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You can read the recommendations in the user guide, the technical guide or the installation guide for BEHRINGER BCF2000-WH. You'll find the answers to all your questions on the BEHRINGER BCF2000-WH in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

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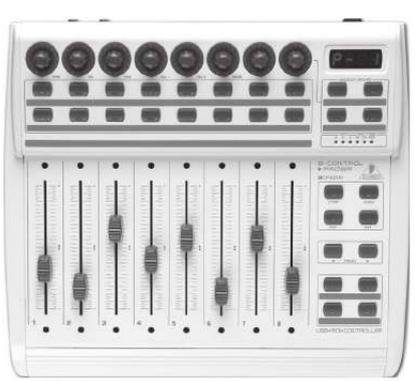
BCF2000-WH

B-CONTROL ▶FADER

User's Manual [en]

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BEHRINGER
JUST LISTEN.

Manual abstract:

3) Heed all warnings. 4) Follow all instructions. 5) Do not use this apparatus near water. @@@@6) Clean only with dry cloth. 7) Do not block any ventilation openings. Install in accordance with the manufacturers instructions. @@9) Do not defeat the safety purpose of the polarized or grounding-type plug. 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) The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection. 12) Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable. 13) Only use attachments/accessories specified by the manufacturer.

14) 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. WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus. This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosurevoltage that may be sufficient to constitute a risk of shock.

This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual. 15) Unplug this apparatus during lightning storms or when unused for long periods of time. 16) 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. 17) CAUTION - These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions unless you are qualified to do so. 2 B-CONTROL FADER BCF2000-WH B-CONTROL FADER Total Recall USB/MIDI Controller Desk with 8 Motorized Faders s Unique, total recall cascadable desktop MIDI controller with analog feel and an intuitive user interface s 8 ultra-precise 100-mm motorized faders for ultimate control of virtual mixers, organ-drawbars (inverse mode) or virtual synths and samplers s 4 virtual groups with 8 dual-mode, high-resolution encoders that feature LED rings and an additional push function s 16 + 4 illuminated buttons freely assignable to all types of MIDI functions from note on/off, control change and program change to MMC and system exclusive data s All panel elements freely assignablemanually or via user-friendly learn mode s Additional multi-function foot switch and foot controller connectors can be used to address all types of MIDI data s 32 user presets each with 4 encoder groups s Configurable MIDI and USB modes for ultra-flexible system integration s 1 MIDI In plus 2 MIDI Outs, usable as an additional USB to MIDI interface s Multi-function 4-digit LED display with real-time parameter indication plus write-in fields for your own labeling s MIDI input with merge function for cascading several control units s Easy connection to any computer/expander, etc. using standard MIDI In/Out connectors s Generic USB MIDI support with Windows XP and Mac OS X operating systems s Additional drivers and editor/librarian software available for free download on our website s High-quality components and exceptionally rugged construction for long life and durability s Conceived and designed by BEHRINGER Germany All trademarks (except BEHRINGER, the BEHRINGER logo, JUST LISTEN and B-CONTROL) mentioned belong to their respective owners and are not affiliated with BEHRINGER. Mac OS is a trademark of Apple Computer, Inc.

, registered in the U.S. and other countries. Windows is a registered trademark of Microsoft Corporation in the United States and other countries. BCF2000-WH 3 B-CONTROL FADER BCF2000-WH FOREWORD Dear Customer, Welcome to the team of BEHRINGER users, and thank you very much for expressing your confidence in us by purchasing the B-CONTROL. Writing this foreword for you gives me great pleasure, because it represents the culmination of many months of hard work delivered by our engineering team to achieve a very ambitious goal: to present an outstanding USB MIDI CONTROLLER. Due to ist extreme flexibility it can be used as a central control unit with USB/MIDI interface as well as for mere MIDI control applications. The task of designing our B-CONTROL certainly meant a great deal of responsibility, which we assumed by focusing on you, the discerning computer user and musician. Meeting your expectations also meant a lot of work and night shifts. But it was fun, too.

Developing a product usually brings a lot of people together, and what a great feeling it is when all who participated in such a project can be proud of what theyve achieved. It is our philosophy to share our enjoyment with you, because you are the most important member of the BEHRINGER team. With your highly competent suggestions for new products youve made a significant contribution to shaping our company and making it successful. In return, we guarantee you uncompromising quality as well as excellent technical and audio properties at an extremely reasonable price. All of this will enable you to give free rein to your creativity without being hampered by budget constraints.

We are often asked how we manage to produce such high-quality devices at such unbelievably low prices. The answer is quite simple: its you, our customers! Many satisfied customers mean large sales volumes enabling us to get better purchasing terms for components, etc. Isnt it only fair to pass this benefit on to you? Because we know that your success is our success too! I would like to thank all of you who have made the B-CONTROL possible. You have all made your own personal contributions, from the developers to the many other employees at this company, and to you, the BEHRINGER user. TABLE OF CONTENTS 1.

My friends, its been worth the effort! Thank you very much, Uli Behringer

4 B-CONTROL FADER BCF2000-WH

1. INTRODUCTION

Thank you very much for expressing your confidence in BEHRINGER products by purchasing the B-CONTROL BCF2000-WH. The B-CONTROL is an extremely flexible control surface suitable for a wide array of applications.

Regardless of whether you want to intuitively control your sequencer software with mixers, plug-ins and virtual instruments, or if you wish to use its broad MIDI functions for controlling rack synthesizers, general MIDI sound generators or effect processors, the B-CONTROL offers you tremendous ease of use that leaves no wishes open. contact the distributor nearest you. A list of distributors can be found in the support area of our website (www.behringer.com).

Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently. Thank you for your cooperation! 1.2 System requirements for USB operation: Up-to-date WINDOWS PC or MAC with a USB connection + The following users manual is intended to familiarize you with the units control elements, so that you can master all the functions. After having thoroughly read the users manual, store it at a safe place for future reference. + **1.1 Before you get started** 1.1.1 Shipment The B-CONTROL was carefully packed at the assembly plant to assure secure transport. Should the condition of the cardboard box suggest that damage may have taken place, please inspect the unit immediately and look for physical indications of damage. The B-CONTROL supports WINDOWS XP and MAC OS X USB MIDI compatibility.

Soon, you will be able to download drivers for other operating systems, for multi unit support, new presets as well as a WINDOWS editor software free of charge. Just click www.behringer.com to get it for free. The B-CONTROL can also be operated stand-alone without a computer as a pure MIDI controller. Software control via MIDI is also possible, provided your computer has a MIDI interface. + + Damaged equipment should NEVER be sent directly to us. Please inform the dealer from whom you acquired the unit immediately as well as the transportation company from which you took delivery of the unit. Otherwise, all claims for replacement/repair may be rendered invalid. To assure optimal protection of your B-CONTROL during use or transport, we recommend utilizing a carrying case.

Please always use the original packaging to avoid damage due to storage or shipping. Never let unsupervised children play with the B-CONTROL or with its packaging. Please dispose of all packaging materials in an environmentally-friendly fashion. # 2. INTRODUCTION TO MIDI 2.

1 MIDI control for beginners Application possibilities for the B-CONTROL are truly wideranging. Well start with a couple of general explanations and examples that should quickly let you get a good understanding of MIDI basics. What exactly does the B-CONTROL do? Simply put, this a remote control for all kinds of MIDI equipment. Using the faders, encoders (infinitely variable rotary controls) and keys, an entire array of control functions can be performed. Adjusting these parameters, you can control various functions of external (hardware or software) equipe the B-CONTROL as a central control surface in your studio for comfortably editing your rack synthesizers, GM/GS/XG sound generators and effects equipment.

To get detailed information on how to assign them, please refer to chapter 4.3.2 Programming in the EDIT mode on page 13. Now, define in the B-CONTROL the control elements that will control these 3 parameters. You can either use the LEARN function if the software synthesizer gives you the option to send its CC data via MIDI, or you can implement the following settings manually: s s s Assign the push encoder 1 CC 05 to filter frequency control via dial rotation. Assign the push encoder 2 CC 06 to filter resonance control via dial rotation. Assign the push encoder 3 CC 07 to volume control via dial rotation. **2.3 MIDI connections** The MIDI connections in the back of your B-CONTROL feature the standard 5-pin DIN connectors. You will require MIDI cables to connect your B-CONTROL to other MIDI equipment.

In general, commercially available ready-to-use cables can and should be used. Their length should not exceed 15 m (50 ft.). MIDI IN: Used for receiving MIDI data (parameter feedback, SysEx data), or to mix MIDI signals with the B-CONTROL signals (merge function). MIDI OUT A/B: Data for controlling

other MIDI equipment can be sent through the MIDI outputs. How do I wire the B-CONTROL? Several classic examples can be found in the explanations of different operating modes (see chapter 4.1 The Operating Modes). Basically, the following applies: s s If you want to control hardware MIDI equipment, use the MIDI connectors. To control software MIDI equipment, you can either use the MIDI connectors on your B-CONTROL provided your computer has a MIDI interface or you can use a USB connection. To remotely control both hardware and software equipment, several combination modes are available. These are explained in chapter 4.1. + The B-CONTROL has two MIDI outputs. MIDI OUT B can be configured as MIDI THRU, so that the incoming data at MIDI IN can be passed through unaffected. s 2.

4 The MIDI format Although your B-CONTROL is very easy to use, it still makes sense to review some information about this data format. Each MIDI command, also called message, consists of a status byte and up to two data bytes. The status byte defines the command type, and the data bytes contain the corresponding values. Different types of MIDI messages used by the B-CONTROL are explained next: Note messages: Among keyboard hotshots, Note On and Note Off messages are among the essential MIDI messages. Playing MIDI instruments from a master keyboard or computer is only possible with these messages.

The B-CONTROL can also send Note Messages; however, this is not absolutely necessary to play music. This way, note events are also used to trigger drumloops or individual notes from a sampler. Many effects processors also allow rhythmic entering of delay times or song tempos with note commands. Note On and Note Off messages have the following data format: What kinds of equipment can I control with the B-CONTROL? You can basically control any device supporting the MIDI format. Both hardware and software MIDI devices are controlled exactly the same. The only difference is in the wiring. Here are a couple of suggestions on how you can use your B-CONTROL: s Editing sound parameters of (virtual) synthesizers, sound samplers, GM/GS/XG sound generators s Controlling parameters on effects equipment/software plug-ins such as effects processors, reverbs, compressors, equalizers etc.

Remotely controlling software mixers (volume, panorama, equalizers etc.) Remotely controlling transport functions (playback, forward, stop etc.) on sequencers, hard disk recorders, drum computers etc.

Using faders as drawbar control for virtual or digital organ expanders Controlling MIDI-enabled lighting equipment Live control of volume and sound parameters on expanders Triggering (i.e. playing live) short samples, drum loops, shouts, effects etc. Remotely controlling groove boxes, step sequencers, MIDI generators (such as arpeggiators etc.), DJ software and other live software Program changes and volume control on sound generators (just like on a master keyboard) Likewise, applicable to band keyboardists, solo entertainers, organists, electronic music performers, DJs, sound engineers, home/project studio owners, theater technicians etc. s s s s s s s Note Off Note On Status Byte &8n (n = channel #) &9n (n = channel #) Data Byte 1 Data Byte 2 Note # Velocity Note # Velocity Table 2.1: Data format of Note On and Note Off messages The value range for channel numbers is between 1 and 16; for data bytes it is 0 to 127. Even though Note Off messages are not really used by keyboarders anymore, the B-CONTROLs support sending this status information. Velocity corresponds to the key pressure, and therefore to the volume of a touch-sensitive keyboard (piano). Since the B-CONTROL does not feature touch-sensitive keys, the velocity value is transmitted with a fixed value that can be set during programming.

s s 6 2. INTRODUCTION TO MIDI + B-CONTROL FADER BCF2000-WH A note command can only be assigned to keys, footswitches and push functions of the encoder. Control Change (CC): Control Change Messages are some of the most powerful MIDI messages. Using them, a vast number of parameters and functions can be recalled and automated. Individual control elements (faders, rotary dials, keys etc.

) can be assigned to CC messages on your B-CONTROL. Because not only keys but also faders and rotary dials can be used, control values can be controlled in real time either statically or dynamically. A list with the standard controller numbers can be found in this user manuals appendix. NRPN: Additionally, controllers that have no standardized assignment can also be used, and can therefore be assigned according to no predetermined rule. These controllers are called NRPNs (NonRegistered Parameter Numbers).

NRPNs are further subdivided into MSB (Most Significant Byte) and LSB (Least Significant Byte) in order to achieve a higher resolution. A lower resolution is particularly easy to observe during fader movement of a mixer, in which 7-bit (= 128 values) jumps in the signal level can be heard. By subdividing NRPNs into MSB and LSB, you can achieve 14-bit resolution of faders and rotary dials, which means that the movement of a fader is divided into more than 16,000 steps (214)! In addition to NRPNs, there are also RPNs (Registered Parameter Numbers). RPN commands are defined as GM (general MIDI), GS (Roland) and XG (Yamaha) MIDI standards. Pitch Bend The pitch-bend wheel of a keyboard is used for tone modulation and has its own commands in the MIDI format. After Touch MIDI keyboards featuring After Touch can respond to varying key pressure even after you release the key (i.e. after the keystroke is over) and can send this data via MIDI. This function either reacts key-specific (key pressure) or it reacts to all notes at the same time (channel pressure). MIDI Machine Control (MMC): With MIDI Machine Control, you can assign transport functions of a sequencer or drum computer (e.

g. start, stop, FFW/RWD) and locator points to individual keys with a permanently adjustable time position (locate, punch in/out points). Program Change Messages and MIDI Bank Select: Program change messages are used to recall programs/presets in MIDI devices connected to your B-CONTROL. 128 program numbers can be recalled. For devices with more than 128 presets, use the bank select function, which lets you select a storage bank before sending a program change. Running Status: Because the MIDI interface is a serial data transmission format (meaning that its data is transmitted as a succession of individual data segments), it became apparent very quickly that it may not be fast enough. To avoid perceptible delays in the output of MIDI data, Running Status was designed. It suppresses the transmission of the status byte when the same MIDI messages are transmitted in succession. This means that, for example, during a continuous change of the data byte of a controller (e.g.

volume), the status byte is only sent once. The only thing that is transmitted are the changes in the data byte. This goes on until another status byte is sent. 8 bits are saved for each message sent. SysEx Dump: System-Exclusive data refer to a function that makes transmission of nonspecific data via MIDI possible. This is often used for reading out memory contents and storing them externally. The status byte notes the data type (SysEx); the first three data bytes are a manufacturer ID, so that when you have a large MIDI network, you can still talk to the correct MIDI device. To make using several identical B-CONTROLs at the same time possible, you can assign a device number (device ID) in the global setup menu to each B-CONTROL, which assures that only the correct device receives the data intended for it. 3. CONTROL ELEMENTS AND CONNECTIONS In this chapter, we will describe various control elements of your B-CONTROL.

All controls and connectors are explained in detail, and well give you useful tips on how to use them. An illustration of the control elements with the corresponding numbering can be found on the next page. The 8 infinitely variable push encoders are used to send MIDI data. They have two functions (turn and press) that can be assigned to different MIDI commands. Each of these 16 keys can send one MIDI command. The four-digit LED display indicates the current operating software version briefly during startup. After that, it shows the selected preset number. When in play mode, activating one of the control elements indicates value changes on the LED in real time. When in programming mode, it indicates the type of MIDI commands, program/channel numbers and parameter values. Using the ENCODER GROUP keys, four so-called encoder groups per preset can be recalled, so that eight PUSH encoders for a total of 64 different MIDI functions are at your disposal.

These LEDs indicate the following: MIDI IN, OUT A and OUT B illuminate if MIDI data flows through the respective connectors. USB Mode illuminates if a USB connection to a computer is active (your computer must be on). The FOOT SW LED illuminates if the footswitch is pressed. FOOT CTRL LED illuminates when the footcontroller is actuated (MIDI data is sent). Permanently fixed functions are assigned to this key section: STORE saves presets. LEARN gets you to the LEARN mode. EDIT gets you to the EDIT mode. Using the EXIT key, you exit a programming level (edit mode/ global setup).

Use it also to cancel a store or copy procedure. The eight 100-mm faders are freely assignable for controlling MIDI commands. They are motorized, so they automatically slide into the predetermined position when you switch to another preset. If the software you are controlling or the MIDI device to which your B-CONTROL is connected support parameter feedback, the fader positions change automatically. Using the PRESET keys, 32 presets can be recalled. The preset number is shown in the display. These four keys can be assigned to any MIDI command of your choice. These are the MIDI connectors of your B-CONTROL. Depending on the operating mode, MIDI OUT B doubles as MIDI THRU. This is the SWITCH connector for connecting a footswitch. Its polarity is automatically detected. CONTROLLER connector.

Here, you can connect an expression pedal that can be used for controlling assignable MIDI data. 3. CONTROL ELEMENTS AND CONNECTIONS 7 B-CONTROL FADER BCF2000-WH Fig. 3.1: The control surface of the B-CONTROL Fig.3.2: The back of the B-CONTROL Use the POWER switch to switch on the B-CONTROL. Before connecting the B-CONTROL to the power mains, ensure that the POWER switch is in OFF position. To disconnect the unit from the mains network, pull the plug from the socket. When switching on the B-CONTROL, ensure that the mains plug is easily accessible.

Please note: The POWER switch does not fully disconnect the unit from the mains power cord plug or extention cord. To disconnect the unit from the main power source, pull out the main cord plug or appliance coupler. When installing the product, ensure the plug or appliance coupler is readily operable. Unplug the power cord when the unit is not used for a prolonged period of time. The connection to the mains is established using a standard connection socket. A matching cable is included in the shipment. SERIAL NUMBER. The USB connector is used for connecting to a computer with a compatible USB input. + 8 3. CONTROL ELEMENTS AND CONNECTIONS B-CONTROL FADER BCF2000-WH 4.

OPERATION 4.1 The operating modes Depending on how you want to use your B-CONTROL, you should first select an operating mode. You can use it as a pure USB controller for your computer applications (software mixers, sequencers, soft synths, VSTeffects etc.), as a stand-alone MIDI controller, or as a combination of both with different MIDI interface configuration possibilities. Here is how you select an operating mode: s s s Keep the EDIT key pressed, and press the STORE key at the same time.

You are now in the global setup menu and you can let go of both keys. Now, select an operating mode by turning the PUSH encoder 1. You can select USB modes U-1 to U-4 and stand-alone modes S-1 to S-4. The modes are described in detail in chapter 4.1.

1 and further, and examples about their use are also given there. Please see also chapter 4.3.3. To exit global setup, please press the EXIT key. The settings made in the global setup menu are automatically stored and do not have to be separately saved. 4.1.1 USB modes USB mode U-1: s + The USB connection is briefly interrupted if you switch within a USB mode, or when you switch from a USB mode to a standalone mode and vice versa. If a USB connection is made or lost while your B-CONTROL is on, the selected operating mode is retained.

Fig. 4.1: Routing and use in USB mode 1 In USB mode 1, the B-CONTROL is connected to your computer by using a USB cable. It sends MIDI data and receives parameter feedback from the computer, provided that the music software you are controlling supports these functions. This way, current parameter values can be shown on the LED, or can be indicated by the fader position. All MIDI ports of the B-CONTROL are off. This mode is optimal for controlling software tools (mixers, sequencers, synths, VSTeffects etc.) if you dont need any additional MIDI ports. This mode is also very useful if you are already using other multi-channel MIDI interfaces on your computer and cant address any additional ones. 4.

OPERATION 9 B-CONTROL FADER BCF2000-WH USB-Mode U-2: USB-Mode U-3: Fig. 4.2: Routing and use in USB mode 2 Your B-CONTROL sends MIDI data to the computer and receives parameter feedback, provided that the software you are controlling supports this function. MIDI IN and OUT A are available as a 16channel MIDI interface for your computer. OUT B functions as MIDI THRU and forwards MIDI IN data unchanged.

OUT B is not accessible from the computer, and doesnt send any control data from the B-CONTROL. This mode is ideal for applications in which you control music software on your computer and at the same time need a USB MIDI interface with one IN and one OUT. Additionally, a MIDI keyboard can be tapped into at the MIDI THRU (OUT B) connector. This way, you can use a master keyboard to import your arrangements into the sequencer, or to play back software synths. OUT A controls a hardware sampler, while a MIDI expander (sound generator without a keyboard; e.

g. a rack synthesizer or a pure preset unit), an effects processor or similar can be connected at OUT B, whereby it is directly controlled only from the keyboard or is controlled only via program changes. Fig. 4.3: Routing and use in USB mode 3 This is surely the most often used standard mode with computer applications. This setting is optimal for controlling software while all MIDI connectors are used as a USB-MIDI interface for the computer. With this function, there are 16 input channels and 32 output channels available to your music software (IN and OUT A + OUT B). The B-CONTROL transmits its data via USB to the computer. The availability of parameter feedback from the computer to the B-CONTROL depends on the software your are controlling. MIDI expanders can not be directly accessed from the keyboard in this operating mode.

This operating mode is only used to import MIDI tracks into the sequencer. 10 4. OPERATION B-CONTROL FADER BCF2000-WH USB-Mode U-4 (expanded): Fig. 4.4: Routing and use in USB mode 4 This operating mode should be selected if you want to couple two B-CONTROLs to control your software using both B-CONTROLS through a common USB port. Additionally, MIDI OUT B of the first controller (unit 1) can be used from the computer as a 16-channel MIDI output. The data of both B-CONTROLs is mixed and is sent to the host computer via USB. Select standalone mode 3 for the second unit (unit 2). 4. OPERATION 11 B-CONTROL FADER BCF2000-WH 4.

1.2 Stand-alone modes The stand-alone modes come into play when the B-CONTROL is not used as a USB-controller for controlling computer applications but as a pure MIDI controller. With all stand-alone modes, all MIDI connectors can be used simultaneously, and these modes differ only in how the data is transmitted on the MIDI outputs. Of course, not only sound generators can be remotely controlled (as shown in the illustrations) but also effects processors, groove boxes, hardware sequencers, lighting equipment, compact studios, portable keyboards, digital pianos etc.

basically any equipment with a MIDI input.

This can also be your computer with its own MIDI interface. The USB connector can not be used while your B-CONTROL is in one of the stand-alone modes. A merge function that makes mixing MIDI data from two different sources to one output possible is active at output A in standalone modes S-1 to S-3. Stand Alone-Mode S-1: Stand Alone-Mode S-2: Fig. 4.

6: Routing and use in stand-alone mode 2 Say you want to control just one sound generator from your B-CONTROL because the tone generator allows extensive editing (e.g. its a rack synthesizer or a sampler, as shown above). The MIDI keyboard should be able to play both sound generators. In this case, S-2 is the optimal setup. The second sound module can be a pure preset unit that doesnt allow any programming. However, it can also be an effects unit that only receives program commands from the keyboard. This operating mode is also very useful when the data received by the second unit is undesired and could otherwise disrupt operation (e.g. to MIDI functions that cannot be switched off or the MIDI channel can not be changed).

Fig. 4.5: Routing and use in stand-alone mode 1 S-1 is probably the most frequently used standard operating mode among the stand-alone applications. We recommend using it when you for example want to control two sound generators from your B-CONTROL, whereby both sound generators are played simultaneously from a master keyboard. To do this, MIDI data from the B-CONTROL and the keyboard have to be mixed and transmitted on both MIDI OUTs. This is done using the integrated merge function. The master keyboard is connected to the MIDI input of the B-CONTROL. Both expanders played from the master keyboard and controlled by the B-CONTROL are connected at the MIDI outputs. Control data for the B-CONTROL will probably be program change and real-time controller commands, while the keyboard will typically transmit keyboard commands (note on/off, velocity, after touch, pitch bend). 12 4.

OPERATION B-CONTROL FADER BCF2000-WH Stand Alone-Mode S-3: Stand Alone Mode S-4: Fig. 4.7: Routing and use in stand-alone mode 3 In this mode, MIDI data from the B-CONTROL is mixed with the data coming in at the MIDI input (merge function), but is exported exclusively on output A. Only control data of the B-CONTROL is available at output B. This way, you can control two MIDI devices from your B-CONTROL, but only the device connected at OUT A can additionally be played from the MIDI keyboard.

If you want to daisy-chain two B-CONTROLs to jointly control several MIDI devices, you need to connect OUT A of the first B-CONTROL to MIDI IN of the second B-CONTROL. OUT A of the second B-CONTROL needs to be connected to the MIDI input of the effects unit. If additional MIDI devices need to be talked to, please connect the THRU port of one MIDI device to the IN port of the next MIDI device. This way, with different MIDI channel assignments, each MIDI device can be controlled from each one of the B-CONTROLs. If additional MIDI inputs are needed, then external MIDI merge boxes must be used. @@@@@@@@@@@@@@@@@@@@@MIDI control commands are laid out at output A. @@@@Connect OUT A to the MIDI input on the interface. An additional MIDI receiver can be connected to OUT B. An expansion using a second B-CONTROL is also conceivable. @@@@@@@@@@@@@@Other stand-alone modes may cause undesirable MIDI loops. @@@@In this case, all stand-alone modes can be used. @@Alternatively, you can also use S-3 and connect the computer via MIDI OUT B so that no MIDI feedback loop is created. s Cancel the store procedure by pressing the EXIT button. We deliberately did not include an autostore function. That way, you can assign a new MIDI control to a control element without changing the current preset.

If you want to restore a preset, just select another preset briefly and again return to editing. Now, the old data has been restored. 4.2.3 Copying encoder groups With this function you are able to copy an entire encoder group within a preset. This saves a lot of programming effort if all encoder groups within a preset consist of the same basic functions (e.g. MIDI channel, CC number for turn and push function). s s s s s Press the encoder group button of the group you want to copy. Press STORE; the STORE button LED flashes.

Now select the destination encoder group. The destination encoder button LED flashes. Press STORE again, the STORE button LED is no longer lit. Cancel the store procedure at any time by pressing EXIT. To permanently store encoder group settings, carry out the preset store function as explained in chapter 4. 2.2. To copy an encoder group into a different preset, you have to copy an entire preset! After that, you can copy or rearrange the encoder groups in the new preset as described above. 4.2 Play mode menu The Play mode menu is the highest menu level in the B-CONTROL.

Use it during normal operation for real-time control of MIDI data. Display: After switching on the unit, the current system software version is briefly displayed. Value changes are shown when using one of the control elements, provided that they have been activated. Control elements: You can use several keys, encoders and faders simultaneously and send their MIDI data. The classification of MIDI data types is explained in chapter 4.4. According to its assigned MIDI data type, each control element shows the current parameter value in the corresponding LED or LED ring. The position of the faders changes automatically as soon as you choose another preset or during incoming parameter messages. LED display: The encoder LED ring displays or the status LEDs of the buttons change automatically when running controller recordings in a sequencer, provided, of course, all connections have been made correctly, the correct operating mode is enabled and the software sequencer supports sending parameter values. Button illumination varies according to the controller mode: if a button is in Toggle on mode, the button LED illuminates as soon as the button is pressed.

Only when you press the button once again, the LED goes out. If a button is in Toggle off mode, the corresponding LED will be lit only for the time the button is pressed. The performance of the control elements, the display and the LED displays can be individually set up and is explained in chapter 4.3 Programming. + + 4.3 Programming 4.3.1 The LEARN function The easiest way to assign MIDI functions to individual control elements is to use the LEARN function. Here, the MIDI data is assigned remotely. For example, MIDI data sent from a MIDI sequencer to your B-CONTROL is assigned to a control element selected beforehand.

With LEARN, not only CC, NRPN and note commands can be received but almost any type of MIDI data, including short SysEx strings. s Press and hold the LEARN button while operating any control element. This can be a fader, a PUSH encoder, button, footswitch or sustain pedal. The control element is shown in the display (e. g.

Fd 8). When using push encoders, select an encoder group beforehand.

In addition, you have to differentiate between turn and push function. Now, release the LEARN button. The B-CONTROL is waiting to receive MIDI data. Start transmitting MIDI data from your sequencer. As soon as the data is received by the B-CONTROL, it is shown in the display. After correct data transmission, the display shows GOOD or bAd if wrong, faulty or too extensive data has been sent. To leave or cancel LEARN, press the EXIT button. 4.2.1 Selecting a preset s s Select a preset with the PRESET button preset number is indicated in the display. . The new + s s Alternatively, you may select a preset by pressing and holding down the preset button while moving one of the push encoders . As soon as you release the PRESET button, the new preset is active.

s 4.2.2 Copy/store presets s s Press the STORE button to save a preset. The button LED starts to flash. Select a memory number using the PRESET buttons or by holding down one of the PRESET buttons while moving a push encoder at the same time. The new preset number flashes in the display. By pressing STORE again, the STORE LED and the display stop flashing. If you want to overwrite the current preset, press the STORE button twice (step 2 can be cancelled). s s s s 14 4. OPERATION B-CONTROL FADER BCF2000-WH 4.

3.2 Programming in EDIT mode Various types of MIDI commands (Pitchbend, After Touch, MMC etc.) are assigned to the individual control elements in EDIT mode. s To activate the EDIT mode, press and hold the EDIT button and operate a control element. This can be a fader, sustain pedal, a push encoder, a button or footswitch.

The control element is indicated in the display (e. g. Fd 8). When using push encoders, select an encoder group beforehand. In addition, you have to differentiate between turn and push function.

Release EDIT; you are now in the EDIT mode. Using the push encoders, you can now assign MIDI commands to the selected control element. You will find all possible MIDI function in tables 4.1 and 4.2, including all accompanying explanations. s s If you want to assign MIDI data to additional control elements, just press and hold the EDIT button and move one of the control elements. Now, let go of both controls and use the push encoders to assign a function to it (see tables 4.1 and 4.2). To leave the EDIT mode, press EXIT.

Initially, all settings made here are stored temporarily! If you intend to store them in a preset, please see chapter 4.2.2. + s s + The detailed EDIT functions are described in the following two tables. With the assignable control elements, we differentiate between CONTINUOUS and SWITCH types. s CONTINUOUS-type control elements (table 4.1) include the 8 faders, the sustain pedal and the turn function of the push encoders. SWITCH-type control elements (table 4.2) are buttons, press functions for push encoders and footswitch. s Table 4.

1: Assignment of the push encoders in EDIT mode (CONTINUOUS types) 4. OPERATION 15 B-CONTROL FADER BCF2000-WH Table 4.2: Assignment of the push encoders in EDIT mode (SWITCH types) Table explanation: All settings in the EDIT mode are made by turning the push encoders. Pressing the push encoder displays its current value. In addition, the setting options depend on whether the selected control element is a SWITCH type or CONTINUOUS type. In the EDIT mode, Push Encoder 1 selects (by turning) the type of command assigned to a control element. With Push Encoder 2, select a MIDI channel through which that control elements data is sent. Push Encoders 3 - 5 set parameters and values for the selected MIDI type. They vary depending on the MIDI function. More details about this subject can be found later in this chapter.

Push Encoder 6 (Controller Mode) selects how the previously selected control element behaves, depending on whether it is a SWITCH or a CONTINUOUS type. CONTINUOUS-type elements: CONTINUOUS-type element controls are divided into Absolute, Absolute (14 bit), Relative 1 (2nd complement), Relative 2 (binary offset), Relative 3 (MSB, most significant bit), Relative 1 (14 bit), Relative 2 (14 bit), Relative 3 (14 bit) and Increment/ Decrement. Absolute means absolute data values although jumps may occur when changing values. With Relative, the current parameter value is continued independently from the position of the control. Absolute (14-Bit) or one of the Relative (14-Bit) modes are standard modes for value changes at NRPNs with high resolution. This is necessary with some software mixers if more than 128 steps are needed. Increment/Decrement serves as a step-by-step increase or decrease of values by using the Data Increment/Decrement commands (see list 5.1 in the appendix). + The classic controler mode for most applications is absolute. All other modes have to be supported by the MIDI software or the device to be controlled.

Using Push Encoder 7, you can adjust how control elements display information. Depending on whether you are dealing with an encoder, push encoder, fader or foot pedal, there are different options available: 16 4. OPERATION B-CONTROL FADER BCF2000-WH LED display of the push encoders: OFF The LED circle remains off. 1d 1d2d (1 digit): Only one LED lights up (standard setting). The LED circle operates similar to 1d, but when the value is 0, no LED lights up. The display of the LED circles occurs in two stages. If you slowly turn the encoder from left to right, at first only one LED lights up, and then the next LED lights up while the previous LED goes out, and so on. This way, even the slightest value changes can be accurately represented. Just like 2d, but when the value is 0, no LED lights up. Bar display: when the value is changed, all LEDs light up successively (for volume etc.

). Just like bar display, but when the value is 0, no LED lights up. Spread: When the value is 0, the upper middle LED lights up; when the value is increased, the LED circle gradually lights up in both directions (left and right). In the middle position (value = 64), only the upper middle LED is on. With lower values, the LED circle lights up toward the left; with higher values, the LED circle lights up toward the right (panorama adjustment).

(Quality Q) has the opposite effect from spread: the LED circle lights up gradually when you decrease the value. This setting is used for indicating filter quality with parametric equalizers. Cutoff is optimal for controlling the cutoff frequency of a low-pass filter, for example on a synthesizer. When the value is 0, all LEDs light up. The LEDs go out successively as you increase the value.

The Toggle Off mode corresponds to a momentary-contact button, comparable to the switch of an electric door opener. The on value is sent only as long as the button is pressed. After releasing the button, the off value is sent. Use this control type to trigger short sound FX or samples (similar to using a keyboard) by sending Note On and Offs. The Increment option only works for buttons, and only on CC, NRPN and after touch command types. This mode lets you gradually increase the controller value with each new keystroke.

Set up increment size using encoder 7. If you repeatedly press a button, the value sent will be increased each time by the preset amount selected here. If increment size is set to 10, values 0, 10, 20, 30 ..

. 110, 120, 0, 10 and so on will be successively sent one after another. You can also enter negative values (e.g. -10) to achieve a gradual decrease in the value. If you use encoders 4 and 5 to delineate the lowest and the highest value that are to be sent, the values always stay within that range here as well. With this function, you have the option to use your B-CONTROL to control software buttons with more than two switch positions. The value display activated using Push Encoder 8 is identical for switch and continuous elements. If this value display is active, the current value is indicated in the four-digit display when you actuate a control element. The display shows the preset number again as soon as you release the control element.

2dBar BarSprd Pan Qual 4.4 MIDI messages Program Change: With the encoders 3 and 4 you can select bank numbers. If a MIDI device contains more than 128 presets/programs, first a bank change command has to be sent. Even though this is a controller command, it has to be sent before the program change (and is therefore adjustable) since it is linked to the preset change. If the bank select message is not needed, simply select off.

Encoder 5 selects the program number. If the selected control element is a control dial (continuous type), the program number is directly selected when turning the dial. Pressing the switch directly selects the assigned program number. This can be useful if you always want to start from the same preset. Control Change CC: A control change consists of a controller number and its respective value.

Encoder 3 sets the controller number. With buttons, different values can be sent when pressing and releasing (to be set with encoders 4 and 5). This function is useful if fixed parameter settings are to be sent. With faders and control dials (continuous type), the value range can be determined by using encoders 4 (minimum value) and 5 (maximum value). Cut Damp Damping: used for damping filters. When the value is 0, the outer right LED lights up. If the values are increased, the LED circle fans out from right to left until all LEDs light up. This way, increasing damping is best represented when a value goes up. Fader functions: Move If you move the fader by hand, it sends a new value directly. In doing so, jumps in the parameter value may occur if the current value doesnt correspond to the fader position.

This can sometimes happen because in this mode parameter feedback doesnt cause fader movement. P-UP Pick up: The fader ignores the parameter feedback. However, value jumps are avoided because the fader only sends values if the current value (different from the fader setting) is exceeded. Motor: With parameter feedback, the motorized fader engages automatically and always indicates the current value. Mot + Foot controller function: Move The pedal immediately sends value changes. Value jumps may result. P-UP Pick-Up: The foot pedal become active and sends values only if the set value is exceeded. Alternatively, you can invert the value scale by assigning 127 as the minimum value and 0 as maximum value (scale inversion). A classic application is the draw bar control of virtual or digital organs or organ expanders. If assigning controller 7 (volume) to the faders this way, the signal becomes quieter when moving up the fader.

Moving down the fader is similar to moving out the draw bars, and the volume increases. SWITCH-type elements: SWITCH-type control elements have three different modes: Toggle On, Toggle Off and Increment. Toggle On is similar to a switching function (e.g. a light switch).

Each time you press the switch, the value sent alternates between the on value (set by encoder 4) and the off value (set by encoder 5). This setting is perfect for triggering drum loops from a sampler (press once = start, press again = stop). NRPN: A NRPN is needed if none of the 127 standardized controller numbers are available for a certain function. Encoder 3 selects the parameter number. For assigning mixer faders, we recommend the high resolution (Absolute 14 bit), provided that the control hardware/software supports it.

Note: Of course, a note can only be assigned to one SWITCH element. The note is set with encoder 3. Note C3 (C key) corresponds with note number 60. Encoder 4 sets the note velocity (note volume). 4. OPERATION 17 B-CONTROL FADER BCF2000-WH Pitch Bend: Pitch bend is assignable to only one CONTINUOUS element. Since this is a type of command with its own status byte, selecting a MIDI channel (Encoder 2) and Range (Encoder 4) is sufficient. After Touch: Normally, ALL is selected here. This means that After Touch affects all notes equally (Channel Pressure). If you want to use a polyphonic After Touch (Key Pressure), the single note on which After Touch should have an effect can be selected using encoder 3.

Since this process is only supported by a few tone generators, channel After Touch will be best most of the time. When a switch element has been selected, an on and off value can also be set (release dynamic). Therefore, you can limit the modulation range (FX depth) using After Touch. MMC: MIDI Machine Control data is only assignable to button elements. Encoder 4 (Value 1) sets Locate Time hour and minute values, while encoder 5 (Value 2) sets seconds and frames. The Locate Position is always sent before the MMC command. We therefore have the following logic-switching sequence: If the Locate parameter has been selected, the sequencer or hard drive recorder always jumps to the set position. If Play has been selected as the parameter (for a button), the sequencer always starts from the set locator point as soon as the button is pressed. Rewind always begins at the chosen locator point. Select the frame rate with encoder 6: 24, 25, 30 (non-drop), 30d (drop frame) or off (in this case only the MMC message is sent, without any information of the locate position).

GS/XG: Encoder 3 directly selects the most important Main Control parameters. The display indicates them as a (shortened) text (table 4.2). In this case, these are CCs or NRPNs (no SysEx data). (QFRGHU 1 2 3 4 5 6 7 8)XQFWLRQ Operating Mode Global RX Channel Footswitch Start-Preset Device ID SysEx Dump MIDI Data Interval 6HOHFW U-1 .
.. U-4, S-1 ...
S-4 Off, 1 ... 16 Auto/Normal/Inverted 1 ... 32, Last 1 ... 16 Single/All (ms) Table 4.

4: Push encoder allocation in global setup menu s To exit the global setup menu, press EXIT. The settings in the global setup menu take effect immediately and do not have to be separately stored. + Operating Mode: The operating modes are described in chapter 4.1. You can select USB modes U-1 to U-4 and stand-alone modes S-1 to S-4. Global RX Channel: The B-CONTROL receives program change commands on this channel. Footswitch type: Because there are different kinds of footswitches (depending on their switching behavior), the polarity of the footswitch connector can be set (normal/inverted), or it can be automatically detected during power startup (auto recognition).

Start Preset Number: Each of the 32 presets can be selected as the startup preset. Additionally, with the Last function, at startup you have the option to always load the preset that was used last. Device ID Number: You should change the ID number settings only if you work with several BCF2000-WHs at the same time, and problems with recognizing the correct device start occurring during a SysEx Dump procedure.

+ Please keep in mind that SysEx Dumps can only be received at the device number to which they were sent! SysEx Dump Select: Turning push encoder 6 lets you select between the current preset (single) or the entire memory contents of the 32 presets (all) should be sent as a SysEx dump. One press on encoder 6 triggers the dump. To receive a SysEx dump, you dont have to change any settings on your equipment. If you send a single preset to the B-CONTROL, the data is written to a temporary memory; to be stored permanently, the data has to be stored on a storage slot of your choice (preset store function). Table 4.

3: GS/XG Parameter Main Controls Encoders 4 and 5 let you confine or invert each controllers value range. + s WARNING: If you send an ALL-Dump to the B-CONTROL, the entire memory contents are directly overwritten! No request to confirm will be made, and the memory has no redundant safety function! To cancel a SysEx dump, press the EXIT key. 4.5 Settings in the global setup menu Settings that have an effect on all presets are made in the global setup menu. s s s Keep the EDIT key pressed and at the same time press the STORE key.

You are now in the global setup menu, and can let go of both keys. Now, turn the push encoders 1 to 8 to get the desired setting. This is how the push encoders are allocated: MIDI Data Interval: This is where you adjust the data transmission rate. This setting only has an effect on MIDI data packs such as SysEx dumps and not on controlling of MIDI commands (they are carried out in real time anyway). The transmission rate is adjustable in milliseconds. 18 4. OPERATION B-CONTROL FADER BCF2000-WH 4.6 The Emulation Modes The BEHRINGER B-CONTROL is the ideal supplement to many sequencers and recording software. It offers an intuitive und musical operation of the most frequently used control elements. This chapter outlines the connection and configuration of the B-CONTROL and your computer.

In order to obtain the best connection between the B-CONTROL and your software, use one of the five B-CONTROL emulation modes. The emulation modes contain pre-programmed control element assignments: s B-CONTROL mode (BC): General mode where you can create your own settings. Please see chapter 4.3 for further reference. Mackie Control (mC C): This mode is ideal for applications that support the Mackie Control protocol (Steinberg Cubase SX and Nuendo, Propellerhead Reason and Ableton Live 5). Logic Control (LC): In this mode, Apple Logic Pro detects the B-CONTROL as Emagic Logic Controller. Mackie Control (mCSo): Special Mackie Control mapping for Cakewalk Sonar 3. Mackie Baby HUI (bhuI): Mapping for applications that support the Baby HUI protocol (Digidesign Pro Tools, Steinberg Cubase SX / Nuendo, easier setting than Mackie Control Protocol). 4.6.

1 Global Edit Setup If any of the 4 emulation modes is active, it is not possible to change presets, control elements or parameters on the B-CONTROL. You cannot select Global Edit parameters as described in chapter 4.5. You can, however, change these before starting the selected emulation mode. Simply follow these steps: 1.

2. 3. 4. 5. Push and hold the desired mode button (see fig.

4.9). Switch on the B-CONTROL and wait until EG (EDIT GLOBAL mode) is indicated on the display. Release the mode button. Now you can edit the global settings with the push encoders 1 to 8 as described in chapter 4.5. Press the EXIT button to leave the Global Edit setup. The preselected emulation mode is now active and is indicated on the display. s s s s 4.7 Additional functions Temporary Local Off: Local Off means that when you move a control element on the B-CONTROL, no MIDI data is transmitted.

If the position of a control element deviates from the current value in the software, you can readjust its position until the correct position is found by using this function. After that, the control can be moved again without creating an audible value deviation. Deviations between the position of a control element and the current parameter value can occur if no parameter feedback is being sent while a value is being changed in the software (e.g. mixer automation). s s s Press the EXIT key and keep it pressed. Move the desired control element until you get the correct value. Let go of the EXIT key. The control element can now be moved again. The emulation templates (see chapter 5 Appendix) indicate which parameter of the corresponding protocol is assigned to which B-CONTROL control element.

The Mackie and Logic Control emulations contain the most common parameters/select options. The function of each control element is pre-programmed and complies with the emulated hardware controller. The specifications of the parameters orient themselves on the original adaptations; see emulation templates below for detailed assignments. For detailed descriptions of the original protocols and software adaptations of the emulated hardware controllers, please visit the homepages of the corresponding hardware manufacturers (controllers), software manufacturers (adapted music application) or look up the help menu of the corresponding music software. 1.

2. Ensure that the B-CONTROL is switched off. Push and hold the desired mode button (LC). Panic Reset: This function resets the most important MIDI data to their factory settings. s s s Press EDIT and keep it pressed.

Now press EXIT. The reset is performed as soon as you press EXIT. PAnC (for Panic) appears in the display. As soon as the reset is over, your B-CONTROL goes automatically into the play mode, and the current preset is shown in the display. Data Request: Current value settings of the MIDI device connected to your B-CONTROL can be transmitted to your B-CONTROL using the data request function (provided that the MIDI device supports this function, and a request command was defined using the editor software). In this case, the MIDI device doesnt send data; the B-CONTROL requests them instead. s Fig. 4.9: Emulation mode buttons 3. 4.

Switch on the B-CONTROL and wait until the selected mode is indicated on the display. Release the mode button. Press the LEARN key while the EDIT key is kept pressed. The request takes place, and the B-CONTROL indicates the controller values of the receiving MIDI device on the LED ring or through fader positions. Snapshot Send: A Snapshot Send lets you send all current controller values in order to transmit the B-CONTROL settings to the connected MIDI device. s PRESET key while the EDIT key is kept Press the pressed. The B-CONTROL now sends the current controller settings. Single Preset Dump: In addition to the SysEx Dump function in the global setup menu, the following key combination lets you send all settings of the current presets: 4.

s s Press the PRESET pressed. key while the EDIT key is kept If you want to cancel the dump, press the EXIT key.

Snapshot Send and Single Preset Dump differ in the kind of data that is being sent: With Snapshot Send, only current control values are transmitted in order to synchronize them with the connected MIDI device. With Single Preset Dump, the entire contents of the current preset including the current control assignments are sent. With this function, you can easily archive certain presets, or swap them with other B-CONTROL users. + Motor Off Function: The fader motors can be temporarily disengaged. To do that, one or several fader(s) is/are assigned a key that disengages the faders motor for the duration of the keystroke.

All 20 programmable keys (and) are available. s s s s Press the EDIT key and keep it pressed. Move the fader(s) whose motors you wish to disengage. Press the key to which you want to assign the motor-off function. Exit with EXIT.

The MIDI command assigned to a key remains preserved. This way, that MIDI function can be used simultaneously with the fader motor being disengaged when the key is pressed. + 5. APPENDIX Table 5.1: Standard MIDI Controller 20 5. APPENDIX B-CONTROL FADER BCF2000-WH 6. SPECIFICATIONS USB INTERFACE Type MIDI INTERFACE Type Full-speed 12 MBit/sec. USB MIDI class-compliant 5-pin DIN connectors IN, OUT A, OUT B/THRU CONTROL ELEMENTS Controls 8 motorized 100-mm faders 8 infinitely variable push encoders with LED rings Keys 20 keys 10 system keys (4x Encoder Group, 4x programming, 2x Preset) Table 5.2: GS/XG Parameter Main Controls DISPLAY Type SWITCHED INPUTS Footswitch Foot pedal POWER SUPPLY Voltage Power consumption Fuse Mains connection 4-digit 7-segment LED display 1 x ¼" TS connector with automatic polarity detection 1 x ¼" TRS connector 100 to 240 V~, 50/60 Hz max. 15 W T 1 A H 250 V Standard IEC receptacle 0XVLFDO 1RWH C-2 C#-2/Db-2 D-2 D#-2/Eb-2 E-2 F-2 F#-2/Gb-2 G-2 G#-2/Ab-2 A-2 A#-2/Bb-2 B-2 C-1 C0 C1 C2 C3 (Clef C) C4 C5 C6 C7 C8 G8 0,', 1RWH 1XPEHU 0 1 2 3 4 5 6 7 8 9 10 11 12 24 36 48 60 (Yamaha-Convention) 72 84 96 108 120 127 DIMENSIONS/WEIGHT Dimensions (W x H x D) 13" x 4" x 11 4/5" (330 mm x 100 mm x 300 mm) Weight approx.

2,60 kg (5 ¾ lbs.) Table 5.3: MIDI note number assignment BEHRINGER is constantly striving to manintain the highest professional standards. As a result of these efforts, modifications may be made from time to time to existing products without prior notice. Specifications and appearance may differ from those listed or illustrated. 6. SPECIFICATIONS 21 B-CONTROL FADER BCF2000-WH 7. WARRANTY § 1 OTHER WARRANTY RIGHTS AND NATIONAL LAW 1. This warranty does not exclude or limit the buyers statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract. 2.

The warranty regulations mentioned herein are applicable unless they constitute an infringement of national warranty law. § 2 ONLINE REGISTRATION Please do remember to register your new BEHRINGER equipment right after your purchase by visiting www.behringer.com (alternatively www.behringer. de) and kindly read the terms and conditions of our warranty carefully. Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently. Thank you for your cooperation! § 3 WARRANTY 1. BEHRINGER (BEHRINGER International GmbH including all BEHRINGER subsidiaries listed on the enclosed page, except BEHRINGER Japan) warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (1) year* from the original date of purchase, in accordance with the warranty regulations described below. If the product shows any defects within the specified warranty period that are not excluded from this warranty as described under § 5, BEHRINGER shall, at its discretion, either replace or repair the product using suitable new or reconditioned parts.

In the case that other parts are used which constitute an improvement, BEHRINGER may, at its discretion, charge the customer for the additional cost of these parts. 2. If the warranty claim proves to be justified, the product will be returned to the user freight prepaid. 3. Warranty claims other than those indicated above are expressly excluded. § 4 RETURN AUTHORIZATION NUMBER 1. To obtain warranty service, the buyer (or his authorized dealer) must call BEHRINGER (see enclosed list) during normal business hours BEFORE returning the product. All inquiries must be accompanied by a description of the problem. BEHRINGER will then issue a return authorization number. 2.

Subsequently, the product must be returned in its original shipping carton, together with the return authorization number to the address indicated by BEHRINGER. 3. Shipments without freight prepaid will not be accepted. § 5 WARRANTY REGULATIONS 1. Warranty services will be furnished only if the product is accompanied by a copy of the original retail dealers invoice. Any product deemed eligible for repair or replacement under the terms of this warranty will be repaired or replaced. 2. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/ adaptation shall not be considered a defect in materials or workmanship. The warranty does not cover any such modification/ adaptation, irrespective of whether it was carried out properly or not. Under the terms of this warranty, BEHRINGER shall not be held responsible for any cost resulting from such a modification/ adaptation.

3. Free inspections and maintenance/repair work are expressly excluded from this warranty, in particular, if caused by improper handling of the product by the user. This also applies to defects caused by normal wear and tear, in particular, of faders, crossfaders, potentiometers, keys/buttons, tubes, guitar strings, illuminants and similar parts. 4. Damages/defects caused by the following conditions are not covered by this warranty: s improper handling, neglect or failure to operate the unit in compliance with the instructions given in BEHRINGER user or service manuals. connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used. damages/defects caused by force majeure or any other condition that is beyond the control of BEHRINGER. s s 5. @@6. @@7. @@BEHRINGER will inform the buyer of any such circumstance. @@with a separate invoice for freight and packing. Such costs will also be invoiced separately when the buyer has sent in a written repair order. § 6 WARRANTY TRANSFERABILITY This warranty is extended exclusively to the original buyer (customer of retail dealer) and is not transferable to anyone who may subsequently purchase this product.

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