Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for CASIO CELVIANO AP-220. You'll find the answers to all your questions on the CASIO CELVIANO AP-220 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual CASIO CELVIANO AP-220
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ES

CELVIANO
AP-220

English
Español

USER'S GUIDE
GUÍA DEL USUARIO

Please keep all information for future reference.
Guarde toda información para tener como referencia futura.

Safety Precautions
Before trying to use the piano, be sure to read the separate "Safety Precautions".

Precauciones de seguridad
Antes de intentar usar el piano, asegúrese de leer las "Precauciones de seguridad" separadas.

AP220ES1C

CASIO.

Manual abstract:

Guarde toda información para tener como referencia futura. @@@@2. 3. 4. 5. 6. 7. 8. 9. Read these instructions.
Keep these instructions. Heed all warnings. Follow all instructions. Do not use this apparatus near water. Clean only with dry cloth.
Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. @@@@A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety.
If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet. 10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus. 11. Only use attachments/accessories specified by the manufacturer. 12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. 13. Unplug this apparatus during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus. The power indicator being unlit does not mean the apparatus is completely disconnected from the MAINS. When you need to have the apparatus completely disconnected from the MAINS, you must unplug the power cord. For that purpose, locate the apparatus in a way that secures easy access to the power cord. 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 userís authority to operate the equipment. Declaration of Conformity Model Number: AP-220 Trade Name: CASIO COMPUTER CO., LTD. Responsible party: CASIO AMERICA, INC. Address: 570 MT.
PLEASANT AVENUE, DOVER, NEW JERSEY 07801 Telephone number: 973-361-5400 This device complies with Part 15 of the FCC Rules, Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Important! Please note the following important information before using this product. · Before using the AD-A12150LW 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. · The product is not intended for children under 3 years. · Use only CASIO AD-A12150LW adaptor. · The AC adaptor is not a toy. · Be sure to disconnect the AC adaptor before cleaning the product. Manufacturer: CASIO COMPUTER CO.

,LTD. 6-2, Hon-machi 1-chome, Shibuya-ku, Tokyo 151-8543, Japan Responsible within the European Union: CASIO EUROPE GmbH Casio-Platz 1, 22848 Norderstedt, Germany This mark applies in EU countries only.
Contents

. A-1 MIDI Implementation Chart Company and product names used in this manual may be registered trademarks of others. E-1 General Guide Bottom 1 Front Rear 2 3 4 Front 5 6 bn 7 8 9 bk bl bm bo E-2 General Guide *CAUTION · Make sure that the cover is fully open whenever you are playing on the keyboard.

A partially open cover can suddenly close unexpectedly and pinch your fingers. NOTE · The names shown here are always indicated in bold when they appear within the text of this manual.

1 PHONES jacks 2 DC 12V terminal 3 USB port 4 Pedal connector 5 VOLUME controller 6 FUNCTION button 7 SONG a button 8 RECORDER (L) button 9 METRONOME (R) button bk GRAND PIANO (MODERN) button bl GRAND PIANO (CLASSIC) button bm ELEC PIANO button bn Power lamp bo POWER button FUNCTION Button The FUNCTION button is used when configuring a variety of different digital piano settings. The following are FUNCTION button basics. To change a setting, hold down the FUNCTION button as you press the keyboard key that is assigned the setting you want to select. An operation confirmation tone will sound whenever you press a keyboard key to configure a setting. Example: "To select a tone" on page E-7 NOTE · For details about operations and settings, see "Configuring Settings with the Keyboard" on page E-19. The following table shows how pressing the FUNCTION button changes the operation of certain buttons. This button: SONG a RECORDER METRONOME MODERN CLASSIC ELEC PIANO Does this while FUNCTION button is depressed: Starts and stops demo tune play. Selects the left-hand part. Selects the right-hand part. Toggles Reverb on (button lamp lit) and off (lamp unlit).

*Toggles Chorus on (button lamp lit) and off (lamp unlit). Toggles Duet on (button lamp lit) and off (lamp unlit). Saving Settings and Using Operation Lock Your digital piano lets you save its current settings and lock its buttons to protect against operation errors. For details, see "Parameter List" on pages E-21 - E-23. E-3 English Power Outlet Your digital piano runs on standard household power. Be sure to turn off power whenever you are not using the digital piano. * Using the Clip To fasten the clip As shown in the illustration, press down on (a) to force the tip of the clip into the slot. Press down until you hear the clip click securely into place. Slot Tip Using an AC Adaptor Use only the AC adaptor (JEITA Standard, with unified polarity plug) that comes with this digital piano. Use of a different type of AC adaptor can cause malfunction of the digital piano.*

Specified AC Adaptor: AD-A12150LW ·mplifier You can connect audio equipment or a music amplifier to the digital piano and then play through external speakers for more powerful volume and better sound quality. · You can get information about accessories that are sold separately for this product from the CASIO catalog available from your retailer, and from the CASIO website at the following URL. http://world.casio.com/ E-6 Playing with Different Tones VOLUME FUNCTION SONG a POWER METRONOME GRAND PIANO ELEC PIANO Selecting and Playing a Tone The piano comes with 16 built-in tones. · The names of the tones are marked above the keyboard keys to which they are assigned. To select a tone 1. Press the POWER button. IMPORTANT! · When you turn on the digital piano, it performs a power up operation in order to initialize its system. During system initialization the tone button lamps cycle on and off in the sequence for about seven seconds to let you know that system initialization is in progress.

2. Select the tone you want. To select GRAND PIANO (MODERN or CLASSIC) or ELEC PIANO · Press one of the GRAND PIANO buttons (MODERN or CLASSIC) or the ELEC PIANO button to select the one you want. To select one of the other tones · While holding down the FUNCTION button, press the keyboard key that corresponds to the tone you want to select. · The button lamp of the selected tone will light. E-7 English Playing with Different Tones 3. Use the VOLUME controller to adjust the volume. To adjust the brilliance of a tone NOTE · GRAND PIANO tones (MODERN, CLASSIC) Your digital piano has a total of 16 built-in tones. The MODERN and CLASSIC tones are stereo sampled tones that can be selected using the GRAND PIANO buttons. Try using the GRAND PIANO tones to familiarize yourself with their distinctive sounds and characteristics.

Tone Name MODERN Characteristics This tone provides a bright grand piano sound. The volume and timbre of this tone is quick to respond to different keyboard pressures, and it has relatively strong reverb. This tone is a good choice for dynamic and lively performances. This is a natural piano tone that closely resembles the sound of an acoustic grand piano. Reverb and other effects are kept to a minimum in order to enhance the impact of piano pedals operations (acoustic resonance), for musically delicate expressions. This tone is a good choice for lesson and practice sessions. 1. While holding down the FUNCTION button, use the BRILLIANCE keys to specify a brilliance value in the range of 3 to 0 to 3. CLASSIC For this type of sound: Mellower and softer Brighter and harder Press this keyboard key: · The GRAND PIANO tone (VARIATION) is best for playing along with an accompaniment. NOTE Bass Tones (BASS 1, BASS 2) Selecting either of the two BASS (LOWER) tones (1 or 2) in step 2 of the above procedure will assign the selected bass tone to the low range (left side) of the keyboard.

The high range (right side) will be assigned the tone that was selected when you pressed the BASS 1 or BASS 2 key. · BASS 1 and BASS 2 let you effectively split the keyboard between two different tones. Split Point Low Range High Range · To return a tone to its initial default setting "0", press and at the same time. BASS 1 PIPE ORGAN (Currently selected tone.) NOTE · To return the keyboard to a single tone, select any tone other than BASS 1 or BASS 2. · You cannot select BASS 1 or BASS 2 when recording to Track 2. E-8 Playing with Different Tones Layering Two Tones Use the following procedure to layer two tones, so they sound at the same time. When specifying two tones for layering, first tone you select will be the main tone, while the second tone will be the layered tone. To adjust the volume balance between two layered tones English 1. While holding down the FUNCTION button, use the keyboard keys shown below to adjust the volume of the layered tones.

1. While holding down the FUNCTION button, hold down the keyboard key for the main tone as you press the keyboard key for the layered tone. Example: To layer HARPSICHORD and STRINGS 1 C1 C2 C3 C4 C5 C6 C7 C8 Initial default (Center) Volume of the layered tone (Second tone you selected) Volume of the main tone (First tone you selected) · To return the volume setting to its initial default, hold down the FUNCTION button and press both of the keys at the same time. HARPSICHORD STRINGS 1 2. To unlayer the keyboard, select another tone by pressing the GRAND PIANO button or by using the procedure under "Selecting and Playing a Tone" (page E-7).

NOTE · You also can layer piano tones by holding down one of the GRAND PIANO buttons (MODERN or CLASSIC) as you press the ELEC PIANO button. · You cannot layer the BASS 1 or BASS 2 tone with another tone. · You cannot perform the layer operation when recording to Track 2. E-9 Playing with Different Tones Using Effects Reverb : Makes your notes resonate. Chorus : Adds more breadth to your notes.

About DSP DSP makes it possible to digitally produce complex acoustic effects. The DSP is assigned to each tone whenever you turn on digital piano power. To turn reverb on and off 1. While holding down the FUNCTION button, press the MODERN button to toggle reverb on (lamp lit) and off (lamp unlit). Using the Digital Piano's Pedals Your digital piano comes equipped with three pedals: damper, soft, and sostenuto To turn chorus on and off 1. While holding down the FUNCTION button, press the CLASSIC button to toggle chorus on (lamp lit) and off (lamp unlit). Soft pedal Sostenuto pedal Damper pedal To configure reverb and chorus effect settings Pedal Functions Damper Pedal Pressing the damper pedal while playing will cause the notes you play to reverberate for a very long time. · When a GRAND PIANO tone (MODERN, CLASSIC, VARIATION) is selected as the tone, pressing this pedal will cause notes to reverberate (with acoustic resonance) just like the damper pedal on an acoustic grand piano. Soft Pedal Pressing this pedal while playing suppresses notes played on the keyboard after the pedal was pressed, and makes them sound softer. Sostenuto Pedal Only the notes of the keys that are depressed when this pedal is pressed are sustained until the pedal is released.

1. While holding down the FUNCTION button, press one of the Reverb or Chorus keyboard keys. 1 2 3 4 1 2 3 4 Reverb Chorus Example: Selecting Reverb 4 · Reverb Value To do this: Turn on reverb Select this setting: 1: Room 2: Small Hall 3: Large Hall 4: Stadium · Chorus Value To do this: Turn on chorus Select this setting: 1: Light Chorus 2: Medium Chorus 3: Deep Chorus 4: Flanger (Whooshing effect) E-10 Playing with Different Tones Using the Metronome 4. Press the METRONOME button or SONG a button to turn off the metronome. 1.

2. Press the METRONOME button. · This starts the metronome. · The lamp above the SONG a button flash in time with the metronome beat. To change the beat, hold down the FUNCTION button as you press one of the METRONOME BEAT keys to select a beat setting.

· To return the tempo setting to the default tempo of the currently selected Music Library tune, press the + and keys at the same time in step 3. Pressing + and while recording will return the tempo value to 120. To adjust the metronome volume NOTE · You can perform the following procedure at any time, regardless of whether or not the metronome is sounding. 1. While holding down the FUNCTION button, use the METRONOME VOLUME keys to specify a volume value in the range of 0 to 42. · For details about using the keyboard keys for settings, see "Keyboard Keys Used for Configuring Settings" on page E-20. · Each press of the or key raises or lowers the metronome volume value by 1. · You can specify beats per measure value of 0, 2, 3, 4, 5, or 6. Specifying 0 as the setting plays a straight click, without any chime. This setting lets you practice with a steady beat.

NOTE · To return to the initial default setting, press at the same time. and 3. While holding down the FUNCTION button, use the TEMPO keys to specify a tempo value in the range of 20 to 255 beats per minute. · Each press of the + or key raises or lowers the tempo value by 1. · You can use the value input keys (0 to 9) to enter a specific three-digit. Be sure to input all three digits. Example: To enter "96", press keys 0, 9, 6. E-11 English NOTE Playing with Different Tones Playing a Piano Duet You can use the Duet Mode to split the piano's keyboard in the center so two people can play a duet. Changing the Octaves of the duet keyboards You can change the ranges of the left and right keyboards in octave units from their initial default settings. This comes in handy, for example, if the initial default range is not enough when one person is playing the left hand part and another person is playing the right hand part.

Keyboard Split point Left keyboard Right keyboard C3 C4 C5 C6 C3 C4 C5 C6 1. (middle C) (middle C) The left and right side keyboards have virtually the same range. The left pedal operates as the left side damper pedal, while the right pedal is the right side damper pedal. While holding down the FUNCTION and ELEC PIANO buttons, press the keyboard C key that you want located at C4 (middle C) of the left keyboard. Pedals Left side damper pedal Right side damper pedal Left and right side damper pedal The Duet Mode is the perfect way to conduct lessons, with the teacher playing on the left side as the student playing the same song on the right side.

Example: Press the keyboard key of the leftmost C (C4) will assign the range shown below. Left keyboard Right keyboard 1. 2. Select the piano tone you want to use for the duet. Example: GRAND PIANO (MODERN) C4 C5 C6 C7 C3 C4 C5 C6 While holding down the FUNCTION button, press the ELEC PIANO button to toggle duet on (lamp lit) and off (lamp unlit).

(Pressed key) 1 octave higher than initial setting Unchanged IMPORTANT! 2. · You cannot use the Duet Mode while recording (page E-15). While holding down the FUNCTION and ELEC PIANO buttons, press the keyboard C key that you want located at C4 (middle C) of the right keyboard. NOTE · You can return the keyboards to their initial default ranges by exiting and then re-entering the Duet Mode. E-12 Playing Back Built-in Songs English FUNCTION SONG a RECORDER METRONOME Playing Back All of the Built-in Songs Your digital piano comes with a Music Library of 60 built-in tunes. You can play all 60 tunes in sequence, from beginning to end. Playing Back a Specific Music Library Song The Music Library includes both built-in songs (01 to 60), plus one song (61) that have been saved to digital piano memory from a computer*. You can use the procedure below to select one of these songs and play it back. * You can download music data from the Internet and then transfer it from your computer to digital piano memory. See "Transferring Song Data with a Computer" on page E-25 for more information.

1. While holding down the FUNCTION button, press the SONG a button. · This will start repeat demo playback of the built-in songs in sequence, from 01 through 60. · You can play along with a song on the keyboard as it is playing.

The tone assigned to the keyboard is the one that is preset for the song that is playing. · You can select a specific song during demo playback. For details, see step 2 under "Playing Back a Specific Music Library Song". 1. 2. Find the song number of the song you want to play in the song list on page A-1. To change to another song, hold down the FUNCTION button as you use the SONG SELECT keys to specify a song number. 2. Press the SONG a button again to stop built-in song play. NOTE · The tune selection and playback stop operations described above are the only operations that are possible during demo tune play. · Each press of the + or key raises or lowers the song number by 1.

· You can use the value input keys (0 to 9) to enter a specific two-digit song number. Be sure to input both digits. Example: To select song 08, enter 0 and then 8. 3. Press the SONG a button.

· This starts the playback of the song. E-13 Playing Back Built-in Songs 4. To stop playback, press the SONG a button again. · Playback will stop automatically when the end of the song is reached. NOTE · Pressing the + and keys at the same time will select song number 01. · You also can adjust the playback tempo and volume of the song. See "Configuring Settings with the Keyboard" on page E-19 for more information. Practicing with a Music Library Song You can turn off the left hand part or right hand part of a song and play along on the piano. NOTE · The Music Library includes a number of duets. While a duet is selected, you can turn off the first piano <Primo> or second piano <Secondo> tone and play along with the song.

PREPARATION · Select the song you want to practice and adjust the tempo. See "Configuring Settings with the Keyboard" on page E-19. · A number of tunes have tempo changes part way through in order to produce specific musical effects. 1. While holding down the FUNCTION button, press the RECORDER (L) button or METRONOME (R) button to select the part you want to turn off. · Pressing a button toggles its part on (button lamp on) and off (button lamp off). Left hand Right hand Both parts on Right hand part off Left hand part off 2. 3. 4. Press the SONG a button.

· This starts playback, without the part you turned off in step 1. Play the missing part on the keyboard. To stop playback, press the SONG a button again. E-14 Recording and Play Back English FUNCTION SONG a RECORDER METRONOME You can store the notes you play in digital piano memory for later playback. Recording Data Storage · Starting a new recording deletes any data that was previously recorded in memory.

· Should power fail during recording, all of the data in the track you are recording will be deleted. IMPORTANT! Tracks A track is a container of recorded data, and a song consists of two tracks: Track 1 and Track 2. You can record each track separately and then combine them so they play back together as a single song. While playing back. .

. Track 1 Song Track 2 Record · CASIO COMPUTER CO., LTD. takes no responsibility for any damages, lost profits, or claims by third parties arising from the deletion of recorded data due to malfunction, repair, or for any other reason. Using the RECORDER Button Record Each press of the RECORDER button cycles through the recording options in the sequence shown below. Lit Flashing Off Memory Capacity · You can record approximately 5,000 notes in digital piano memory. · The RECORDER button lamp will flash at high speed when memory runs low. @@@@@@@@@@@@@@@@@@@@@@Note that the delete operation cannot be undone. @@@@@@@@@@@@@@@@@@@@@· To return to the initial default setting, press both keys at the same time. Type C: Value input using the numeric keys (0 to 9) Example: To enter "120", press keys 1, 2, 0.

NOTE Transpose key · You can find out what operation type applies to each setting by checking the "Operation Type" in the "Parameter List" on pages E-21 - E-23. E-19 Configuring Settings with the Keyboard Keyboard Keys Used for Configuring Settings · The numbers 1 through cl correspond to the same numbers in the "Parameter List" on pages E-21 - E-23. [Left keyboard] 1Reverb 2Chorus 3Keyboard key (Transpose) 4Keyboard tuning (Tuning) 5Octave shift 6Temperament 7Tempo/Temperament select 1 2 3 4 1 2 3 4 [Overall] [Center keyboard] 8Song select/Base note 9Tone selection [Right keyboard] clOperation lock ckBack up btOperation tone bsLocal control brSend channel bqLayer balance bpUSB device mode boTouch response bnMetronome beat - + OFF ON OFF ON OFF ON OFF ON bmMetronome volume blSong volume bkBrilliance E-20 Configuring Settings with the Keyboard Parameter List Tones Parameter Settings 1 to 4 Default: 2 1 to 4 Default: 2 See page E-7. Default: GRAND PIANO (MODERN) 3 to 0 to 3 Default: 0 24 to 0 to 24 Default: 0 Operation Type (page E-19) A A A Description Specifies the reverb of notes. (page E-10) Controls the breadth of notes. (page E-10) Assigns a tone to the keyboard. (page E-7) Remarks Reverb Chorus Tone selection Brilliance (BRILLIANCE) B B Specifies the brilliance of notes. (page E-8) Specifies the volume balance between the main tone and the layered tone. (page E-9) Layer balance Song/Metronome Parameter Settings Operation Type (page E-19) B (+/) C (0 to 9) Description Specifies the tempo of Music Library songs, the metronome, recording and playback, etc. (page E-11) Remarks · Always enter three digits when using the number keys (0 to 9) to input a value.

Example: To input 90, enter 0, 9, 0 (leading zero required). · During recording, pressing + and at the same time sets a value of 120. · Always enter two-digits when using the number keys (0 to 9) to input a value. Example: To input 8, enter 0, 8 (leading zero required). · This setting cannot be changed while recording.

Tempo (TEMPO) 20 to 255 Default: 120 Song select 01 to 61 (SONG SELECT) Default: 01 B (+/) C (0 to 9) Selects a Music Library tune. (page E-13) Song volume Metronome 00 to 42 (SONG VOLUME) Default: 42 00 to 42 volume Default: 36 (METRONOME VOLUME) (METRONOME Default: 4 BEAT) B B Sets the volume level of Music Library playback. Specifies the metronome volume. (page E-11) Metronome beat 0, 2, 3, 4, 5, 6 A Specifies the metronome beat. (page E-11) · The metronome beat setting cannot be changed while playback of a Music Library tune is in progress.

E-21 English Configuring Settings with the Keyboard Keyboard Parameter Settings 12 to 0 to 12 Default: 0 B Operation Type (page E-19) Description Raises or lowers the tuning of the digital piano in semitone steps.

Remarks · The transpose setting cannot be configured while Music Library playback is in progress or while in the Duet Mode. · Raising the key of the digital piano can cause notes the highest part of the range to become distorted. · The pitch setting cannot be changed while playback of a Music Library tune is in progress. 3 Keyboard key (Transpose) 4 Keyboard tuning 99 to 0 to 99 (Tuning) Default: 0 B Raises or lowers the overall pitch of the digital piano in 1cent steps (100 cents = 1 semitone) from the standard pitch of A4 = 440 Hz. Change the range of the keyboard in octave units. 5 Octave shift 2 to 0 to 2 Default: 0 B · You can configure octave shift settings for the main tone part and layered tone part. · You cannot configure octave shift settings for split tone parts. <Temperaments> 00: Equal / 01: Pure Major / 02: Pure Minor / 03: Pythagorean / 04: Kirnberger 3 / 05: Werckmeister / 06: Mean-Tone / 07: Rast / 08: Bayati / 09: Hijaz / 10: Saba / 11: Dashti / 12: Chahargah / 13: Segah / 14: Gurjari Todi / 15: Chandrakauns / 16: Charukeshi <Base notes> : C / +: C# / 0: D / 1: Eb / 2: E / 3: F / 4: F# / 5: G / 6: Ab / 7: A / 8: Bb / 9: B 6 Temperament (TEMPERAMENT) 7 Temperament select (TEMPERAMENT SELECT) 8 Temperament Base note (BASE NOTE) You can change the scale (tuning system) of the keyboard from standard equal temperament to another tuning that is more suitable for Defaults: playing Indian music, Arabic Temperament: 00 1. TEMPERAMENT music, classical pieces, etc.

(Equal Temperament) (6) Base note: C 2. TEMPERAMENT SELECT (7) 3. BASE NOTE (8) A Specifies the relative touch of the keyboard keys. Setting a smaller value causes lighter touch to produce more powerful sound. Temperament: 00 to 16 Base note: , +, 0 to 9 (C to B) Hold down FUNCTION as you press each of the following keyboard keys. bo Touch response Off (OFF), 1 to 3 (TOUCH RESPONSE) Default: 2 E-22 Configuring Settings with the Keyboard MIDI and Other Settings Parameter Settings Operation Type (page E-19) Description Remarks bp USB device MIDI, Storage Default: MIDI mode (USB DEVICE MODE) · While storage is selected for this setting, the The digital piano enters MIDI GRAND PIANO (MODERN, CLASSIC) mode automatically when it is and ELEC PIANO button lamps flash, and connected to a computer by a USB all other lamps are unlit. cable. Select storage when saving · All digital piano operations are disabled at Recorder memory song data to a this time. computer or when loading · Each press of the USB device mode computer song data to digital keyboard key toggles between the MIDI piano memory. (page E-25) and storage modes.
Specifies one of the MIDI channels (1 through 16) as the Send channel, which is used for sending MIDI messages to an external device. · The Local control setting cannot be changed Selecting "Off" for Local control while playback of a Music Library tune is in cuts off the digital piano's sound progress. source, so no sound is produced by the digital piano when keys are pressed. Selecting "Off" disables sounding · This setting is retained even when the of the operation tone whenever a digital piano is turned off. keyboard key is pressed while the · The operation tone setting cannot be FUNCTION is depressed. changed while Music Library playback is in progress, while the metronome is sounding, and during recording. · The back up setting cannot be changed When "On" is selected for this while Music Library playback is in setting, the digital piano will progress, while the metronome is remember its current settings*1, sounding, in the Duet Mode, and during and restore them when it is turned recording. on again. When "Off" is selected, settings*2 *1The following settings are not remembered. are reset to their initial defaults · Duet Mode whenever the digital piano is · Tune LR (part) turned on.
· Local control *2Except for the operation tone on/off setting. Selecting "On" for this setting locks · The operation lock setting cannot be the digital piano's buttons (except changed while Music Library playback is in for the power button and the progress, while the metronome is buttons required for unlock), so no sounding, and during recording. operation can be performed. Turn on operation lock when you want to protect against unintentional button operations. br Send channel 01 to 16 Default: 01 B bs Local control Off, On Default: On A bt Operation tone Off, On Default: On A ck Back up Off, On Default: Off A cl Operation lock Off, On Default: Off A E-23 English Connecting to a Computer You can connect the Digital Piano to a computer and exchange MIDI data between them. You can send play data from the Digital Piano to music software running on your computer, or you can send MIDI data from your computer to the Digital Piano for playback. 2. After starting up your computer, use a commercially available USB cable to connect it to the Digital Piano. Digital Piano USB port USB cable (A-B type) Minimum Computer System Requirements The following shows the minimum computer system requirements for sending and receiving MIDI data. Check to make sure that your computer complies with these requirements before connecting the Digital Piano to it.

Operating System Windows® XP (SP2 or later)*1 Windows Vista® *2 Windows® 7 *3 Mac OS® X (10.3.9, 10.4.11 or later, 10.5.6 or later, 10.6.2 or later) *1: Windows XP Home Edition Windows XP Professional (32- bit) *2: Windows Vista (32- bit) *3: Windows 7 (32-bit, 64-bit) USB port IMPORTANT! A connector B connector Computer USB port 3. Turn on the Digital Piano.
· If this is the first time you are connecting the Digital Piano to your computer, the driver software required to send and receive data will be installed on your computer automatically. 4. 5. Start up your computer's music software. Configure the music software settings to select one of the following as the MIDI device.
CASIO USB-MIDI : (For Windows Vista, Windows 7, Mac OS X) USB Audio Device: (For Windows XP) · For information about how to select the MIDI device, see the user documentation that comes with the music software you are using. · Never connect to a computer that does not conform to the above requirements. Doing so can cause problems with your computer. IMPORTANT! · Be sure to turn on the Digital Piano first before starting up your computer's music software. NOTE Connecting the Digital Piano to Your Computer IMPORTANT! · Make sure you follow the steps of the procedure below exactly. Connecting incorrectly can make data send and receive impossible. 1. · Once you are able to connect successfully, there is no problem with leaving the USB cable connected when you turn off your computer and/or Digital Piano.

· For detailed specifications and connections that apply to MIDI data send and receive by this Digital Piano, see the latest support information provided by the website at the following URL. http://world.casio.com/ Turn off the Digital Piano and then start up your computer. · Do not start up the music software on your computer yet! E-24 C Connecting to a Computer Using MIDI What is MIDI? The letters MIDI stand for Musical Instrument Digital Interface, which is the name of a worldwide standard for digital signals and connectors that makes it possible to exchange musical data between musical instruments and computers (machines) produced by different manufacturers. NOTE 2. Change the digital piano's USB device mode to storage.

· For detailed information about MIDI Implementation, visit the CASIO website at: http://world.casio.com/. See "Send channel" and "Local control" on page E-23. · While holding down the FUNCTION button, press the keyboard key that corresponds to the USB device mode. After this setting is changed, the GRAND PIANO (MODERN CLASSIC) and ELEC PIANO button lamps flash, and all other lamps are unlit. See "USB device mode (USB DEVICE MODE)" on page E-23 for more information. Transferring Song Data with a Computer Use the procedures in this section to transfer Recorder memory data to a computer for storage, and to load songs to user song memory (Music Library 61). IMPORTANT! 3. On your computer, perform the required operation to display your computer's storage devices.

Do this: Double-click "My Computer". Turning off the Digital Piano while it is exchanging data with a computer can cause data in Digital Piano memory to become corrupted. If this happens, a memory format operation will start the next time you turn on the Digital Piano. Note that it takes about 20 seconds for the format operation to finish, and you will not be able to perform any operation during that time. If your computer is running this operating system: Windows XP Windows Vista, Windows 7 Double-click "Computer".

Mac OS Skip step 3 and double-click "PIANO" on your Mac desktop. 1. Perform steps 1 through 3 of the procedure under "Connecting the Digital Piano to Your Computer" on page E-24. · The memory of this digital piano will appear as "PIANO" under "Devices with Removable Storage". C E-25 English Connecting to a Computer 4.

Double-click "PIANO". · "PIANO" contains folders named MUSICLIB and RECORDER. Use MUSICLIB to load a song into the piano's user song memory (Music Library 61), and RECORDER to transfer Recorder memory data to and from your computer. To load a song into user song memory (Music Library 61) 1. Copy the file (.MID or .CM2) you want to load into user song memory to the MUSICLIB folder. 2. Change the name of the file to BIDSNG01, with a file name extension of .MID or .

CM2. · If there are two files with the names BIDSNG01.MID and BIDSNG01.CM2 in the MUSICLIB folder, only the BIDSNG01.MID data will be loaded into user song memory. If you want the BIDSNG01.CM2 file to be loaded in this case, change the name of the BIDSNG01.MID to something else. Data Type User songs Folder Name MUSICLIB NOTE File Name and Extension* BIDSNG01.MID: SMF format data (format 0/1) BIDSNG01.

CM2: CASIO original format data Recorder memory data RECORDER BIDREC01.CSR: CASIO original format data · The message "Cannot rename MIDIDATA" will appear on your computer screen if you try to change the name of the copied file to BIDSNG01.MID while there is already a file in the MUSICLIB folder named BIDSNG01.MID. Change the name of the current BIDSNG01.

MID to something else and then rename the copied file to BIDSNG01.MID. * Before starting a store or load operation, first check the file name and extension to ensure it matches the ones shown in this column. IMPORTANT! To transfer Recorder memory data between the digital piano and your computer To transfer the digital piano's current Recorder memory data to your computer, copy the contents of the RECORDER folder to your computer. To return Recorder data you previously saved to your computer back to Recorder memory, copy it back to the RECORDER folder (and replace the current RECORDER folder contents).

· The initial default configuration for Windows XP, Windows Vista, and Windows 7 is to hide file name extensions. Perform one of the following operations on your computer to show file name extensions. To show file name extensions under Windows XP 1. Open the folder you want. 2. On the [Tools] menu, click [Folder Options]. 3. Click the [View] tab. In the [Advanced settings] list, clear the check box next to [Hide extensions for known file types]. 4.

Click [OK]. To show file name extensions under Windows Vista or Windows 7 1. Open Folder Options by clicking the [Start] button, clicking [Control Panel], clicking [Appearance and Personalization], and then clicking [Folder Options]. 2. Click the [View] tab. Under [Advanced settings] clear the [Hide extensions for known file types] check box. 3. Click [OK]. E-26 C Connecting to a Computer 5. After the file copy operation is complete, return the USB device mode to MIDI.

· If you are using a Macintosh, perform the eject operation (drag them to the trash can). · While holding down the FUNCTION button, press the applicable keyboard key. See "USB device mode (USB DEVICE MODE)" on page E-23 for more information. · Returning the USB device mode to MIDI will load the contents of MUSICLIB into user song memory and the contents of RECORDER into Recorder memory. IMPORTANT! · A data conversion error is indicated when both of the SONG a button lamps, and the GRAND PIANO (MODERN) button, GRAND PIANO (CLASSIC) button, and ELEC PIANO button lamps are all lit, and all other lamps are unlit.

Copyrights The rights of creators and copyright holders of music, images, computer programs, databases, and other data are protected by copyright laws. You are allowed to reproduce such works for personal or noncommercial use only. For any other purpose, all reproduction (including data format conversion), modification, transfer of reproductions, distribution over a network, or any other use without permission of the copyright holder exposes you to claims for damages and criminal prosecution for copyright infringement and violation of the author's personal rights. Be sure to reproduce and otherwise use copyrighted works only in accordance with applicable copyright laws. E-27 English Assembling the Stand Unpacking PREPARATION · · · · This stand does not include any of the tools required for assembly.

It is up to you to prepare a large Philips head (+) screwdriver for assembly. A B C · CAUTION Assembly of the stand should be performed by at least two people working together.

This stand should be assembled on a flat surface. Do not remove the tape securing the keyboard cover in place until assembly is complete. Removing the tape can cause the keyboard cover to open and close during assembly, creating the risk of personal injury to your hands and fingers. Take care that you do not pinch your fingers between parts when assembling them. To assemble the stand 1. D Part Qty 4 6 1 2 2 4 1 Attach side panels A and B to crosspiece D. Secure the side panels using four E screws. · When installing part 2, slide the brackets 3 into the slots in either end crosspiece D.

If the brackets 3 are not inserted into the ends of the crosspiece D as far as they will go, the screws E will not be able to enter into the screw holes of the brackets 3, which can strip the threads of the screws. · Cover the screw heads with the caps J. E F G H I J K J A E D E 3 B J IMPORTANT! · If anything is missing or damaged, contact your local CASIO service provider. · Note that use of any unauthorized parts or components can cause damage to the stand and/or the piano. Before starting stand assembly, unfasten the band 1 that bundles the pedal cord in the back of crosspiece D, and extend the cord. 2 2. 1 Slide back panel C into the grooves 4 of the side panels. C 4 E-28 Assembling the Stand 3. Use the two screws I to secure the top left and right edges of the back panel C to the brackets 5 of side panels A and B. · At location 6, slip the clip G onto to the screw I before installing the screw.

6. Place the piano onto the stand. 6 G I 5 9 9 I 4. Next, secure the bottom of the back panel C with the six screws F. B C A · At this time the screws on the bottom of the piano 8 should hook into the cutouts in the stand brackets 9.

Back of piano Bracket cutout 8 9 Stand side panel F 5. 7. Adjust the height adjustment screw 7 to provide support so crosspiece D does not bow downwards when the pedals are pressed. Use the two butterfly bolts H to secure the piano to the stand. H IMPORTANT! D IMPORTANT! 7 · The butterfly bolts keep the piano from slipping off the stand.

Never use the piano without the butterfly bolts installed. · Pressing the pedals without adjusting height adjustment screw 7 can result in damage to crosspiece D. Always make sure you adjust height adjustment screw 7 before operating the pedals. E-29 English Assembling the Stand 8. Affix the adaptor cord clip K next to the power terminal (DC12V). · For information about securing the cord, see "Power Outlet" on page E-4. To install the music stand 1. Install the music stand by inserting its pegs into the holes in the top of the piano. DC 12V terminal K To connect the pedal cord 1. Orienting the pedal plug as shown in the illustration, plug it into the pedal connector on the bottom of the piano.

· Secure the pedal cord with the clip G. Pedal plug G E-30 Reference English Troubleshooting Problem No sound is produced when I press a keyboard key. Cause 1. The VOLUME controller is set to "MIN". 2. Headphones or an adaptor plug is plugged into one of the PHONES jacks. 3. MIDI Local control is turned off. 1. The digital piano's key setting is something other than "0".
2. Digital piano tuning is incorrect. 3. Octave shift is enabled. 4.
A non-standard temperament setting is being used. Nothing happens when I press a pedal. Tones and/or effects sound strange. Turning power off and then back on again does not eliminate the problem. Example: Note intensity does not change even though I alter key pressure.
I cannot transfer data after connecting the digital piano to a computer. The pedal cord is not connected. The "Back up" feature is turned on. Action 1. Rotate the VOLUME controller more towards "MAX". 2. Disconnect whatever is connected to the PHONES jacks. 3. Turn on the Local control setting. 1.

Change the key setting to "0", or turn digital piano power off and then back on again. 2. Adjust digital piano tuning, or turn the digital piano off and then back on again. 3. Change the octave shift setting to 0. 4. Change the temperament setting to "00:Equal", which is the standard modern tuning. Connect the pedal cord correctly. Turn off "Back up". Next, turn power off and then back on again.
See Page E-8 E-6 The pitch of the digital piano is off. E-23 E-22 E-22 E-22 E-22 E-30 E-23 E-25 Digital Piano memory data was It takes a long time before I can use the Digital Piano after corrupted because a data transfer operation with a computer was in I turn it on. progress the last time you turned off the piano. When this happens, the Digital Piano performs a memory format operation the next time you turn it on. You cannot perform any other operation while a format operation is in progress.
This is an unavoidable result of the digital sampling process,* and does not indicate malfunction. A tone's quality and volume sounds slightly different * Multiple digital samples are taken for the low range, middle range, and high range of the original depending where it is played musical instrument. Because of this, there may be very slight differences in tonal quality and on the keyboard. volume between sample ranges. This happens when the sounds of multiple parts are sounding at the same time while using layer, When I press a button, the note that is sounding cuts out using the Duet Mode, playing back a built-in tune, recording, etc.
Pressing a button when one of these conditions exists will cause the effect setting that is built into the tone to change automatically, momentarily or there is a which causes notes to cut out momentarily or causes a slight change in how effects are being slight change in how effects applied. are applied. 1. Check to make sure that the USB cable is connected to the digital piano and computer, and that the correct device is selected with your computer's music software. 2. Turn off the digital piano and then exit the music software on your computer. Next, turn the digital piano back on and then restart the music software on your computer. It takes about 20 seconds after you turn on power to perform the memory format operation. Wait until the format operation is complete. Note that you should take care to avoid turning off the Digital Piano while a data transfer operation with a computer is in progress.

E-24 E-31 Reference Product Specifications Model Keyboard Maximum Polyphony Tones AP-220BN/AP-220BK 88-key piano keyboard, with Touch Response 128 notes 16 · Layer (excluding bass tones) · Split (Low-range bass tones only) Brilliance (3 to 0 to 3), Reverb (4 types), Chorus (4 types), DSP, Acoustic Resonance · Beats: 0, 2, 3, 4, 5, 6 · Tempo Range: 20 to 255 Adjustable tone range (1 to 2 octaves) · Number of Songs: 60, User Songs: 1 (memory capacity; up to 65KB)* * Based on 1 KB = 1024 bytes, 1 MB = 10242 bytes · Song volume: Adjustable · Part On/Off: L, R · · · · · · · · · · · Functions: Real-time recording, playback Number of Song: 1 Number of Tracks: 2 Capacity: Approximately 5,000 notes total Recorded Data Protection: Built-in flash memory Touch Select: 3 types, Off Transpose: 2 octaves (12 to 0 to 12) Tuning: A4 = 440.

0 Hz ±99 cents (variable) Temperament Octave shift Operation Lock Effects Metronome Duet Music Library Recorder Pedals Other Functions Damper, Soft, Sostenuto MIDI Inputs/Outputs 16-channel multi-timbre receive · PHONES jacks: Stereo standard jacks × 2 Output impedance: 3 Output Voltage: 1.5V (RMS) MAX · Power: 12V DC · USB port: TYPE B · Pedal connector Speakers Power Requirements Power Consumption Dimensions Weight 12cm × 2 (Output 8W + 8W) AC Adaptor: AD-A12150LW 12V = 18W Digital Piano and Stand: 139.5 (W) × 43.2 (D) × 83.5 (H) cm (54 15/16 × 17 × 32 7/8 inch) Digital Piano and Stand: approximately 37.5kg (82.6lbs) · Specifications and designs are subject to change without notice. E-32 C Reference Operating Precautions Be sure to read and observe the following operating precautions. Location Avoid the following locations for this product.

· Areas exposed to direct sunlight and high humidity · Areas subjected to temperature extremes · Near a radio, TV, video deck, or tuner The above devices will not cause malfunction of the product, but the product can cause interference in the audio or video of a nearby device. User Maintenance · Never use benzine, alcohol, thinner, or other chemical agents to clean the product. · To clean the product or its keyboard, wipe with a soft cloth moistened in a weak solution of water and a mild neutral detergent. Wring all excess moisture from the cloth before wiping. · Any reproduction of the contents of this manual, either in part or its entirety, is prohibited.

Except for your own, personal use, any other use of the contents of this manual without the consent of CASIO is prohibited under copyright laws. @@@@ · The AC adaptor is intended for indoor use only. Do not use it where it might be exposed to splashing or moisture. @@ · Store the AC adaptor in a dry place. · Use the AC adaptor in an open, well-ventilated area.

@@ · Unplug the AC adaptor from the power outlet if you do not plan to use the Digital Piano for a long time. · Never try to repair the AC adaptor or modify it in any way. · AC adaptor operating environment Temperature: 0 to 40°C Humidity: 10% to 90% RH · Output polarity: Included and Optional Accessories Use only accessories that are specified for use with this product. Use of unauthorized accessories creates the risk of fire, electric shock, and personal injury. Weld Lines Lines may be visible on the exterior of the product. These are "weld lines" that result from the plastic molding process. They are not cracks or scratches. Musical Instrument Etiquette Always be aware of others around you whenever using this product. Be especially careful when playing late at night to keep the volume at levels that do not disturb others. Other steps you can take when playing late at night are closing the window and using headphones.

E-33 English Reference AC Adaptor Handling Precautions Model: AD-A12150LW 1. Read these instructions. 2. Keep these instructions on hand. 3. Heed all warnings. 4. Follow all instructions. 5. Do not use this product near water.

6. Clean only with a dry cloth. 7. Do not install near radiators, heat registers, stoves, or any other source of heat (including amplifiers). 8. Use only attachments and accessories specified by the manufacturer. 9. Refer all servicing to qualified service personnel. Servicing is required after any of the following occurs: when the product is damaged, when the power supply cord or plug is damaged, when liquid is spilled into the product, when a foreign object falls into the product, when the product is exposed to rain or moisture, when the product does not operate normally, when the product is dropped. 10. Do not allow the product to be exposed to dripping or splashing liquid. Do not place any object containing liquid on the product. 11. Do not allow the electrical load output to exceed the label rating. 12. Make sure the surrounding area is dry before plugging into a power source. 13. Make sure the product is oriented correctly. 14. Unplug the product during lightning storms or when you do not plan to use it for a long time.

15. Do not allow product ventilation openings to become blocked. Install the product in accordance with the manufacturer's instructions. 16. Take care the power cord is located where it will not be stepped upon or bent severely, particularly in locations close to plugs and convenience receptacles, and in locations where it exits from the product. 17. The AC adaptor should be plugged into a power outlet as close to the product as possible to allow immediate disconnection of the plug in case of emergency. The symbol below is an alert indicating un-insulated hazardous voltage inside the product's enclosure, which may be sufficient to constitute the risk of electric shock to users. ' * The symbol below is an alert indicating the presence of important operating and maintenance (servicing) instructions in the documentation that accompanies the product. E-34 Appendix/Apéndice Tone List/Lista de tonos Tone Name/ Nombre de tonos GRAND PIANO MODERN GRAND PIANO CLASSIC GRAND PIANO VARIATION ELEC PIANO FM E.

PIANO 60'S E.PIANO HARPSICHORD VIBRAPHONE PIPE ORGAN JAZZ ORGAN ELEC ORGAN 1 ELEC ORGAN 2 STRINGS 1 STRINGS 2 BASS (LOWER) 1 BASS (LOWER) 2 Bank Select MSB/ Program Change/ MSB de selección de Cambio de programa banco 0 0 0 4 5 4 6 11 19 17 16 16 49 48 32 32 2 1 0 0 0 1 0 0 0 0 0 1 0 0 0 1 Song List/Lista de canciones No./Nº 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 Song Name/Nombre de canciones Nocturne Op.9-2 Fantaisie-Impromptu Op.66 Étude Op.

10-3 "Chanson de l'adieu" Étude Op.10-5 "Black Keys" Étude Op.10-12 "Revolutionary" Étude Op.25-9 "Butterflies" Prélude Op.28-7 Valse Op.64-1 "Petit Chien" Valse Op.64-2 Moments Musicaux 3 Impromptu Op.90-2 Marche Militaire 1 (Duet) Frühlingslied [Lieder Ohne Worte Heft 5] Fröhlicher Landmann [Album für die Jugend] Von fremden Ländern und Menschen [Kinderszenen] Träumerei [Kinderszenen] Tambourin Menuet BWV Anh.114 [Clavierbüchlein der Anna Magdalena Bach] Inventio 1 BWV 772 Inventio 8 BWV 779 Inventio 13 BWV 784 Praeludium 1 BWV 846 [Das Wohltemperierte Klavier 1] Le Coucou Gavotte Sonatina Op.36-1 1st Mov. Sonatine Op.20-1 1st Mov. Sonate K.545 1st Mov. Sonate K.

331 3rd Mov. "Turkish March" Rondo K.485 Für Elise Marcia alla Turca Sonate Op.13 "Pathétique" 1st Mov. Sonate Op.13 "Pathétique" 2nd Mov. Sonate Op.13 "Pathétique" 3rd Mov. Sonate Op.27-2 "Moonlight" 1st Mov. Rhapsodie 2 Waltz Op.

*39-15 (Duet) Liebesträume 3 Blumenlied La Prière d'une Vierge Csikos Post Humoresque Op.101-7 Melodie [Lyrische Stücke Heft 2] Sicilienne Op.78 Berceuse [Dolly] (Duet) Arabesque 1 La Fille aux Cheveux de Lin [Préludes] Passepied [Suite bergamasque] Gymnopédie 1 Je Te Veux Salut d'Amour The Entertainer Maple Leaf Rag L'arabesque [25 Etüden Op.100] La Styrienne [25 Etüden Op. 100] Ave Maria [25 Etüden Op.100] Le retour [25 Etüden Op.100] La chevaleresque [25 Etüden Op.100] No.13 [Études de Mécanisme Op. 849] No.26 [Études de Mécanisme Op.849] A-1 Model AP-220 MIDI Implementation Chart Transmitted Recognized Version : 1.0 Function Remarks Basic Channel Default Changed Default Messages Altered 1 - 16 1 - 16 Mode 3 X 1 - 16 1 - 16 Mode 3 X Mode Note Number 0 - 127 True voice Note ON Note OFF Key's Ch's O 9nH v = 1 - 127 X 8nH v = 64 X X X 0,32 1 5 6, 38 7 10 11 16 17 18 19 64 65 66 67 76 77 78 80 81 82 83 84 91 93 100, 101 120 121 O X X X O X X X X X X O X O O X X X X X X X X O X X O 0 - 127 0 - 127*1 O 9nH v = 1 - 127 X 9nH v = 0, 8nH v =** X O O O O O O O O O O O O O O O O O O O O O O O O O O O O O *1: Depends on tone *1: Depende del tono **: no relation **: sin relación Velocity After Touch Pitch Bender Control Change Bank select Modulation Portamento Time Data entry LSB, MSB*2 Volume Pan Expression DSP Parameter0*2 DSP Parameter1*2 DSP Parameter2*2 DSP Parameter3*2 Damper Portamento Switch Sostenuto Soft pedal Vibrato rate Vibrato depth Vibrato delay DSP Parameter4*2 DSP Parameter5*2 DSP Parameter6*2 DSP Parameter7*2 Portamento Control Reverb send Chorus send RPN LSB, MSB*2 All sound off Reset all controller Program Change O :True # O X X X O O X O X X O 0 - 127 O X X X X X X O O X *2 System Exclusive System Common : Song Pos : Song Sel : Tune : Clock : Commands : Local ON/OFF : All notes OFF : Active Sense : Reset System Real Time Aux Messages Remarks *2: For details, see MIDI Implementation at http://world.casio.com/. *2: Si desea más información, vea Implementación MIDI en http://world.casio.com/. Mode 1 : OMNI ON, POLY Mode 3 : OMNI OFF, POLY Mode 2 : OMNI ON, MONO Mode 4 : OMNI OFF, MONO O : Yes X : No 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. C MA1007-C Printed in China AP220ES1C .

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