

VARIO Digital System User Manual

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Last updated 11 May 2021

Further information, as well as audio files and videos
are available on our website:

<https://www.bechstein-digital.com/>

The latest versions of this document in German
and other languages are also available as PDF files.

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1. WELCOME

First, we would like to thank you warmly for purchasing the C. Bechstein VARIO digital system.

We have developed a comprehensive concept: we designed and built a product aimed not only at boosting your musical creativity, but also opening up the digital world to you and your C. Bechstein piano.

You may already be familiar with the basic technologies used by the VARIO system: sensors translate the movements of the keys and pedals into electric signals that are transferred to a sound generator (either the VARIO's sound module or an app) and from there to headphones.



VARIO duet version of the VARIO digital system



The VARIO digital system for Zimmermann pianos

Moreover, a mute bar customized for your piano model silences the instrument so you can play without disturbing anyone.

Thanks to its modular architecture and its connectivity to a variety of mobile devices, the VARIO digital system delivers far more opportunities than many other silent solutions.

BASIC CONCEPT AND DESIGN PRINCIPLES

For a good understanding of the many possibilities offered by your VARIO device, it is helpful to take a look at the basic concept and our design principles:

ENHANCING YOUR PIANO EXPERIENCE

We think that modern, high-quality music software can boost your creativity and that premium apps can enhance your acoustic piano experience. The VARIO app delivers functions that are easy to use and *truly relevant* to your personal playing style. Moreover, the VARIO digital system is compatible with third-party applications and can interact with them in many different ways.

FLEXIBLE CONNECTIVITY

“Enhanced experience” includes the option of connecting the VARIO digital system to the most commonly used mobile devices, such as smartphones, tablets and laptops. The VARIO duet digital system is equipped with a USB-C standard socket to connect it, today and in the future, to a variety of devices. Moreover, wireless MIDI connection over Bluetooth is possible with all system versions.

For details on “Connectivity”, see page 19.

EASY TO USE

Even for technology aficionados, using basic functions of a device must be as simple and convenient as possible. That’s why we designed the VARIO system so that it is operational right after power-up. You can activate and adjust the most important functions using just two buttons, even without the app or any connected devices.

A SUSTAINABLE PRODUCT

The VARIO digital system is designed to last a long time. While the lifetime of an acoustic piano spans several decades, that of modern electronic devices is much shorter, for a number of reasons. To ensure that your VARIO system will remain compatible with future generations of digital devices, we have developed a low-maintenance, modular structure with software that can be updated as needed.

For details on software “Updates”, see page 12.

With future generations in mind, we use recyclable materials wherever possible for the components of the VARIO system and favor regional suppliers, even for the circuit boards and the housing parts.

We invite you to explore your C. Bechstein VARIO system in detail using this manual as a guide. Don’t hesitate to contact us at www.bechstein-digital.com if you have any questions or suggestions. We appreciate feedback of any kind and will do all we can to respond to your questions or concerns as quickly as possible.

The entire C. Bechstein team wishes you lots of fun and creative hours with your instrument and the VARIO digital system.

Berlin, April 2021

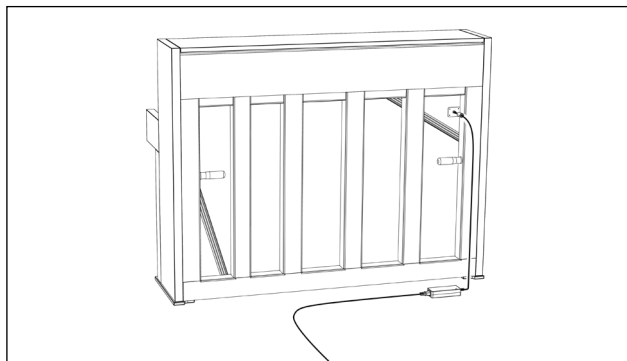
2. GETTING STARTED

2.1 Power on: The first contact with your new VARIO

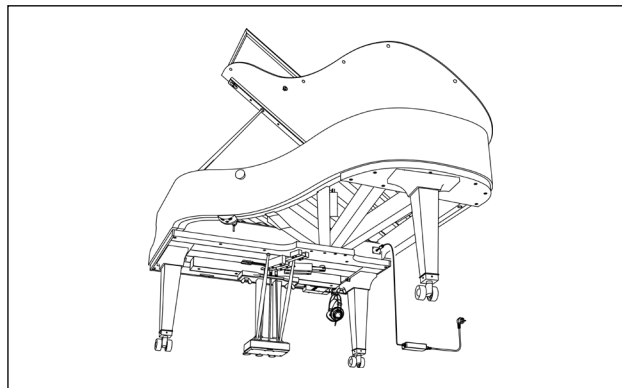
This section assumes that the VARIO system has already been installed on your upright or grand piano. Generally, your dealer will have ensured that your instrument is in perfect condition. You already appreciate its outstanding acoustic quality – Now let's discover your piano's digital potential!

POWER SUPPLY & START UP

The VARIO digital system must be connected to the mains using only the power supply unit delivered with the device. On grand pianos, the socket is located on the underside of the instrument, at approximately an arm's length behind the VARIO control module.

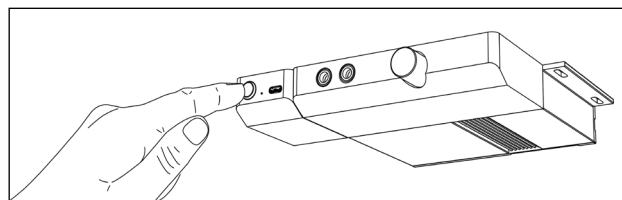


Connection of the power supply unit on an upright piano

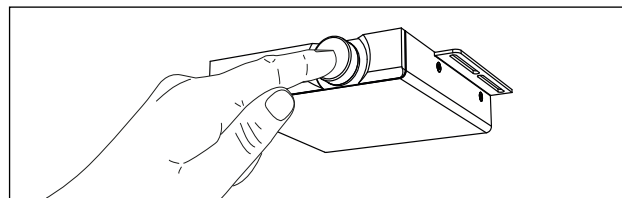


Connection of the power supply unit on a grand piano

Switch on the VARIO digital system by pressing the button. The system is ready when the button lights gold after a few seconds.

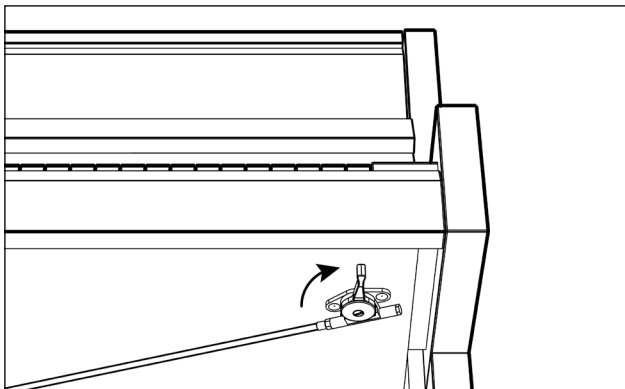


Switching on by pressing the button



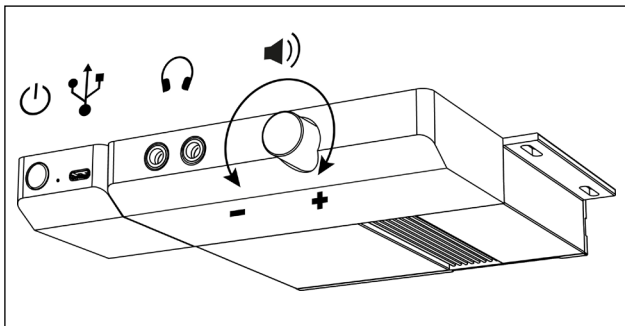
Turning on the VARIO system on a Zimmermann piano

Below the keyboard is a handle to activate the hammer stop bar and thus mute the acoustic instrument.

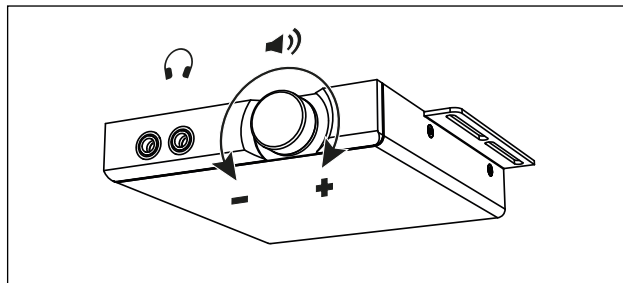


Activating the Silent mode

Once your piano is silenced, you can put the headphones on, connect them to one of the two audio jacks and adjust the volume with the knob next to the jacks. Please note: as with your acoustic piano, the sound volume in the headphones can be very loud if you play forte.

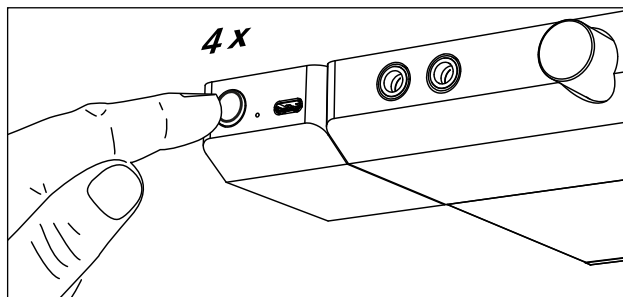


Front panel with sockets and volume knob

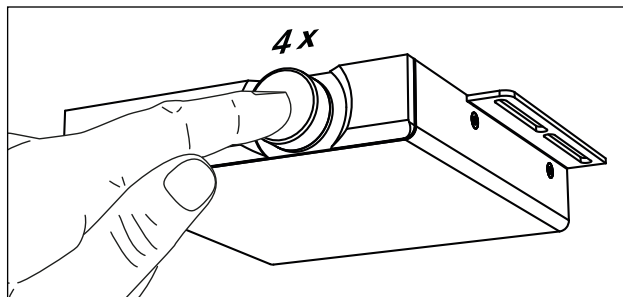


VARIO system sockets and volume knob for Zimmermann pianos

Once you've enjoyed the first notes, you'll certainly be looking forward to more sounds from the VARIO system. Press the button once and play notes to hear sound 2. Press it again to hear sound 3. And again for sound 4.



Press the knob briefly one to four times to switch between the different sounds – even without an app.



On a Zimmermann piano, you can select the four different sounds without the app by pressing the knob briefly.

Press the button one more time and you hear again the first sound mode. Using the VARIO app, you can store up to four sound modes as “favorites” in VARIO system.

For details on storing favorites, see the user manual at <https://service.bechstein-digital.com/>

Now it's time to connect your VARIO system to a smartphone or, even better, a tablet with a larger screen.

We recommend placing the mobile device on the music rack. If you're playing an upright, you can use the two-piece stand supplied with the digital system. The stand is made to fit mobile devices of various sizes.

You can choose between vertical (portrait) and horizontal (landscape) placement. Please note that the horizontal position is more ergonomic, while the vertical position is more convenient if you use the tablet/smartphone for displaying sheet music.

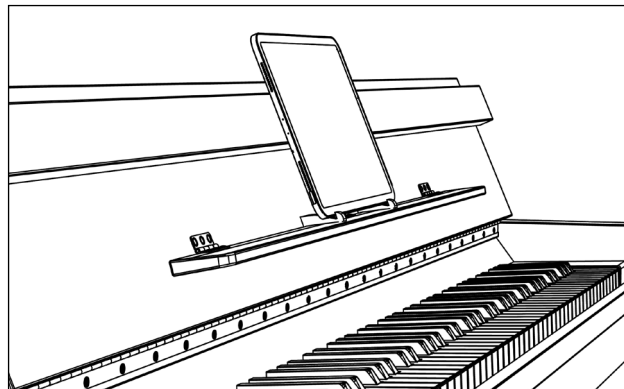
Download the VARIO App (see the following sections for details) and launch it on your device.

For details on Bluetooth and the different cable types, see “Connectivity” on page 19.

STANDBY MODE

Press and hold the button to switch the VARIO digital system in a special standby mode: the system is almost completely shut down and only the built-in Bluetooth LE module remains accessible for MIDI apps.

In this mode, the VARIO digital system consumes as little as 0.3 W. Thus its annual energy consumption is lower than that of a smartphone charged every day or every other day.



A tablet resting on the music rack and the two-part stand supplied with the VARIO system (see page 18) provides optimal viewing and operation.

3. INSTALLATION OF THE VARIO APP

3.1 Introduction

The use of apps is central to the overall concept of the VARIO digital system.

An app provides a user interface that lets you control the system from the screen of your mobile device. The numerous apps available on the market not only enable communication with the hardware, but also allow you to get the most out of your piano as they assist you in practicing, learning, sharing your music, and more.

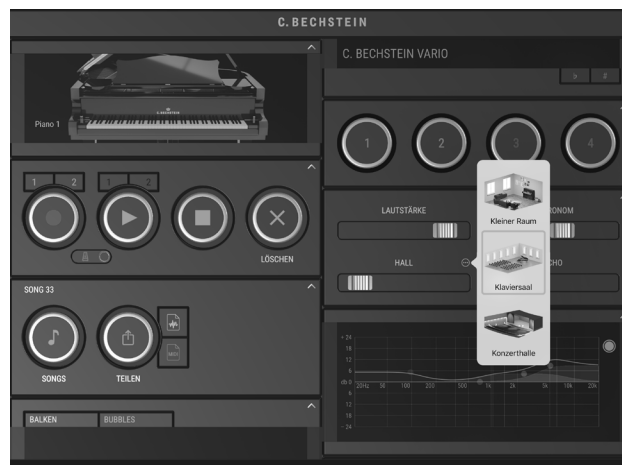
The C. Bechstein VARIO app is designed to work in perfect synergy with our acoustic pianos. It is compatible with both Android and Apple operating systems for mobile devices and its user interface blends in with your piano's design, especially when the tablet/smartphone is placed on the music rack.

Countless music apps have been developed in recent years. Professional musicians appreciate the software tools available for notation, training, recording and sound processing, while beginners particularly enjoy apps for learning and playfully exploring the world of music in general, and the piano in particular. Everyday apps are relevant here as well, for everything from emailing and messaging to streaming tutorials and inspiring musical videos on platforms such as YouTube.

We designed both the VARIO app and the digital system to interact with all kinds of third-party apps for sharing and processing music files.

This section of the user manual presents the VARIO app and explains how to set it up. Basic knowledge on the use of your mobile device is assumed.

Please note that the VARIO app communicates with the VARIO hardware over the MIDI interface (Musical Instrument Digital Interface), a standard used for decades for communication between music instruments, electronic components and software.



3.2 Installation on iOS/iPadOS

The VARIO app for iOS and iPadOS is available free of charge in the Apple App Store, provided you have a customer account (Apple ID), also free of charge. Please proceed as follows to download and install the VARIO app:

- Open the App Store app on your iPad/iPhone/iPod touch.
- Enter “bechstein vario” in the Search field.
Alternatively, you can scan the QR code to the right with your device’s camera.
- Open the VARIO app product page and tap “Load”.

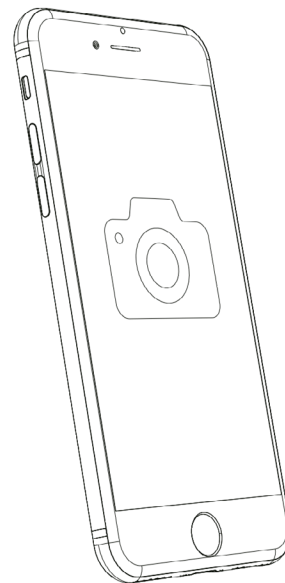
The system may prompt you to enter your Apple ID and password or your Touch ID/Face ID, depending on your settings.

Information on using the App Store

<https://support.apple.com/en-us/HT204266>

**For more information on the use of the VARIO app,
see the user manual at**

<https://service.bechstein-digital.com/>



3.3 Installation on Android

The VARIO app for Android OS is available free of charge on Google Play, provided you have a Google account (also free of charge). Please proceed as follows to download and install the VARIO app:

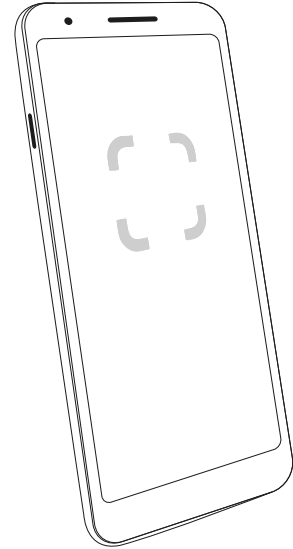
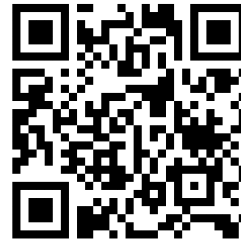
- Open the Google Play app on your smartphone/tablet.
- Enter “bechstein vario” in the search field.
- Alternatively, you can scan the QR code to the right with your smartphone/tablet.
- Tap “Install” on the VARIO app page.

Information on Google Play:

<https://support.google.com/googleplay>

For more information on the use of the VARIO app, see the user manual at

<https://service.bechstein-digital.com/>



3.4 Updates

Update the software of your VARIO digital system using the VARIO app to get the latest functions.

If the app update includes a new version of the system's firmware, you can update that as well. To do this, check the version of the firmware installed on your system.

The VARIO app will recommend an update if a new version is available.

1. Connection

You can connect your instrument to your smartphone/tablet over USB or Bluetooth.

- On **iOS/iPadOS**: Select the Connection menu (upper right corner of the screen)
- On **Android**: Select the MIDI Connection menu (upper left corner of the screen)

Although you can update over USB or Bluetooth, we recommend using a USB connection for two reasons: data transfer is faster using a cable, and radio waves generated by other devices may interfere with the Bluetooth connection.

Direct cable connection is possible if your smartphone/tablet has a USB-C port, but you will need a camera connection kit if you're using an Apple device with a Lightning port.

If you're updating the app on a smartphone, put the phone in Flight mode and deactivate the Do Not Disturb function prior to start the process to make sure it won't be interrupted by any type of incoming calls.

- On **iOS/iPadOS**: Settings -> Display & Brightness -> Do not disturb -> Never
- On **Android**: Settings -> Security -> Display lock (option varies according to device manufacturer)

Don't forget to reactivate your preferred settings after the update.

2. Firmware update

- On **iOS/PadOS** open the Settings menu (lower right corner of the screen) and click "Firmware" (bottom)
- On **Android** open the Settings menu (upper left corner of the screen) and click "Firmware" (bottom).

The screen displays the installed firmware version as well as the new version available for the VARIO's mainboard and sensors.

Press the Start button to launch the update; it usually takes three or four minutes.

Keep your device near your instrument during the update, even if you're using a Bluetooth connection. Don't interrupt the process, even if it lasts a bit longer than expected.

A message appears briefly on the screen to confirm that the update was successful.

Verify the firmware version now displayed on the screen.

Please note that it might be necessary to repeat the update process for various components of the system (mainboard, sensor bar).



3. New connection to the VARIO system

The Bluetooth MIDI connection is automatically dropped when the update process ends.

Press and hold the hardware button on the front of the VARIO device to put the system in standby mode.

The system's two control modules start as soon as you establish a new Bluetooth connection between the VARIO app and the system.

If you connect over USB, you have to press the button on the VARIO control module to start the system.

4. Calibration and setting check

We recommend recalibrating the keyboard after every update.

It may also be necessary to set the key and pedal parameters after recalibration.

Please note that the dynamism curve may need a reset after an update.

For more information on the use of the VARIO app, see the user manual at

<https://service.bechstein-digital.com/>

4. OPERATING THE VARIO DIGITAL SYSTEM WITHOUT APP

With firmware version 1.1.0 or later, the VARIO duet can also be operated without using an app. The keyboard sensors of the VARIO must be calibrated for this purpose.

This is how app-free operation works:

To operate the system without an app, first press and hold the **button** to the left of the operating module, then play **individual notes** on the keyboard.

Key		Notation Name	Helmholtz pitch notation	Function / Sound
16	■	C1	C	Line-In and Out switching on and off
...				
40	■	C3	c'	Grand Piano 1 (Concert)
41	■	C#3		Grand Piano 2 (Warm)
42	■	D3		Grand Piano 3 (Practice)
43	■	D#3		E-Piano 1 (Main)
44	■	E3		E-Piano 2 (Bell)
45	■	F3		E-Piano 3 (FM)
46	■	F#3		Cembalo
47	■	G3		Church Organ 1 (Flute)
48	■	G#3		Church Organ 2 (Tutti)
49	■	A3		Jazz Organ
50	■	A#		Choir
51	■	B3		Strings 1
52	■	C4	c''	Strings 2 (Slow)
53	■	C#4		Warm Pad 1
54	■	D4		Warm Pad 2 (Slow)
55	■	D#4		Grand Piano 1 + Strings (Layer)
56	■	E4		Grand Piano 1 + E-Piano Main (Layer)
57	■	F4		Grand Piano 1 + E-Piano FM (Layer)
58	■	F#4		Grand Piano 1 + Choir (Layer)

5. VARIO HEADPHONES

DESIGNED FOR THE VARIO

We have designed the VARIO headphones as an integral part of the digital system, focusing on both high fidelity sound and optimal wearing comfort for both adults and children.

The semi-open design perfectly meets these requirements: while the headphones allow some of the ambient noise to reach your ears, they provide enough isolation and you can play without being disturbed.

Note: Please exercise caution to avoid causing damage to your hearing.

Each sound mode has its own dynamic characteristics. Be sure to adjust the volume as needed after changing the sound mode.

Using headphones, the sound volume is perceived differently than from the acoustic piano directly.

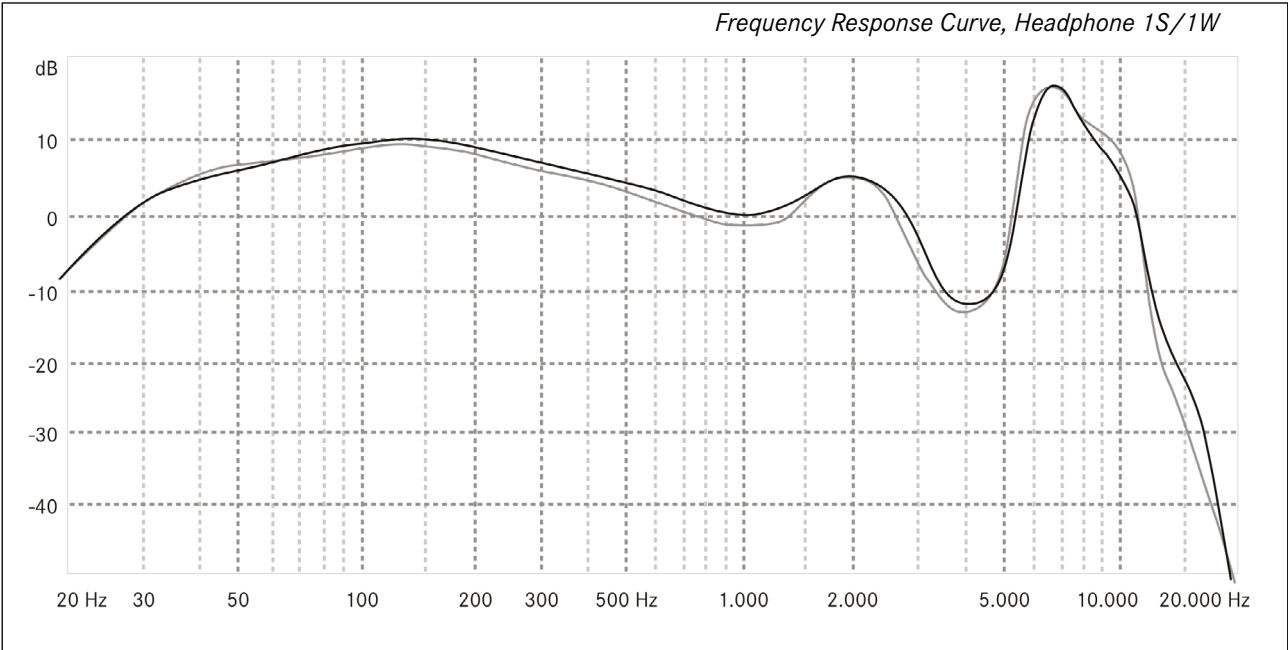
Even if you enjoy listening to loud music, you should set the volume so that it doesn't damage your hearing. Also keep in mind that children tend to turn the volume up quite loud when they wear headphones.



We suggest the following procedure for setting the headphone volume, taking the volume of your acoustic piano as a reference:

- Turn the volume knob anticlockwise
- Position the headphones so that only one ear is completely covered.
- Release the piano's mute bar
- Play some notes with moderate touch (mezzopiano/ mezzoforte).
- Turn the knob clockwise until the volume in your ear covered by the headphones roughly matches that of the acoustic piano.
- Turn the knob anticlockwise a little (see note above).

Specifications	
Transducer design	Dynamic, open, ear-enclosing
Driver	50 mm ø, neodymium driver
Audio transmission range	20 Hz-20 kHz
Dynamics	95 dB (1 mW)
Input impedance	32 Ω
Pressure force	~ 3.5 N
Connections	3.5 mm socket on the headset
	3.5 mm stereo gold-plated jack on the cable
Colors (headphones/cables)	Black /black or white /grey



CABLES AND JACK ADAPTERS

The headphones are equipped with a cable long enough to let you plug them into either the VARIO system or your mobile device positioned on the piano.

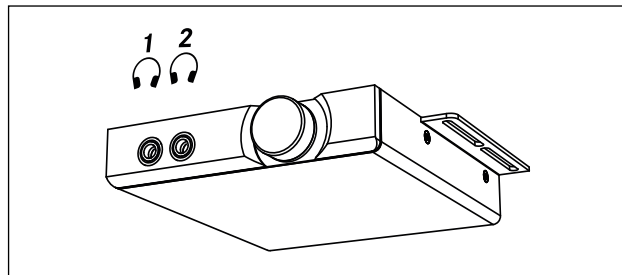
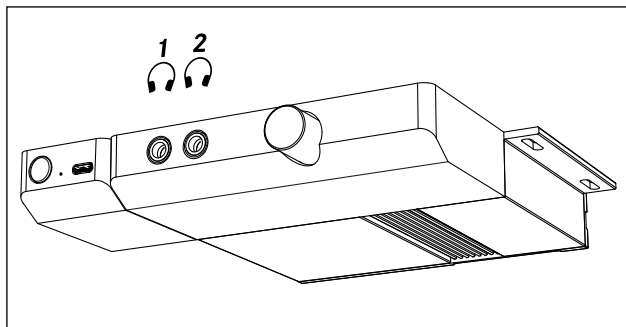
The adapter from 3.5 mm to 6.3 mm is provided for this purpose.

For some smartphones/tablets, you may need another adapter for a USB or Apple Lightning socket, which is often supplied with the mobile device and available from electronics retailers. (Depending on the mobile device, an from mini jack to USB-C or to Apple-Lightning). If you're using an Apple device, we recommend that you use only an original adapter or one provided with the MFi label, as generic adapters may contain electronic parts that are not compatible with your iOS/iPadOS version.

See <https://support.apple.com/en-us/HT204566>

HEADPHONE HOLDER

To avoid damaging the headphones or the sound module by overstretching the cable, always hang up the headphones on the holder provided before you walk away from the piano.

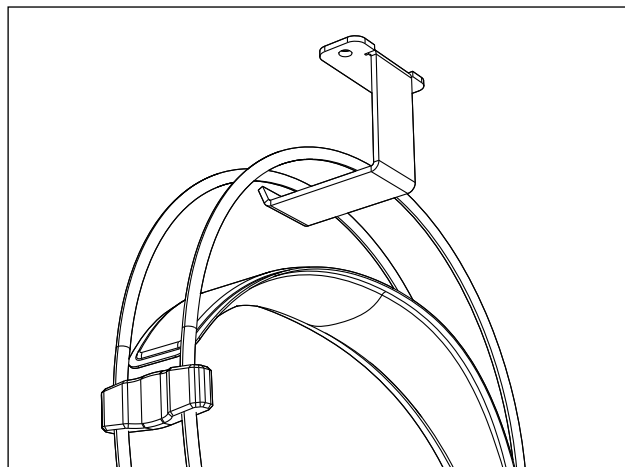


Two headphone sockets on the VARIO system for Zimmermann pianos

USING A SECOND PAIR OF HEADPHONES

You can use two pairs of headphones with the duet module, which is helpful in music lessons, for example. We recommend that you choose the same model as your first pair, to ensure that both players have the same sound and dynamic experience.

Note: VARIO headphones are available in black and white. Using two pairs of headphones of different colors will make it easier to keep the cables separate.

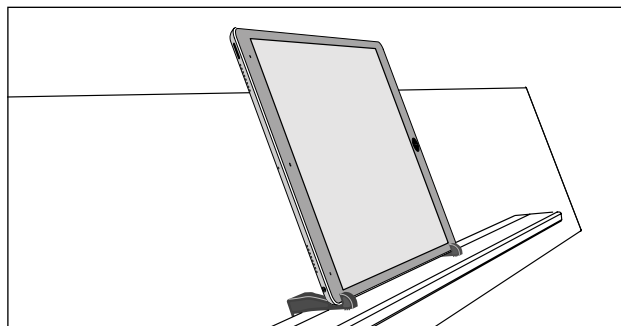
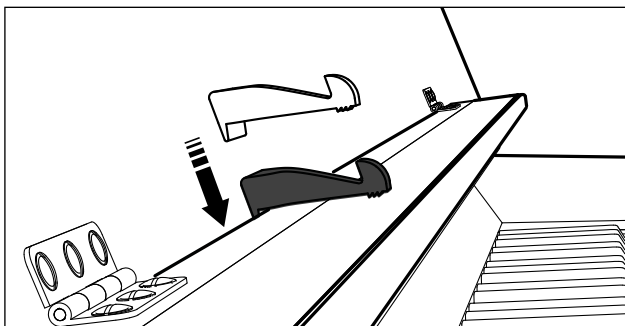
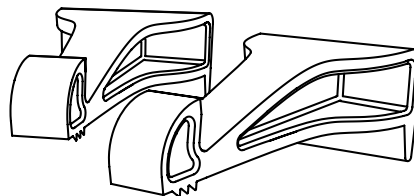


6. DISPLAY STAND

A two-part display stand made of non-slip rubber is supplied with the VARIO digital system for positioning a smartphone/tablet on the music rack of your C. Bechstein, W.Hoffmann or Zimmermann piano. Simply hook the two parts at the back of the rack (see illustrations).

Please note that your mobile device will not be completely secured against falling down, for example if you pull on the USB or the headphone cables.

The display stand is also available as an accessory from your dealer.



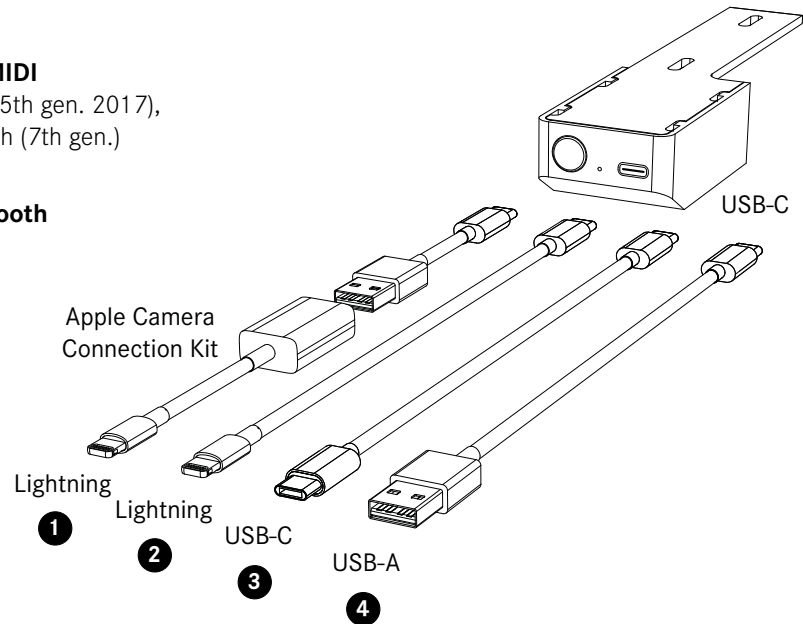
7. CONNECTIVITY OF THE VARIO DUET

❶ Lightning + Camera Connection Kit: MIDI

iPad mini (5th gen.), iPad Air (3th gen.), iPad (5th gen. 2017),
iPhone (iPhone 6S, 2015 and later), iPod touch (7th gen.)

❷ Lightning: charging & MIDI over Bluetooth

iPad mini, iPad Air, iPad, iPhone, iPod touch



❸ USB-C: MIDI and charging (Power Delivery)

Many notebooks (Windows/Linux) and Apple MacBook (2015),
MacBook Air (2018), MacBook Pro (2016), iMac (2017), Mac
mini (2018), iMac Pro, iPad Pro (all models),
smartphones and tablets with Android OS (many models since
2017)

❹ USB-A: MIDI (no charging)

Many notebooks (Windows/Linux), MacBooks and Macs with
USB-A (also older models)

Without cable: via Bluetooth MIDI LE

Compatible with all devices mentioned above

8. IMPORTANT NOTES

INFORMATION FOR SAFE HANDLING

We focused on maximum risk prevention while developing the C. Bechstein VARIO digital system. Nevertheless, it is important to observe the following instructions when you're using it:

- Only use the power supply unit delivered with the system.
- Only connect the unit to an outlet that complies with the unit's specifications.
- Never damage the power cord or place heavy objects on it. Also avoid crimping, bending or jamming the cable.
- Secure the power cord to prevent tripping hazards.
- Never open or modify the individual modules or the power supply unit.
- Make sure that no items such as paper clips, needles, coins, liquids, or pet hair get inside the electronics or on the sensor bar under the keys.
- The VARIO digital system can be connected to headphones and various other devices. Never use it with a sound volume that may damage your hearing or the connected devices.
- Do not turn on the system in the following cases:
 - Liquids or objects have got into the modules or the instrument.
 - The power supply unit is damaged.
 - Smoke is coming out of the system or it smells of smoke.
 - The system has become cold, damp or wet.
 - It doesn't behave as expected or its performance is degraded.
- Keep products containing solvents such as nail varnish, spray cans, alcohol, cosmetics, etc. away from your C. Bechstein VARIO.
- The device and the power supply unit must be operated in such a way that sufficient ventilation is always provided.
- When unplugging internal or external connections, pull only on the plug, not on the cable.
- Never handle the devices, cables or the power supply unit with wet hands.
- Ensure that all cables are properly connected after transportation and that the system has not been damaged, damp or cold.
- In the event of a thunderstorm, unplug the power cord.
- Before leaving the instrument, unplug the headphones and hang them on the holder provided.
- We also recommend having a specialist clean the sensor bar whenever you have the piano tuned.

9. TECHNICAL DATA

General information	
Operation	Multi-function button, volume control, app for smartphones & tablets
User presets/Favorites	4, selected via app and button
Silent function	Hammer stop bar, activated via Bowden cable
Keyboard sensor system	Optical, contactless, continuous detection
Pedal sensor system	Optical, contactless, continuous detection
App functions (iOS & iPadOS, Android)	
Calibration	Calibration of the sensors
Dynamic adjustment/Velocity curve	Flexible setting options for conversion into MIDI Note On Velocity, 5 zones (keyboard ranges)
Recording (iOS only)	2-track sequencer, virtually unlimited capacity
Sharing music (iOS only)	Transfer of MIDI and audio files via email, messenger services, cloud, etc.
Metronome (iOS only)	Flexible setting options, choice of clock sounds, multiple sounds
Software update	VARIO app on iOS via App Store, VARIO app on Android via Google Play. Firmware update via app.
Sound generation	
	Sampling
Source of the main sound	C. Bechstein Concert D 282 grand piano
Number of sound modes	19
Polyphony	256
Pedal sounds	Yes, adjustable

Key noise	Yes, adjustable
Release samples	Yes, adjustable
Sympathetic string resonance	Yes, adjustable
Sympathetic damper resonance	Yes, adjustable
Una corda	Yes
Sostenuto	Yes
Forte pedal half position	Yes
Tuning/Tuning	+/- 100 cent
Transpose	+/- 24 semitones

Effects

Hall (Reverb)	Small room, piano hall, concert hall
Echo (only on iOS)	Tempo (metronome) dependent delay Mixing and tempo setting only on iOS
Equalizer	4-band fully parametric

Connectivity

Bluetooth	Bluetooth-MIDI via Bluetooth Low Energy (BLE), single mode, practical usable range approx. 15 m
USB socket (only on the VARIO duet version)	USB-C 3.0, USB-MIDI PD (Power Device Management; support for power supply of connected devices)
Audio, headphone jacks	2x 6.3 mm (jack, stereo)
Audio Outputs	2x Cinch (L/R), -10 dBV
Audio Inputs / AUX In	2x Cinch (L/R), -10 dBV

Power supply	
Input voltage, power supply unit	110-240 V
Power consumption	6.3 W in normal operation (plus connected devices if required, see below)
Optional power supply for connected mobile devices	5 V/0.9 A, 9 V/1 A, 15 V/1 A, 20 V/2.5 A
Standby	0.285 W
Energy saving/Auto power off	Yes

Dimensions (mm)	
VARIO duet	Front modules side by side 190 x 190 x 27 mm
VARIO system for Zimmermann pianos	167 x 166 x 27 mm

Package contents	Power supply unit, power cord, headphones (incl. cable and adapter), display stand, user manual
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