

th•mann

DP-90
digital piano

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Table of contents

1	General notes.....	4
2	Safety notes.....	5
3	Performance characteristics.....	7
4	Set-up instructions.....	8
5	Control panel and connections.....	11
6	Connection options.....	14
7	Functions.....	16
	7.1 Adjust volume.....	16
	7.2 Set brightness.....	16
	7.3 Songs.....	16
	7.4 Playing.....	18
	7.5 Recording a song.....	20
	7.6 Historic temperaments.....	22
	7.7 TWINOVA.....	23
	7.8 Touch sensitivity.....	23
	7.9 Digital effects.....	24
	7.10 Metronome.....	25
	7.11 Set tempo.....	25
	7.12 Transpose.....	26
	7.13 Fine tuning.....	26
	7.14 Beep.....	26
	7.15 Automatic switch-off.....	27
	7.16 Troubleshooting.....	27
8	Songs and demo pieces.....	28
9	MIDI Implementation table.....	35
10	Technical data.....	38
11	Protecting the environment.....	39



1 General notes

This user manual contains important information on the safe operation of the device. Read and follow all safety notes and all instructions. Save this manual for future reference. Make sure that it is available to all persons using this device. If you sell the device to another user, be sure that they also receive this manual.

Our products are subject to a process of continuous development. We therefore reserve the right to make changes without notice.

Symbols and signal words

This section gives an overview of the symbols and signal words used in this user manual.

Signal word	Meaning
DANGER!	This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided.
CAUTION!	This combination of symbol and signal word indicates a possible dangerous situation that can result in minor injury if it is not avoided.
NOTICE!	This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided.
Warning signs	Type of danger
	Warning – high-voltage.
	Warning – danger zone.

2 Safety notes

Intended use

This device is intended to be used for electronic sound generation using a piano keyboard. Use the device only as described in this user manual. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

This device may be used only by persons with sufficient physical, sensorial, and intellectual abilities and having corresponding knowledge and experience. Other persons may use this device only if they are supervised or instructed by a person who is responsible for their safety.

Safety

**DANGER!****Danger for children**

Ensure that plastic bags, packaging, etc. are disposed of properly and are not within reach of babies and young children. Choking hazard!

Ensure that children do not detach any small parts (e.g. knobs or the like) from the unit. They could swallow the pieces and choke!

Never let children unattended use electrical devices.

**DANGER!****Electric shock caused by short-circuit**

Always use proper ready-made insulated two-wire mains cabling (power cord). Do not modify the mains cable or the plug. Failure to do so could result in electric shock/death or fire. If in doubt, seek advice from a registered electrician.

**DANGER!****Electric shock caused by high voltages inside**

Within the device there are areas where high voltages may be present. Never remove any covers.

There are no user-serviceable parts inside.

**CAUTION!****Possible hearing damage**

With loudspeakers or headphones connected, the device can produce volume levels that may cause temporary or permanent hearing impairment.

Do not operate the device permanently at a high volume level. Decrease the volume level immediately if you experience ringing in your ears or hearing impairment.

**CAUTION!****Risk of injury due to heavy weight**

Due to the heavy weight of the device, at least two persons are required for transport and installation.

**NOTICE!****Operating conditions**

This device has been designed for indoor use only. To prevent damage, never expose the device to any liquid or moisture. Avoid direct sunlight, heavy dirt, and strong vibrations.

**NOTICE!****Power supply**

Before connecting the device, ensure that the input voltage (AC outlet) matches the voltage rating of the device and that the AC outlet is protected by a residual current circuit breaker. Failure to do so could result in damage to the device and possibly injure the user.

Unplug the device before electrical storms occur and when it is unused for long periods of time to reduce the risk of electric shock or fire.

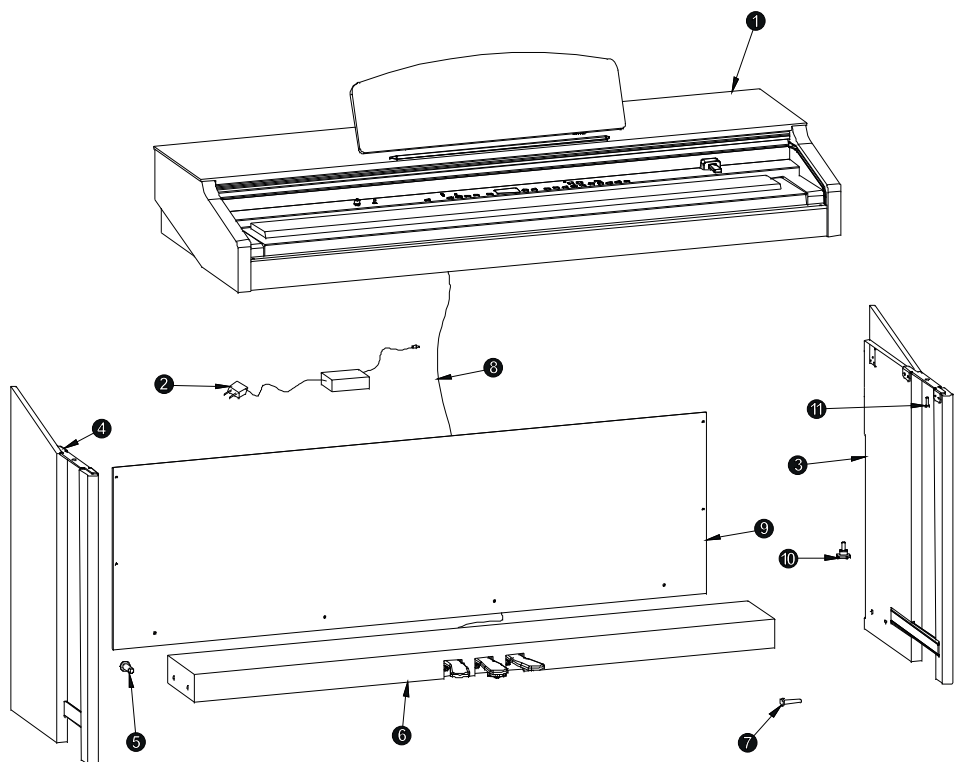
3 Performance characteristics

Thank you for choosing this digital piano.

This instrument has 88 weighted hammer action keys with adjustable velocity sensitivity, based on state-of-the-art PCM technology for tone generation. It will give you many years of pleasure in making music and playing on stage. You may also use it to record what you are playing, or record your own accompaniment first, then play the tune. The digital piano is not only at the latest state of the art - it also looks really elegant and will draw all looks, no matter where you put it up. To use your instrument as well as possible, read these operating instructions carefully and try out the different functions we introduce.

Have fun with your new instrument! We hope that it will give you pleasure for many years to come.

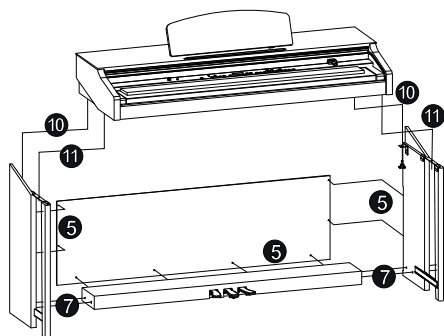
4 Set-up instructions



Open the packaging and verify before setting up that the entire delivery is included, as listed below.

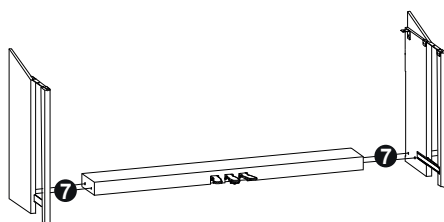
- | |
|---|
| 1. Piano body |
| 2. Mains adapter |
| 3. Right leg component |
| 4. Left leg component |
| 5. Screws 4 × 15 (8 pcs) to attach the rear panel skirt |
| 6. Foot pedal unit |
| 7. Screws M 6 × 25 (4 pcs) |
| 8. Pedal cable |
| 9. Rear panel skirt |
| 10. Hand screws (2 pcs) |
| 11. Screws M 6 × 12 (2 pcs) |

Mechanic set-up

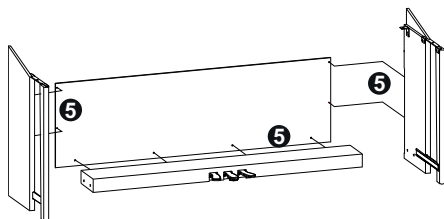


1. ➤ Set up your digital piano in proximity of a power outlet.
2. ➤ Proceed according to the figures and use only the included screws. Different screws may damage the piano body or reduce the digital piano's stability.

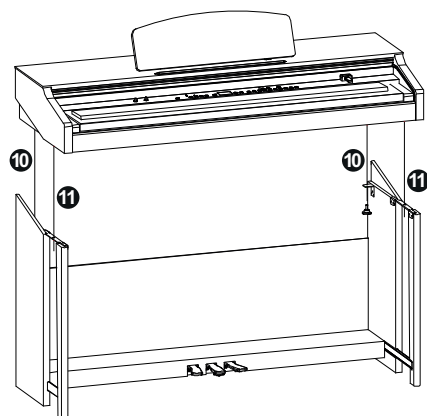
- (5) Screws 4×15 (8 pcs) for attachment of the rear panel skirt
- (7) Screws $M 6 \times 25$ (4 pcs)
- (10) Hand screws (2 pcs)
- (11) Screws $M 6 \times 12$ (2 pcs)



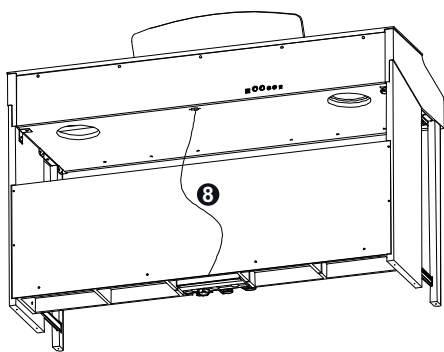
3. ➤ Put the foot pedal unit (6) between the left and right leg component ((3) and (4)) and use two screws $M 6 \times 25$ (7) on either side to attach the two leg components to the foot pedal unit.



4. ➤ Attach the rear panel skirt to the foot pedal unit (6) with eight screws 4×15 (5) and to the rear of the leg components ((3) and (4)).

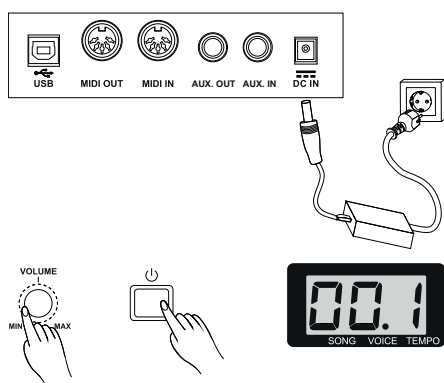


5. ➤ Place the piano body (1) on the frame and attach it with the two hand screws (10) and the two screws $M 6 \times 12$ (11).



6. ➔ Connect the pedal cable to the connection in the pedal unit and the connection below the keyboard.

Connect the voltage supply

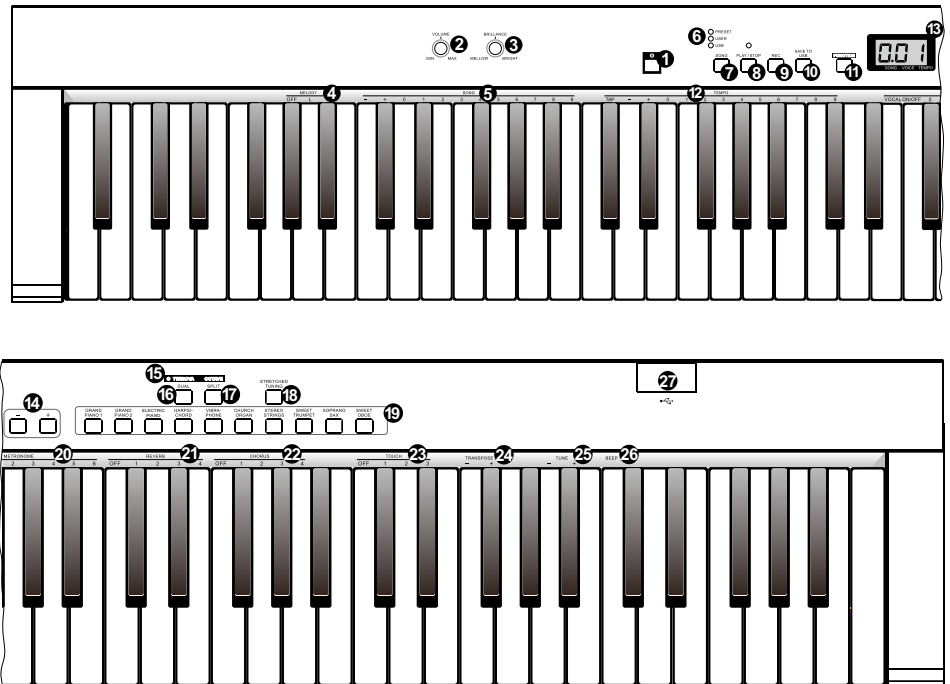


1. ➔ Turn the volume control VOLUME all the way to the left.
2. ➔ Plug the mains adapter cable into the connection DC IN in the connection panel on the rear and the mains plug into the socket.
3. ➔ Keep the button [POWER] pushed until the LED display lights up. The digital piano is switched on.
4. ➔ With the digital piano on, keep the button [POWER] pushed again until the LED display and other displays go out. The digital piano is off again.



In the "IDLE" mode (automatic switch-off), the digital piano switches off automatically if not used for 30 minutes.

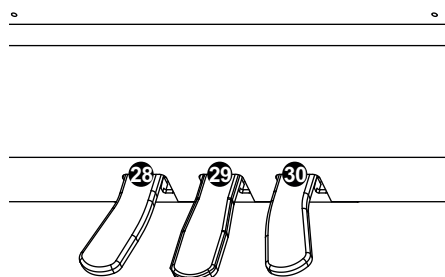
5 Control panel and connections



Control panel

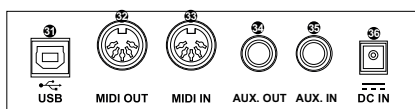
1	Button <i>[POWER]</i> to switch the digital piano on and off.
2	Knob control <i>VOLUME</i> to set the volume.
3	Knob control <i>BRILLIANCE</i> to adjust brightness of the sound.
4	Piano keys <i>[MELODY]</i> to select the left and right hand. Keep the button <i>[FUNCTION]</i> pushed in the operating mode <i>SONG</i> and then push the piano key <i>[L]</i> or <i>[R]</i> to select the left or right hand for the song.
5	Piano keys <i>SONG</i> to select songs. Keep the button <i>[FUNCTION]</i> pushed and then push one or several piano keys in this area to select a song.
6	LED displays for songs. Push the button <i>[SONG]</i> to switch the source for the corresponding song. The respective LED lights up.
7	Button <i>[SONG]</i> to start the operating mode <i>SONG</i> or switch the source for the song.
8	Button <i>[PLAY/STOP]</i> to play back or terminate songs.
9	Button <i>[REC]</i> to record songs.
10	Button <i>[SAVE TO USB]</i> to save recorded data on a USB drive.

11	<p>Button <i>[FUNCTION]</i></p> <p>Keep this button pushed and then push the corresponding piano keys to call specific functions.</p>
12	<p>Piano keys <i>[TEMPO]</i> to set the tempo.</p> <p>Keep the button <i>[FUNCTION]</i> pushed and then push a piano key in this area to set the current tempo.</p>
13	LED display of the current digital piano settings.
14	Buttons <i>[+]/[-]</i> to set the parameters.
15	LED TWINOVA shows whether the digital piano is currently in the operating mode TWINOVA or not.
16	<p>Button <i>[DUAL]</i> to switch the dual mode on and off.</p> <p>With the button <i>[FUNCTION]</i> pushed, this button also activates and deactivates the TWINOVA operating mode.</p>
17	<p>Button <i>[SPLIT]</i> to switch the voice for the left hand on and off.</p> <p>In operating mode TWINOVA, the button can also be used with the button <i>[FUNCTION]</i> pushed to activate or deactivate octave transfer.</p>
18	Button <i>[STRETCHED TUNING]</i> to switch historic temperaments on and off.
19	Buttons for direct selection of instrument voices.
20	<p>Piano keys <i>[METRONOME]</i></p> <p>Keep the button <i>[FUNCTION]</i> pushed and push the piano key <i>[ON/OFF]</i> to activate or deactivate the metronome or push another piano key in this area to select a specific time signature.</p>
21	<p>Piano keys <i>[REVERB]</i></p> <p>Keep the button <i>[FUNCTION]</i> pushed and then push the piano key <i>[OFF]</i> in this area to switch off reverb effects or push another piano key in this area to select a specific reverb effect.</p>
22	<p>Piano keys <i>[CHORUS]</i></p> <p>Keep the button <i>[FUNCTION]</i> pushed and push the piano key <i>[OFF]</i> in this area to switch the chorus effect off, or push another piano key in this area to select a specific chorus effect.</p>
23	<p>Piano keys <i>[TOUCH]</i></p> <p>Keep the button <i>[FUNCTION]</i> pushed and push a piano key in this area to set the touch sensitivity of the buttons.</p>
24	<p>Piano keys <i>[TRANSPOSE]</i></p> <p>Keep the button <i>[FUNCTION]</i> pushed and enter the value by which you want to transpose up or down with <i>[+]</i> and <i>[-]</i> in 12 semitone steps.</p>
25	<p>Piano keys <i>[TUNE]</i></p> <p>Keep the button <i>[FUNCTION]</i> pushed and perform fine tuning with the piano keys <i>[+]</i> and <i>[-]</i>.</p>



- | | |
|----|--|
| 26 | Piano key [BEEP]
Keep the button [FUNCTION] pushed and push this piano key to switch the button tone for operation on or off. |
| 27 | Connection for USB drive. |
| 28 | Soft pedal
If the soft pedal is operated when playing, the keys will sound softer. |
| 29 | Sostenuto pedal
If the Sostenuto pedal is operated when playing, only those notes will be held that are played at the same time as the pedal is operated. The pedal will not influence the notes played afterwards. |
| 30 | Sustain pedal
If the sustain pedal is operated when playing, the keys will sound longer - as if they were kept depressed. |

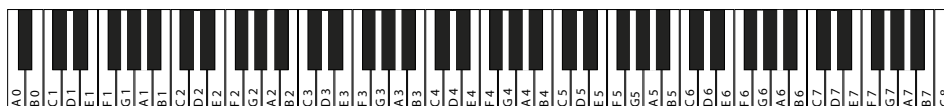
Connections on the rear



- | | |
|----|---|
| 31 | USB/MIDI interface
For connection to a computer. |
| 32 | Interface MIDI OUT
Connection for MIDI-IN interface of another MIDI device. |
| 33 | Interface MIDI IN
Connection for MIDI-OUT interface of another MIDI device. |
| 34 | AUX OUT: Possibility of connecting external audio devices, such as speakers or amplifiers. |
| 35 | AUX IN: Possibility of connecting external audio devices, such as MP3 or CD players for use of the internal speakers. |
| 36 | Connection for mains adapter. |

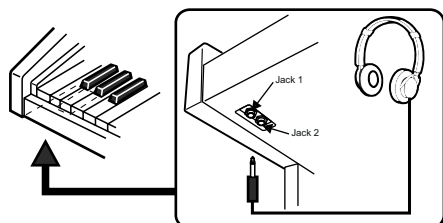
Key names

Keys on the keyboard are designated according to the following figure.



6 Connection options

Headphones

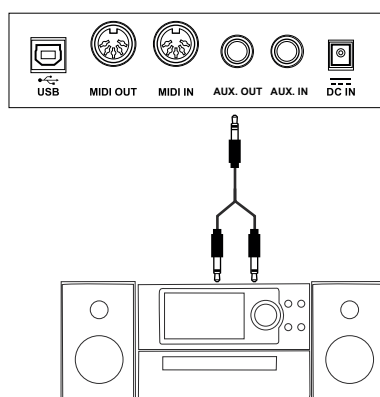


On the left, below the keyboard, there are the two headphone outputs 1 and 2.

If you connect headphones (not included) to output 2, this will deactivate the speakers.

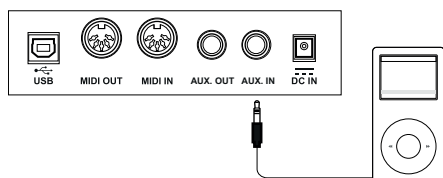
When using output 1, sound output through the speakers is retained.

External audio devices via the socket AUX. OUT



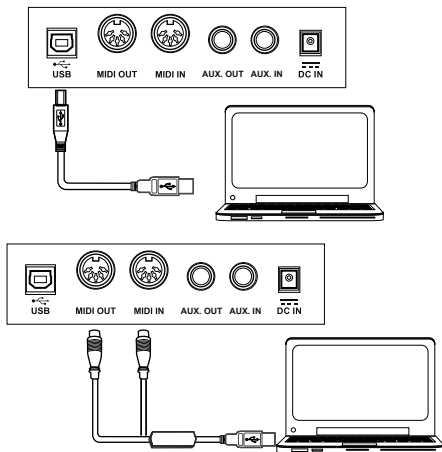
Via the socket AUX. OUT, you may connect the digital piano to an amplifier, a stereo system, a mixer or a recorder. Plug one end of the audio cable into the socket AUX. OUT on the rear of the digital piano and the other end into the input of the corresponding audio device.

External audio devices via the socket AUX. IN



You can use the socket AUX. IN to connect, e.g., a CD or MP3 player to the digital piano. This permits playback of songs via the internal speakers of the digital piano while playing to them at the same time. Plug one end of the audio cable into the socket AUX. IN on the rear of the digital piano and the other end into the output of the corresponding audio device.

Computer



■ USB/MIDI interface

The USB/MIDI interface is used to send and receive MIDI data.

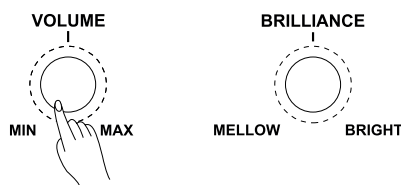
■ MIDI connections

MIDI means "Musical Instrument Digital Interface"; it is a global standard that permits electronic interaction of many different instruments and sound modules.

- MIDI IN: This connection is used to receive MIDI data from other devices.
- MIDI OUT: The MIDI data generated by the digital piano are sent to other MIDI-capable devices via this output.

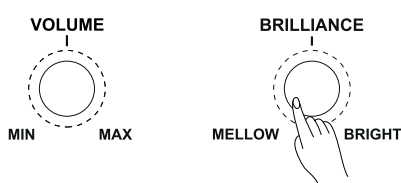
7 Functions

7.1 Adjust volume



Use the knob control VOLUME (2) to set a volume that is comfortable for playback and exercising. Turn the knob clockwise to increase volume. Turn it counter-clockwise to reduce volume.

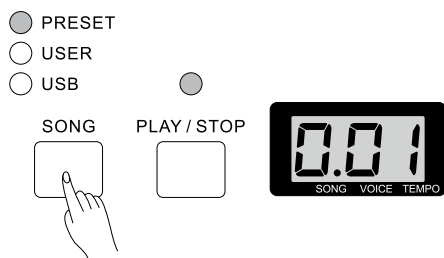
7.2 Set brightness



Use the knob control BRILLIANCE (3) to set the digital piano's sound brightness. The sound turns softer and more mellow for the entire keyboard if you turn the control to the left, brighter and more brilliant when you turn the control to the right. Try it out until the sound is as you like it.

7.3 Songs

Play back song



All in all, the digital piano offers 61 songs, including one that you may record on your own. For more information, see [Chapter 8 'Songs and demo pieces' on page 28](#)

1. Play back songs in endless loop

Push the button [SONG] to switch to the mode for playing back songs. The text 'SONG' is lit on the LED and all songs are played back in an endless loop. The number of the respective song is also displayed in the LED.

2. Single loop

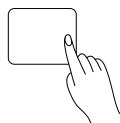
If you start a song with the button [PLAY/STOP], this song is repeated until you push [PLAY/STOP] again.



During playback of a song, the two-coloured display of the button [PLAY/STOP] flashes at the rhythm and tempo of the song.

Terminate playback

PLAY / STOP



1. ➔ Push the button [PLAY/STOP] to terminate playback. The two-coloured display stops flashing.
2. ➔ If you only have the included songs for the digital piano (i.e. no songs have been recorded and no USB drive is connected), the button [SONG] can be pushed to terminate playback of the currently played song.
3. ➔ Upon termination of playback, push a button for direct selection of an instrument voice to return to regular playing mode.

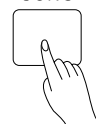


During and after completion of song playback, the digital piano can be played as usual.

Select a song

- ☒ PRESET
- ☐ USER
- ☐ USB

SONG



1. ➔ Select a source for song

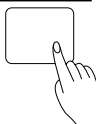
During playback of a song, the source for the song can be changed by pushing the button [SONG] repeatedly. The LED for the corresponding source 'PRESET', 'USER' or 'USB' lights up.



The source for songs can only be changed to 'USB' or 'USER' if a USB drive is connected and recognised correctly, or if a song has already been recorded.

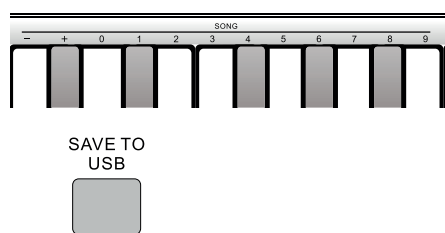
If you only have the included songs for the digital piano (i.e. no songs have been recorded and no USB drive is connected), the button [SONG] will cause all songs to play back in an endless loop or terminate playback of the currently played song.

FUNCTION



2. ➔ Select a song

Keep the button [FUNCTION] pushed and select a song with the buttons [+] or [-].



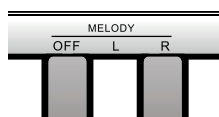
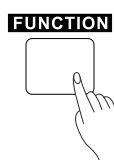
3. Select a song on the USB drive

When the digital piano has recognised the USB drive correctly, the display for the button **[SAVE TO USB]** lights up. Now you may push the buttons **[SONG]** or **[PLAY/STOP]** to play back the MIDI files in the root directory of the USB stick. If a song is played back from the USB drive, you may select the MIDI files with the buttons **[+]** or **[-]**. By default, the file number is '001'.



- Since the digital piano will recognise MIDI files only in the root directory of the USB drive, you should put the files you want to play there.
- The digital piano supports only MIDI files with up to 32 tracks. If a MIDI file has more than 32 tracks, the song will be automatically skipped in an endless loop and the next song will be played. In a single loop, the song will not be played back and the LED display will show **[Err]**. Use the buttons **[+]** or **[-]** to select a different song.

Practice songs

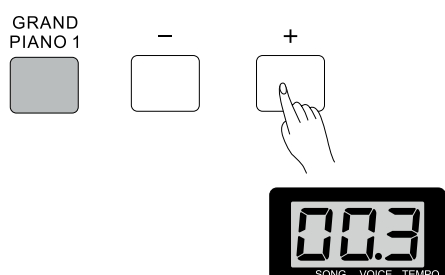


All 60 songs can be used for practice. Keep the button **[FUNCTION]** pushed in the operating mode "SONG" and use the piano keys **[L]/[R]** in the area "MELODY" to select the hand you want to practice. Push the button **[OFF]** to leave the practice mode again.

7.4 Playing

The digital piano offers a selection of ten voices that can be selected right in the control field, 128 General MIDI voices and nine additional drum sets. To use the voices not directly available in the control field, you need to send the corresponding MIDI bank or programme control commands to the digital piano via the MIDI-IN or USB/MIDI interface. For detailed information on this, see [Chapter 9 'MIDI Implementation table'](#) on page 35.

Select a voice

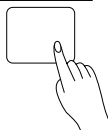


By default, the voice of the right hand is set to '001'.

Push one of the buttons in the control field for direct selection of an instrument voice. In playing mode, you may also select the voice via the buttons **[+]/[-]**. When the voice is selected, the number of the current voice and a dot behind the second digit in the LED display will appear.

Demo pieces

FUNCTION



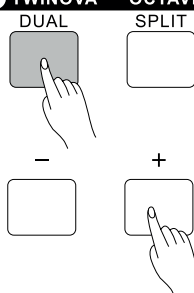
In playing mode, keep the button *[FUNCTION]* pushed and push one of the buttons in the control field for direct selection of an instrument voice to start the demo piece for the corresponding voice. To leave the demo mode, push one of the buttons in the control panel to directly select an instrument voice. This selects the voice for the right hand.



*While a demo piece is played back, the buttons *[SPLIT]*, *[DUAL]* and *[STRETCHED TUNING]* have no function; the current setting for *SPLIT* and the left hand remain unchanged, however.*

Two voices at once – dual mode

TWINOVA OCTAVE



STEREO STRINGS



1. ➤ Activate/deactivate second voice

Push the button *[DUAL]* to activate or deactivate the second voice. The corresponding display for the button *[DUAL]* lights up or goes out.

2. ➤ Select the second voice

By default, the second voice is set to '007' (string instruments).

Keeping the button *[DUAL]* pressed will briefly display the number of the current second voice in the LED display. Push one of the buttons in the control field for direct selection of a second instrument voice. In this mode, you may select the second voice via the buttons *[+]/[-]* as well. Pushing the button *[DUAL]* again selects the mode for selection of the voice for the entire keyboard again.

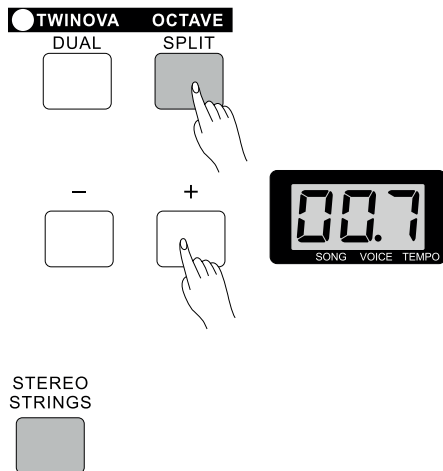
3. ➤ Playing two voices at once

If you have selected a first and a second voice in dual mode, you may play both voices at once on the keyboard.



- You may only select a second voice if the display on the button *[DUAL]* is lit. They will sound on the digital piano at once.
- When the voice for the left hand is active, the dual mode only applies for the right-hand area.

Voice for the left hand



This function assigns different voices to the left and the right hand.

1. ➤ Activate/deactivate voice for the left hand

Push the button *[SPLIT]* to activate or deactivate the voice for the left hand. The corresponding display for the button *[SPLIT]* lights up or goes out.

2. ➤ Select voice for the left hand

By default, the voice for the left hand is set to '007' (string instruments).

Keeping the button *[SPLIT]* pushed will briefly display the number of the currently selected voice for the left hand in the LED display. Push one of the buttons in the operating field for direct selection of a voice for the left hand. In this mode, you may also select the voice for the left hand via the buttons *[+]/[-]*. Pushing the button *[SPLIT]* again selects the mode for selection of the voice for the entire keyboard again.

3. ➤ Playing voice for the left hand

If you have selected a voice for the left hand in this mode, you may play different voices on the keyboard at once.

4. ➤ Split point

Keep the button *[SPLIT]* pushed and push a piano key. This specifies the split point, i. e. the keyboard area to the left of this point applies for the left hand and the keyboard area to the right of this point applies for the right hand.

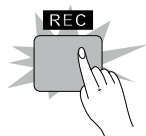


- You will only be able to select a voice for the left hand if the display on the button *[SPLIT]* is lit. It will then sound at once on the digital piano.
- The point on the keyboard that separates the left-hand area from the right-hand area is referred to as the "split point". By default, the split point is specified at key F#3 (34).

7.5 Recording a song

You may record a song with the digital piano. The recorded data will be retained when you switch off the digital piano.

Prepare recording



Push the button [REC]. The display on the button flashes. This means that the digital piano is ready to record and you can set some parameters.

Start recording

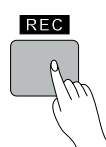


Push the button [PLAY/STOP] when the digital piano is ready for recording to start recording.



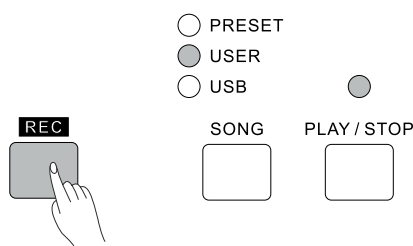
If you have already recorded a song, it will be automatically overwritten.

Terminate recording



Push the button [REC] during the recording to terminate the recording and save the file. When the full memory capacity has been reached, the recording is terminated automatically and the recorded data is saved. During saving, the display flashes quickly. The display shows 'FUL'. After saving is completed, the display goes out and you can play back the recorded song.

Play back the recording



During the recording, push the button [REC] to terminate the recording and start the playback mode. The recorded song is played back in a loop and the display 'USER' lights up. If a song has already been recorded and you push the button [REC] again with the piano ready to record, you will leave the recording mode and automatically switch to the playback mode. The recorded song is played back.

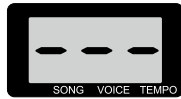
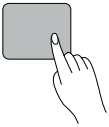
Delete recording



Keep the buttons [+] / [-] pushed when switching on to delete the recording.

Save recording to USB drive

SAVE TO
USB



You may save the recording as a MIDI file in the root directory of the USB drive and then play it back on a MIDI player. Proceed as follows:

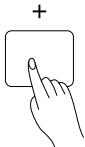
1. ➔ When the digital piano has recognised the USB drive correctly, the display for the button *[SAVE TO USB]* lights up.
2. ➔ Push the button *[SAVE TO USB]*. The recording is automatically saved as a MIDI file in the root directory of the USB drive. During saving, the LED display '---' appears. After completion of saving, the digital piano switches to automatic deactivation mode.
3. ➔ If you push the button *[SAVE TO USB]* and the LED display shows *Err*, this means that saving has failed. Try another USB drive or format the USB drive and try again from step 1.



- If you push the button *[SAVE TO USB]* although there is no recording, the LED display will briefly show 'noF', i.e. no file can be saved.
- If the LED display shows '---', the data is saved. To avoid data loss, do not remove the USB drive during this process and do not switch off the digital piano.

7.6 Historic temperaments

STRETCHED
TUNING



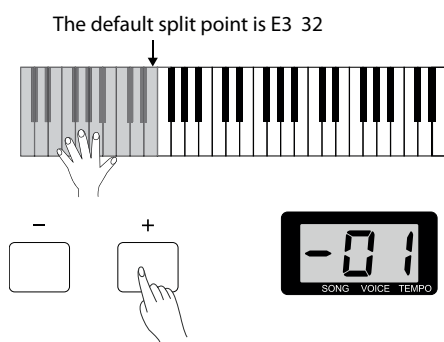
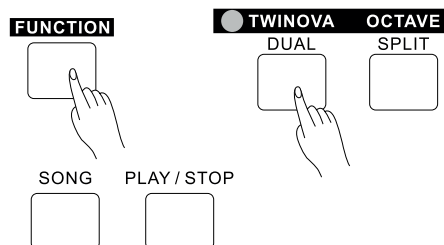
This function permits experimentation with different historic temperaments if you are playing certain types of music that were not composed based on equal temperament.

1. ➔ Push the button *[STRETCHED TUNING]* to switch to the mode for historic temperaments. The display for the button lights up. By default, the historic temperament set is '001' (Pythagoras).
2. ➔ In addition to the equal temperament, six other historic temperaments are available. They are: Pythagoras, pure major, pure minor, meantone, Werckmeister and Kirnberger.
3. ➔ Push the button *[STRETCHED TUNING]* to leave the mode for historic temperaments. The display for the button goes out.
4. ➔ Keep the button *[STRETCHED TUNING]* pushed in the mode for historic temperaments to switch to the mode for selection of the historic temperament. Use the buttons *[+]/[-]* to select the historic temperament displayed in the LED display and the piano keys C7 to B7 to determine the root note of the key.



- Historic temperaments and the root note can only be selected if the display for the button *[STRETCHED TUNING]* is lit. Then the historic temperament sounds on the digital piano.
- The historic temperament is automatically deactivated once the digital piano switches to the mode for song playback.

7.7 TWINOVA



In the TWINOVA mode, the keyboard is split into two areas with the same voice and pitch.

1. ➤ Activate or deactivate TWINOVA.

Keep the button **[FUNCTION]** pushed and push the button **[DUAL]** to switch to the mode TWINOVA. The display for this button lights up.

Keep the button **[FUNCTION]** pushed and push the button **[DUAL]** again to leave the TWINOVA mode again. The display for this button goes out. You may also push the buttons **[SONG]** or **[PLAY/STOP]** to leave the mode again and to switch to the mode for song playback. In TWINOVA mode, the buttons **[DUAL]** and **[SPLIT]** are deactivated. The split point is set to E3 (32) by default.

2. ➤ Select voice

Selecting the TWINOVA mode means that there is no difference between the voices for the left and right hand. The buttons for direct voice selection or the buttons **[+]/[-]** can be used to select the voices.

3. ➤ Set the split point

Keep the button **[SPLIT]** pushed in TWINOVA mode and push a piano key in the area from C3 to C6 to set the split point for TWINOVA.

Push the button **[SPLIT]** again to leave the mode for setting the split point again.

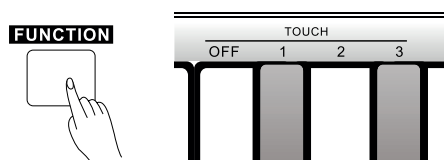
4. ➤ Octave transfer

In TWINOVA mode, keep the button **[FUNCTION]** pushed and push the button **[SPLIT]** to briefly switch to the octavation mode of TWINOVA. The LED display shows the octavation value of TWINOVA. The buttons **[+]/[-]** can be used to set the activation value of TWINOVA. If no setting is made within three seconds, the digital piano will automatically return to the TWINOVA mode.



TWINOVA is not available in the mode for song playback.

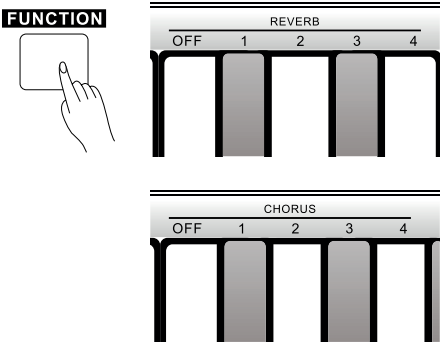
7.8 Touch sensitivity



Use this function to set the response behaviour of the keyboard in four different stages. Keep the button **[FUNCTION]** pushed and push a piano key in the area "TOUCH" to set the touch sensitivity.

Parameter	Meaning
Piano key [OFF]	Touch sensitivity off. This can be very useful when using the organ voice.
Piano key [1]	Soft In this setting, the volume is louder than usual even at a soft touch.
Piano key [2]	Normal Setting that corresponds to the usual response behaviour of a keyboard.
Piano key [3]	Hard In this setting, the volume is lower than usual even at a hard touch.

7.9 Digital effects



Use the following functions to simulate acoustic effects under different ambience conditions.

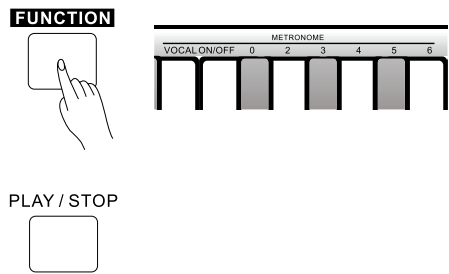
Keep the button *[FUNCTION]* pushed and push the corresponding piano keys in the areas "REVERB" and "CHORUS" to set the corresponding reverb and chorus effects.

Parameter	Meaning for REVERB	Meaning for CHORUS
Piano key [OFF]	Echo effect off	Chorus effect off
Piano key [1]	Room	Slight chorus effect
Piano key [2]	Small concert hall	Medium chorus effect
Piano key [3]	Large concert hall	Strong chorus effect
Piano key [4]	Stadium	Flanger




By default, the reverb effect is set to '2' (small concert hall) and the chorus effect is switched off.

7.10 Metronome



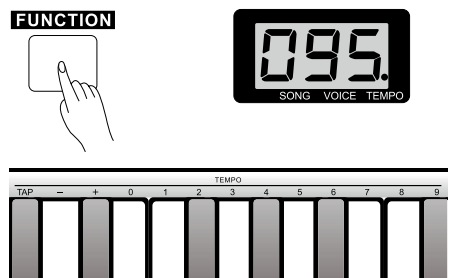
The metronome function can be helpful when practicing or recording songs.

- 1. ➤ Switch on metronome
Keep the button [FUNCTION] pushed and push the piano key [ON/OFF] in the METRONOME area to switch the metronome on or off.
- 2. ➤ Select time signature
Keep the button [FUNCTION] pushed und and select the desired time signature with the corresponding piano key in the keyboard area METRONOME. The following settings are possible: 0 (continuous metronome without emphasis of a metering time), 2 (measure with two beats), 3 (measure with three beats), 4 (measure with four beats), 5 (measure with five beats), 6 (measure with six beats).
- 3. ➤ Select metronome voice
Keep the button [FUNCTION] pushed and push the piano key [VOCAL] to select the metronome voice. You may select a human voice or a regular voice.



The metronome function is not available in playback mode.

7.11 Set tempo

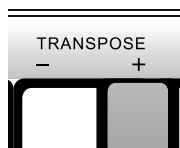
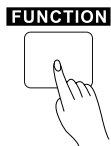


The tempo can be set in the range of 30 to 280 beats per minute. During setting, the current value and a dot behind the third digit appear in the LED display.

- 1. ➤ Keep the button [FUNCTION] pushed and push the corresponding key in the TEMPO selection area. You may change the tempo by entering it as figures (from 0 to 9) with the piano key [TAP] or the piano keys [+]/[-].
- 2. ➤ Keep the button [FUNCTION] pushed and push the key [TAP] in the TEMPO selection area within three seconds. The metronome will start with the currently set tempo.
- 3. ➤ Keep the button [FUNCTION] pushed and push the keys [+]/[-] in this area at the same time to set the tempo to '120'.

Parameter	Meaning
Piano key [TAP]	Quick-setting tempo
Piano key [+]	Increase tempo by one unit.
Piano key [-]	Reduce tempo by one unit.
Piano key [0] to [9]	Enter tempo as a figure with three digits.

7.12 Transpose

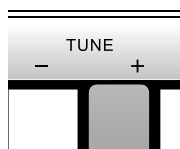
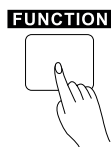


This function permits adjustment of the keyboard pitch in 12 semitones up or down. Keep the button *[FUNCTION]* pushed and push the keys *[+]* or *[-]* in the area *TRANPOSE* to adjust the pitch by one semitone up or down with each push of a button.



*Push the buttons *[+]* and *[-]* in this area at the same time to restore the pre-setting '0' (no transposition).*

7.13 Fine tuning



This function permits very fine tuning of the pitch.

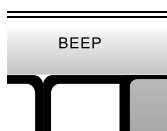
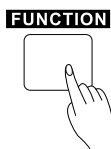
Keep the button *[FUNCTION]* pushed and push the keys *[+]* or *[-]* in the area *TUNE* to adjust the pitch up or down by one unit in the area from '-50' to '+50' with each push of the button. This corresponds to a pitch change of -100 to +100 cents, i.e., one semitone up or down.



*Push the buttons *[+]* and *[-]* in this area at the same time to restore the default setting '0' (no fine tuning).*

Parameter	Meaning
Piano key <i>[+]</i>	Increase pitch by one unit.
Piano key <i>[-]</i>	Reduce pitch by one unit.

7.14 Beep

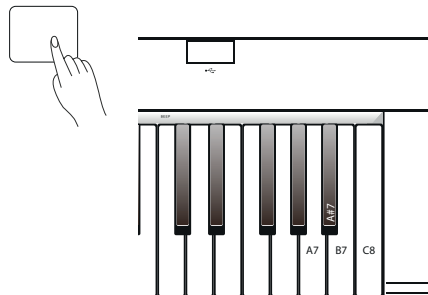


This function switches the button tone on or off. By default, the button tone is on. Keep the button *[FUNCTION]* pushed and push the key *[BEEP]* to switch the button tone on or off.

Keeping the button *[FUNCTION]* pushed and switching on the button tone will cause a tone to be issued every time you push a function button.

7.15 Automatic switch-off

FUNCTION



With the automatic switch-off active, the digital piano is automatically switched off after a certain time. By default, this takes place after 30 minutes.

Keep the button *[FUNCTION]* pushed and push a piano key in the area of A7 to C8 to set the time for the automatic switch-off.

Parameter	Meaning
Piano key <i>[A7]</i>	Automatic switch-off deactivated.
Piano key <i>[A#7]</i>	Switch off after 5 minutes.
Piano key <i>[B7]</i>	Switch off after 15 minutes.
Piano key <i>[C8]</i>	Switch off after 30 minutes.

7.16 Troubleshooting

Problem	Possible causes and solutions
A connected USB drive is not recognised and the display for the button <i>[SAVE TO USB]</i> is not lit.	<ul style="list-style-type: none"> ■ Check that the USB drive was pushed onto the piano interface correctly. ■ Check that the USB drive is OK. Re-format the drive with a computer and try again or use another USB drive.
When switching the digital piano on and off, the speakers make a "pop" sound.	This is normal. No reason for concern.
No sound is heard when playing on the keyboard.	Ensure that the volume controller is set accordingly.
Using a mobile phone causes interference.	Using a mobile phone close to the digital piano may cause interferences. To avoid this, switch off your mobile phone or use it only at a corresponding distance.

8 Songs and demo pieces

Voice List

No.	Pro.	Bank	Name
Panel Voice List			
1	0	100	Grand Piano 1
2	1	100	Grand Piano 2
3	5	100	Ele. Piano
4	6	100	Harpsichord
5	11	100	Vibraphone
6	19	100	Church Organ
7	49	100	Stereo Strings
8	56	100	Sweet Trumpet
9	64	100	Soprano Sax
10	68	100	Sweet Oboe
GM Voice List			
1	0	0	Acoustic Grand Piano
2	1	0	Bright Acoustic Piano
3	2	0	Electric Grand Piano
4	3	0	Honky-tonk Piano
5	4	0	Electric Piano 1
6	5	0	Electric Piano 2
7	6	0	Harpsichord
8	7	0	Clavi
9	8	0	Celesta
10	9	0	Glockenspiel
11	10	0	Music Box
12	11	0	Vibraphone
13	12	0	Marimba
14	13	0	Xylophone
15	14	0	Tubular Bells
16	15	0	Dulcimer

No.	Pro.	Bank	Name
17	16	0	Drawbar Organ
18	17	0	Percussive Organ
19	18	0	Rock Organ
20	19	0	Church Organ
21	20	0	Reed Organ
22	21	0	Accordion
23	22	0	Harmonica
24	23	0	Tango Accordion
25	24	0	Acoustic Guitar (nylon)
26	25	0	Acoustic Guitar (steel)
27	26	0	Electric Guitar (jazz)
28	27	0	Electric Guitar (clean)
29	28	0	Electric Guitar (muted)
30	29	0	Overdriven Guitar
31	30	0	Distortion Guitar
32	31	0	Guitar Harmonics
33	32	0	Acoustic Bass
34	33	0	Electric Bass (finger)
35	34	0	Electric Bass (pick)
36	35	0	Fretless Bass
37	36	0	Slap Bass 1
38	37	0	Slap Bass 2
39	38	0	Synth Bass 1
40	39	0	Synth Bass 2
41	40	0	Violin
42	41	0	Viola
43	42	0	Cello
44	43	0	Contrabass
45	44	0	Tremolo Strings

No.	Pro.	Bank	Name
46	45	0	Pizzicato Strings
47	46	0	Orchestral Harp
48	47	0	Timpani
49	48	0	String Ensembles 1
50	49	0	String Ensembles 2
51	50	0	Synth Strings 1
52	51	0	Synth Strings 2
53	52	0	Choir Aahs
54	53	0	Voice Oohs
55	54	0	Synth Voice
56	55	0	Orchestra Hit
57	56	0	Trumpet
58	57	0	Trombone
59	58	0	Tuba
60	59	0	Muted Trumpet
61	60	0	French Horn
62	61	0	Brass Section
63	62	0	Synth Brass 1
64	63	0	Synth Brass 2
65	64	0	Soprano Sax
66	65	0	Alto Sax
67	66	0	Tenor Sax
68	67	0	Baritone Sax
69	68	0	Oboe
70	69	0	English Horn
71	70	0	Bassoon
72	71	0	Clarinet
73	72	0	Piccolo
74	73	0	Flute
75	74	0	Recorder
76	75	0	Pan Flute
77	76	0	Blown Bottle

No.	Pro.	Bank	Name
78	77	0	Shakuhachi
79	78	0	Whistle
80	79	0	Ocarina
81	80	0	Lead 1 (square)
82	81	0	Lead 2 (sawtooth)
83	82	0	Lead 3 (calliope)
84	83	0	Lead 4 (chiff)
85	84	0	Lead 5 (charang)
86	85	0	Lead 6 (voice)
87	86	0	Lead 7 (fifths)
88	87	0	Lead 8 (bass + lead)
89	88	0	Pad 1 (new age)
90	89	0	Pad 2 (warm)
91	90	0	Pad 3 (polysynth)
92	91	0	Pad 4 (choir)
93	92	0	Pad 5 (bowed)
94	93	0	Pad 6 (metallic)
95	94	0	Pad 7 (halo)
96	95	0	Pad 8 (sweep)
97	96	0	FX 1 (rain)
98	97	0	FX 2 (soundtrack)
99	98	0	FX 3 (crystal)
100	99	0	FX 4 (atmosphere)
101	100	0	FX 5 (brightness)
102	101	0	FX 6 (goblins)
103	102	0	FX 7 (echoes)
104	103	0	FX 8 (sci-fi)
105	104	0	Sitar
106	105	0	Banjo
107	106	0	Shamisen
108	107	0	Koto
109	108	0	Kalimba

No.	Pro.	Bank	Name
110	109	0	Bag Pipe
111	110	0	Fiddle
112	111	0	Shanai
113	112	0	Tinkle Bell
114	113	0	Agogo
115	114	0	Steel Drums
116	115	0	Woodblock
117	116	0	Taiko Drum
118	117	0	Melodic Tom
119	118	0	Synth Drum
120	119	0	Reverse Cymbal
121	120	0	Guitar Fret Noise
122	121	0	Breath Noise
123	122	0	Seashore
124	123	0	Bird Tweet
125	124	0	Telephone Ring
126	125	0	Helicopter
127	126	0	Applause
128	127	0	Gunshot

Drum Set List

No.	Pro.	Name
1	0	Standard Set
2	8	Room Set
3	16	Power Set
4	24	Electronic Set
5	25	Analogue Set
6	32	Jazz Set
7	40	Brush Set
8	48	Orchestra Set
9	56	SFX Set

Song List

No.	English Name
1	Waltz in A Flat Op.39, No.15
2	The Happy Farmer
3	Etude
4	Dance Of The Four Swans From "Swan Lake"
5	Carmen Suite No.2 Habanera
6	A Little Polish Dance
7	Jesus Saviour Pilot Me
8	Old Macdonald Had A Farm
9	O Sole Mio
10	Wedding March From "Lohengrin"
11	2-Part Invention No.13 In A Minor BWV 784
12	Turkish March
13	Italian Polka
14	Musette
15	Bourree
16	To A Wild Rose
17	Away In A Manger
18	Fur Elise
19	Marriage Of Figaro
20	Angels We Have Heard On High
21	Waltz
22	America The Beautiful
23	Did You Ever See A Lassie
24	Arabesque
25	Old France
26	Santa Claus Is Coming To Town
27	Music Box Dancer
28	Symphony No.9 In E Minor Large From "The New World"
29	Larghetto
30	French Suites
31	Mazurka

No.	English Name
32	Minuet 1
33	Minuet 2
34	Minuet 3
35	Minuet In G
36	Neapolitan Song
37	Prelude
38	Salut D' Amour
39	Pizzicato Polka
40	Piano Sonata No.11 in A major K331 I. Andante grazioso
41	Songs Without Words Op30 No. 6 F sharp minor Venetian Gondola Song
42	Duke Aria From "The Rigoletto"
43	Burgmuller Op.100 No.15 - Ballade
44	Spinning Song
45	In The Theatre
46	Alfredo and Violetta Column Tower Duet
47	Come Back To Sorrento
48	Piano Sonatina In F Major
49	Tchaikovsky Waltz
50	Military March No.1 In D Major
51	Als Die Alte Mutter Mich Noch lehrte Singen
52	Etude on Leger Lines 1
53	Etude on Leger Lines 2
54	At the Ball
55	Dancing Raindrops
56	From a Story Book
57	Comin' 'Round the Mountain
58	Song of the Brook
59	Puck
60	Cotton-pickin' Fingers

9 MIDI Implementation table

Function		Sent	Received	Comments
Basic Channel	Default	1	ALL	
	Changed	1-16	1-16	
Mode	Default	No	Mode 1	
	Messages	No	No	Poly Mode only
	Altered	*****	*****	
Note Number		0 – 127	0 – 127	
	True voice	*****	0 – 127	
Velocity Note	Note ON	Yes, 9nH, v = 1 – 127	Yes, 9nH, v = 1 – 127	
	Note OFF	No, 9nH, v = 0	Yes, 9nH, v = 0 or 8nH, v = 0 – 127	
After Touch	Keys	No	No	
	Channels	No	No	
Pitch Bend		No	No	

MIDI Implementation table

Function		Sent	Received	Comments
Control Change	0	Yes	Yes	Bank Select
	1	No	Yes	Modulation
	5	No	Yes	Portamento Time
	6	Yes	Yes	Data Entry
	7	Yes	Yes	Volume
	10	No	Yes	Pan
	11	No	Yes	Expression
	64	Yes	Yes	Sustain Pedal
	65	No	Yes	Portamento ON/OFF
	66	Yes	Yes	Sostenuto Pedal
	67	Yes	Yes	Soft Pedal
	80	No	Yes	Reverb Program
	81	No	Yes	Chorus Program
	91	Yes	Yes	Reverb Level
	93	Yes	Yes	Chorus Level
	120	No	Yes	All Sound Off
	121	No	Yes	Reset All Controllers
	123	Yes	Yes	All Notes Off
Program Change	True #	Yes *****	Yes 0-127	
System Exclusive		No	Yes	
System Common	Song Position Pointer	No	No	
	Song Select	No	No	
	Tune Request	No	No	
System Real Time	Clock	Yes	No	
	Commands	No	No	
Aux Messages	Local ON/OFF	No	Yes	
	ALL Notes OFF	Yes	Yes	
	Active Sensing	Yes	No	
	System Reset	No	Yes	
Notes:				

MIDI channel modes

	POLY	MONO ON
OMNI ON	Mode 1	Mode 2
OMNI OFF	Mode 3	Mode 4

10 Technical data

Keyboard	88 weighted hammer action keys with adjustable velocity sensitivity
Voices	GRAND PIANO 1/2, ELECTRIC PIANO, HARPSICHORD, VIBRAPHONE, CHURCH ORGAN, STEREO STRINGS, SWEET TRUMPET, SOPRANO SAX , SWEET OBOE
Polyphony	128-note polyphony with effects
General MIDI	128 voices and 9 drum sets
Demos and songs	10 demos and 60 songs
Pedals	Soft, Sostenuto, Sustain
Functions	Recording and playback, dual and split mode, historic temperaments, TWI-NOVA, touch sensitivity, reverb and chorus effects, metronome, transposing, fine tuning, button tone, automatic switch-off
Connectors	Voltage supply (DC IN), 2 × headphones (6.35 mm jack plug), AUX IN, AUX OUT, USB, MIDI IN, MIDI OUT, USB-MIDI interface
Speakers	2 × 25 W, 4 Ω (tweeter) 2 × 25 W, 8 Ω (subwoofer)
Input voltage	15 V $\overline{=}$ (DC)
Dimensions (W x D x H)	1590 mm × 455 mm × 645 mm (62.60 in. × 17.72 in. × 25.40 in.)
Weight	55 kg (121.25 lbs.)

11 Protecting the environment

Disposal of the packaging material



For the transport and protective packaging, environmentally friendly materials have been chosen that can be supplied to normal recycling.

Ensure that plastic bags, packaging, etc. are properly disposed of.

Do not just dispose these materials with your normal household waste, but make sure that they are fed to a recovery. Please follow the notes and markings on the packaging.

Disposal of your old device



This device is subject to the European directive 2002/96/EC.

Do not dispose the device with your normal household waste.

Dispose this device through an approved waste disposal firm or through your local waste facility. When discarding the device, comply with the rules and regulations that apply in your country. If in doubt, consult your local waste disposal facility.

