

Introduction

Thank you for choosing a Yamaha CLP-156 Clavinova. Your Clavinova is a fine musical instrument that employs advanced Yamaha music technology. With the proper care, your Clavinova will give you many years of musical pleasure.

- Stereo sampling of the acoustic piano voices offers unmatched realism and expressive power, while the AWM (Advanced Wave Memory) tone generator system offers rich, realistic reproductions of all other voices.
- Piano-like touch response — adjustable in 4 stages — provides extensive expressive control and outstanding playability.
- Dual play mode allows 2 voices to be played simultaneously.
- Unique Clavinova Tone voice provides a fresh sound for new musical expression.
- Damper pedal includes natural resonance effect for the piano voices, simulating the string and sound-board resonance of acoustic pianos.
- Metronome feature with variable tempo facilitates practice.
- 2-track digital recorder lets you record and play back anything you play on the keyboard.
- Internal 3.5" floppy disk drive provides extended Recorder capacity and Disklavier PianoSoft™ playback capability — one blank floppy disk for recording and one PianoSoft demonstration disk (excerpts from the Disklavier PianoSoft disks) are provided.
- MIDI compatibility and a range of MIDI functions make the Clavinova useful in a range of advanced MIDI music systems.

In order to make the most of your Clavinova's performance potential and features, we urge you to read this Owner's Manual thoroughly, and keep it in a safe place for later reference.

Taking Care Of Your Clavinova

Your Clavinova is a fine musical instrument, and deserves the most careful treatment. Observe the following points and your Clavinova will sound and look great for many years.

1. Never Tamper With the Internal Circuitry

Never open the case and touch or tamper with the internal circuitry.

2. Turn Off After Use

Always turn the POWER switch OFF after use, and close the key cover to protect the keyboard.

3. Clean Carefully

Clean the cabinet and keys of your Clavinova only with a clean, slightly damp cloth. A neutral cleanser may be used if desired. Never use abrasive cleansers, waxes, solvents or chemical dust cloths since these can dull or damage the finish.

4. Avoid Vinyl

Never place any vinyl products on your Clavinova. Contact with vinyl can cause irreversible damage to the finish.

5. Avoid Humidity & Heat

Install your Clavinova in a place that is away from direct sunlight, excessive humidity or heat.

6. Handle With Care

Never apply excessive force to the controls, connectors or other parts of your Clavinova, and avoid scratching or bumping it with hard objects.

7. Name Plate Location

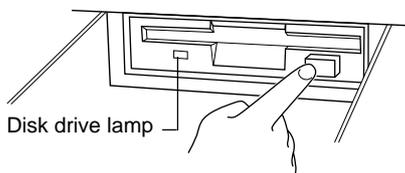
The CLP-156 name plate is located on the bottom panel.

8. Handling Floppy Disks

Yamaha Disklavier PianoSoft disk is write-protected, and therefore cannot be used to save songs. To save Recorder songs from the Recorder, a blank floppy disk should be used (one blank disk is supplied with the Clavinova).

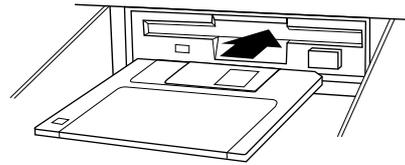
Taking Care of Your Floppy Disks

- Do NOT eject the disk during recording or playback, or at any time when the disk drive lamp is lit. Doing so may damage both the disk and the FDD.
- Do NOT turn the Clavinova on or off while the disk is in the drive.
- Always eject the disk before turning the Clavinova off.
- When ejecting a floppy disk from the disk drive:



- To eject a floppy disk, press the eject button slowly as far as it will go. Then when the disk is fully ejected, remove it by hand.
- The disk may not be ejected properly if the eject button is pressed too quickly or if it is not pressed in far enough. (The eject button may become stuck halfway with the disk extending from the slot by only a few millimeters). If this is the case, do not attempt to pull out the partially ejected disk. Doing so may damage the disk drive mechanism and/or the floppy disk. To remove a partially ejected disk, try pressing the eject button once again or push the disk back into the slot, then repeat the eject procedure carefully.

- Never open or close the key cover while a disk is extending from the drive (i.e. in the ejected position). The key cover may contact the disk, possibly damaging the disk or even the disk drive.
- Do not insert anything but floppy disks into the disk drive. Other objects may cause damage to the disk drive or floppy disk.
- Use only double-sided double density (2DD) 3.5-inch floppy disks with the Clavinova.



Precautions Regarding Floppy Disk Use

- Never open the disk's shutter. Dirt or dust on the Internal magnetic surface will cause data errors.
- Never leave disks near a speaker, TV, or other device that emits a strong magnetic field.
- Do not store disks in places exposed to direct sunlight or sources of high temperature.
- Do not place heavy objects such as books on top of a disk.
- Avoid getting the disks wet.
- Be sure to store the disks in environmental conditions as specified below:
 - Storage temperature: 4° to 53°C (39° to 127°F).
 - Storage humidity: 8 to 90% relative humidity.
 - Store in an area free from dust, sand, smoke, etc.
- Be sure to apply the disk label at the proper position. When changing the label never cover the old label with a new label; always remove the old label first.

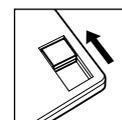
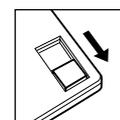
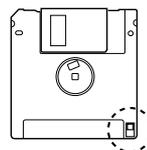
Head Cleaning

The head of the disk drive unit will get dirty as you use it eventually causing data errors. If this occurs, clean the head with a 3.5 inch head cleaning disk (available from most computer supply stores).

Data Backup

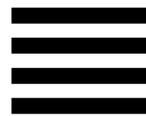
It is recommended that you copy your recorded songs to another disk for backup (see page 25). If the original disk is damaged or your song is deleted, the backup disk can be used instead of the original.

Protecting Your Data (Write Protect Tab)

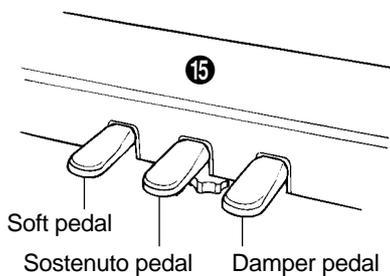
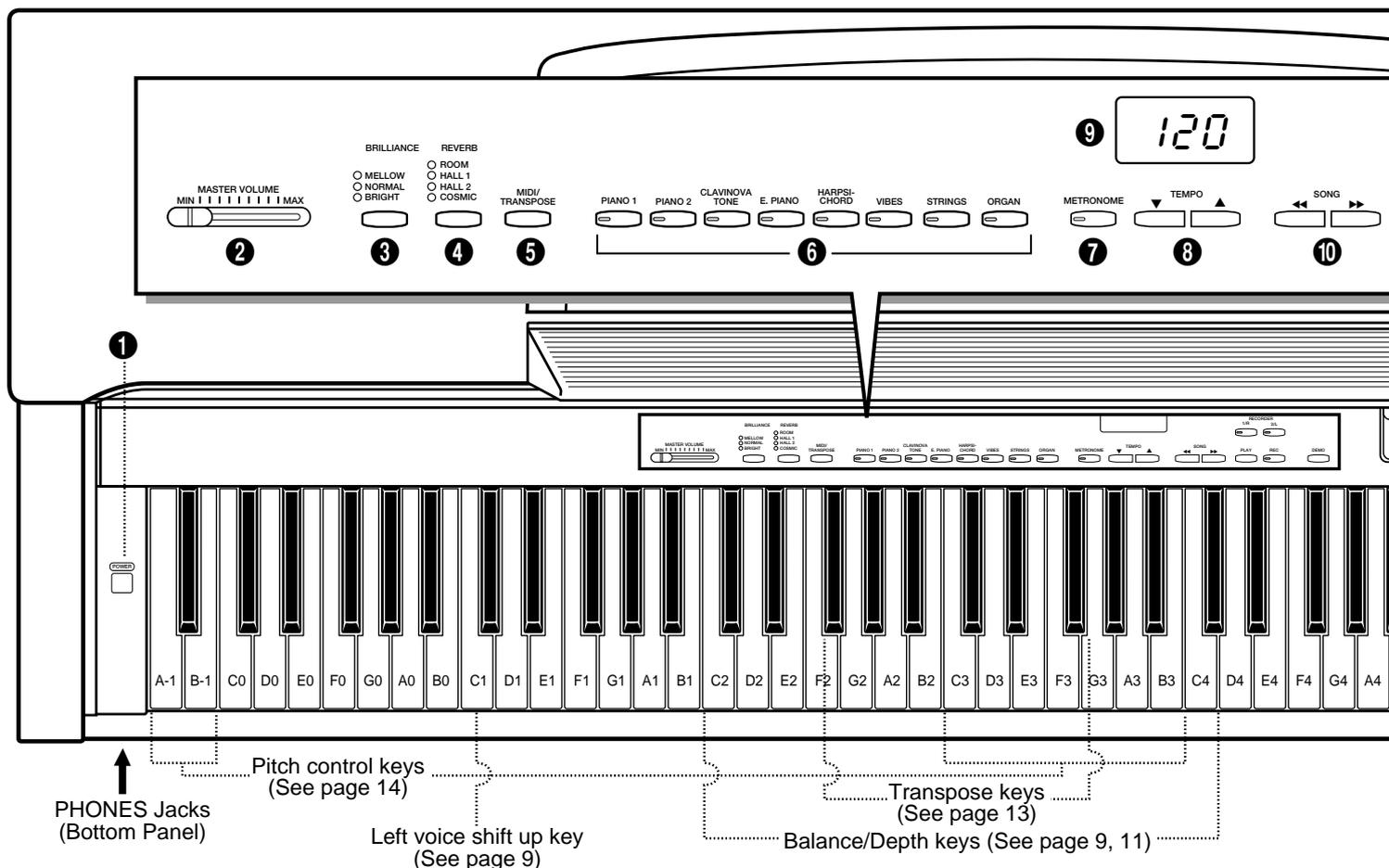


Write protect tab open (locked — write protected)

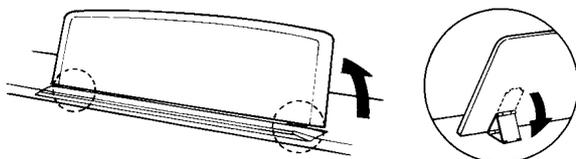
Write protect tab closed (unlocked — write enabled)



The Control Panel



● The Music Stand



If you will be using sheet music with your Clavinova, raise the music stand built into its top panel by lifting the rear edge of the music stand, then flip down the music stand braces and engage them with the corresponding recesses.

The music stand can be lowered after slightly lifting it and folding the two brackets which support it against the back of the stand.

1 [POWER] Switch

Press the [POWER] switch once to turn the power ON, a second time to turn the power OFF. When the power is initially turned ON, the [PIANO 1] voice selector LED will light, and the power indicator located below the left end of the keyboard will light.

2 [MASTER VOLUME] Control

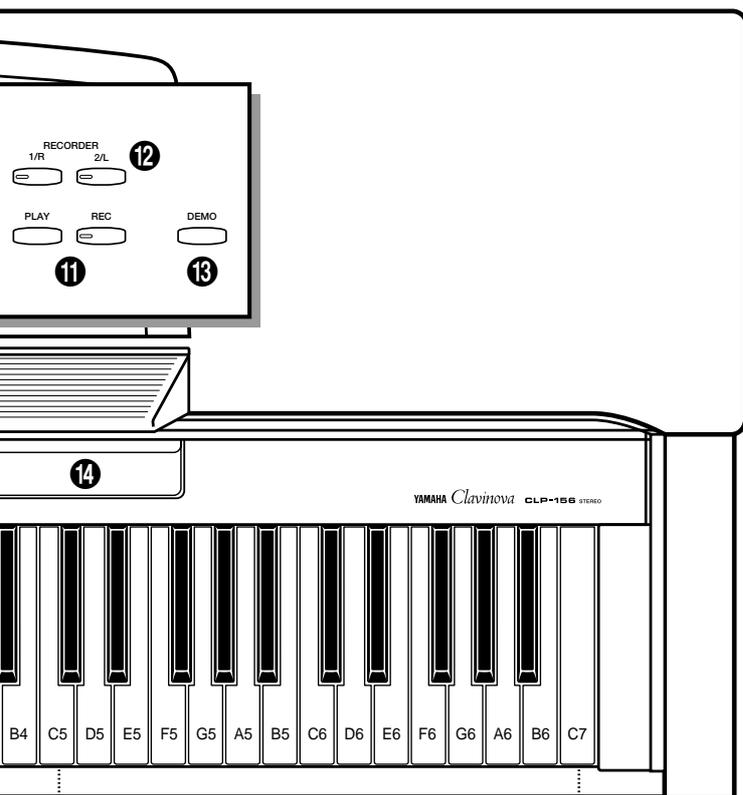
The [MASTER VOLUME] control adjusts the volume (level) of sound produced by the Clavinova's internal stereo sound system. The [MASTER VOLUME] control also adjusts headphone volume when a pair of headphones is plugged into the PHONES jack (page 6).

3 [BRILLIANCE] Button

This button can be used to change the tonality or “timbre” of the selected voice. See page 10 for details.

4 [REVERB] Button

The [REVERB] button selects a number of digital reverb effects that you can use for extra depth and expressive power. See page 11 for details.



Right voice shift up key
(See page 9)

Memory key
(See page 10, 11, 12, 14)

5 [MIDI/TRANSPOSE] Button

The [MIDI/TRANSPOSE] button allows access to the Clavinova's TRANSPOSE function (to shift the pitch of the entire keyboard up or down), keyboard touch sensitivity adjustment, Utility functions (to enhance the versatility and flexibility of the Clavinova), and MIDI functions. For details refer to "Transposition" on page 13, "Touch Sensitivity" on page 12, "Utility Functions" on page 21, and "MIDI Functions" on page 30.

6 Voice Selectors

The CLP-156 has eight voice selectors. Simply press any of the voice selectors to select the corresponding voice. The voice selector LED will light to indicate which voice is currently selected.

The CLP-156 also has a DUAL mode in which two voices can be played simultaneously across the full range of the keyboard — see page 9 for details.



- The PIANO 1 voice is automatically selected whenever the [POWER] switch is initially turned ON.

7 [METRONOME] Button

Turns the metronome sound on and off. The TEMPO [▲] and [▼] buttons, below, are used to set the tempo of the metronome sound — see page 15 for details.

8 TEMPO [▼] and [▲] Buttons

These buttons adjust the tempo of the CLP-156 metronome function as well as the recording and playback functions. The tempo range is from 32 to 280 quarter-note beats per minute.

9 TEMPO Display

This 3-digit LED display normally shows the current tempo in quarter-note beats per minute. When the metronome, recording, or playback is in operation, it displays the current measure number. It also displays the selected song number when a disk is in the disk drive, and various parameters of functions while they are in operation.

10 SONG [◀] and [▶] Buttons

Select a song number on a floppy disk for recording or playback. See page 18 or 16 for details.

11 RECORDER [PLAY] and [REC] Buttons

These buttons control the CLP-156 2-track recorder, letting you record and play back just about anything you play on the keyboard — the music data that you record is stored on a 3.5" floppy disk loaded into the Clavinova's disk drive unit. See page 18 for details.

12 RECORDER [1/R] and [2/L] Buttons

Select the track for recording or playback. See page 18 or 16 for details.

13 [DEMO] Button

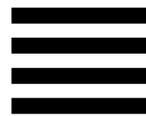
Activates the demo playback mode in which you can select playback of different demonstration sequences for each of the Clavinova's voices. See page 8 for details.

14 3.5" Floppy Disk Drive

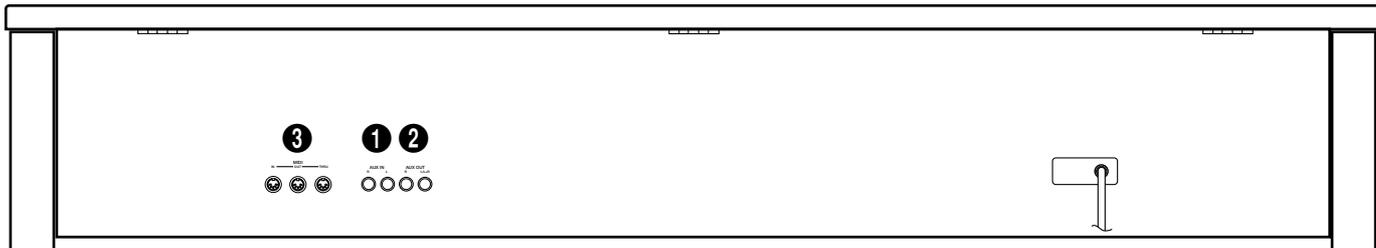
A floppy disk for recording and playback is inserted into the 3.5" floppy disk drive. See page 2 for precautions about handling the floppy disk and the disk drive.

15 Pedals

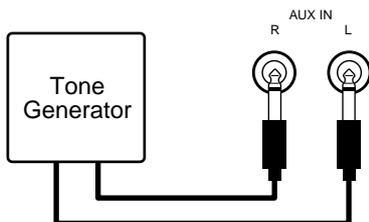
The CLP-156's soft (left), sostenuto (center), and damper (right) pedals provide a range of expressive control capabilities similar to the pedal functions on an acoustic piano. See page 12 for details.



Connections



1 AUX IN L and R Jacks



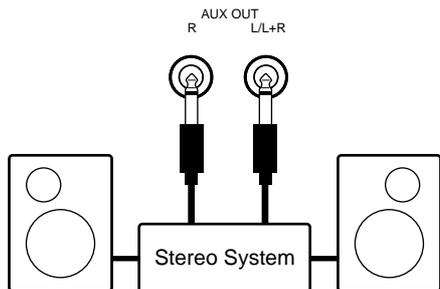
These jacks are intended primarily for use with external synthesizers or tone generator modules.

For example, the outputs of the synthesizer/tone generator can be to the Clavinova AUX IN jacks, allowing the sound of the synthesizer/tone generator to be reproduced via the Clavinova's internal amplifier and speaker system.



- The input signal from the AUX IN jacks is delivered to the AUX OUT jacks, but is not affected by the Clavinova's volume control or reverb effect.

2 AUX OUT L/L+R and R Jacks



The AUX OUT L/L+R and R jacks deliver the output of the Clavinova for connection to an instrument amplifier, mixing console, PA system, or recording equipment. If you will be connecting the Clavinova to a monaural sound system, use only the L/L+R jack. When a plug is inserted into the L/L+R jack only, the left- and right-channel signals are combined and delivered via the L/L+R jack so you don't lose any of the Clavinova's sound.

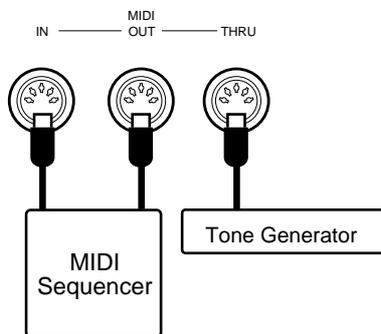
The Internal Amplifier & Speaker System

The CLP-156 features a powerful stereo amplifier delivering 30 watts per channel, driving a speaker system that puts out exceptionally rich sound with natural response from powerful lows to shimmering highs. The speaker system features a bass-reflex type enclosure with two 13-centimeter and two 5-centimeter speaker units.



- The AUX OUT jack signal must never be returned to the AUX IN jacks, either directly or through external equipment.

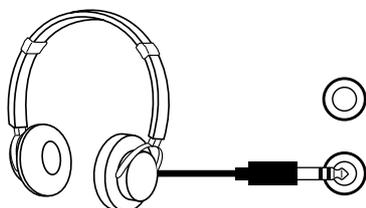
3 MIDI IN, THRU and OUT Connectors



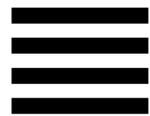
The MIDI IN connector receives MIDI data from an external MIDI device (such as a synthesizer, sequencer, music computer, etc.) which can be used to control the Clavinova. The MIDI THRU connector re-transmits any data received at the MIDI IN connector, allowing "chaining" of several MIDI instruments or other devices. The MIDI OUT connector transmits MIDI data generated by the Clavinova (e.g. note and velocity data produced by playing the Clavinova keyboard).

More details on MIDI are given in "MIDI Functions" on page 30.

PHONES Jacks (Bottom Panel)

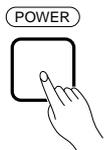


Two pairs of standard pair of stereo headphones can be plugged in here for private practice or late-night playing. The internal speaker system is automatically shut off when a pair of headphones is plugged into either of the PHONES jacks.



Selecting & Playing Voices

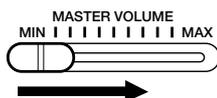
1 Turn Power On



After making sure that the Clavinova's AC plug is properly inserted into a convenient AC wall outlet, press the **[POWER]** switch located to the left of the keyboard to turn the power ON.

When the power is turned ON, the **[PIANO 1]** voice selector LED will light (the PIANO 1 voice is automatically selected whenever the power is turned ON).

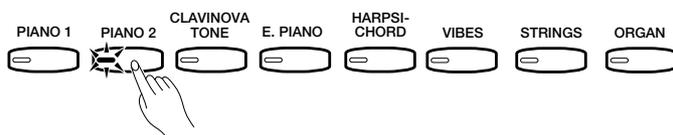
2 Set the Volume



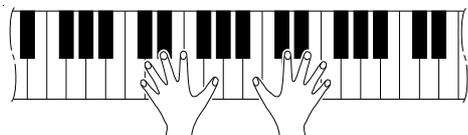
Initially set the **[MASTER VOLUME]** control about half way between the "MIN" and "MAX" settings. Then, when you start playing, re-adjust the **[MASTER VOLUME]** control for the most comfortable listening level.

3 Select a Voice

Select the desired voice by pressing one of the voice selectors.



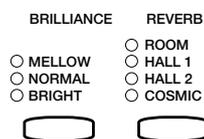
4 Play



The Clavinova also offers keyboard touch response, so the volume and timbre of notes played can be controlled according to how "hard" you play the keys. The amount of variation available depends on the selected voice.

5 Adjust Tone & Add Effects As Required

You can also change the overall tone or add reverb and/or effects as desired by using the **[REVERB]** and **[BRILLIANCE]** buttons (see page 10 for **[BRILLIANCE]** button operation, "Reverb" on page 11).

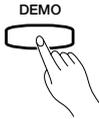


Selecting & Playing Voices

Playing the Demonstration Tunes

The CLP-156 features 8 demonstration tunes that effectively demonstrate its sound capabilities. Here's how you can select and play the demo tunes.

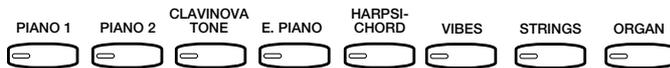
1 Engage the Demo Mode



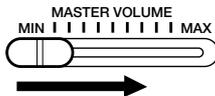
Press the [DEMO] button to engage the demo mode — the voice selectors will flash in sequence.

2 Select a Demo Tune

The 8 demo tunes are selected via the voice selectors. Press a selector to start playback of the corresponding tune, featuring the voice normally selected by that voice selector button. The demo tunes will play in sequence until stopped, starting with the selected tune. The voice selector indicator will flash during demo playback.



3 Set the Volume



Use the [MASTER VOLUME] control to adjust the volume.



- The **TEMPO** buttons do not affect demo playback (“_ _ _” appears on the TEMPO display).

4 Play a Different Demo

You can start playback of any other demo tune during playback by simply pressing the corresponding voice selector. Playback will stop and the playback-ready mode described in step 2, above, will be re-engaged if you press the voice selector of the demo that is currently playing.

5 Stop the Demo



Press the [DEMO] button when you want to stop demo playback and return to the normal play mode.

The Demo Tunes

[PIANO 1] button: Etude op. 10-5 “Black Keys” by F. F. Chopin

[PIANO 2] button: “Le Rhône” by K. Hattori

[CLAVINOVA TONE] button: “Pavane pour une infante défunte” by M. J. Ravel

[HARPSICHORD] button: “Le Coucou” by L. C. Daquin

[VIBES] button: “Schmetterling (Papillons)” op. 43 by E. H. Grieg

[STRINGS] button: “Charmaine” by L. Pollack

[ORGAN] button: “Jesu, Joy Of Man’s Desiring” (Chorale from Cantata No. 147) by J. S. Bach

- The demonstration pieces listed above are short excerpts from the original compositions. The other demo song is original (© 1994 by YAMAHA CORPORATION).

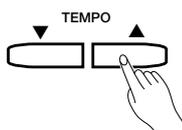
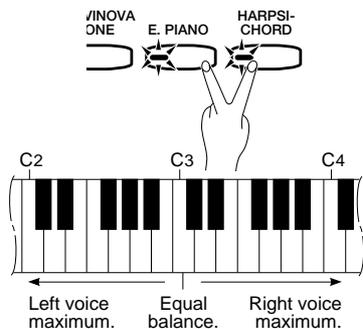


- One PianoSoft demonstration disk is also provided with the CLP-156. It contains several excerpts from the Disklavier PianoSoft disks. Refer to the “Disk Playback” section on page 16 for how to playback the Demonstration disk.

The Dual Mode

The DUAL mode makes it possible to play two voices simultaneously across the entire range of the keyboard. To activate the DUAL mode simply press two voice selectors at the same time (or press one voice selector while holding another). The voice indicators of both selected voices will light when the DUAL mode is active. To return to the normal single-voice play mode, press any single voice selector.

● Adjusting the Balance Between the Dual-mode Voices



The volume levels of the two voices combined in the DUAL mode are normally set automatically to produce a pleasing balance (see “Default Settings” below). The balance can be adjusted manually by using the **C2** through **C4** keys on the keyboard or the **TEMPO** [▲] and [▼] buttons while pressing the two voice selectors corresponding to the voices to be combined in the DUAL mode. The selected balance value (1 ... 15) will be shown on the TEMPO display until the voice selectors are released.

When using the keyboard, the **C3** key produces equal balance between the two voices (a setting of “8”), while keys to the left of **C3** increase the volume of the left voice in relation to the right voice, and keys to the right of **C3** increase the volume of the right voice in relation to the left voice. By “left” and “right” voices we refer to the relative positions of the voice selectors — i.e. in a STRINGS/ORGAN combination STRINGS is the left voice and ORGAN is the right voice.

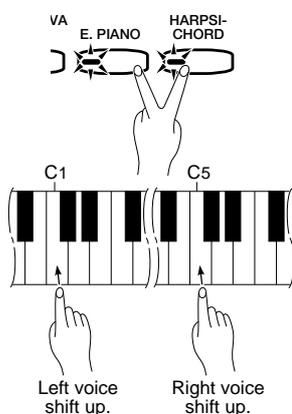
When using the **TEMPO** buttons the first time either button is pressed the current balance appears on the TEMPO display, then pressing the [▼] button increases the volume of the left voice in relation to the right while the [▲] button has the opposite effect. Press both the [▲] and [▼] buttons simultaneously to instantly recall the equal-volume (“8”) setting.

- A setting of “1” sets the volume of the left voice to maximum and the volume of the right voice to minimum.
- A setting of “8” sets both voices to the same volume.
- A setting of “15” sets the volume of the right voice to maximum and the volume of the left voice to minimum.



• Hold either the TEMPO [▲] or [▼] button for continuous scrolling in the specified direction.

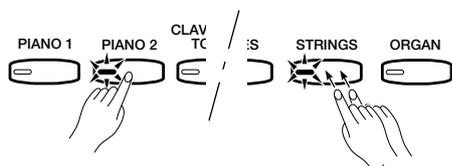
● Shifting a Dual-mode Voice Up One Octave



Depending on which voices you combine using the DUAL mode, the combination may sound better if one of the voices is shifted up an octave. To shift the right voice, press the **C5** key while pressing the two voice selectors corresponding to the voices to be combined in the DUAL mode. Press **C5** again to shift the voice back to its normal range. Use the **C1** key in the same way to shift the left voice.

Default octave settings are provided for all voice combinations, as listed in the “Default Settings” chart, below.

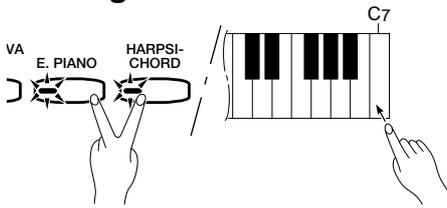
● Slow-attack Strings



In a DUAL mode voice combination using STRINGS and any other voice, it is possible to switch the STRINGS voice to a slow-attack variation when initially selecting the voices by pressing the [STRINGS] selector twice while holding the other voice selector. Repeat this operation to return to the normal STRINGS voice attack.

The Dual Mode

● Memorizing the Balance, Strings Type, & Octave Shift Settings



Press the **C7** key while holding any two voice selectors to memorize all balance, STRINGS voice attack variation, and octave shift settings made since the power was turned on. The memorized settings will be retained in memory for about one week after the power is turned off, then the default settings will be restored. To keep the memorized settings for longer periods, turn the power on briefly at least once a week.

If these settings are not memorized as described above, they are retained in memory only until the Clavinova is turned off.

Default Settings

		Balance							
		PIANO 1	PIANO 2	CLAVINOVA TONE	E. PIANO	HARPSICHORD	VIBES	STRINGS	ORGAN
Octave Shift	PIANO 1		8 (C3)	8 (C3)	8 (C3)	8 (C3)	8 (C3)	4 (F2)	3 (E2)
	PIANO 2	0		8 (C3)	8 (C3)	8 (C3)	8 (C3)	4 (F2)	3 (E2)
	CLAVINOVA TONE	0	0		8 (C3)	8 (C3)	8 (C3)	4 (F2)	4 (F2)
	E. PIANO	0	0	0		8 (C3)	8 (C3)	4 (F2)	3 (E2)
	HARPSICHORD	0	0	0	0		8 (C3)	4 (F2)	5 (G2)
	VIBES	R	R	R	R	R		7 (B2)	7 (B2)
	STRINGS	0	0	0	0	0	L		8 (C3)
	ORGAN	0	0	0	0	0	L	0	

C2 ... C4: Balance keys 0: Normal octave L: Left voice up one octave R: Right voice up one octave

Brilliance

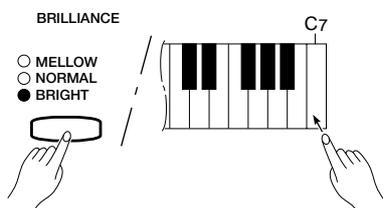
The **[BRILLIANCE]** button makes it possible to change the tonality or “timbre” of the selected voice to suit your musical requirements. Three settings are provided: MELLOW, NORMAL, and BRIGHT. To select one of these settings, press the **[BRILLIANCE]** button a few times until the indicator corresponding to the desired setting lights.

NORMAL This setting produces the “normal” tone of the selected voice.

BRIGHT This setting creates a brighter, sharper tone.

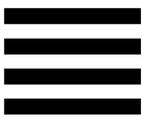
MELLOW The MELLOW setting produces a rounder, softer tone.

● Memorizing the Brilliance Setting



Press the **C7** key while holding the **[BRILLIANCE]** button to memorize the current brilliance setting. The memorized setting will be retained in memory for about one week after the power is turned off, then the default setting (NORMAL) will be restored. To keep the memorized setting for longer periods, turn the power on briefly at least once a week.

If this setting is not memorized as described above, it is retained in memory only until the Clavinova is turned off.



Reverb

The [REVERB] button selects a number of digital reverb effects that you can use for extra depth and expressive power.

To select a reverb type press the [REVERB] button a few times until the indicator corresponding to the desired type lights (the indicators light in sequence each time the [REVERB] button is pressed). No reverb is produced when all indicators are off.

OFF When no reverb effect is selected (no REVERB indicator is lit), a special natural damper effect is applied to the piano voices. This simulates the natural resonance of an acoustic piano's strings and sound board when the damper pedal is pressed.

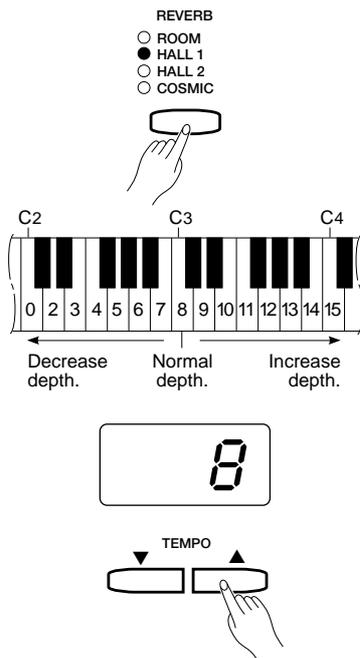
ROOM This setting add a continuous reverb effect to the sound that is similar to the type of acoustic reverberation you would hear in a medium-size room.

HALL 1 For a "bigger" reverb sound, use the HALL 1 setting. This effect simulates the natural reverberation of a medium-size concert hall.

HALL 2 For a really spacious reverb sound, use the HALL 2 setting. This effect simulates the natural reverberation of a large concert hall.

COSMIC The COSMIC reverb effect produces an echo-plus-reverb sound that can add life and animation to your music.

● Adjusting Reverb Depth



The depth of the selected reverb effect can be adjusted for the current voice (separate settings can be made for each voice and reverb type) by using the **C2** through **C4** keys on the keyboard or the **TEMPO** [▲] and [▼] buttons while holding the [REVERB] button. The selected reverb depth value (0 ... 15) will be shown on the TEMPO display until the [REVERB] button is released. The default reverb depth settings are given in the "Default Settings" chart below.

When using the keyboard, the **C3** keys sets the "normal" depth (a setting of "8"). Keys to the left of **C3** decrease the reverb depth, and keys to the right of **C3** increase the reverb depth.

When using the **TEMPO** buttons the first time either button is pressed the current depth setting appears on the TEMPO display, then pressing the [▲] button increases the reverb depth while the [▼] button decreases the reverb depth. Press both the [▲] and [▼] buttons simultaneously to instantly recall the normal ("8") setting.

- A setting of "0" sets the minimum reverb depth (no reverb).
- A setting of "8" sets medium "normal" reverb depth.
- A setting of "15" sets the maximum reverb depth.



- Hold either the TEMPO [▲] or [▼] button for continuous scrolling in the specified direction.
- A setting of "1" cannot be entered via the keyboard.

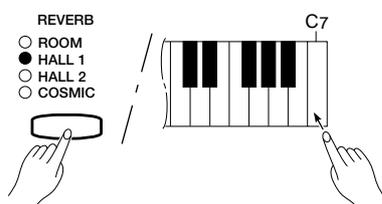
Default Settings

	ROOM	HALL 1	HALL 2	COSMIC
STRINGS, ORGAN	8 (C3)	8 (C3)	11 (F3)	10 (E3)

* All effect types set to 8 (C3) for all other voices.

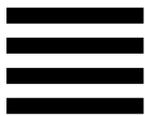
* The default reverb type is ROOM.

● Memorizing the Reverb Type & Depth Settings



Press the **C7** key while holding the [REVERB] button to memorize the current effect type and all depth settings made since the power was turned on. The memorized settings will be retained in memory for about one week after the power is turned off, then the default settings will be restored. To keep the memorized settings for longer periods, turn the power on briefly at least once a week.

If these settings are not memorized as described above, they are retained in memory only until the Clavinova is turned off.



Touch Sensitivity

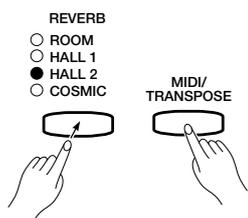
Four different types of keyboard touch sensitivity — **HARD**, **MEDIUM**, **SOFT** or **FIXED** — can be selected to match different playing styles and preferences. The different touch sensitivity settings are selected by using the **[MIDI/TRANSPOSE]** and **[REVERB]** buttons.

HARD (ROOM indicator) The **HARD** setting requires the keys to be played quite hard to produce maximum loudness.

MEDIUM (HALL 1 indicator) The **MEDIUM** setting produces a fairly “standard” keyboard response. This is the initial factory default setting.

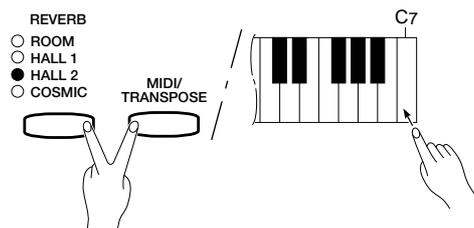
SOFT (HALL 2 indicator) The **SOFT** setting allows maximum loudness to be produced with relatively light key pressure.

FIXED (No indicator lit) All notes are produced at the same volume no matter how hard the keyboard is played. This is an ideal setting for voices which normally have no keyboard sensitivity (i.e. harpsichord and organ).



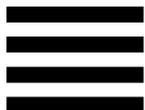
To select a touch sensitivity setting press the **[REVERB]** button a few times while holding the **[MIDI/TRANSPOSE]** button until the indicator corresponding to the desired setting lights.

● Memorizing the Touch Sensitivity Setting



Press the **C7** key while holding the **[MIDI/TRANSPOSE]** and **[REVERB]** button to memorize the current touch sensitivity setting. The memorized setting will be retained in memory for about one week after the power is turned off, then the default setting (**MEDIUM**) will be restored. To keep the memorized setting for longer periods, turn the power on briefly at least once a week.

If this setting is not memorized as described above, it is retained in memory only until the Clavinova is turned off.



The Pedals

The CLP-156 has three foot pedals that produce a range of expressive effects similar to those produced by the pedals on an acoustic piano.

● Soft (Left) Pedal

Pressing the soft pedal reduces the volume and slightly changes the timbre of notes played.

● Sostenuto (Center) Pedal

If you play a note or chord on the keyboard and press the sostenuto pedal while the note(s) are held, those notes will be sustained as long as the pedal is held (as if the damper pedal had been pressed) but all subsequently played notes will not be sustained. This makes it possible to sustain a chord, for example, while other notes are played “staccato.”

● Damper (Right) Pedal

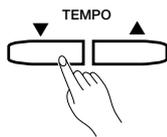
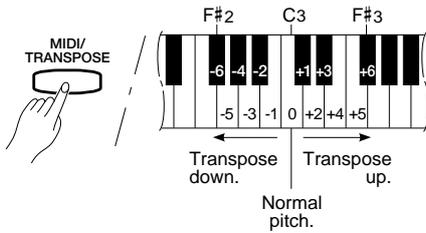
The damper pedal functions in the same way as a damper pedal on an acoustic piano. When the damper pedal is pressed notes played have a long sustain. When no **REVERB** effect is selected and a piano voice is selected, the damper pedal also produces a special “resonance” that simulates the ring of the strings and the sound board of an acoustic piano. Releasing the pedal immediately stops (damps) any sustained notes. The CLP-156 damper pedal additionally features continuous damping. This allows you to create shorter effects by pressing the damper pedal down only part of the way.



Transposition

The Clavinova's TRANSPOSE function makes it possible to shift the pitch of the entire keyboard up or down in semitone intervals up to a maximum of six semitones. "Transposing" the pitch of the Clavinova keyboard facilitates playing in difficult key signatures, and you can easily match the pitch of the keyboard to the range of a singer or other instrumentalist.

The [MIDI/TRANSPOSE] button and keys **F#2** through **F#3** on the keyboard, or the TEMPO [▲] and [▼] buttons, are used for transposition.



1 Press and hold the [MIDI/TRANSPOSE] button. The current transpose setting will appear on the TEMPO display ("–6" semitones through "0" through "6" semitones).

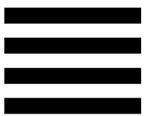
2 Press a key between **F#2** and **F#3** according to the desired amount of transposition*, or use the TEMPO [▲] and [▼] buttons to set the required transposition value. The "0" default setting can be instantly recalled by simultaneously pressing the TEMPO [▲] and [▼] buttons.

3 Release the [MIDI/TRANSPOSE] button.

* Pressing the **C3** key produces normal keyboard pitch. Pressing the key to the left of **C3** (**B2**) transposes the pitch of the keyboard down a semitone, the next key to the left (**B♭2**) transposes down a whole tone (two semitones), etc., down to the **F#2** key which transposes down 6 semitones. Upward transposition is accomplished in the same way using the keys to the right of **C3**, up to **F#3** which transposes up 6 semitones.



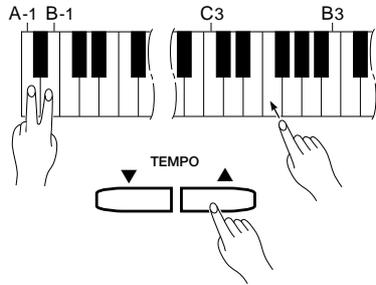
- Hold either the TEMPO [▲] or [▼] button for continuous scrolling in the specified direction.
- Notes below and above the A-1 — C7 of the Clavinova sound one octave higher and lower, respectively.



Pitch Control

Pitch control makes it possible to tune the Clavinova over a ± 50 -cent range (approximate) in approximately 1.2-cent or 1-hertz intervals. A hundred "cents" equals one semitone, so the tuning range provided allows fine tuning of overall pitch over a range of approximately a semitone. Pitch control is useful for tuning the Clavinova to match other instruments or recorded music.

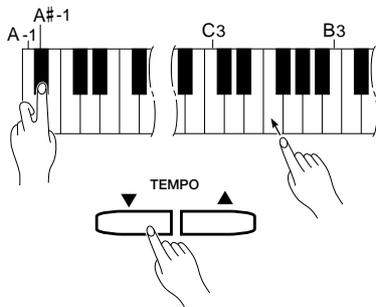
● Tuning Up



- 1 To tune up (raise pitch), hold the **A-1** and **B-1** keys simultaneously (A-1 and B-1 are the two lowest white keys on the keyboard) and press any key between **C3** and **B3**. Each time a key in this range is pressed the pitch is raised by approximately 1.2 cents, up to a maximum of about 50 cents above standard pitch. To raise the pitch in 1-hertz increments press the **TEMPO** [**▲**] button instead of the **C3-B3** keys. The **TEMPO** [**▼**] button can also be used to tune down while the **A-1** and **B-1** keys are held.

- 2 Release the **A-1** and **B-1** keys.

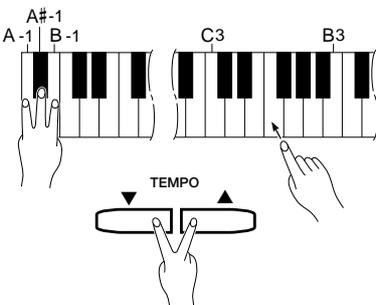
● Tuning Down



- 1 To tune down (lower pitch), hold the **A-1** and **A#-1** keys simultaneously and press any key between **C3** and **B3**. Each time a key in this range is pressed the pitch is lowered by approximately 1.2 cents, up to a maximum of about 50 cents below standard pitch. To lower the pitch in 1-hertz increments press the **TEMPO** [**▼**] button instead of the **C3-B3** keys. The **TEMPO** [**▲**] button can also be used to tune up while the **A-1** and **A#-1** keys are held.

- 2 Release the **A-1** and **A#-1** keys.

● To Restore Standard Pitch



- 1 To restore the default pitch (A3 = 440 Hz), hold the **A-1**, **A#-1**, and **B-1** keys simultaneously and press any key between **C3** and **B3**, or simultaneously press the **TEMPO** [**▲**] and [**▼**] buttons.

- 2 Release the **A-1**, **A#-1** and **B-1** keys.



- Hold either the **TEMPO** [**▲**] or [**▼**] button for continuous scrolling in the specified direction.
- The **PITCH CONTROL** function has no effect when **LOCAL OFF** is active (see "MIDI FUNCTIONS," page 32).

● The Pitch Display

Example:

```

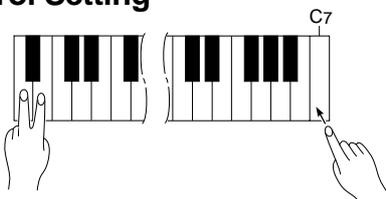
442 442.0 ..... 442.24
442 442.25 ..... 442.49
442 442.5 ..... 442.74
442 442.75 ..... 442.99

```

The approximate pitch of A3 is shown on the TEMPO display in Hertz while the pitch control function is in operation. The total display range is from approximately 427 hertz (-50 cents) to 453 hertz (+50 cents).

The dots to the right of each figure in the display are used to provide a general idea of fractional pitches.

● Memorizing the Pitch Control Setting



Press the **C7** key while holding the **A-1/B-1**, **A-1/A#-1**, or **A-1/A#-1/B-1** key combination to memorize the current pitch control setting. The memorized setting will be retained in memory for about one week after the power is turned off, then the standard pitch will be restored. To keep the memorized setting for longer periods, turn the power on briefly at least once a week.

If this setting is not memorized as described above, it is retained in memory only until the Clavinova is turned off.



The Metronome & Tempo Control

The CLP-156 built-in metronome is a convenient feature for practice, and it can also provide a solid rhythmic guide when recording using the Recorder feature, described below.

The Metronome

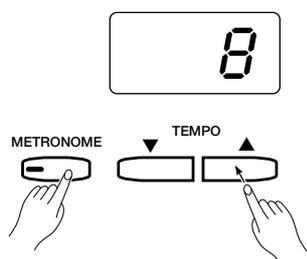


The metronome sound is turned on and off via the [METRONOME] button. Press the [METRONOME] button so that its indicator lights to turn the metronome on and then again so that the indicator goes out to turn the metronome off. When the metronome is on the current measure number is shown on the TEMPO display.



• The metronome will not function when the supplied PianoSoft demonstration disk or a Disklavier PianoSoft disk is in the disk drive.

● Metronome Volume



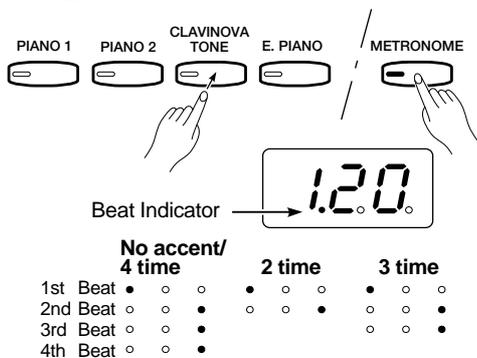
The volume of the metronome sound can be independently adjusted by using the TEMPO [▲] and [▼] buttons while holding the [METRONOME] button. The first time either button is pressed the current volume setting appears on the TEMPO display, then pressing the [▲] button increases the volume while the [▼] button decreases the volume. Press both the [▲] and [▼] buttons simultaneously to instantly recall the default (“8”) setting.

- A setting of “1” sets the minimum metronome volume.
- A setting of “8” sets the default metronome volume.
- A setting of “15” sets the maximum metronome volume.



• Hold either the TEMPO [▲] or [▼] button for continuous scrolling in the specified direction.

● Metronome Time Signature



The time signature of the metronome sound can be set by pressing the appropriate voice selector button while holding the [METRONOME] button, as follows:

[METRONOME] + [PIANO 1]	No accent (default)
[METRONOME] + [PIANO 2]	2 time
[METRONOME] + [CLAVINOVA TONE]	3 time
[METRONOME] + [E. PIANO]	4 time

The dots on the TEMPO display flash to indicate the current beat within the current measure, as shown to the left.

Tempo Control

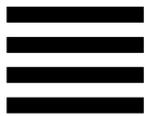


The tempo of the Metronome as well as the song recording and playback functions can be adjusted from 32 to 280 quarter-note beats per minute via the TEMPO [▲] and [▼] buttons. The current tempo normally appears on the TEMPO display. Although the TEMPO display shows the current measure number during Metronome, song recording or playback operation, the tempo value is displayed when either of the TEMPO buttons are pressed, and remains on the display for about one second after the TEMPO buttons are released. “_ _ _” is displayed for any tempo value during playback of the supplied PianoSoft demonstration disk or optional Disklavier PianoSoft disks.

The default tempo of 120 beats per minute is automatically set when the power is initially turned on. Press the TEMPO [▲] and [▼] buttons simultaneously to instantly recall the default tempo (120) at any time. The tempo value of the selected song is recalled if the TEMPO [▲] and [▼] buttons are pressed simultaneously when a song which contains data is selected.



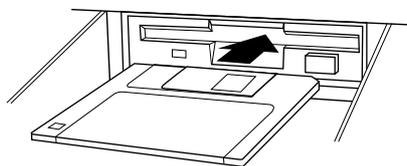
• Hold either the TEMPO [▲] or [▼] button for continuous scrolling in the specified direction.



Disk Playback

Performance data on the supplied PianoSoft demonstration disk (others are available from Yamaha), as well as original performances you record using the Clavinova's Recorder function (page 18) can be played back as described below.

1 Insert a Disk



Insert the disk containing the data to be played back into the disk drive, with the sliding door facing the drive slot and the label side facing upward. The disk should click into place and the disk lamp will light briefly while the Clavinova reads and identifies the disk. Song number "1" will also appear on the display.

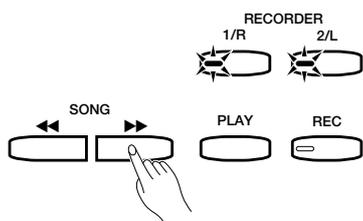


- Any recorded data in the CLP-156 memory (i.e. data recorded without first inserting a disk) will be erased when:
 - the supplied PianoSoft demonstration disk or an optional PianoSoft disk is inserted.
 - a disk containing original performance data is inserted and the "Select a Song Number" operation, below, is carried out.
 If you want to keep the data that is in the instrument's memory, copy it to a recordable disk as described on page 20 before doing any of the above.

2 Select a Song Number



Song Number



Use the SONG [◀] and [▶] buttons to select the song number you want to play. Select "ALL" if you want all songs on the disk to be played back in sequence. When the desired song number is selected the [1/R] and [2/L] track button indicators will glow green if the corresponding tracks contain performance data.

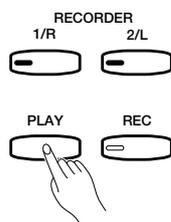


- The songs can be made to play back and repeat either in sequence or in random order when "ALL" is selected, depending on the setting of the "All-song Random Repeat" function (page 28).

3 Start Playback



Measure Number

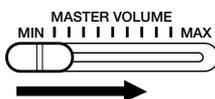


Start playback of the selected song by pressing the [PLAY] button. Unless "ALL" is selected, the selected song will play through to the end and playback will stop automatically. The current measure number will be shown on the display during playback. It is also possible to play along on the keyboard during playback.



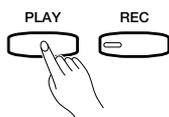
- The measure number display may not be accurate with some songs.
- It is possible to change the playback voice by using the panel voice selectors during playback of the supplied PianoSoft demonstration disk or an optional Disklavier PianoSoft disk. In this case the playback voice will become the same as the voice played via the keyboard. The playback voice cannot be changed when playing back other types of disks (the keyboard voice can be changed).

4 Adjust the Volume



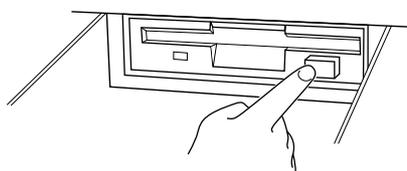
Adjust the playback volume as required via the [MASTER VOLUME] control.

5 Stop Playback



Although playback will stop automatically at the end of the song, it can be stopped at any time by pressing the [PLAY] button.

6 Eject the Disk When Done

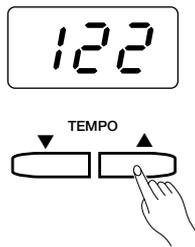


When you've finished with the currently loaded disk, simply press the disk drive EJECT button to remove it.



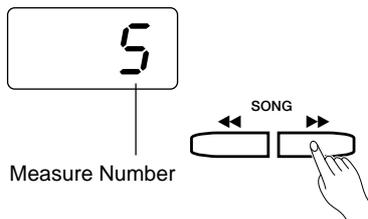
- NEVER** eject a disk or turn the power off while the disk drive lamp is on or a disk is playing back.

● Adjusting the Playback Tempo



The playback tempo can be adjusted either before or during playback by using the **TEMPO** [▲] and [▼] buttons. Press the **TEMPO** [▲] and [▼] buttons simultaneously to recall the original tempo. The tempo value in beats per minute will appear on the display during adjustment. “_ _ _” is displayed for any tempo value during playback of the supplied PianoSoft demonstration disk or optional Disklavier PianoSoft disks.

● Fast Reverse and Forward

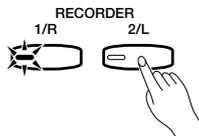


During playback the **SONG** [◀◀] and [▶▶] buttons function as fast reverse and forward controls:

■ **Fast reverse:** Press the **SONG** [◀◀] button during playback to move backward rapidly through the song. The current measure number will appear on the display. No sound is produced during fast reverse.

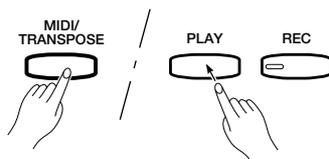
■ **Fast forward:** Press the **SONG** [▶▶] button during playback to move rapidly forward through the song. The current measure number will appear on the display, and the fast-forward sound can be heard.

● Playing Back only One Track



If both the [1/R] and [2/L] track button indicators light green, both tracks contain data which will be played back. If you only want to play back one track, however, you can turn either track off by pressing its track button so the indicator goes out. Press the same track button again so the indicator lights to turn the track back on. Both tracks can be turned on or off either before or during playback in this way.

● Repeat Playback



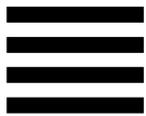
As mentioned in step 2 of the playback procedure described above, you can select “ALL” instead of an individual song number if you want to hear all the songs on the disk played back in sequence. It is also possible to automatically play all songs from the currently selected song repeatedly by pressing the [PLAY] button while holding the [MIDI/TRANPOSE] button. Press the [PLAY] button to stop repeat playback at any time.

● Playing Other Types of Music Data

In addition to the supplied PianoSoft demonstration disk and disks containing performances you record yourself using the CLP-156 recorder function, the Clavinova can play back optional Yamaha Disklavier PianoSoft™ disks available from your Yamaha dealer, and disks containing songs recorded in Standard MIDI File format (format 0 only).

When playing Standard MIDI Files, approximate panel voices will automatically be selected for the voices specified by the song data.

In most cases pre-recorded Standard MIDI File disks will include data for more tracks than the two available on the CLP-156. Only track-1 and track-2 data will be played by the CLP-156, while the data for other tracks will be transmitted via the CLP-156 MIDI OUT terminal (see page 6). The data for tracks 1 and 2 will not be transmitted via MIDI OUT. It is possible, however, to re-assign the data for other tracks to playback via tracks 1 and 2 by using the “Disk Playback Track Selection” function described on page 27. In this case the data for all tracks other than those assigned to be played by the CLP-156 will be transmitted via the MIDI OUT terminal.



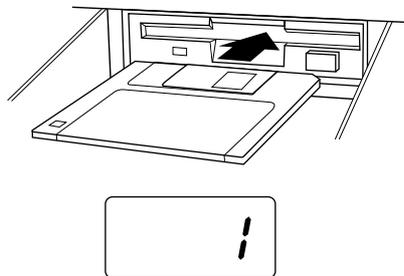
Using the Recorder

The CLP-156 features a two-track recorder that lets you record what you play on the keyboard and then play it back. Since you have two tracks, you can “overdub” one part on top of another, using a different voice if you like, to create complex, rich-sounding recordings. The recorder feature is a useful adjunct to any keyboard study program, since it lets you hear exactly how you sound from the listener’s perspective. It can also be just plain fun.

Each individual recording made using this function is known as a “song”, and up to 60 songs can be recorded on a single floppy disk (less if the recorded songs contain a large amount of data).

Recording

1 Insert a Disk

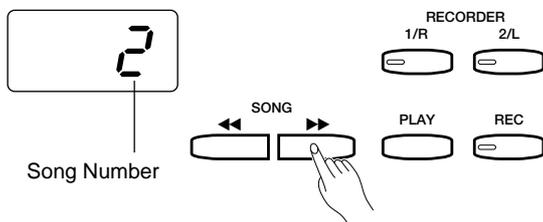


Insert a properly formatted disk into the disk drive, with the sliding door facing the drive slot and the label side facing upward. The disk should click into place and the disk lamp will light briefly while the Clavinova reads and identifies the disk. Song number “1” will also appear on the display.



- If an unformatted disk or a disk that was not formatted by the CLP-156 is inserted, “For” will appear flashing on the display and recording will not be possible. Be sure to format the disk using the “Floppy Disk Format” function described on page 24 before recording.

2 Select a Song Number

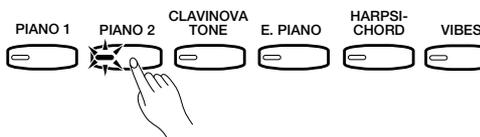


Use the SONG [◀] and [▶] buttons to select the song number you want to record to.



- When a song number is selected the [1/R] and [2/L] track button indicators will light green if the corresponding tracks already contain performance data. If you record to a song number that contains data, the old data will be erased and replaced by the newly-recorded data. Select an “empty” song if you don’t want to erase the existing data.

3 Select a Voice & Other Initial Settings As Required



Use the voice selectors to select the voice you want to record with. In addition to the notes played, the CLP-156 also records the data listed in the charts below. “Initial Value” refers to settings that can be made before actually beginning recording — e.g. selecting a voice or brilliance type. “During Recording” refers to parameter changes that will be recorded while recording. The initial settings can be changed after recording as described in “Changing the Initial Settings” on page 20.

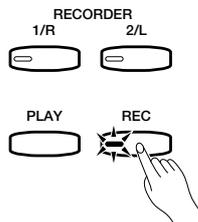
● Data Recorded Independently for Each Track

Data	Initial Value	During Recording
Notes played	No	Yes
Voice	Yes	Yes
Damper pedal	Yes	Yes
Soft pedal	Yes	Yes
Sostenuto pedal	No	Yes
Brilliance type	Yes	Yes
Dual voice	Yes	Yes
Dual balance	Yes	Yes

● Data Common to Both Tracks

Data	Initial Value	During Recording
Reverb type	Yes	Yes
Reverb depth	Yes	Yes
Tempo	Yes	No

4 Engage the Record Ready Mode



Press the **RECORDER [REC]** button to engage the record ready mode (recording does not actually start yet). The **[REC]** button indicator will light red.

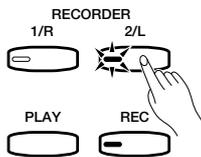
When the **[REC]** button is released the amount of space available on the currently loaded floppy disk will be shown on the display in kilobytes (approximate). Also, a dot on the right side of the display will flash at the current tempo.

The record ready mode can be disengaged before recording by simply pressing the **[REC]** button again.



- It is not possible to record to a song which contains data recorded on an instrument other than the CLP-156 — “no” will appear on the display when you press the **[REC]** button.

5 Select the Record Track



When the record mode is engaged in the previous step, the last-recorded track will automatically be selected for recording and its indicator — i.e. the **[1/R]** or **[2/L]** button indicator — will glow red. If you want to record on a different track, press the appropriate track button so that its indicator glows red.



- The track button indicators of tracks which contain previously recorded data will glow green. The previously-recorded data on the non-record track will normally be played back as you record, so you can play along with a previously-recorded track. If you don't want to hear the previously recorded track as you record, press the playback track button before pressing the **[REC]** button (step 4, above) so that its indicator goes out.
- Recording on a track which already contains data will erase all previous data on that track.

6 Start the Metronome, If Required



If you want to use the metronome while recording, press the **[METRONOME]** button and adjust the tempo and volume as described on page 15. The metronome sound will not be recorded.

7 Start Recording

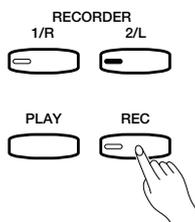


Recording will begin automatically as soon as you play a note on the keyboard or press the **[PLAY]** button. The current measure number will appear on the display during recording.



- You can record up to a maximum of about 57,000 notes on a single floppy disk (approximately 700 kilobytes disk capacity), depending on pedal usage and other factors. If the disk becomes full while recording, “FUL” will appear on the display and recording will stop automatically.

8 Stop Recording



Press either the **[REC]** or **[PLAY]** button to stop recording. “rEc” will appear on the display while the data is being written to the floppy disk, then the indicator of the recorded track will glow green to indicate that it now contains data, and the display will revert to the normal song number display.

● Changing the Initial Settings

The initial settings (see the chart in step 3, above) recorded by the CLP-156 can be changed after the recording is finished by pressing the **[REC]** button to engage the record ready mode, pressing the appropriate track button, making the required changes, and then pressing the **[REC]** button again to exit from the record ready mode and register the changes. If you do this, be careful not to press the **[PLAY]** button or a key on the keyboard, either of which will start recording and erase all previous recorded data on the selected track. If you start this procedure but decide to cancel, simply select a different track then press the **[REC]** button a second time.

Using the Recorder

● Erasing a Single Track

All data can be erased from either of the recorder's tracks by engaging the record mode, selecting the track you want to erase, and then pressing the **[PLAY]** button twice without recording any data.

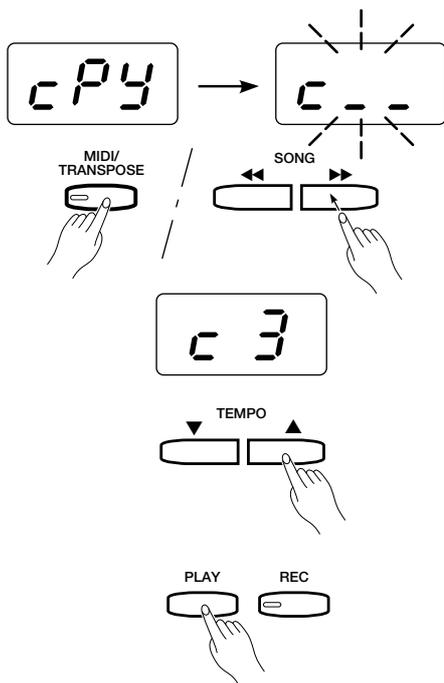
● If You Record Without First Inserting a Disk ...

If you forget to insert a properly formatted floppy disk before recording, it is possible to record up to approximately 600 notes before the 8-kilobyte internal memory becomes full. If you want to keep this data, it is possible to copy it to disk by following the procedure outlined below.



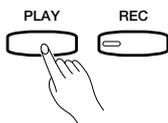
• Any of the following operations will erase all data in the internal memory. Be sure to copy the data in memory to disk before:

- 1: Turning the power switch OFF.
- 2: Loading a PianoSoft disk (including the supplied disk).
- 3: Inserting any disk and selecting a song number.



- 1 While holding the **[MIDI/TRANPOSE]** button, press either the **SONG** [**◀**] and [**▶**] button several times until “cPy” appears on the display. Release the **[MIDI/TRANPOSE]** button when “c_ _” appears on the display.
- 2 Use the **TEMPO** [**▲**] or [**▼**] button to select the song number to which you want to copy the data.
- 3 Insert the disk you want to copy the data to.
- 4 Press the **[PLAY]** button. If no previous data exists in the specified song number “cPy” will appear on the display and the data in the CLP-156 memory will be copied to the disk. If the specified song number already contains data, “n y” will appear on the display. In this case press the **TEMPO** [**▲**] button (yes) if you want to go ahead with the copy operation, thereby erasing the previous data, or the **TEMPO** [**▼**] button (no) if you want to cancel the copy operation and leave the existing data intact. In the latter case repeat the procedure, selecting an empty song number.

Playback



To play back what you've recorded, simply press the **RECORDER** **[PLAY]** button. Playback starts from the beginning of the recorded data, and will stop automatically at the end of the recorded data. You can also stop playback at any time by pressing the **[PLAY]** button. To mute a track so that it doesn't play back, press the corresponding track button so that its indicator goes out.

Also refer to the “Disk Playback” section (page 16) for other playback functions.



- If the metronome is being used during playback, the metronome will stop when playback is stopped.
- The playback data is not transmitted via the MIDI OUT terminal.



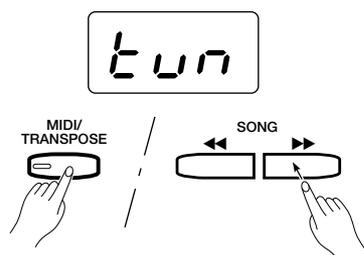
Utility Functions

Utility 1: Individual key Tuning

The individual key tuning feature makes it possible to individually tune each key on the CLP-156 keyboard in order to match different tuning standards. The pitch of each key can be raised or lowered by a maximum of 50 cents (approximately) from the standard pitch.

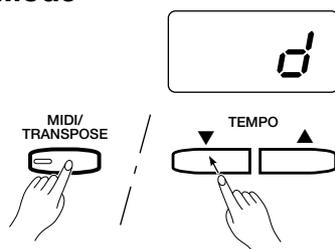
● To Lower the Pitch of a Single Key

1 Select the Individual Key Tuning Function



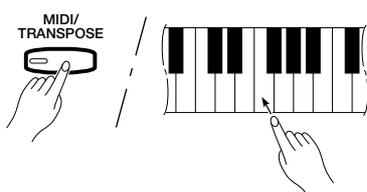
Hold the [MIDI/TRANSCOPE] button and press the SONG [◀◀] or [▶▶] button as many times as necessary until “tun” appears on the display — don’t release the [MIDI/TRANSCOPE] button yet.

2 Select the “Down-tuning” Mode



Press the TEMPO [▼] button. “d” will appear on the TEMPO display.

3 Tune the Required Key(s)

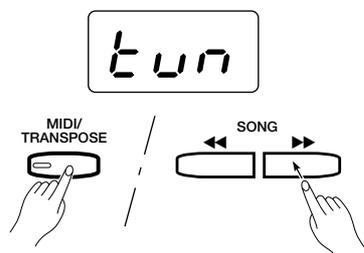


While still holding the [MIDI/TRANSCOPE] button, press the desired key as many times as necessary to lower its pitch by the required amount (each press lowers pitch by approximately 1.2 cents). The ±50-cent tuning range is shown on the TEMPO display in steps ranging from “-44” to “44”.

4 Release the [MIDI/TRANSCOPE] button.

● To Raise the Pitch of a Single Key

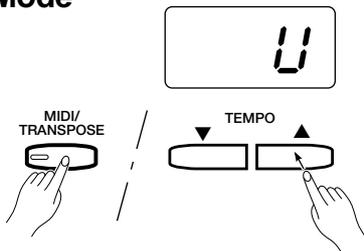
1 Select the Individual Key Tuning Function



Hold the [MIDI/TRANSCOPE] button and press the SONG [◀◀] or [▶▶] button as many times as necessary until “tun” appears on the display — don’t release the [MIDI/TRANSCOPE] button yet.

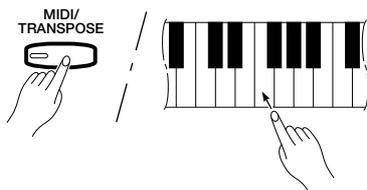
Utility Functions

2 Select the “Up-tuning” Mode



Press the **TEMPO [▲]** button. “U” will appear on the TEMPO display.

3 Tune the Required Key(s)



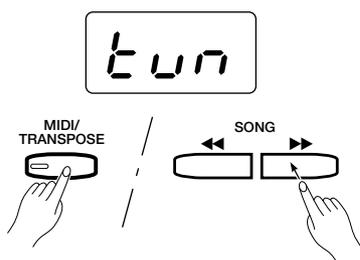
While still holding the [MIDI/TRANPOSE] button, press the desired key as many times as necessary to raise its pitch by the required amount (each press raises pitch by approximately 1.2 cents). The ± 50 -cent tuning range is shown on the TEMPO display in steps ranging from “-44” to “44”.

4 Release the [MIDI/TRANPOSE] button.

● To Turn the Individual Key Tune Mode OFF or ON

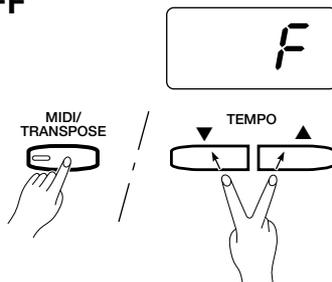
The individual key tuning settings described above can be turned off (normal tuning) while retaining the settings in memory. Individual key tuning is always turned off when the power is initially turned on, but any previous settings are retained in memory and can be recalled if the power has not been off for longer than about a week. To keep the memorized settings for longer periods, turn the power on briefly at least once a week. Complete tunings can also be saved to and loaded from disk as described in “Utility 2: Save Individual Key Tuning” and “Utility 3: Load Individual Key Tuning”, below.

1 Select the Individual Key Tuning Function



Hold the [MIDI/TRANPOSE] button and press the **SONG [◀◀]** or **[▶▶]** button as many times as necessary until “tun” appears on the display — don’t release the [MIDI/TRANPOSE] button yet.

2 Turn Individual Key Tuning OFF



Press the **TEMPO [▲]** and **[▼]** buttons simultaneously. “F” will appear on the TEMPO display indicating that the individual key tuning mode is OFF.

3 Release the [MIDI/TRANPOSE] button.



- You can turn the individual key tuning mode back on by carrying out steps 1 and 2 in either the “To Lower The Pitch Of a Single Key” or “To Raise the Pitch Of a Single Key” procedure, above, so that “d” or “U” appears on the display.

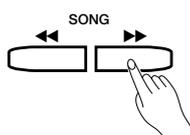
Utility 2: Save Individual Key Tuning

This function saves the current individual key tuning data set up via the “Individual Key Tuning” function to disk. The data can then be reloaded at any time by using the Load Individual Key Tuning function, described next.

1 Insert a Disk

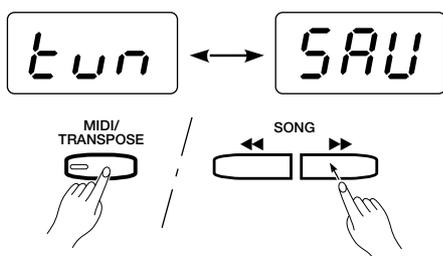
Insert a properly formatted disk into the Clavinova disk drive.

2 Select a Song Number



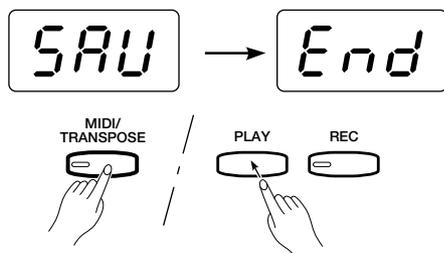
Individual key tuning data can be saved to a blank song number or one that already contains recorder data. Use the **SONG** [◀] and [▶] buttons to select the song number to which you want to save the individual key tuning data.

3 Select the Save Individual Key Tuning Function



Hold the [MIDI/TRANSCOPE] button and press the **SONG** [◀] or [▶] button as many times as necessary until “tun” and “SAV” flash alternately on the display — don’t release the [MIDI/TRANSCOPE] button yet.

4 Execute the Save Individual Key Tuning Function



While still holding the [MIDI/TRANSCOPE] button, press the [PLAY] button to actually begin saving the data. Simply release the [MIDI/TRANSCOPE] button before pressing the [PLAY] button if you want to cancel the function. “SAV” will appear on the display while the data is being saved, then “End” will appear briefly when the save operation has been completed.



- The tuning settings are saved to one song file on the disk. The Save Individual Key Tuning function will automatically be exited when the data has been saved.
- Individual key tuning data saved as described above is not erased by the “Song Delete” function described on page 26. Further, the individual key tuning data will only be copied when the “Song Copy” function described on page 25 is executed if the song also contains performance data.

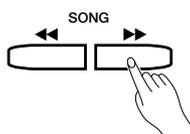
Utility 3: Load Individual Key Tuning

This function reloads the individual key tuning data saved to disk by the Save Individual Key Tuning function, described above.

1 Insert a Disk

Insert the disk containing the individual key tuning data you want to load into the Clavinova disk drive.

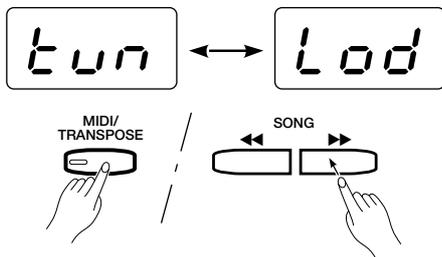
2 Select a Song Number



Use the **SONG** [◀] and [▶] buttons to select the song number containing the individual key tuning data you want to load.

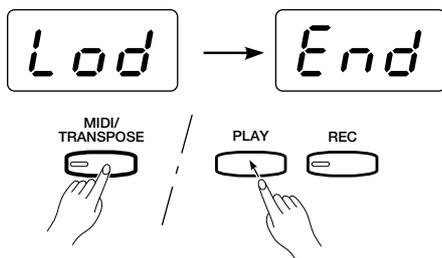
Utility Functions

3 Select the Load Individual Key Tuning Function



Hold the [MIDI/TRANPOSE] button and press the SONG [◀◀] or [▶▶] button as many times as necessary until “tun” and “Lod” flash alternately on the display — don’t release the [MIDI/TRANPOSE] button yet.

4 Execute the Load Individual Key Tuning Function



While still holding the [MIDI/TRANPOSE] button, press the [PLAY] button to actually begin loading the data. Simply release the [MIDI/TRANPOSE] button before pressing the [PLAY] button if you want to cancel the function. “Lod” will appear on the display while the data is being loaded, then “End” will appear briefly when the load operation has been completed.

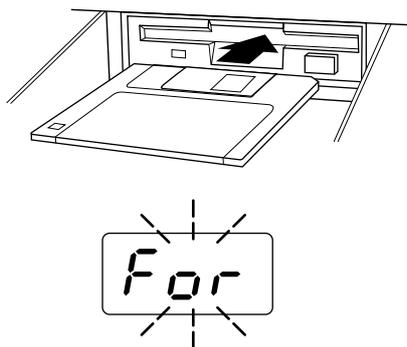


- The Individual Key Tuning mode will automatically be turned ON when the data has been loaded.
- If no individual key tuning data exists in the selected song number, “no” will appear on the display. If this occurs, try again from step 2, above.

Utility 4: Floppy Disk Format

The Clavinova uses only 3.5" 2DD floppy disks. We recommend that you use Yamaha 2DD disks. Before you can use a new disk for recording, the disk must be “formatted” so that the Clavinova can recognize it and correctly write the music data onto it.

1 Insert the Disk To Be Formatted

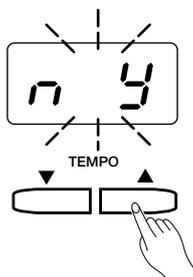


Insert a new blank disk. Make sure that the disk’s write protect tab is set to the “write” position (tab closed), and insert the new disk into the disk drive unit with the sliding door facing the drive slot and the label side of the disk facing upward. The disk should click securely into place, and the disk drive lamp should light briefly.



- “For” will flash on the display to indicate that a blank (unformatted) disk or one with a format not recognizable by the CLP-156 is loaded in the drive. In this case you can go directly to the next step. If an already-formatted disk that you want to re-format is loaded (i.e. to completely erase all data from the disk in one operation), you’ll have to select the format function by pressing the SONG [◀◀] or [▶▶] button as many times as necessary until “For” appears on the display while holding the [MIDI/TRANPOSE] button, then release the [MIDI/TRANPOSE] button when “n y” appears flashing on the display and proceed to step 3.
- “Pro” will appear on the display if a protected disk that cannot be formatted is loaded in the drive: a write-protected disk or a Disklavier PianoSoft disk.

2 Engage the Format Function



Press the TEMPO [▲] or [▼] button. “n y” will flash on the display.

3 Confirm & Start the Format Operation



Use the **TEMPO** [▲] (YES) and [▼] (NO) buttons to confirm and continue or cancel the operation. “YES” if you intend to execute the format operation or “NO” if you wish to cancel the operation. This step is necessary because formatting completely erases any data that is already on the disk — make sure that the disk you’re about to format does not contain any important data!

Formatting will begin the instant you select “YES”. The number of each “track” on the disk will be shown on the display as the format process continues (“F80” through “F 0”). When formatting is complete “End” will appear briefly then the display will revert to the normal song number display.

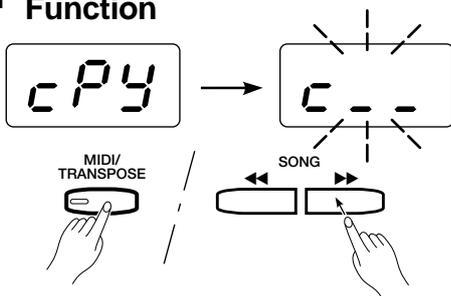
Utility 5: Song Copy

Recorder song data — including any existing individual key tuning data — can be “backed up” by copying to a new song number or a different disk, as follows:

1 Insert a Disk & Select the Source Song

Insert the disk containing the song you want to copy, and use the **SONG** [◀] and [▶] buttons to select the number of the song you wish to copy.

2 Select the Song Copy Function



Hold the [MIDI/TRANSCOPE] button and press the **SONG** [◀] or [▶] button as many times as necessary until “cPy” appears on the display — then release the [MIDI/TRANSCOPE] button when “c _ _” appears flashing on the display (“c _ _” will not appear if the selected song number contains no data).

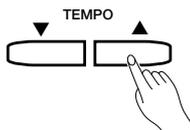
3 Select the Destination Song



Copy to same disk



Copy to different disk

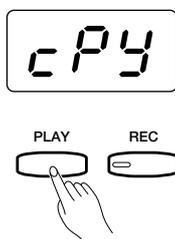


Use the **TEMPO** [▲] and [▼] buttons to select the song number you wish to copy to (i.e. the destination song number — “c 1” through “c60”). If you select a song number that already contains data, that data will be overwritten by the new song data. If you select a song number greater than “c60” a bar will appear above the “c” in the song number, indicating that the copy will be made to a different disk.



NOTE • You can cancel the copy function before actually starting the copy operation (next step) by pressing either the **SONG** [◀] or [▶] button.

4 Start Copying



Press the [PLAY] button to begin the actual copy operation. “cPy” will appear on the display during the copy operation, then the destination song number will appear when the copy operation has finished.



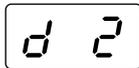
NOTE • “n y” will flash on the display when you attempt to start copying if you have selected a destination song number that already contains data. Press the **TEMPO** [▲] (YES) button if it is OK to go ahead with the copy operation and erase the existing data in the destination song. Press **TEMPO** [▼] to cancel the copy operation.

Utility Functions

● Copying to a Different Disk



Insert source disk.



Insert destination disk.

If you chose to copy to a different disk, you may have to exchange the source and destination disks a few times if the song being copied is long and complex. In this case, the Clavinova will prompt you to insert the source and destination disks with the displays shown to the left. While the data is being copied the number of times the disks will have to be exchanged to complete the copy operation will be shown on the display. When it is no longer necessary to change disks “cPy” will appear on the display. The destination song number will appear when the copy operation has finished.



- Data cannot be copied from Disklavier PianoSoft disks (including the supplied disk) or Standard MIDI File disks. Data cannot be copied to Disklavier PianoSoft disks (including the supplied disk) or any write protected disk.

Utility 6: Song Delete

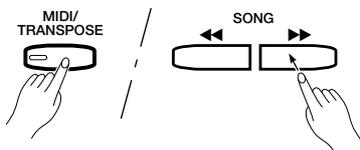
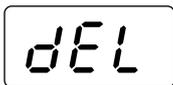
You can delete any Recorder song data (not including any existing individual key tuning data) from a loaded disk as follows:

1 Insert a Disk & Select the Delete Function

Insert the disk containing the song you want to delete.

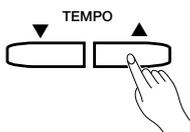
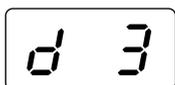
2 Select the Song Delete Function

Hold the [MIDI/TRANPOSE] button and press the SONG [◀◀] or [▶▶] button as many times as necessary until “dEL” appears on the display — then release the [MIDI/TRANPOSE] button when “d” and the currently selected song number appears on the display.



3 Select the Song to Delete

Use the TEMPO [▲] and [▼] buttons to select the song number you wish to delete.

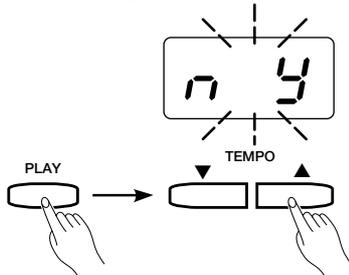


- You can cancel the delete function before actually starting the delete operation (next step) by pressing either the SONG [◀◀] or [▶▶] button.

4 Confirm & Execute the Delete Operation

Press the [PLAY] button — “n y” will flash on the display. Use the TEMPO [▲] (YES) and [▼] (NO) buttons to select either (YES) or (NO). (YES) to immediately delete the selected song, or (NO) if you wish to cancel the operation. If the selected song contains no data the “n y” prompt will not appear and the Song Delete mode will be automatically exited.

The song number will appear on the display when the delete operation has been successfully completed.



- Data cannot be deleted from any write protected disk, the supplied PianoSoft Disk or optional Disklavier PianoSoft disks.

● Deleting a Single Track

To delete just one track of a song:

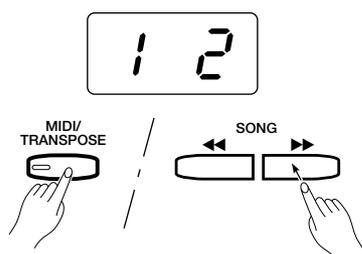
- 1 Insert the disk and select the song number containing the track you want to delete.
- 2 Set the track you want to delete to the record ready mode.
- 3 Press the [PLAY] button twice without recording anything in between.

Utility 7: Disk Playback Track Selection

Normally the CLP-156 plays the track-1 and track-2 data on a disk. Some pre-recorded MIDI Standard File disks as well as those recorded on sequencers or similar equipment have performance data on other tracks as well. This function lets you select any two tracks for playback from among the 16 that may possibly be available.

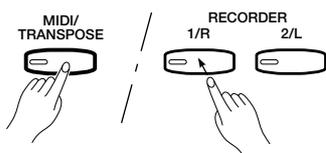
● Selecting the Playback Track for CLP-156 Track 1/R or 2/L

1 Select the Disk Playback Track Selection Function



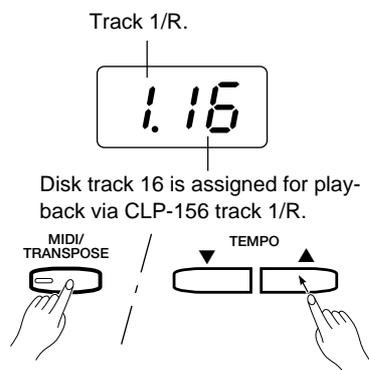
Hold the [MIDI/TRANPOSE] button and press the SONG [◀▶] or [▶▶] button as many times as necessary until “1 2” appears on the display — don’t release the [MIDI/TRANPOSE] button yet.

2 Select a CLP-156 Track



Still holding the [MIDI/TRANPOSE] button, press either the [1/R] or [2/L] track button, depending on which track you want to assign playback of a disk track to.

3 Select a Disk Track



Disk track 16 is assigned for playback via CLP-156 track 1/R.

Still holding the [MIDI/TRANPOSE] button, use the TEMPO [▲] and [▼] buttons to specify the disk track number you want played back via the CLP-156 track selected in the previous step. You can select tracks 1 through 16, or “_ _” to turn playback off. The currently selected values will appear on the display as long as the [MIDI/TRANPOSE] button is held.



- The disk playback track selection settings are cancelled as soon as you remove the floppy disk from the disk drive.

Utility 8: Convert to SMF

This function can be used to convert the performance data recorded by the CLP-156 (Yamaha ESEQ format) to Standard MIDI File (SMF) format (format 0) so songs recorded on the CLP-156 can be played back on SMF-compatible devices.



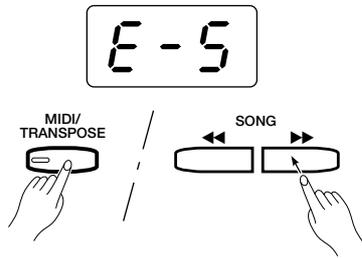
- Data converted to SMF format cannot be re-converted to the CLP-156 format or re-recorded on the CLP-156 — “no” will appear on the display when you press the [REC] button. It may therefore be a good idea to make a copy of important data using the Song Copy function (page 25) before converting it.

1 Insert a Disk & Select a Song Number

Insert the disk containing the data to be converted into the Clavinova disk drive, then use the SONG [◀▶] and [▶▶] buttons to select the song number you want to convert.

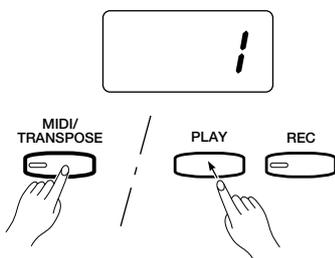
Utility Functions

2 Select the Convert to SMF Function



Hold the [MIDI/TRANPOSE] button and press the SONG [◀◀] or [▶▶] button as many times as necessary until “E-S” appears on the display — don’t release the [MIDI/TRANPOSE] button yet.

3 Execute the Convert to SMF Function



Still holding the [MIDI/TRANPOSE] button, press the [PLAY] button to begin conversion. The number of the measure being processed will appear on the display, then the normal song number display will reappear when the conversion has finished.

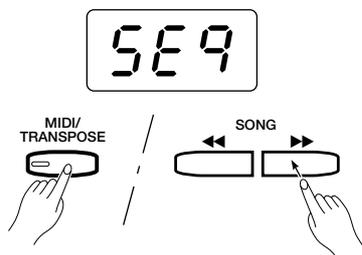


- This function cannot be executed if the selected song number contains no data.
- This function cannot be used to convert the data on the supplied PianoSoft demonstration disk, optional Disklavier PianoSoft disks, write-protected disks, or already-converted disks.

Utility 9: All-song Random Repeat

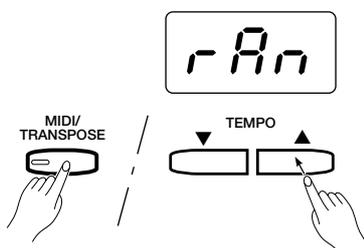
When the repeat playback function described on page 17 is used, the songs on the currently loaded disk are normally played back in the sequence that they appear on the disk. This function makes it possible to have the songs played back in random order.

1 Select the All-song Random Repeat Function



Hold the [MIDI/TRANPOSE] button and press the SONG [◀◀] or [▶▶] button as many times as necessary until “SEq” or “rAn” appears on the display — don’t release the [MIDI/TRANPOSE] button yet.

2 Select the Random Playback Mode



Still holding the [MIDI/TRANPOSE] button, use the TEMPO [▲] and [▼] buttons to select “rAn” if you want random playback (or “SEq” if you want normal sequence playback).

3 Release the [MIDI/TRANPOSE] Button

4 Use the Disk Playback Repeat Function

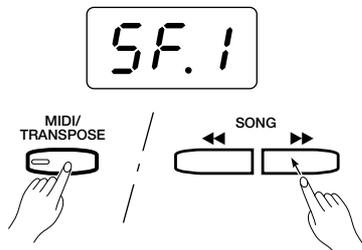
Engage the disk playback repeat function described on page 17 to hear the playback mode you've selected.

Utility 10: Standard MIDI File Voice Mode

Most pre-programmed Standard MIDI File disks use General MIDI voice assignments. When such disks are played on the CLP-156, appropriate voices are automatically selected in response to the voice numbers included in the playback data. With this function, however, it is possible to set the CLP-156 so that it will use the normal panel voice assignments instead of automatically conforming to the General MIDI assignments. This can be convenient when playing back data you've created for the CLP-156 on an external sequencer or music computer.

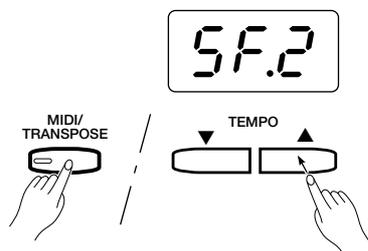
This function cannot be used unless an appropriate disk is inserted in the disk drive.

1 Select the Standard MIDI File Voice Mode Function



Hold the [MIDI/TRANPOSE] button and press the SONG [◀◀] or [▶▶] button as many times as necessary until "SF.1" or "SF.2" appears on the display — don't release the [MIDI/TRANPOSE] button yet.

2 Select the Voice Mode



Still holding the [MIDI/TRANPOSE] button, use the TEMPO [▲] and [▼] buttons to select "SF.1" or "SF.2" (refer to the chart, below).

SF.1	GM Assignment. When a Standard MIDI File is playback on the CLP-156, the closest possible voices to the GM voices specified by the voice numbers in the playback data will be automatically selected.
SF.2	Normal Assignment. If a "GM on" message is received playback will proceed in the same way as for the "SF.1" mode, but if no "GM on" message is received the normal panel voices will be used for playback (i.e. the voices will not conform to the General MIDI voice assignments).

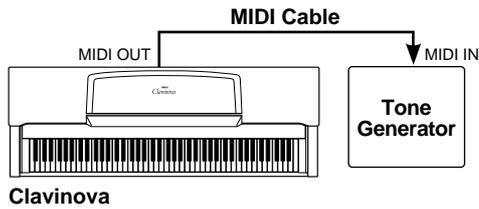
3 Release the [MIDI/TRANPOSE] Button



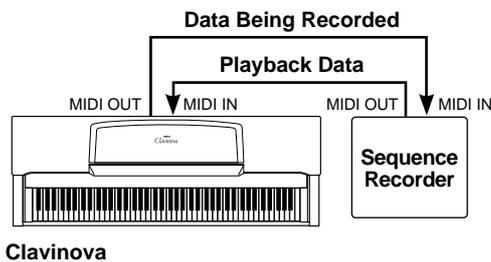
- The SF.1 mode is always selected when the power is initially turned ON.
- The General MIDI standard specifies voice assignments that are essentially the same on any device from any manufacturer so that any performance data that conforms to the General MIDI standard can be played back on any General MIDI compatible device. There are, however, slight differences in the voices provided by each manufacturer.
- Only the track-1 and track-2 data in any Standard MIDI File will be normally played back directly by the CLP-156 (unless the "Disk Playback Track Selection" function is used — page 27). The data for all other tracks will be transmitted via the MIDI OUT terminal.

MIDI Functions

● A Brief Introduction to MIDI



MIDI, the Musical Instrument Digital Interface, is a world-standard communication interface that allows MIDI-compatible musical instruments and equipment to share musical information and control one another. This makes it possible to create “systems” of MIDI instruments and equipment that offer far greater versatility and control than is available with isolated instruments. For example, most MIDI keyboards (including the Clavinova, of course) transmit note and velocity (touch response) information via the MIDI OUT connector whenever a note is played on the keyboard. If the MIDI OUT connector is connected to the MIDI IN connector of a second keyboard (synthesizer, etc.) or a tone generator (essentially a synthesizer with no keyboard), the second keyboard or tone generator will respond precisely to notes played on the original transmitting keyboard. The result is that you can effectively play two instruments at once, providing thick multi-instrument sounds.



Although the CLP-156 features a built-in “sequencer” (the Recorder is a type of sequencer), the same type of musical information transfer described above can be used for more sophisticated MIDI sequence recording using an external sequencer or music computer. A MIDI sequence recorder or music computer can be used to “record” MIDI data received from a CLP-156, for example. When the recorded data is played back, the CLP-156 automatically “plays” the recorded performance in precise detail.

The examples given above really only scratch the surface. MIDI can do much, much more. The CLP-156 offers a number of MIDI functions that allows it to be used in fairly sophisticated MIDI systems.



- Always use a high-quality MIDI cable to connect MIDI OUT to MIDI IN terminals. Never use MIDI cables longer than about 15 feet, since cables longer than this can pick up noise which can cause data errors.

● MIDI “Messages” Transmitted & Received by the Clavinova

The MIDI information (messages) transmitted and received by the CLP-156 Clavinova are as follows:

Note and Velocity Data

This information tells the receiving keyboard or tone generator to play a certain note (specified by the MIDI note number) at a certain dynamic level (specified by the MIDI velocity value). Note and velocity data is transmitted by the Clavinova whenever a key is pressed, and the Clavinova’s internal AWM tone generator will “play” the corresponding note(s) whenever note and velocity data is received from an external MIDI device.

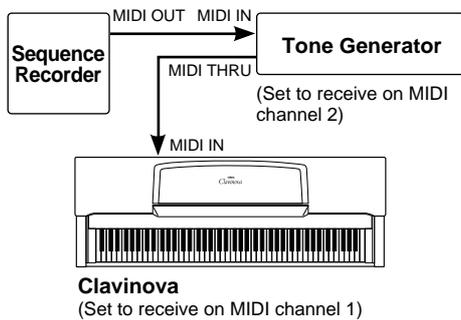
Program Change Numbers

The CLP-156 transmits a MIDI program change number between 0 and 7 when one of its voice selectors is pressed. This normally causes the correspondingly numbered voice to be selected on a receiving MIDI device. The Clavinova will respond in the same way, automatically selecting the appropriate voice when a MIDI program change number is received. See “Program Change ON/OFF” on page 32 for information on turning program change number reception and transmission ON or OFF.

Control Change Numbers

Control Change data representing Damper pedal operation is transmitted by the Clavinova whenever one of these pedals is used. If the receiving device is a tone generator or another keyboard, it will respond in the same way as the Clavinova’s internal tone generator when one of the pedals is used. The Clavinova also receives and responds to the appropriate control change data. See “Control Change ON/OFF” on page 33 for information on turning control change number reception and transmission ON or OFF.

● MIDI Transmit & Receive Channel Selection



The MIDI system allows transmission and reception of MIDI data on 16 different channels. Multiple channels have been implemented to allow selective control of certain instruments or devices connected in series. For example, a single MIDI sequence recorder could be used to “play” two different instruments or tone generators. One of the instruments or tone generators could be set to receive only on channel 1, while the other is set to receive on channel 2. In this situation the first instrument or tone generator will respond only to channel-1 information transmitted by the sequence recorder, while the second instrument or tone generator will respond only to channel-2 information. This allows the sequence recorder to “play” two completely different parts on the receiving instruments or tone generators.

In any MIDI control setup, the MIDI channels of the transmitting and receiving equipment must be matched for proper data transfer. An “OMNI” receive mode is also available, which allows reception on all 16 MIDI channels. In the OMNI mode it is not necessary to match the receive channel of the receiving device to the transmit channel of the transmitting device (except when receiving mode messages).

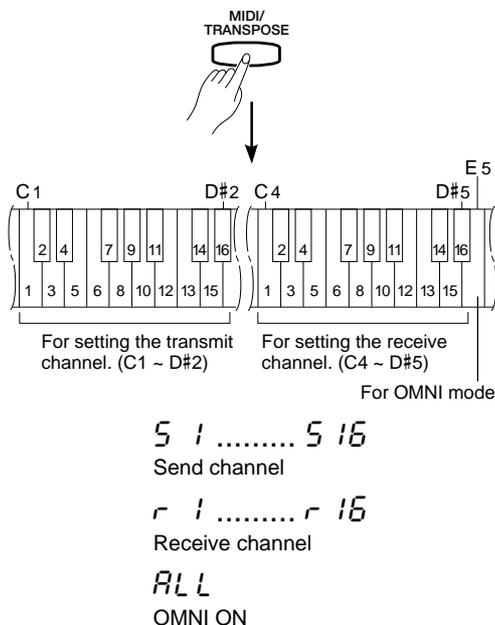
Setting the Clavinova MIDI Channels

- 1** Press and hold the [MIDI/TRANPOSE] button.
- 2** Press the key on the keyboard corresponding to the desired MIDI transmit or receive channel.* (the selected channel number is shown on the **TEMPO** display — the OMNI ON receive mode is indicated by “ALL” on the display).
- 3** Release the [MIDI/TRANPOSE] button.

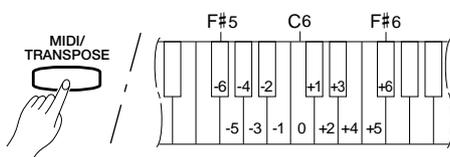
* Keys **C1** through **D#2** on the keyboard are used to set the MIDI transmit channel, and keys **C4** through **D#5** are used to turn the OMNI mode OFF and set the MIDI receive channel as shown in the illustration to the left. The **E5** key sets the OMNI receive mode and basic receive channel 1.



• When the power is initially turned ON, MIDI receive is set to the OMNI mode, the basic receive channel is set to 1, and the transmit channel is set to 1.



● MIDI Transmit Transpose



Display	Transposition
t-6	-6 semitones
t-5	-5 semitones
t-4	-4 semitones
t-3	-3 semitones
t-2	-2 semitones
t-1	-1 semitone
t 0	Normal
t 1	+1 semitone
t 2	+2 semitones
t 3	+3 semitones
t 4	+4 semitones
t 5	+5 semitones
t 6	+6 semitones

This function allows the MIDI note data transmitted by the Clavinova to be transposed up or down in semitone increments by up to plus or minus 6 semitones. The pitch of the Clavinova itself is not affected.

Setting the MIDI Transpose Function

- 1** Press and hold the [MIDI/TRANPOSE] button.
- 2** Press the key on the keyboard corresponding to the desired degree of transposition.* The amount of transposition selected is shown on the **TEMPO** display.
- 3** Release the [MIDI/TRANPOSE] button.

* Keys **F#5** through **F#6** on the keyboard are used to set the MIDI transmit transpose function as shown in the illustration to the left.



• When the power is turned ON, MIDI transmit transpose is set to 0 (no transposition).

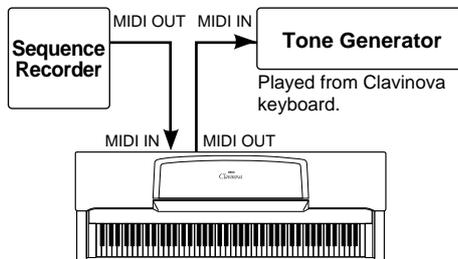
Other MIDI Functions

The MIDI functions listed to the right are engaged by holding down the [MIDI/TRANPOSE] button and pressing the corresponding voice selector. Full details are given in the following pages.

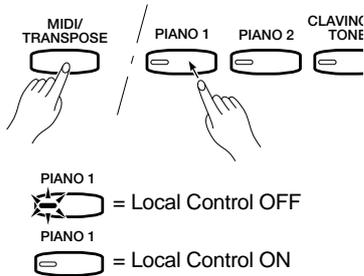
MIDI FUNCTION CHART

Function	CLP-156 Voice Selector
Local Control ON/OFF	[PIANO 1]
Program Change ON/OFF	[PIANO 2]
Control Change ON/OFF	[CLAVINOVA TONE]
Multi-Timbre Mode	[E.PIANO]
MIDI Split & Left Local OFF	[HARPSICHORD]
MIDI Split & Right Local OFF	[VIBES]
Panel Data Transmit	[STRINGS]

● Local Control ON/OFF



Clavinova
Local control OFF. Played from MIDI Sequencer.



“Local Control” refers to the fact that, normally, the Clavinova keyboard controls its internal tone generator, allowing the internal voices to be played directly from the keyboard. This situation is “Local Control ON” since the internal tone generator is controlled locally by its own keyboard.

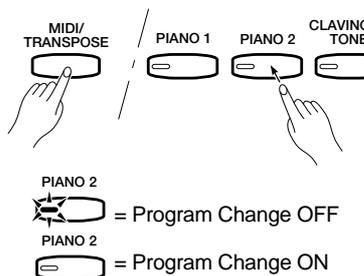
Local control can be turned OFF, however, so that the Clavinova keyboard does not play the internal voices, but the appropriate MIDI information is still transmitted via the MIDI OUT connector when notes are played on the keyboard. At the same time, the internal tone generator responds to MIDI information received via the MIDI IN connector. This means that while an external MIDI sequence recorder, for example, plays the Clavinova’s internal voices, an external tone generator can be played from the Clavinova keyboard.

- 1** Hold down the [MIDI/TRANPOSE] button.
- 2** Press the [PIANO 1] voice selector. If the PIANO 1 LED is lit when the [PIANO 1] voice selector is pressed, you have turned local control OFF. If the PIANO 1 LED is not lit when the [PIANO 1] voice selector is pressed, you have turned local control ON.
- 3** Release the [MIDI/TRANPOSE] button.

● Program Change ON/OFF

Normally the Clavinova will respond to MIDI program change numbers received from an external keyboard or other MIDI device, causing the correspondingly numbered Clavinova voice to be selected. The Clavinova will normally also send a MIDI program change number whenever one of its voices is selected, causing the correspondingly numbered voice or program to be selected on the external MIDI device if the device is set up to receive and respond to MIDI program change numbers.

This function makes it possible to cancel program change number reception and transmission so that voices can be selected on the Clavinova without affecting the external MIDI device, and vice versa.

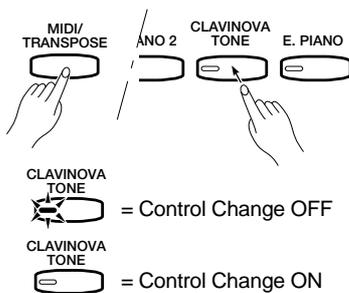


- 1** Hold down the [MIDI/TRANPOSE] button.
- 2** Press the [PIANO 2] voice selector. If the PIANO 2 LED is lit when the [PIANO 2] voice selector is pressed, you have turned program change reception/transmission OFF. If the PIANO 2 LED is not lit when the [PIANO 2] voice selector is pressed, you have turned program change reception/transmission ON.
- 3** Release the [MIDI/TRANPOSE] button.

● Control Change ON/OFF

Normally the Clavinova will respond to MIDI control change data received from an external MIDI device or keyboard, causing the selected Clavinova voice to be affected by pedal and other “control” settings received from the controlling device. The Clavinova also transmits MIDI control change information when one of its pedals are operated.

This function makes it possible to cancel control change data reception and transmission if you do not want the Clavinova voices to be affected by control change data received from an external device or vice versa.



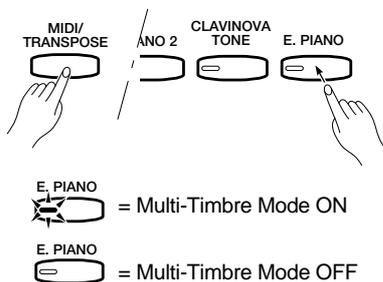
1 Hold down the [**MIDI/TRANSPOSE**] button.

2 Press the [**CLAVINOVA TONE**] voice selector. If the **CLAVINOVA TONE** LED is lit when the [**CLAVINOVA TONE**] voice selector is pressed, you have turned control change reception/transmission **OFF**. If the **CLAVINOVA TONE** LED is not lit when the [**CLAVINOVA TONE**] voice selector is pressed, you have turned control change reception/transmission **ON**.

3 Release the [**MIDI/TRANSPOSE**] button.

● The Multi-Timbre Mode

The Multi-Timbre mode is a special mode in which the Clavinova voices can be independently controlled on different MIDI channel numbers by an external MIDI device. The Multi-Timbre mode can be activated as follows:



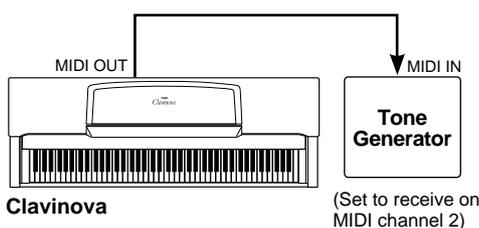
1 Hold down the [**MIDI/TRANSPOSE**] button.

2 Press the [**E.PIANO**] voice selector. If the **E.PIANO** LED is lit when the [**E.PIANO**] voice selector is pressed, you have turned the Multi-Timbre mode **ON**. If the **E.PIANO** LED is not lit when the [**E.PIANO**] voice selector is pressed, you have turned the Multi-Timbre mode **OFF**.

3 Release the [**MIDI/TRANSPOSE**] button.

● The MIDI Split & Left Local OFF Mode

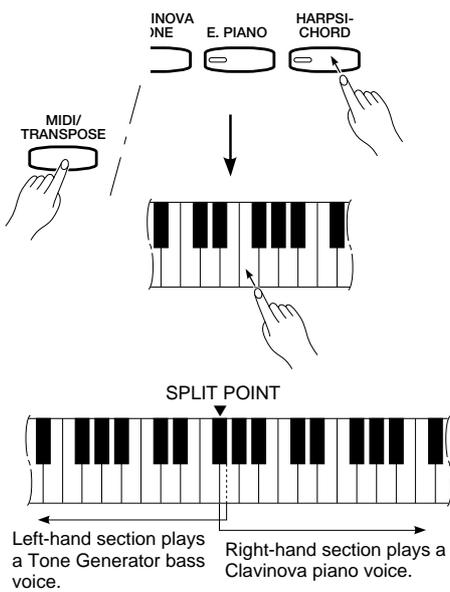
In the MIDI split mode one section of the Clavinova keyboard is used to play a Clavinova voice in the normal way, while the remaining section is used to play a second MIDI keyboard or tone generator. In this mode the right-hand section of the keyboard is used to play an internal Clavinova voice, while the left-hand section of the keyboard plays the external keyboard or tone generator. Playing the left-hand section of the keyboard produces no sound from the Clavinova. The “split point,” or the key that divides the left- and right-hand sections of the keyboard can be set at any desired key.



The MIDI split mode is useful if, for example, you want to play a piano (Clavinova) voice with the right hand while playing a synthesizer bass line or string section with the left hand.

When the MIDI split mode is activated, notes played on the left-hand section are transmitted via the Clavinova MIDI OUT connector on MIDI channel 2. Notes played on the right-hand section are transmitted on the “basic channel” (i.e. the channel set using the MIDI channel selection function described previously).

MIDI Functions



- 1** Press the [HARPSICHORD] voice selector while holding down the [MIDI/TRANPOSE] button. The HARPSICHORD LED will flash.
- 2** While still holding the [MIDI/TRANPOSE] button, press the key on the keyboard at which you want to set the split point. The HARPSICHORD LED will light continuously. The split-point becomes the first key of the left-hand section.
- 3** Release the [MIDI/TRANPOSE] button.
- 4** To return to the normal full-keyboard mode, hold the [MIDI/TRANPOSE] button and press the [HARPSICHORD] voice selector, then release both buttons.



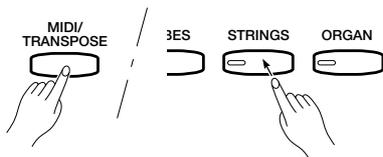
• When the power is turned ON the default split point key — F#2 — will be automatically selected. If a new split point is selected it remains active until the power is turned OFF or a different split point is selected.

● The MIDI Split & Right Local OFF Mode

In the CLP-156 either the right- or left-hand section of the keyboard can be assigned to control an external keyboard or tone generator. Assigning the left-hand section to external tone generator control was described in the previous section. To assign the right-hand section to external tone generator control while playing the Clavinova voices with the left hand, press the [VIBES] voice selector instead of the [HARPSICHORD] voice selector when activating the Split mode (see the preceding section). All other operations are exactly the same as described in the previous section.

● Transmitting the Panel Settings

This function causes all the current Clavinova control settings (selected voice, etc) to be transmitted via the MIDI OUT terminal. This is particularly useful if you will be recording performances to a MIDI sequence recorder which will be used to control the Clavinova on playback. By transmitting the Clavinova panel settings and recording them on the MIDI sequence recorder prior to the actual performance data, the Clavinova will be automatically restored to the same settings when the performance is played back.



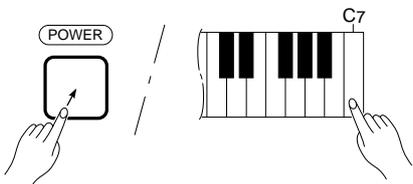
- 1** Hold down the [MIDI/TRANPOSE] button.
- 2** Press the [STRINGS] voice selector.
- 3** Release the [MIDI/TRANPOSE] button.



• See page 39 for list of the panel settings transmitted by this function.



Factory Preset Recall



All dual mode, reverb, brilliance, touch sensitivity, pitch control, and individual key tune settings can be restored to their original factory preset (default) values by holding the C7 key while turning the [POWER] switch ON.

Error Messages

For

(format)

The loaded disk is not formatted for use with the Clavinova. After making sure that the disk does not contain any important data (for another device, for example), format the disk as described on page 24.

Pro

(protected)

You have attempted to format, write to, copy to/from, or delete data from a write-protected disk. Use a disk that is not write protected (set the disk's write-protect tab to the write-enable position).

dEr

(disk error)

An error occurred while writing to or reading from the disk.

Try the operation again; if the error occurs a second time the disk or drive may be faulty. If the drive has been in use for some time the heads may be dirty. Clean the heads with a commercially-available floppy disk head cleaner. If the error still occurs with one disk and not others the disk should be considered faulty and should be discarded. If the error occurs with all disks the drive may be faulty. Refer the problem to your Yamaha dealer.

no

(no disk/no data)

A disk read or write operation was attempted but no disk is present in the disk drive, or the song contains no appropriate data.

Make sure an appropriate disk is inserted in the disk drive, or the song contains appropriate data before performing any operation that involves disk access.

You have attempted to record or edit data that is not recognized by the CLP-156. Refer to the notes on pages 19, and 27.

Troubleshooting

If you encounter what appears to be a malfunction, please check the following points before assuming that your Clavinova is faulty.

1. No Sound When the Power is Turned ON

Is the AC plug properly connected to an AC wall outlet? Check the AC connection carefully. Is the MASTER VOLUME control turned up to a reasonable listening level?

2. The Clavinova Reproduces Radio or TV Sound

This can occur if there is a high-power transmitter in your vicinity. Contact your Yamaha dealer.

3. Intermittent Static Noise

This is usually due to turning ON or OFF a household appliance or other electronic equipment which is fed by the same AC mains line as your Clavinova.

4. Interference Appears On Radio or TV Sets Located Near the Clavinova

The Clavinova contains digital circuitry which can generate radio-frequency noise. The solution is to move the Clavinova further away from the affected equipment, or vice versa.

5. Distorted Sound When the Clavinova is Connected to An External Amplifier/Speaker System

If the Clavinova is connected to a stereo system or instrument amplifier and the sound is distorted, reduce the setting of the Clavinova volume control to a level at which the distortion ceases.

Options

BC-8 Bench

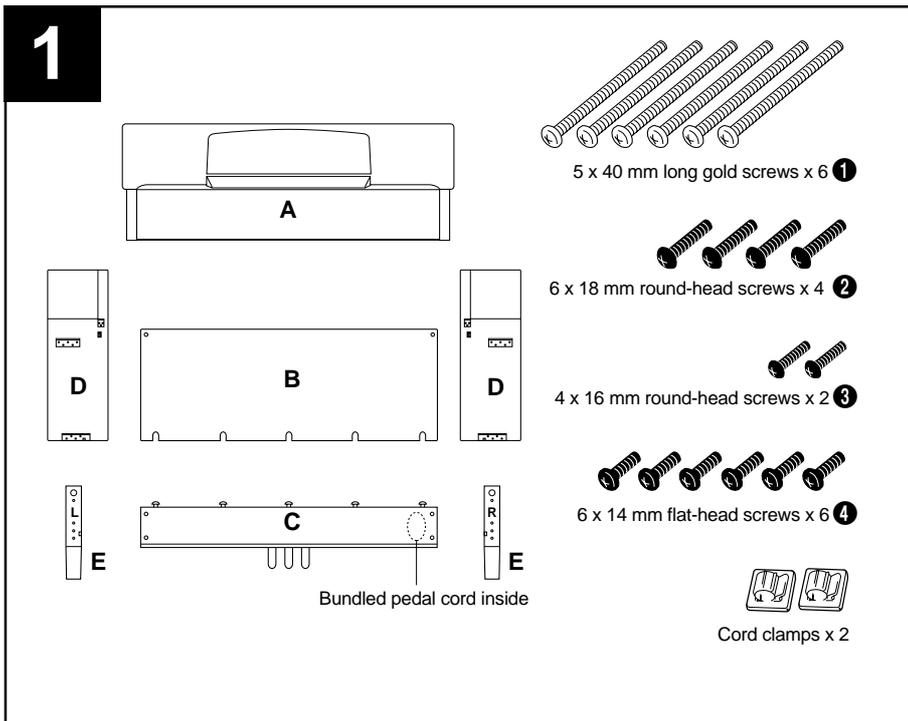
A comfortable bench styled to match your Yamaha Clavinova.

HPE-160 Stereo Headphones

High-performance lightweight dynamic headphones with extra-soft ear pads.



Keyboard Stand Assembly



NOTE

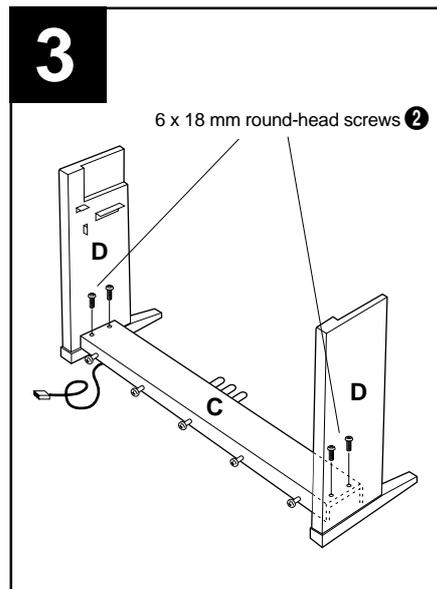
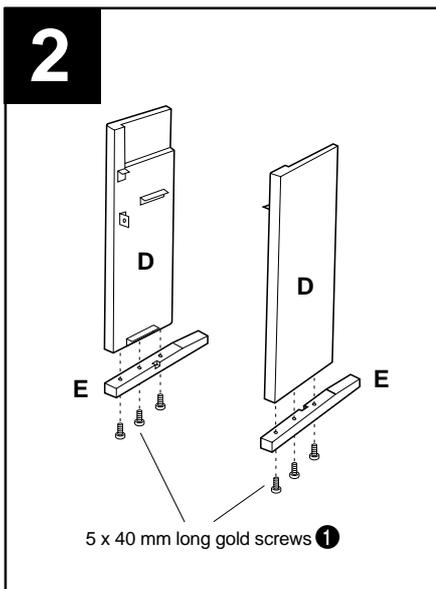
- We do not recommend attempting to assemble the Clavinova alone. The job can be easily accomplished, however, with only two people.
- Use only the screws provided or replacements of exactly the specified size. Using screws of the wrong size can result in damage to the instrument.

1 Open the box and remove all the parts.

On opening the box you should find the parts shown in the illustration. Check to make sure that all the required parts are provided.

2 Assemble the side panels (D) and feet (E).

Secure the feet (E) to the side panels (D) with the 5 x 40 millimeter long gold-colored screws **1** (3 each), making sure that the cutouts on the feet face the bracket side of the side panels.



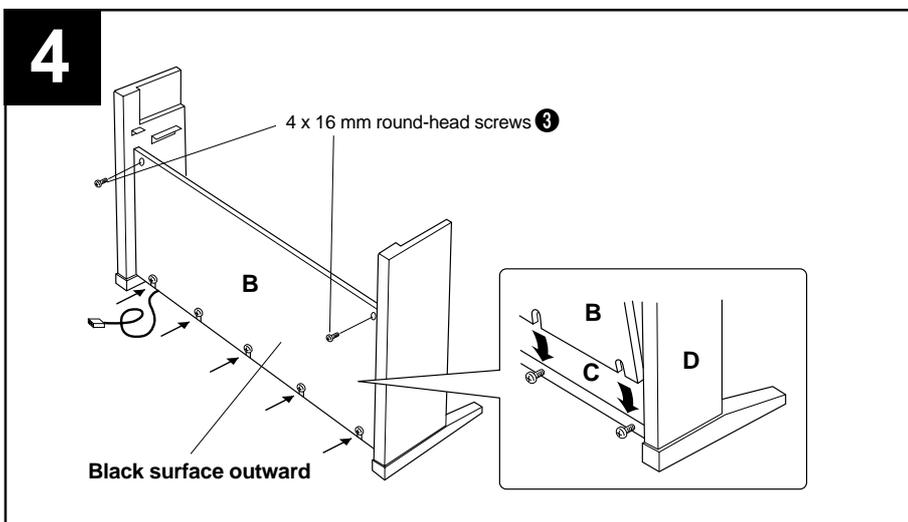
3 Attach the side panels (D) to the pedal box (C).

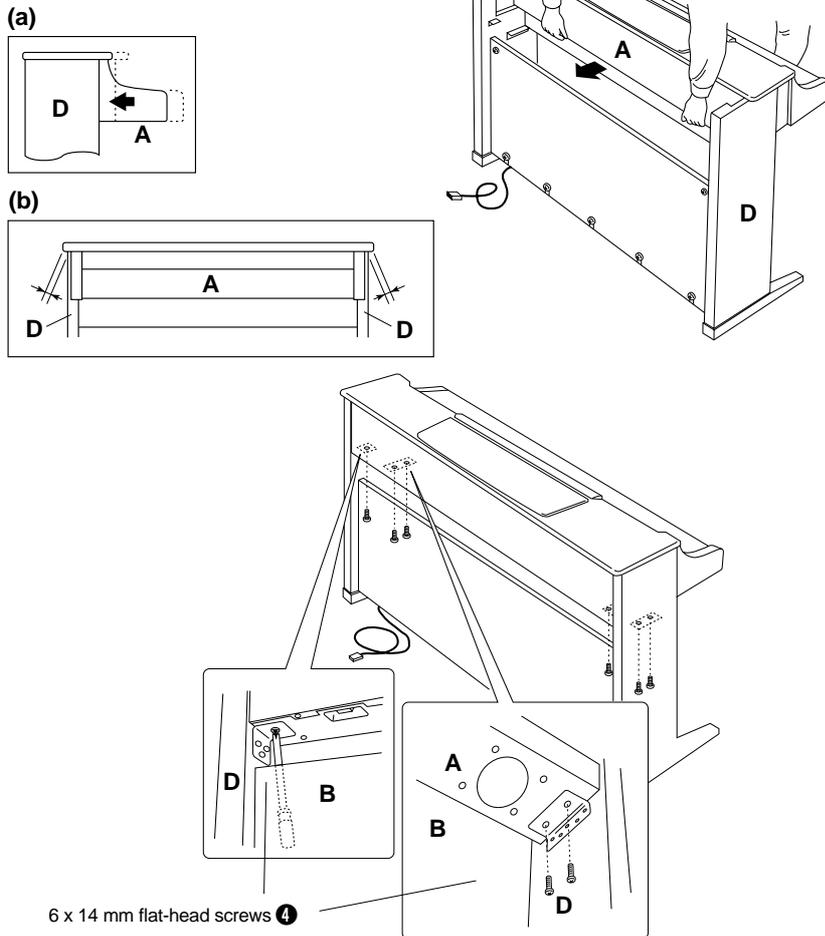
Before installing the pedal box, untie and straighten out the bundled pedal cord attached to the bottom of the pedal box.

Place the pedal box on top of the brackets attached to the side panels (D), and attach using the four 6 x 18 millimeter round-head screws **2** — two screws on each side. Make sure the pedals extend in the same direction as the feet.

4 Attach the rear panel (B).

With the black surface of the rear panel facing outward and the panel angled slightly as shown in the illustration, lower it onto the screws protruding from the rear of the pedal box so that the screws fit into the corresponding slots in the lower edge of the rear panel. Then, while eliminating any gaps between the rear and side panels, secure the top of the rear panel to the side panel brackets using the two 4 x 16 millimeter round-head screws **3**. Finally, tighten the screws holding the rear panel to the pedal box.



5**5 Install the main unit (A).**

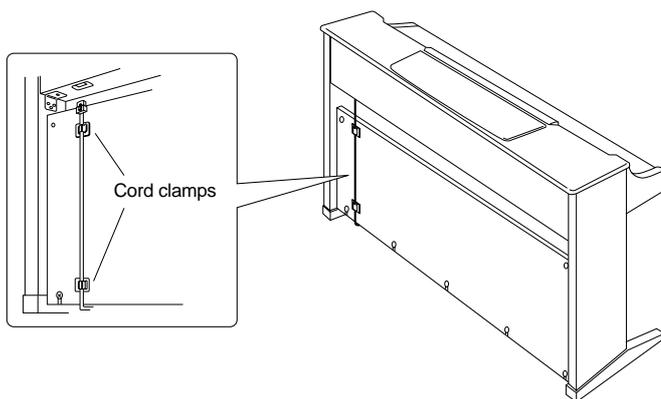
Rest the rear edge of the main unit (A) on the front edges of the cutouts in the side panels (D), then slide the main unit backward firmly until it stops (so that there is no clearance between the main unit side panels and the stand, as shown in the illustration “a”).

WATCH YOUR FINGERS WHILE DOING THIS!! Also be sure to place your hands at least 10 centimeters from either end of the main unit when positioning it.

There is slight horizontal play between the main unit and side panels, so center the main unit, as shown in the illustration “b”, then attach the rear of the main unit with two 6 x 14 millimeter flat-head screws ④, and the front of the main unit with four more 6 x 14 millimeter flat-head screws ④ as shown in the illustration.

6 Connect the pedal cord.

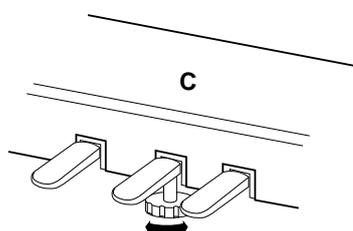
The pedal cord from the pedal box must be plugged into the corresponding connectors in the main unit. The plug only goes in one way (the lug on the connector should face the rear of the unit, as shown in the illustration), so don't try to force it in the wrong way around. Once connected, attach the cord clamps to the rear panel as shown, then clip the cord into the clamps.

6**7 Be sure to set the adjuster.**

For stability, an adjuster is provided on the bottom of the pedal box (C). Rotate the adjuster until it comes in firm contact with the floor surface. The adjuster ensures stable pedal operation and facilitates pedal effect control. If the adjuster is not in firm contact with the floor surface, distorted sound may result.

!! IMPORTANT

- After assembling the Clavinova, check once more to make sure that all screws have been securely fastened.
- If the stand leans to the side, makes unusual noises, or otherwise seems unstable during use, check and tighten all screws while following the assembly instructions given above.

7

MIDI Data Format

If you're already very familiar with MIDI, or are using a computer to control your music hardware with computer-generated MIDI messages, the data provided in this section can help you to control the Clavinova.

1. NOTE ON/OFF

Data format: [9nH] -> [kk] -> [vv]

9nH = Note ON/OFF event (n = channel number)
 kk = Note number (Transmit: 15 ~ 114 = D#-1 ~ F#7 /
 Receive: 21 ~ 108 = A-1 ~ C7)
 vv = Velocity (Key ON = 1 ~ 127. Key OFF = 0)

Data format: [8nH] -> [kk] -> [vv]

8nH = Note OFF event (n = channel number)
 kk = Note number (Transmit: 15 ~ 114 = D#-1 ~ F#7 /
 Receive: 21 ~ 108 = A-1 ~ C7)
 vv = Velocity (Key OFF = 0 ~ 127)

* 8nH (note off) is receive only.
 9nH (vvH=00H) used for transmission.

2. CONTROL CHANGE & MODE MESSAGES

Data format: [BnH] -> [cc] -> [vv]

BnH = Control event (n = channel number)
 cc = Control number
 vv = Control value

cc	CONTROL	VALUE [vv]
07H	Volume (reception only)	00000000 : -∞ 01101111 : -3dB 01111111 : ±0dB
0AH	Pan Pot (reception only)	00H ~ 17H LEFT 6 18H ~ 1FH 5 20H ~ 27H 4 28H ~ 2FH 3 30H ~ 37H 2 38H ~ 3FH 1 40H ~ 47H CENTER 48H ~ 4FH SCALING PAN 50H ~ 57H RIGHT 1 58H ~ 5FH 2 60H ~ 67H 3 68H ~ 6FH 4 70H ~ 77H 5 78H ~ 7FH 6
0BH	Expression (reception only)	00000000 : -∞ 01101111 : -3dB 01111111 : ±0dB
40H	Damper Pedal	00H ~ 7FH : eight levels
42H	Sostenuto Pedal	00H ~ 3FH : OFF 40H ~ 7FH : ON
43H	Soft Pedal	00H ~ 3FH : OFF 40H ~ 7FH : ON
5BH	Reverb Depth	00H ~ 7FH : sixteen levels
78H	All Sound OFF (reception only)	00H
79H	Reset All Controller (reception only)	00H
7AH	Local Control ON/OFF (reception only)	00H : OFF 7FH : ON
7BH	All Notes OFF (reception only)	00H
7CH	Omni OFF/All Notes OFF (reception only)	00H
7DH	Omni ON/All Notes OFF (reception only)	00H

3. PROGRAM CHANGE

Data format: [CnH] -> [pp]

CnH = program event (n = channel number)
 pp = Program number

pp	VOICE NAME
00	PIANO 1
01	PIANO 2
02	CLAVINOVA TONE
03	E. PIANO
04	HARPSICHORD
05	VIBES
06	STRINGS
07	ORGAN
08	STRINGS SLOW ATTACK (reception only)

4. SYSTEM REALTIME MESSAGES

[rrH]
 F8H: Timing clock
 FAH: Start
 FCH: Stop
 FEH: Active sensing

Data	Transmission	Reception
F8H	Transmitted every 96 clocks	Received as 96-clock tempo timing when MIDI clock is set to External
FAH	Recorder start	Recorder start
FCH	Recorder stop	Recorder stop
FEH	Transmitted every 200 milliseconds	All notes are turned off if no data is received for more than 400 milliseconds

* Caution: If an overrun framing error occurs the Damper, Sostenuto, and Soft effects for all channels are turned off and an All Note Off occurs.

5. SYSTEM EXCLUSIVE MESSAGES

(1) YAMAHA MIDI Format

Data format: [F0H] -> [43H] -> [xn] -> [ff] . . . [F7H]

43H : Yamaha
 xn : Substatus + channel number.
 ff : Format number.

x ff Information

0 7CH Panel data receive.
 2 7CH Panel Data Send occurs when this data received.
 2 7DH Name Data Send occurs when this data received.

(2) Clavinova MIDI Format

Data format: [F0H] -> [43H] -> [73H] -> [38H] -> [yy] -> [F7H]

43H : Yamaha ID
 73H : Clavinova ID
 38H : CLP-156 ID
 yy : Substatus

yy Information

02H Internal MIDI clock
03H External MIDI clock
13H Multi-timbre mode OFF.
14H Clavinova Common Voice multi-timbre mode ON.
15H Multi-timbre mode ON.
61H MIDI FA cancel ON.
62H MIDI FA cancel OFF.
7cH All notes OFF; receive channel = c+1; omni OFF.

* When yy=2, 3, 13, 14, 15 or 7c, Clavinova common ID (01H) is recognized as well as 38H.

* All Control Change values are reset when [13H], [14H] or [15H] is received. All voices and other parameters are also reset when [14H] or [15H] is received in order to ensure the same initial settings.

(3) Special Control

Data format: [F0H] -> [43H] -> [73H] -> [38H] -> [11H] -> [0nH] -> [cc] -> [vv] -> [F7H]

43H : Yamaha ID
73H : Clavinova ID
38H : CLP-156 ID
11H : Clavinova special control
0nH : Control MIDI change + channel number
cc : Control number
vv : Value

cc	Control	Value [vv]
08H	Dual Balance	00H : Left Voice Max. 7FH : Right Voice Max.
1BH	Metronome Mode (reception only)	00H : Off 01H : On
26H	Touch Sensitivity	00H : Medium 01H : Soft 02H : Hard 03H : Off
58H	Brilliance	00H : Normal 01H : Mellow 02H : Bright
59H	Reverb	00H : Off 01H : Room 02H : Hall-1 03H : Hall-2 04H : Cosmic
5AH	Dual Mode	00H : Dual Off 01H : Dual On (Normal) 02H : Dual On (Left voice 1 octave up) 03H : Dual On (Right voice 1 octave up)
5CH	Dual Voice	[vv] : Dual Voice
5EH	Individual Key Pitch	[vv] : Key number vv = 0: All keys set to normal pitch vv = 1: Individual key tune mode off vv = 2: Individual key tune mode on
5FH	Individual Key Pitch	[vv] : Pitch Data vv = 40H: 0 vv = 41H: +1 vv = 3FH: -1

* When cc=58 (Brilliance) or 59 (Reverb), Clavinova common ID (01H) is recognized in addition to 38H.

(4) Absolute Tempo

Data format: [F0H] -> [43H] -> [73H] -> [xx]
-> [11H] -> [1nH] -> [cc] -> [dd] -> [F7H]

43H : Yamaha ID
73H : Clavinova ID
xx : 38H (CLP-156 ID)
11H : Clavinova special control
1nH : Control MIDI change
(Transmit: n=control channel number)
(Receive: any channel OK)
ccH : Absolute tempo low byte
ddH : Absolute tempo high byte Tempo=dd*128+cc

(5) Beat, Tempo, LED ON/OFF

Data format: [F0H] -> [43H] -> [73H] -> [xx]
-> [11H] -> [4FH] -> [cc] -> [dd] -> [F7H]

43H : Yamaha ID
73H : Clavinova ID
xx : 38H (CLP-156 ID) or common 01H
11H : Clavinova special control
4FH : Control MIDI change
ccH : 00H= Beat lamp
 ddH= 00H: On
 7FH: Off
ccH : 01H= Tempo lamp
 ddH= 00H: On
 7FH: Off

PANEL DATA FORMAT

F0H, 43H, 0nH, 7CH, 00H, 1BH (n: channel number)
53H, 4BH, 20H, 20H (SK)
43H, 4CH, 50H, 27H, 39H, 34H (CLP '94)
3xH, 3yH (x, y: version number)
[PANEL DATA]
[CHECK SUM (1byte)] = 0-(53H+4BH+20H+.....+Data end)
F7H

• Panel Data Contents

- (1) VOICE
- (2) DUAL VOICE
- (3) DUAL ON/OFF
- (4) DUAL BALANCE
- (5) BRILLIANCE
- (6) 0
- (7) 0
- (8) REVERB NUMBER
- (9) REVERB DEPTH
- (10) TOUCH SENSITIVITY
- (11) 0
- (12) SPLIT POINT
- (13) INDIVIDUAL KEY TUNE MODE ON/OFF
- (14) Absolute tempo low byte
- (15) Absolute tempo high byte

INDIVIDUAL KEY TUNING DATA BULK DUMP FORMAT

F0H, 43H, 73H
38H (CLP-156 ID)
06H (Bulk ID)
00H (Bulk number)
00H, 00H, 0BH, 00H: (Data length= wxyzH 88*2 bytes)
[BULK DATA] (low:A-1, high:A-1.....low:C7, high:C7)
[CHECK SUM (1byte)] = 0-sum (Bulk data)
F7H

NAME DATA SEND FORMAT

F0H, 43H, 0nH, 7DH, 00H, 10H (n: channel number)
53H, 4BH, 20H, 20H (SK)
43H, 4CH, 50H, 27H, 39H, 34H (CLP '94)
3xH, 3yH, 20H, 20H, 20H, 20H (x, y: version number)
[CHECK SUM (1byte)] = 0-(53H+4BH+20H+.....+20H)
F7H

MIDI Implementation Chart

Not available.

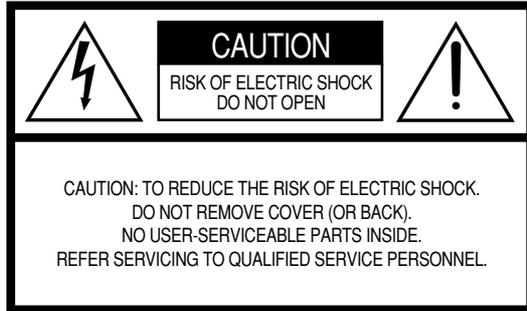
Specifications

		CLP-156
KEYBOARD		88 KEYS (A-1 ~ C7)
POLYPHONY		32 NOTES MAX.
VOICE SELECTORS		PIANO 1, PIANO 2, CLAVINOVA TONE, E. PIANO, HARPSICHORD, VIBES, STRINGS, ORGAN
BRILLIANCE		MELLOW, NORMAL, BRIGHT
REVERB		ROOM, HALL 1, HALL 2, COSMIC
TOUCH SENSITIVITY		HARD, MEDIUM, SOFT, FIXED
RECORDER		SONG [◀]/[▶], 1/R, 2/L, PLAY, REC
DISK DRIVE		3.5" 2DD Micro Floppy Disk Drive
PEDAL CONTROLS		SOFT, SOSTENUTO, DAMPER
OTHER CONTROLS		MASTER VOLUME, MIDI/TRANPOSE, METRONOME, TEMPO [▲]/[▼], TEMPO Display, DEMO
JACKS/CONNECTORS		PHONES x 2, AUX OUT R & L/L+R, AUX IN R & L, MIDI IN/OUT/THRU
INPUT & OUTPUT LEVEL/IMPEDANCE		AUX OUT: Output impedance 600 Ω AUX IN: Input impedance 10 kΩ / Input sensitivity -10 dBm
MAIN AMPLIFIERS		30W x 2
SPEAKERS		13 cm x 2, 5 cm x 2
DIMENSIONS (W x D x H)	Music stand down	1439.8 x 513.0 x 899.7 mm (56-5/8" x 20-1/4" x 35-3/8")
	Music stand up	1439.8 x 513.0 x 1070.8 mm (56-5/8" x 20-1/4" x 42-1/8")
WEIGHT		68.5 kg (151.0 lbs.)

* Specifications subject to change without notice.

SPECIAL MESSAGE SECTION

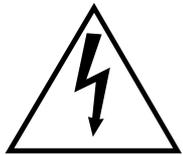
PRODUCT SAFETY MARKINGS: Yamaha electronic products may have either labels similar to the graphics shown below or molded/stamped facsimiles of these graphics on the enclosure. The explanation of these graphics appears on this page. Please observe all cautions indicated on this page and those indicated in the safety instruction section.



See bottom of Keyboard enclosure for graphic symbol markings



The exclamation point within the equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.



The lightning flash with arrowhead symbol, within the equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electrical shock.

IMPORTANT NOTICE: All Yamaha electronic products are tested and approved by an independent safety testing laboratory in order that you may be sure that when it is properly installed and used in its normal and customary manner, all foreseeable risks have been eliminated. **DO NOT** modify this unit or commission others to do so unless specifically authorized by Yamaha. Product performance and/or safety standards may be diminished. Claims filed under the expressed warranty may be denied if the unit is/has been modified. Implied warranties may also be affected.

SPECIFICATIONS SUBJECT TO CHANGE: The information contained in this manual is believed to be correct at the time of printing. However, Yamaha reserves the right to change or modify any of the specifications without notice or obligation to update existing units.

ENVIRONMENTAL ISSUES: Yamaha strives to produce products that are both user safe and environmentally friendly. We sincerely believe that our products and the production methods used to produce them, meet these goals. In keeping with both the letter and the spirit of the law, we want you to be aware of the following:

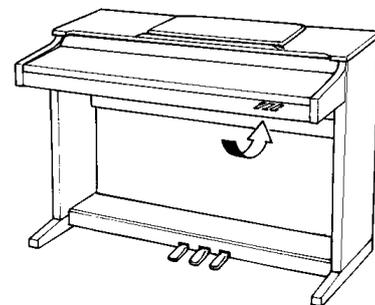
Battery Notice: This product MAY contain a small non-rechargeable battery which (if applicable) is soldered in place. The average life span of this type of battery is approximately five years. When replacement becomes necessary, contact a qualified service representative to perform the replacement.

Warning: Do not attempt to recharge, disassemble, or incinerate this type of battery. Keep all batteries away from children. Dispose of used batteries promptly and as regulated by applicable laws. Note: In some areas, the servicer is required by law to return the defective parts. However, you do have the option of having the servicer dispose of these parts for you.

Disposal Notice: Should this product become damaged beyond repair, or for some reason its useful life is considered to be at an end, please observe all local, state, and federal regulations that relate to the disposal of products that contain lead, batteries, plastics, etc.

NOTICE: Service charges incurred due to lack of knowledge relating to how a function or effect works (when the unit is operating as designed) are not covered by the manufacturer’s warranty, and are therefore the owners responsibility. Please study this manual carefully and consult your dealer before requesting service.

NAME PLATE LOCATION: The graphic below indicates the location of the name plate. The model number, serial number, power requirements, etc., are located on this plate. You should record the model number, serial number, and the date of purchase in the spaces provided below and retain this manual as a permanent record of your purchase.



Model _____

Serial No. _____

Purchase Date _____

IMPORTANT SAFETY INSTRUCTIONS

INFORMATION RELATING TO PERSONAL INJURY, ELECTRICAL SHOCK, AND FIRE HAZARD POSSIBILITIES HAS BEEN INCLUDED IN THIS LIST.

WARNING- When using any electrical or electronic product, basic precautions should always be followed. These precautions include, but are not limited to, the following:

- 1.** Read all Safety Instructions, Installation Instructions, Special Message Section items, and any Assembly Instructions found in this manual BEFORE marking any connections, including connection to the main supply.
- 2.** Main Power Supply Verification: Yamaha products are manufactured specifically for the supply voltage in the area where they are to be sold. If you should move, or if any doubt exists about the supply voltage in your area, please contact your dealer for supply voltage verification and (if applicable) instructions. The required supply voltage is printed on the name plate. For name plate location, please refer to the graphic found in the Special Message Section of this manual.
- 3.** This product may be equipped with a polarized plug (one blade wider than the other). If you are unable to insert the plug into the outlet, turn the plug over and try again. If the problem persists, contact an electrician to have the obsolete outlet replaced. Do NOT defeat the safety purpose of the plug.
- 4.** Some electronic products utilize external power supplies or adapters. Do NOT connect this type of product to any power supply or adapter other than one described in the owners manual, on the name plate, or specifically recommended by Yamaha.
- 5.** **WARNING:** Do not place this product or any other objects on the power cord or place it in a position where anyone could walk on, trip over, or roll anything over power or connecting cords of any kind. The use of an extension cord is not recommended! If you must use an extension cord, the minimum wire size for a 25' cord (or less) is 18 AWG. NOTE: The smaller the AWG number, the larger the current handling capacity. For longer extension cords, consult a local electrician.
- 6.** Ventilation: Electronic products, unless specifically designed for enclosed installations, should be placed in locations that do not interfere with proper ventilation. If instructions for enclosed installations are not provided, it must be assumed that unobstructed ventilation is required.
- 7.** Temperature considerations: Electronic products should be installed in locations that do not significantly contribute to their operating temperature. Placement of this product close to heat sources such as; radiators, heat registers and other devices that produce heat should be avoided.
- 8.** This product was NOT designed for use in wet/damp locations and should not be used near water or exposed to rain. Examples of wet/damp locations are; near a swimming pool, spa, tub, sink, or wet basement.
- 9.** This product should be used only with the components supplied or; a cart, rack, or stand that is recommended by the manufacturer. If a cart, rack, or stand is used, please observe all safety markings and instructions that accompany the accessory product.
- 10.** The power supply cord (plug) should be disconnected from the outlet when electronic products are to be left unused for extended periods of time. Cords should also be disconnected when there is a high probability of lightning and/or electrical storm activity.
- 11.** Care should be taken that objects do not fall and liquids are not spilled into the enclosure through any openings that may exist.
- 12.** Electrical/electronic products should be serviced by a qualified service person when:
 - a. The power supply cord has been damaged; or
 - b. Objects have fallen, been inserted, or liquids have been spilled into the enclosure through openings; or
 - c. The product has been exposed to rain; or
 - d. The product does not operate, exhibits a marked change in performance; or
 - e. The product has been dropped, or the enclosure of the product has been damaged.
- 13.** Do not attempt to service this product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.
- 14.** This product, either alone or in combination with an amplifier and headphones or speaker/s, may be capable of producing sound levels that could cause permanent hearing loss. DO NOT operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist. IMPORTANT: The louder the sound, the shorter the time period before damage occurs.
- 15.** Some Yamaha products may have benches and/or accessory mounting fixtures that are either supplied as a part of the product or as optional accessories. Some of these items are designed to be dealer assembled or installed. Please make sure that benches are stable and any optional fixtures (where applicable) are well secured BEFORE using. Benches supplied by Yamaha are designed for seating only. No other uses are recommended.

PLEASE KEEP THIS MANUAL

FCC INFORMATION (U.S.A.)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

2. IMPORTANT:

When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.

3. NOTE:

This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance

with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA90620

The above statements apply ONLY to those products distributed by Yamaha Corporation of America or its subsidiaries.

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA.

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

IMPORTANT. The wires in this mains lead are coloured in accordance with the following code:

BLUE : NEUTRAL
BROWN : LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

Making sure that neither core is connected to the earth terminal of the three pin plug.

• This applies only to products distributed by Yamaha-Kemble Music (U.K.) Ltd.

Dit produkt is gefabriceerd in overeenstemming met de radiostoringsvoorschriften van de Richtlijn van de Raad (82/499/EEG).

ΑΥΤΗ Η ΣΥΣΚΕΥΗ ΑΝΤΑΠΟΚΡΙΝΕΤΑΙ ΣΤΙΣ ΑΠΑΙΤΗΣΕΙΣ ΤΩΝ ΟΔΗΓΙΩΝ ΤΗΣ ΕΥΡΩΠΑΙΚΗΣ ΟΙΚΟΝΟΜΙΚΗΣ ΚΟΙΝΟΤΗΤΑΣ 82/499/Ε.Ο.Κ..

Este produto está de acordo com o radio de interferencia frequente requeridos do Conselho Diretivo 82/499/EEC.

Dette apparat overholder det gaeldende EF-direktiv vedrørende radiostøj.

Cet appareil est conforme aux prescriptions de la directive communautaire 87/308/CEE.

Diese Geräte entsprechen der EG-Richtlinie 82/499/EWG und/oder 87/308/EWG.

This product complies with the radio frequency interference requirements of the Council Directive 82/499/EEC and/or 87/308/EEC.

Questo apparecchio è conforme al D.M.13 aprile 1989 (Direttiva CEE/87/308) sulla soppressione dei radiodisturbi.

Este producto está de acuerdo con los requisitos sobre interferencias de radio frecuencia fijados por el Consejo Directivo 87/308/CEE.

YAMAHA CORPORATION

