

PLAY & PLAY KEYBOARD

SK-60

ELECTRONIC MUSICAL INSTRUMENT
INSTRUMENTO MUSICAL ELECTRÓNICO

OPERATION MANUAL MANUAL DE OPERACIÓN



Welcome...

To the happy family of satisfied CASIO electronic musical instrument owners! To get the most out of the many features and functions of the SK-60, be sure to carefully read this manual and keep it on hand for future reference.

Important!

Promptly replace the batteries or use the AC adaptor when the following symptoms occur:

- Dim power supply indicator
- Distortion of sound output
- A totally different tone may sound
- Abnormal rhythm pattern and demo tune play
- Continued sound output even after you release a button
- Occasional interruption of sound when playing at high volumes
- Sudden power failure when playing at high volumes

Please keep all information for future reference.

GUIDELINES LAID DOWN BY FCC RULES FOR USE OF THE UNIT IN THE U.S.A (not applicable to other areas).

NOTICE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Main Features

■ Main Features

Sampling

Sampling lets you record the sound of your voice, the bark of your dog, or just about any other sound and "play" it on the keyboard. Sampled sounds can be played as notes on the keyboard or as sound effects on the pads.

Song Bank

24 songs and 12 Free Sessions come built in. Songs can be played back using any of the built-in tones or voice tones for the melody part. Sampled sounds can also be used for the melody part. Free Sessions include accompaniment parts only, so you can play along on the keyboard and pads.

Magical Singer

Pressing the Magical Singer button while a song or free session is playing changes all parts of the playback to human voice tones.



CAUTION

AC Adapter

- Do not locate the power cord in close proximity to heaters or other heating appliances. This may cause the cord to melt leading to possible fire or electrical shock.
- When unplugging the AC adapter from an electrical outlet, always make sure to pull on the adapter itself and not the cord. Pulling excessively on the cord may cause it to be damaged or break leading to possible fire or electrical shock.
- Do not touch the AC adapter with wet hands when it is plugged in. This may cause electrical shock.
- When not using the instrument for an extended period such as when traveling, always make sure to unplug the AC adapter from the electrical outlet for safety reasons.
- After use turn off the power switch of the instrument and unplug the AC adapter from the electrical outlet.



Batteries

- Improper battery use may cause batteries to rupture and leak. This may cause injury, malfunction of the instrument or discoloration of furniture and other articles that come into contact with battery fluid. Take care to observe the following:
 - Install batteries so their polarity (+ / -) matches that indicated on the instrument.
 - For safety and to prevent possible leakage of battery fluid, always make sure to remove batteries from the instrument when you do not plan to use it for a long time.
 - Always make sure that the batteries making up a set are all of the same type.
 - Never combine new batteries with old ones.
 - Never dispose of batteries by incinerating them. Never short or disassemble batteries, and do not expose them to excessive heat.
 - Replace dead batteries as soon as possible.
 - Never attempt to recharge batteries.

Transport

- When transporting the instrument, always make sure to unplug the AC adapter from the electrical outlet and confirm that all other external connections have been disconnected. Only then should the instrument be transported. If the above is not done, the cord may be damaged leading to possible fire or electrical shock.



Case

- Whenever casing, make sure to first unplug the AC adapter from the electrical outlet. Also remove the instrument's batteries if battery power is being used.

Location

- Never locate the instrument in areas subject to high humidity or heavy accumulation of dust. Doing so may cause fire or electrical shock.
- Never locate the instrument in areas subject to grease splatters or steam, such as in a kitchen or near a humidifier. Doing so may cause fire or electrical shock.



Do not place keyboard on lacquered furniture.

- The instrument's silicone rubber feet may eventually blacken or scar lacquered surfaces. Use felt cloth pads to insulate the feet or preferably use a CASIO musical instrument stand designed for your keyboard.



Do not get onto the instrument.

- Do not crawl on top of the instrument. Particular caution is required in homes having small children. This may cause the instrument to tip over and break resulting in injury.

Do not place heavy objects on the instrument.

- Do not place heavy objects on the instrument. This may cause the instrument to tip over or break resulting in injury.

Volume

- Very high volume levels can damage hearing. Avoid using the instrument at very high volume settings for long periods. Consult with a physician immediately if you experience impaired hearing or ringing in the ears.

Accessories and options

- Use only accessories that come with the instrument or authorized CASIO options (sold separately). Use of non-specified accessories or options may cause fire, electrical shock, or malfunction.

Care of your keyboard

Avoid heat, humidity or direct sunlight.

Do not overexpose the unit to direct sunlight, or place near an air conditioner, or in any extremely hot place.

Take care not to drop the unit and avoid strong impact.

Strong impact may cause malfunctions. When carrying or transporting the unit, protect the keyboard and switches with soft cloth or other material.

Never attempt to modify any parts of the unit.

The unit is a precision instrument, made of electronic parts. Any modification of, or tampering with inner parts may cause malfunction.

Do not use lacquer, thinner or similar chemicals for cleaning.

Clean the keyboard with a soft cloth dampened in a weak solution of water and a neutral detergent. (Soak the cloth in the solution and squeeze until it is almost dry.)

Before using the keyboard

Be sure to read the contents of this part of the manual before using the keyboard for the first time.

■ About the power supply

You can power your keyboard with 3 AA batteries, standard AC power (with an optional AC adaptor).

Installing the batteries

This keyboard can be powered by 3 AA size (SUM-3/R6F) manganese dry cell batteries. Make sure that the unit is turned off when installing batteries.

1. Open the battery compartment cover on the bottom of the unit.
2. Load new batteries as illustrated, taking care that the plus (+) and minus (-) poles are facing in the correct directions.
3. Replace the battery compartment cover.
 - Standard battery life is approximately 4 hours (SUM-3/R6F).



Important!

Promptly replace the batteries or use the AC adaptor when the following symptoms occur.

- Dim power supply indicator
- Abnormally low speaker volume
- Distortion of sound output
- A totally different tone may sound
- Abnormal demo tune play
- Continued sound output even after you release a button
- Occasional interruption of sound when playing at high volume
- Sudden power failure when playing at high volumes

Precautions

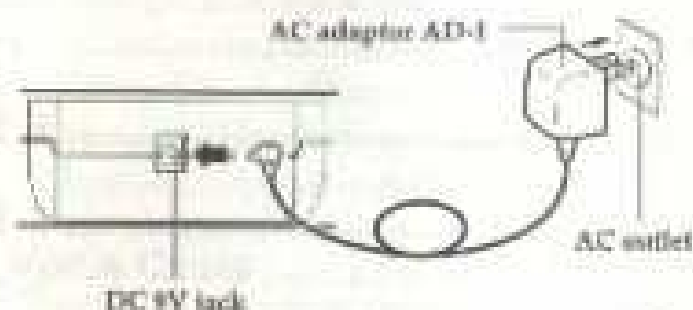
Incorrectly using batteries can cause them to leak or burst, and may damage your unit. Note the following precautions:

- Be sure that the plus (+) and minus (-) poles are facing in the correct directions.
- Do not mix battery types.
- Do not mix new batteries with old ones.
- Never leave dead batteries in the battery compartment.
- Remove batteries when not using the unit for extended periods.
- Never try to recharge the batteries that are specified for the power supply of this unit.

- Do not expose batteries to direct heat, let them become shorted or try to take them apart. (If a battery leaks, clean out the battery compartment of the unit immediately, taking care to avoid letting the battery fluid come into direct contact with your skin.)

Using AC power

An AC adaptor (AD-1, optional) is required when using household current. Use only genuine CASIO adaptor with the same voltage rating (100, 120, 220, 230 or 240V) as the power supply in your area to prevent damage to internal components. Be sure to turn the power of the unit off before you connect the adaptor to the unit. Plug the AC adaptor into the AC outlet and the cord into the unit. This will automatically cut off the battery power supply.



Note

The shapes of the AC adaptor's plug and wall outlet differ in accordance with countries or regions. The illustration is an example.

Important!

- The adaptor may become warm when it is being used. This is normal and does not indicate any problem.
- Be sure to unplug the adaptor from the power source when you are not using the unit.
- Whenever connecting or disconnecting the adaptor, be sure that the power of the unit is switched off.
- Never use a power supply that does not match that specified for the unit. Doing so can damage the adaptor or your unit.

Auto Power Off function

The Auto Power Off function automatically switches power off if you do not perform any operation for about six minutes. When this happens, change the POWER/MODE selector position to OFF and then to ON to turn power back on. You can also use the following operation to cancel the Auto Power Off function so that it does not switch power off.

To cancel the Auto Power Off function

While holding down the TUNE button, switch power on.

- The Auto Power Off function remains cancelled until you manually switch power off.

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1 Getting Acquainted

Now that your SK-60 is set up, here is some general basic information about its operation.

■ General Guide

Melody On/Off button (MELODY ON/OFF)
Turns melody part of songs on and off.

Start/Stop button (START/STOP)
Starts and stops song and plays keyboard play.

Tone button (TONE)
Press before playing tone numbers.

Song Bank button (SONG BANK)
Press before playing song numbers.

Number buttons (1 to 6)
Use to enter preset tone, bank, and Pres Selection numbers.

Power indicator
Lights to indicate power is on.

Power switch (POWER)
Turns power on and off.

Volume buttons (VOLUME)
▲ to increase volume, ▼ to decrease volume.

Tone buttons (TONE)
Change tones of song and Pres Selection play.

Start/Stop button (START/STOP)
Starts and stops song and plays keyboard play.

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Tone buttons (TONE)
Change tones of song and Pres Selection play.

TIME (B, M, L)
See sampling duration.

Keyboard Selections
Keyboard keys used to make sampling settings.

CYCLE (1-2, 1-2-3, 1-2-3-4)
Select sampling tone voice cycle.

EFFECT (RELEASE, REVERSE, LOOP, CLEAR)
Acts effects to sampled sounds.

TUNE (A, V, REBET)
Changes tuning (pitch) of sampled sounds.

2 Sampling

Now that you have set up your SK-60, it's time to start sampling. This section will guide you through the process of sampling a sound and using it in your compositions.

■ Sampling

Start/Stop button (START/STOP)
Starts and stops song and plays keyboard play.

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Number buttons (1 to 6)
Use to enter preset tone, bank, and Pres Selection numbers.

Power indicator
Lights to indicate power is on.

Power switch (POWER)
Turns power on and off.

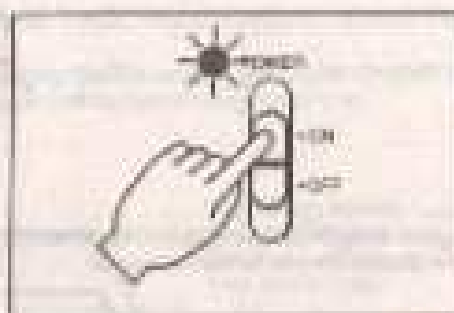
Volume buttons (VOLUME)
▲ to increase volume, ▼ to decrease volume.

Tone buttons (TONE)
Change tones of song and Pres Selection play.

■ To turn power on and off

Slide the power switch up to turn power on. The POWER indicator is lit when power is on.

Slide the power switch down to turn power off. The POWER indicator is not lit when power is off.



Auto Power Off

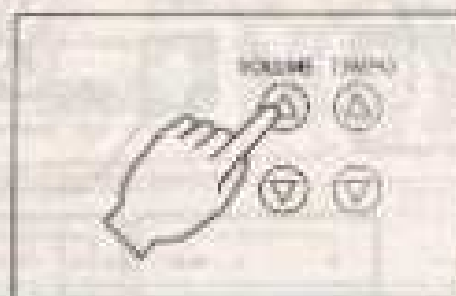
When you are using the SK-60, power automatically turns off about six minutes after the last key operation. To restore power, slide the power switch down and then up again.

You turn off the auto power off feature by holding down the TONE button while turning power on.

■ To adjust keyboard volume

Press the VOLUME ▲ button to increase volume and the ▼ button to decrease volume.

- Holding down either of the VOLUME buttons change the volume setting at high speed.
- Volume can be set to any one of 10 levels. No sound is produced by the keyboard when the volume is set to its lowest level.
- Volume is automatically set to Level 5 whenever you turn on keyboard power.
- Pressing the ▲ and ▼ VOLUME buttons at the same time sets the volume to Level 5.



2

Selecting a Keyboard Tone

You can assign any of the SK-60's 36 preset tones or sounds you sample yourself (page E-24) to the keyboard. The tone you assign to the keyboard is also used for the melody part of Song Bank songs (E-17).

■ To select a preset tone

1. Press the TONE button.
2. Input the two-digit number that corresponds to the tone you want to select.

Tone List

Musical Instruments and Sound Effects

No.	Name	No.	Name	No.	Name			
11	PIANO	F3-C6	21	VIOLIN	F3-C6	31	SIREN 1	-
12	ELEC PIANO	F3-C6	22	STRINGS	F3-C6	32	SIREN 2	-
13	ORGAN	F3-C6	23	TRUMPET	F3-C6	33	TELEPHONE	-
14	ACCORDION	F3-C6	24	CLARINET	F3-C6	34	SPACE 1	-
15	GUITAR*	F2-C5	25	SAX*	F2-C5	35	SPACE 2	-
16	VIBRAPHONE	F3-C6	26	FLUTE	F3-C6	36	FUNNY	-

Human Voice Tones

No.	Name	No.	Name		
41	DOO (FEMALE)	F3-C6	51	LA (CHILDREN)	F3-C6
42	BE (FEMALE)	F3-C6	52	DOO 1 (MALE)*	F2-C5
43	DEE (FEMALE)	F3-C6	53	DOO 2 (MALE)*	F2-C5
44	BAH (FEMALE)	F3-C6	54	BAH (BASS)*	F1-C4
45	AAH (CHOIR)	F3-C6	55	BOM (BASS)*	F1-C4
46	OOH (CHOIR)	F3-C6	56	VOICE PERCUSSION	-

Voice Cycles

No.	Name	
61	DOO-BE	F3-C6
62	BOM-BAH*	F1-C4
63	DOO-BE-DEE	F3-C6
64	DOO-BE-BAH	F3-C6
65	DOO-BE-DEE-BAH	F3-C6
66	DOO-BE-DEE-BAH	F3-C6

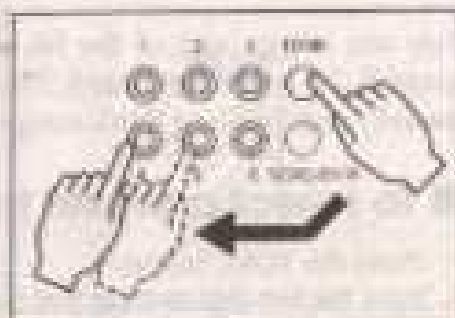
- • indicates tones that are one octave lower than normal.
- ▲ indicates tones that are two octaves lower than normal.
- The pitch of tones 31 to 36, and 56 is virtually the same no matter which keyboard key is pressed.

About digital sampling

A number of preset tones are digital samples of human voices or musical instruments. In order to produce the best sound quality possible, separate samples were taken for the low, middle, and high ranges. The point on the keyboard where there is a changeover from one sample range to another is called the "split point." Note that you may notice a very slight change in the tone and its volume at a split point. This is normal for a sampled sound and does not indicate malfunction of the keyboard.

Also note that with sound effects (31 to 36) and percussive instruments (56), there will be very little change in the pitch of the tone no matter which keyboard key you press.

- Tone 11 (PIANO) is automatically selected whenever you turn on keyboard power.
- To select "45 AHI" for example, press the TONE button and then press [4] [5].
- Inputting only one digit shifts the current setting number to the left. Pressing [1] while tone 45 is selected for example, changes the tone selection to tone 51.

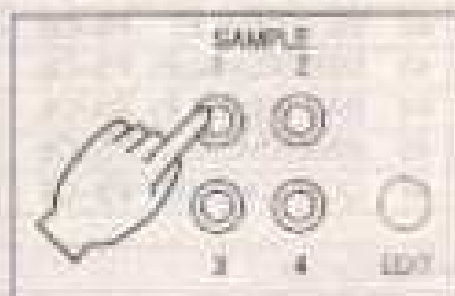


To select a sampled sound

Press one of the SAMPLE buttons (1 through 4) to select a sampled sound for keyboard play.

If there is nothing stored in sample memory or if sample memory contents have been cleared (page E-26), sample memories 1 through 4 are assigned preset tones 41 through 44 respectively. For details, see "Sampling" on page E-23.

- Any effects or tuning assigned to the sampled sound are applied as soon as you select it. See page E-24 for details on how to sample sounds.



3**Using the Song Bank**

The Song Bank contains 24 songs and 12 Free Sessions. The songs contain both melody and accompaniment, but you can turn off the melody part and play along on the keyboard. The Free Sessions have no melody part, and are designed for you to play along on the keyboard.

Song Bank List

24 songs * CASIO original

NO.	Song Name	NO.	Song Name
11	VOICES OF REASON*	31	MARY HAD A LITTLE LAMB
12	TWINKLE TWINKLE LITTLE STAR	32	AMAZING GRACE
13	DOON' MY THING *	33	ACH DU LIEBER AUGUSTIN
14	ODE TO JOY	34	LONDON BRIDGE
15	LITTLE BROWN JUG	35	JOY TO THE WORLD
16	SPRING FROM "THE FOUR SEASONS"	36	GREENSLEEVES
21	WHEN THE SAINTS GO MARCHING IN	41	JINGLE BELLS
22	FREERE JACQUES	42	SILENT NIGHT
23	OLD MacDONALD HAD A FARM	43	O CHRISTMAS TREE
24	AULD LANG SYNE	44	YANKEE DOODLE
25	LONDONDERRY AIR	45	SANTA LUCIA
26	ROW, ROW, ROW YOUR BOAT	46	MARCH FROM "THE NUTCRACKER"

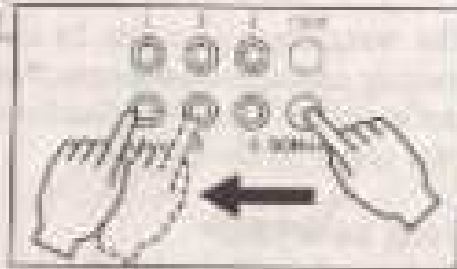
12 Free Sessions

NO.	Song Name
51	POPS 1
52	BIG BAND
53	SWING
54	FOX TROT
55	POPS 2
56	WALTZ 1
61	WALTZ 2
62	POLKA
63	SKA
64	TEX-MEX
65	COUNTRY
66	BAROQUE

■ To play a Song Bank Song or Free Session

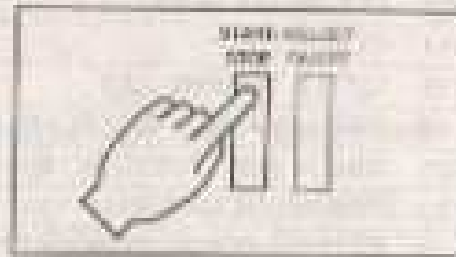
1. Press the SONG BANK button and then input a two-digit song or Free Session number.

- To select "45 SANTA LUCIA" for example, press the SONG BANK button and then press [4] [5].
- Inputting only one digit shifts the current setting number to the left. Pressing [1] while song 45 is selected for example, changes the song selection to 51.
- Song 11 (VOICES OF REASON) is automatically selected whenever you turn on keyboard power.



2. Press the START/STOP button to start play of the selected Song or Free Session.

To stop play, press the START/STOP button again.



With a Song Bank Song, the keyboard's tone setting matches that of the melody of the selected song.

Selecting a Free Session sets the keyboard tone to the setting recommended for that Free Session.

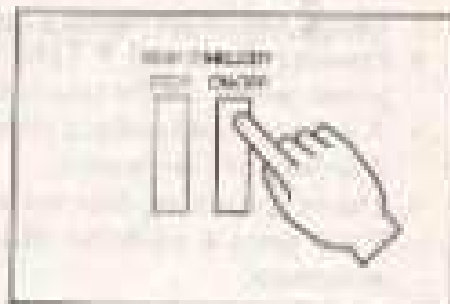
About song melody tones

Melody and accompaniment tones are preset for each Song Bank song. To change the melody tone setting to a preset tone or sampled sound, select the song and then perform one of the procedures under "To select a preset tone" on page F-15. You can change the melody tone, but the accompaniment tone cannot be changed.

- You can change the melody tone while a song is playing.
- A song's preset melody tone is always selected first whenever you select that song.
- The tone you select for a song's melody is also assigned to the keyboard.

To turn off the melody part of a song

To turn off the melody part of a song, press the MELODY ON/OFF button. Press the MELODY ON/OFF button again to turn the melody part back on.



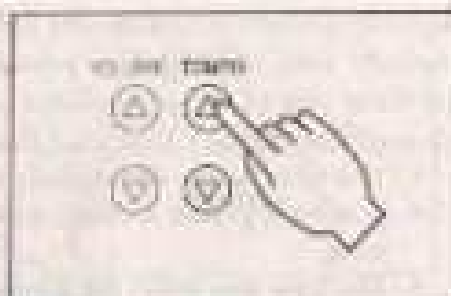
About Song Bank tempo settings

A tempo (speed) is preset for each Song Bank Song and Free Session. To change the tempo, select the Song or Free Session and then perform the following procedure.

To change a Song or Free Session tempo setting

Press the TEMPO ▲ button to increase the tempo (speed) and the ▼ button to decrease tempo.

- Holding down either button changes the tempo setting at high speed.
- Tempo can be set within a range of 40 to 255 beats per minute.
- Pressing the ▲ and ▼ TEMPO buttons at the same time resets the tempo to its preset setting for the selected Song or Free Session.
- A Song or Free Session's preset tempo is always selected first whenever you select that Song or Free Session.
- The tempo setting does not wrap around. This means the setting does not change if you press ▲ while the setting is at the maximum or ▼ while the setting is at the minimum.



Demo Play

The following operation plays Song Bank Songs 11 through 46 in an endless loop. Note that Free Sessions are not played.

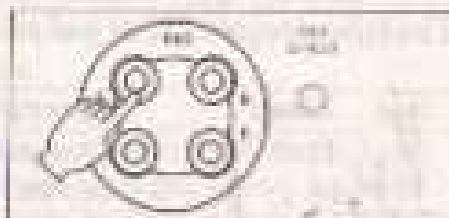
To use demo play

1. Press the SONG BANK button and the START/STOP button at the same time to start demo play.
 - Song Bank songs 11 through 46 play in an endless loop until you stop demo play.
 - Inputting a two-digit number from 11 to 46 while demo play is being performed jumps to the song whose number you input.
 - Demo tune play uses the preset melody tone for each song. You cannot change the melody tone during demo play. The tone preset to each song is also assigned to the keyboard while that song is playing.
2. To stop demo play, press the START/STOP button.
 - The tone assigned to the keyboard is the preset tone for the song that was playing when you stopped demo tune play.

4

Playing the Pads

The SK-60 features four built-in percussion pads named A, B, C, and D, which can be assigned percussion sounds or sampled sounds. Tapping a pad with your finger produces the sound that is currently assigned to that pad. There are also a number of pad effects that you can apply when sampled sounds are assigned to the pads.



Percussion Sounds

As their name suggests, percussion sounds are a collection of drum set sounds.

Pad	Percussion Sound
A	Voice hi-hat
B	Snap
C	Voice kick
D	Voice snare

To assign voice percussion sounds to the pads

Voice percussion sounds are automatically assigned to the pads as shown below, any time you turn on keyboard power.

Sample Memory Sounds

You can assign sounds currently in sample memory (page E-23) to the pads.

Pad	Sampled Sound
A	Sample memory 1
B	Sample memory 2
C	Sample memory 3
D	Sample memory 4



- Note that a sampled sound produced by the pads includes any effects (page E-20) or tuning (page E-26) currently assigned to the sound.
- The pitch of the sampled sound is that of the original sound.
- See "5 Sampling" on page E-23 for details on sampled sounds.

To assign sample memory sounds to the pads

Press the SAMPLING button or one of the SAMPLE buttons (1 to 4). This assigns sample memory sounds 1 through 4 to pads A through D.

- To change back to the voice percussion sounds, turn keyboard power off and then back on again.

Pad Effects

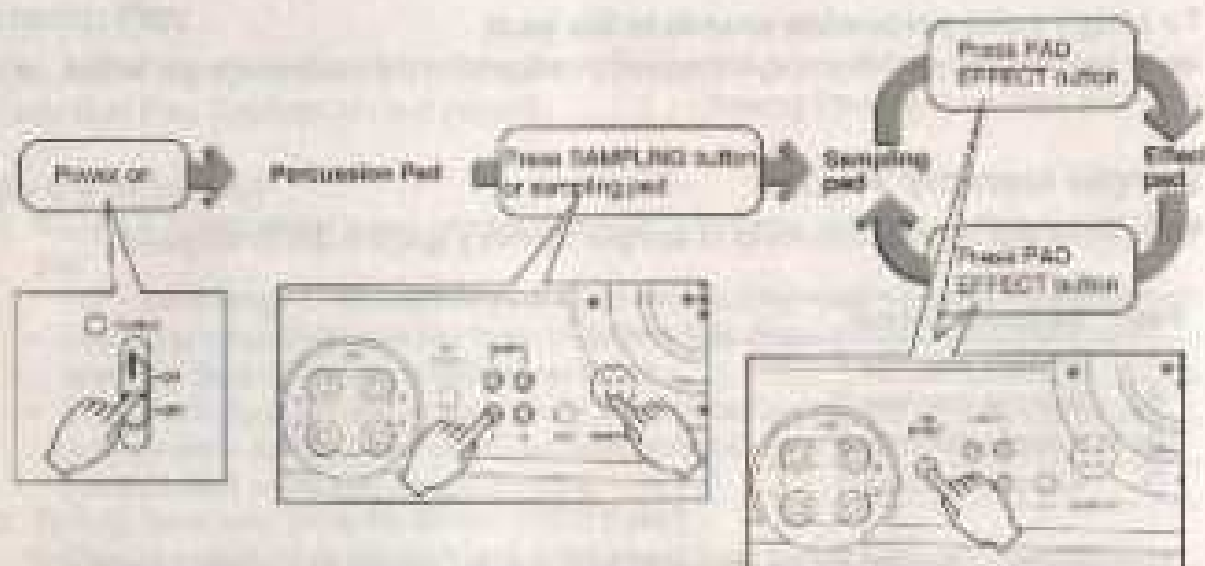
Pad effects are applied to the sampled sounds that are currently assigned to the pads. The following is a list of pad effects.

Pad	Effect	Description
A	Duet	Changes the pitch of the sound to make it sound like two different sounds.
B	Vibrato	Adds vibrato to the sound.
C	Pitch Up	Raises the pitch of the sound.
D	Pitch Down	Lowers the pitch of the sound.

- Pad effects are applied in addition to other effects (page E-27) assigned to a sound.
- Pad effects are not applied to keyboard tones.

To assign pad effects to the pads

1. While sampled sounds are assigned to the pads, press the PAD EFFECT button to assign the pad effects.
2. To remove the pad effects, press the PAD EFFECT button again.



5

Sampling

Sampling lets you record the sound of your voice, the bark of your dog, or just about any other sound and "play" it on the keyboard. Sampled sounds can be played as notes on the keyboard or as sound effects on the pads.

Note

- If there is nothing stored in sample memory or if sample memory contents have been cleared (page E-28), sample memories 1 through 4 are assigned preset tones 41 through 44 respectively. These are the defaults for sample memory.

About sample memory capacity

The sample memory of the SK-60 can hold up to four sound samples, for a total of 2.4 seconds of sound. You can specify the duration of the sampling operation as 0.6 (S), 1.2 (M), or 2.4 (L) seconds, so the number of sampled sound that can actually be stored at one time depends the duration of the samples as noted in the following table.

Duration	Number of Sounds	Sample Memory Buttons
0.6 seconds (S)	4	One sound per button.
1.2 seconds (M)	2	One sound assigned to 1 and 3, the other sound assigned to 2 and 4.
2.4 seconds (L)	1	Same sound assigned to all buttons.

Important!

- Changing the sampling duration replaces current sample memory contents with the defaults for each sample memory (preset tones 41 through 44).

To set sampling duration

1. Press the EDIT button.



2. Press one of the keyboard keys marked **TIME** to select the duration of the sample.

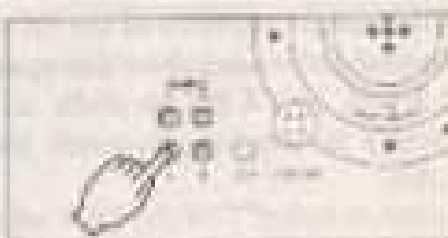
- Select **S** (0.6 seconds), **M** (1.2 seconds), or **L** (2.4 seconds).
- A snap beat sounds when you press a key to confirm your input. If the keyboard key you press is for the sampling duration that is already set, a voice tick sounds.



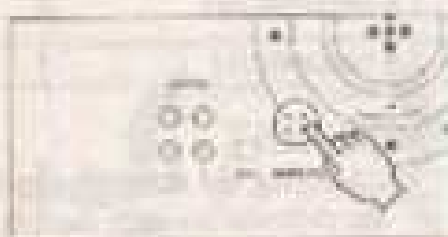
To sample a sound

1. Press one of the **SAMPLE** buttons to select the sample memory where you want to store the sampled sound.

- If you do not press a **SAMPLE** button, the sampled sound will be stored in the memory that corresponds to the **SAMPLE** button you last pressed since turning on keyboard power. If you have not pressed a **SAMPLE** button yet, sample memory 1 is used automatically.



2. Press the **SAMPLING** button to enter the sampling stand-by mode.



3. The keyboard will automatically start the sampling operation as soon as a loud enough sound is made near its built-in sampling microphone.



Important!

- Remember that performing a sampling operation deletes the sound that was previously assigned to the sample memory you are using.
- Also remember that a sampling duration of 1.2 seconds (M) assigns the same tones to sample memories 1 and 3, and 2 and 4, and that a duration of 2.4 seconds (L) assigns the same tone to all four sampling memories.
- The keyboard signals the end of the sampling operation by emitting a snap sound.
- The keyboard indicates a sampling error (when no sound is picked up within about five seconds after the SAMPLING button is pressed or when the sound volume is too low) by emitting a voice kick sound. In this case a sample is not taken and the sound originally stored in the sample memory is retained.
- Sound that is too loud or too near the microphone can cause distortion.
- The keyboard and built-in pads (page E-22) are automatically assigned sample memory contents following a sampling operation.

Original Key Setting

The original version of sounds you sample is automatically assigned to key A4 at the center of the keyboard. A4 is called the "original key". You can use the following sampling procedure to specify a different keyboard key as the original key.

To specify an original key setting during sampling

1. Holding down one of the SAMPLE buttons, press the keyboard key that you want to use as the original key.
2. Continue with the sampling operation from step 4 under "To sample a sound" on page E-24.
 - The original key setting you make applies to the sound you sample during the above operation only. If you make a mistake and fail to sample a sound, you must specify the original key again when you take a new sample.
 - Note that you can also use the following procedure to tune a sampled sound.

Tuning a Sampled Sound

This procedure lets you tune a sampled sound so matches the key of a Song Bank Song or Free Session accompaniment. You can tune within a range of 2 semitones of the original sound.

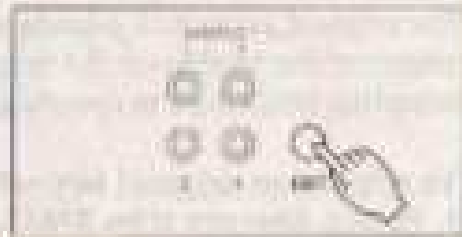
- Note that only sampled sounds can be tuned. You cannot change the tuning of a built-in tone.

To tune a sampled sound

1. Press the **SAMPLE** button that corresponds to the sample memory where the sampled sound you want to tune is stored.

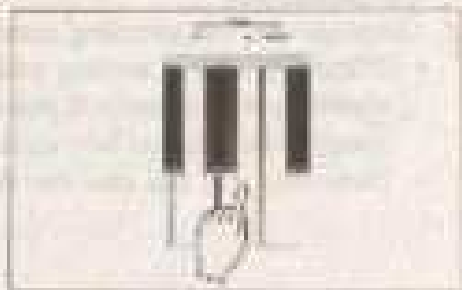


2. Press the **EDIT** button.



3. Press the keyboard key marked **▲** to raise the tuning of the sampled sound or **▼** to lower the tuning.

- Each press of the **▲** or **▼** keyboard key raises or lowers the tuning by one step. Keep pressing the keys until the tuning gets to the level you want.
- To return a sampled sound back to its original tuning, press the keyboard key marked **RESET**.
- A snap is emitted when you press one of the keyboard **TUNE** keys. Pressing the wrong keyboard key (one that is not a **TUNE** key) causes a voice kick to sound.



Sampled Sound Effects

You can add the following effects to sounds stored in sample memory.

Effect	Description
LOOP	Sound repeats as long as a keyboard key is depressed.
REVERSE	Sample is replayed in reverse (from end to beginning).
RELEASE	Releasing a keyboard key causes the sound to gradually fade.

- Note that you can apply effects to sampled sounds only. You cannot apply effects to built-in tones.
- You can apply more than one effect to the same sampled sound simultaneously.

To apply effects to sampled sounds

1. Press the **SAMPLE** button that corresponds to the sample memory where the sampled sound you want to apply an effect to is stored.

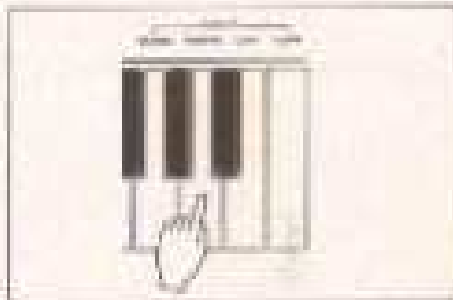


2. Press the **EDIT** button.



3. Press the keyboard key marked with the effect you want to apply.

- If the effect whose key you press is already assigned to the sound, pressing the key removes the effect.
- Press the keyboard key marked **CLEAR** to remove all effects from the sound.
- A snap is emitted when you press one of the keyboard **EFFECT** keys. Pressing the wrong keyboard key (one that is not an **EFFECT** key) causes a voice kick to sound.



4. If you want to assign more than one effect to the sampled sound you selected in step 1, repeat steps 2 and 3.

About sample memory storage...

- Whenever you sample a new sound, anything previously stored in sample memory is replaced by the new sound.
- Sample memory contents (as well as the sampling duration setting, the tuning setting, and the effect setting) are retained memory even when unit power is turned off, as long as power is supplied to the SK-60 by batteries or through the AC adaptor.
- Sample memory contents are lost if power fails to be supplied to the SK-60 (such as when batteries go dead while the AC adaptor is not connected).
- Turning SK-60 power off while a sampling operation is in progress causes the sample memory of the button being used for sampling to be deleted.

To protect sample memory contents

- Connect the AC adaptor before replacing or removing batteries.
- Do not disconnect the AC adaptor while the batteries loaded in the SK-60 are weak or dead.

The data is lost and settings are returned to their initial defaults whenever power is cut off from the keyboard due to disconnection of the AC adaptor and dead batteries. Preset tones 61 through 66 are Voice Cycles. Voice Cycles are played in combination with human voice tones 41 through 46 and 51 through 55. You can also create your own Voice Cycle using sounds in sample memory.

Two, three, or four human voice tones are assigned to each Voice Cycle. Voice Cycle 65 (DOO-BE-DEE-BAH), for example, uses voice tone 41 for DOO, 42 for BE, 43 for DEE, and 44 for BAH. When you press a keyboard key, the Voice Cycle sounds using its assigned human voice tones you. If you play a Song Bank song with a Voice Cycle selected as the melody tone, melody notes are sung using Voice Cycle and tones.

Voice Cycle List

Number	Voice CycleName	
61	DOO-BE	F3-C6
62	BOM-BAH	F1-C4
63	DOO-BE-DEE	F3-C6
64	DOO-BE-BAH	F3-C6
65	DOO-BE-DEE-BAH	F3-C6
66	DOO-BE-DOO-BAH	F3-C6

To select a Voice Cycle

Use the same procedure as you do for selecting any other tone. See "To select a preset tone" on page E-15.

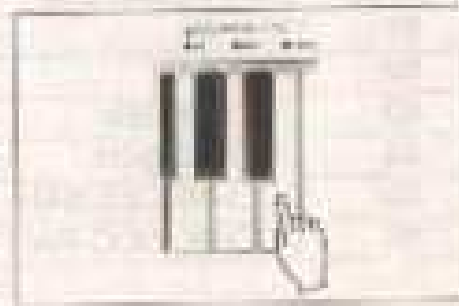
To create a Voice Cycle using sound memory tones

Note: The following procedure assumes that you already have sampled sounds stored in sample memory.

1. Press the EDIT button.



2. Press one of the keyboard keys marked **CYCLE**.
 - Press the key marked **•1-2** to create a voice cycle using the sounds in sample memories 1 and 2.
 - Press the key marked **•1-2-3** to create a voice cycle using the sounds in sample memories 1, 2 and 3.
 - Press the key marked **•1-2-3-4** to create a voice cycle using the sounds in sample memories 1, 2, 3 and 4.
 - A snap is omitted when you press one of the keyboard **CYCLE** keys. Pressing the wrong keyboard key (one that is not a **CYCLE** key) causes a voice kick to sound.

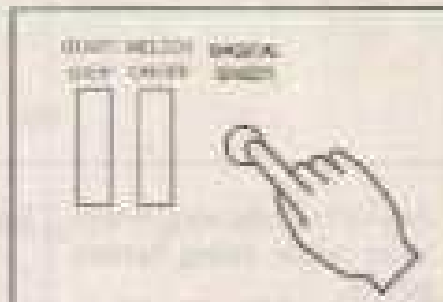


Magical Singer lets you replace all of the musical instruments in Song Bank Songs and Free Sessions with human voices.

- Magical Singer can be used Song Bank Songs and Free Sessions only.

To turn Magical Singer on and off

1. Press the **MAGICAL SINGER** button to turn Magical Singer on.
2. Press the **MAGICAL SINGER** button once again to turn Magical Singer off.
 - The voice tones used for melodies and accompaniments while Magical Singer is on are preset for each Song and Free Session.
 - When playing a song, the keyboard is assigned the same voice tone as the song melody.
 - When you turn off Magical Singer, the accompaniment tone of the song or Free Session that is currently selected returns to its preset default.
 - The keyboard tone changes to a human voice tone even while using Free Session. The specific human voice tone assigned to the keyboard depends on the song.



Troubleshooting

Problem	Cause	Recommended Action
<p>No sound when keyboard keys are pressed.</p>	<p>Power not being supplied correctly.</p>	<ul style="list-style-type: none"> • Check that battery plus (+) and minus (-) ends of batteries are facing correctly. • Check for dead batteries. • Check that AC adaptor is connected correctly.
<p>Any of the following symptoms while using battery power:</p> <ul style="list-style-type: none"> • Low volume • Distorted sound • Broken sound at high volumes • Sudden loss of power at high volumes • Spontaneous output of sound even when keyboard keys are not pressed • Wrong tone • Incorrect playback of songs and Free Sessions • Sudden loss of sound 	<p>Low battery power</p>	<p>Replace batteries or change to AC power.</p>
<p>Sampled sound does not match song or Free Session accompaniment.</p>	<p>Sampling performed without specifying an original key.</p>	<p>Assign the original key for the sampled sound to match the accompaniment (page E-25).</p>
<p>Sampled sound is slightly different from key of song or Free Session accompaniment.</p>	<p>Sampled sound needs tuning.</p>	<p>Tune the sampled sound (page E-26).</p>

Specifications

Model:	SK-60
Keyboard:	32 mini-size key, 2.5 octaves
Polyphony:	12 notes maximum
Built-in Tones:	18
Human Voice Tones:	12
Voice Cycles:	6
Song Bank:	24 songs (with Melody Off)
Free Sessions:	12
Control:	Start, stop, tempo (64 levels)
Pads:	4
Pad Settings:	Sampled sounds, effects, voice percussion
Sampling Method:	8-bit Differential Pulse Coded Modulation (DPCM)
Sampling Rate:	13.021 kHz
Sampling Duration:	2.4 seconds maximum (3 selectable durations)
Input:	Built-in microphone
Effect:	LOOP, REVERSE, RELEASE
Tuning:	±Semi tone
Other Functions:	Magical Singer, Voice Cycle
Terminal:	7.5V DC
Power Supply:	Two-way (Five AA-size batteries/AC adaptor)
Battery Life:	Approximately 4 hours on R61 (SUM-3) manganese batteries
AC Adaptor:	AD-1 (option)
Tuning:	A4 = Approx. 440Hz
Volume:	10-level digital volume control
Speaker:	8cm dia. × 1 (output 1.0W)
Power Consumption:	7.5V - 2.0W
Dimensions:	416 × 222 × 53 mm (16 3/8" × 8 3/4" × 2 1/16")
Weight:	1.0 kg (2.2lbs)(without batteries)

Specifications and designs are subject to change without notice.

Important Information for Parents!

Parents should please note the following important information before letting children use this product.

Before using the optional AD-1 AC Adaptor to power the unit, be sure to check the AC Adaptor for any damage first. Carefully check the power cord for breakage, cuts, exposed wire and other serious damage. Never let children use an AC adaptor that is seriously damaged.

Use only CASIO AD-1 adaptor



Caratteristiche principali

Il sistema di riferimento è costituito da un insieme di assi cartesiani ortogonali, con l'origine in un punto fisso dello spazio. Le coordinate di un punto P sono le proiezioni ortogonali di P sui tre assi, indicate rispettivamente con x, y e z.

La distanza tra due punti P1(x1, y1, z1) e P2(x2, y2, z2) è data dalla formula:
$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}$$

Il volume di un rettangolo tridimensionale con dimensioni a, b e c è dato da:
$$V = a \cdot b \cdot c$$

La superficie di un rettangolo tridimensionale con dimensioni a, b e c è data da:
$$S = 2(ab + bc + ca)$$

Il centro di massa di un rettangolo tridimensionale con dimensioni a, b e c è il punto medio del diagonale, con coordinate:

$$x_c = \frac{a}{2}, y_c = \frac{b}{2}, z_c = \frac{c}{2}$$

Il momento d'inerzia di un rettangolo tridimensionale con dimensioni a, b e c, rispetto ad un asse che passa per il centro di massa e ha direzione z, è dato da:

$$I_z = \frac{1}{12} a b (a^2 + b^2)$$

Appendix/Apéndice

Song Bank List/Lista del banco de canciones

NO. Número	Song Name Nombre de canción	Original Key Clave original	NO. Número	Song Name Nombre de canción	Original Key Clave original
11	VOICES OF REASON*	F#	31	MARY HAD A LITTLE LAMB	G#
12	TWINKLE TWINKLE LITTLE STAR	F#	32	AMAZING GRACE	C#
13	DOOH MY THING*	G#	33	ACH DU LIEBER AUGUSTIN	D#
14	ODE TO JOY	G#	34	LONDON BRIDGE	F#
15	LITTLE BROWN JUG	B#	35	JOY TO THE WORLD	G#
16	SPRING FROM THE FOUR SEASONS*	A#	36	GREENSLEEVES	D#
21	WHEN THE BANTS GO MARCHING IN	E#	41	JINGLE BELLS	D#
22	FRENCH JACQUES	C#	42	SILENT NIGHT	A#
23	OLD McDONALD HAD A FARM	C#	43	O CHRISTMAS TREE	E#
24	ALD LANG SYNE	C#	44	YANKEE DOODLE	C#
25	LONDONERRY AIR	F#	45	SANTA LUCIA	A#
26	ROW, ROW, ROW YOUR BOAT	F#	46	MARCH FROM THE NUTCRACKER	B#

* CASIO original/Original de CASIO

Range of Keyboard play/Gama de ejecución de teclado



Chord Progression of Free Sessions/Progresión de acordes de sesiones libres

NO. Número	Song Name Nombre de canción	Number of Measures Número de compases	Chord Progression Progresión de acordes
51	POPS 1	8	C#M7Am7Dm7Gsus4Em7A#sus7 Am7D#m7 Em7F#m7 Gsus7
52	BIG BAND	8	C#G#C#Am#Dm#G7#C#E
53	SWING	2	C#Am#Dm#G7
54	FOX TROT	8	C#CM7Dm7F#G7Dm7F#G7C#FC
55	POPS 2	8	C#G#F#C#G#F# Em#Dm#C
56	WALTZ 1	8	C#M7C#M7Em7C#m7F#m7G#sus7
57	WALTZ 2	8	C#M7C#M7Em7F#m7Dm7F#m7C#M7C#M7
58	POLKA	4	C#Dm7 G7Em7 G7C
59	SKA	4	C#Am#Dm#G#m7 G7C
60	TEX-MEX	4	C#G#D#C
61	COUNTRY	4	C#Dm7 G7Dm7 G7C
62	BAROQUE	4	C#G#Am# Em#F#G#F#G

Appendix/Apéndice



This recycle mark indicates that the packaging conforms to the environmental protection legislation in Germany.
Esta marca de reciclaje indica que el empaquetado se ajusta a la legislación de protección ambiental en Alemania.

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