



OWNER'S MANUAL

BASS COMBO AMPLIFIERS

BC10



BC20



BC40



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FEATURES

- Combo amplifier for bass instruments
- Passive and active inputs
- Class-A preamp with Low-Z circuitry for minimum noise and maximum headroom
- 3-Way EQ with controls for bass, mid and treble
- DDL (Dynamic Distortion Limiter) for distortion-free reproduction at all levels
- Aux-IN mini jack stereo input (Smartphone, MP3 player, CD player)
- Self-cooling construction (fanless operation)
- Dedicated stereo headphone amplifier
- Bass reflex speaker cabinet
- Speaker protection grille made of rugged steel
- **BC 10:**
 - 10 watt power amp
 - 8" Warwick WXC 8/8 bass driver
- **BC 20:**
 - 20 watt power amp
 - 8" Warwick WXC 8/8 bass driver
 - 2" Warwick WTR 2/8 neodymium high-frequency driver
- **BC 40:**
 - 40 watt power amp
 - 10" Warwick WXC 10/8 bass driver
 - 2" Warwick WTR 2/8 neodymium high-frequency driver

INTRODUCTION

A series of compact amplifiers for Bass instruments like nothing you have seen or heard before. These full frequency, extended headroom, integrated combo amps could be used for virtually any amplified instrument but are specifically tuned to the unique needs of Electric and Upright Bassists. Our considerations in these amp designs were multifold and our objectives are to provide:

- an affordable amplifier for the discerning musician,
- a gigging amplifier for the seasoned professional,
- a teacher's amp where both the student and the teacher can plug in simultaneously while playing musical examples with a music player through the auxiliary input,
- an amp for rehearsals, where space and sound levels are limited.

Here is a short explanation of the underlying design concepts:

INTEGRATED SPEAKER DESIGN

All speaker drivers and cabinets have been designed in tandem with the electronics to create units that work together efficiently. Careful consideration has been taken to modify all parameters, thereby achieving the best results in sound and performance. All components reflect a custom designed solution to give the end user perfect control over tone, volume and configuration.

CLASS A OPERATION

Class A amplifiers are typically more linear and as such are less complex than other amplifier classes. In Class A amplifiers, the amplification circuitry is designed so that it is always conducting electrical current. This means that the active elements are always on, thus avoiding the problem of crossover distortion.

LOW-Z CIRCUITRY

Thermal noise is a critical design issue when it comes to audio electronics. By lowering the impedance of components inside an electronic circuit, the overall thermal noise is substantially reduced. The Low-Z circuitry inside all of our amplifiers makes it possible to achieve consistent noise-free operation.

DYNAMIC DISTORTION LIMITER™

Distortion occurs when an amplifier works beyond its range, when the power supply cannot supply any more power to take the amp higher. A common method to control distortion in amps is to use a limiter, a device that stops the signal going beyond a specific level. Audio limiters work by setting a threshold signal level where the circuit kicks in and keeps signal levels within the capabilities of the power supply. This method is not very precise and often causes audible effects such as pumping and thumps. We designed a circuit that instead reads the distortion level in the power amp and starts limiting as soon as the amp shows even miniscule amounts of distortion. This means our amps always stay within 0.3% distortion (THD) when most amps are rated at between 5-10% distortion (meaning that to get your 20 Watt out of a 20 Watt amp you will get it audibly distorted and if you want a clean signal the power will be a lot less). There are desirable types of distortion, but these are not usually associated with transistor amplifiers, but more commonly associated with tube amps and effect pedals. Warwick's goal is to provide a great, clean sounding amp, allowing the user to decide how much, and what kind of distortion to employ.

SAFETY INSTRUCTIONS

Caution: To reduce the risk of electrical shock, do not remove the cover as there are no user serviceable parts inside. Refer servicing to qualified personnel.



This symbol, wherever it appears, alerts you to the presence of non-insulated dangerous voltage inside the enclosure - voltage that may be sufficient to constitute risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Read the manual.



WARNING!

This amplifier is capable of producing high sound pressure levels. Continued exposure to these high sound pressure levels can cause permanent and irreversible hearing damage. Ear protection is recommended if unit is operated at high volume for long period of time. If you experience any hearing loss or ringing in the ears you should consult a physician.

IMPORTANT SAFETY INSTRUCTIONS

1. Read and keep these instructions.
2. Observe all warnings and follow all instructions.
3. Do not use this device near water.
4. Clean only with dry cloth.
5. Do not block any ventilation openings.
6. Do not use the amp near any heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat.
7. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the device.
8. Only use attachments / accessories specified by the manufacturer.
9. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer. When a cart or rack is used, use caution when moving the cart with the device to avoid injury from tip-over.
10. Unplug the apparatus during lightning storms or when you do not use it for an extended of time.
11. Refer all servicing to qualified personnel. Servicing is required when the device has been damaged in any way, such as the power cord or plug being damaged, liquid has been spilled or objects have fallen into the device or if the device has been exposed to rain or moisture, does not operate normally, or was dropped.
12. **WARNING:** To reduce the risk of electric shock, do not expose this device to rain or moisture. Do not expose the device to dripping or splashing liquids and do not place liquid-filled objects, such as bottles, on the device.
13. Never place the amplifier on a support that might give out under its weight.
14. **Correct Disposal of this product.** This symbol indicates that in EU countries this product should not be disposed with other household waste. To prevent possible harm to the environment or human health from uncontrolled waste



disposal, recycle it responsibly to promote the sustainable reuse of material resources. To dispose of a used device, please use the official return and collection systems or contact the retailer where the product was purchased.



This equipment is a Class II or double insulated electrical appliance. It has been designed in such a way that it does not require a safety connection to electrical earth (grounding).

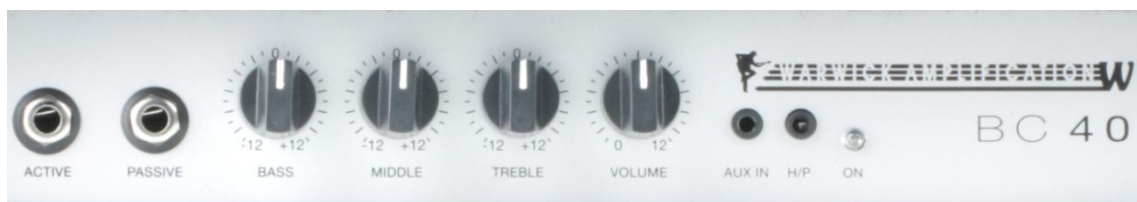
GETTING STARTED

1. **Connect to power** – Set the power switch on the back panel to the "O" position, connect the supplied power cord first to the amplifier and then to an AC outlet supplying the correct voltage as indicated on the back of the amp.
2. **Adjust the front panel controls** – Set VOLUME control to zero, all other controls should be set to neutral / middle position.
3. **Connect your instrument** – Use an instrumental cable to connect your guitar to the proper ACTIVE or PASSIVE input. Turn all volume controls of your guitar to their maximum setting.
4. **Turn the amp on** – Set the power switch on the back panel to the "I" position.
5. **Adjusting your individual settings** – Set the VOLUME to a desired value - you should now hear sound from the speaker. Adjust the other controls to your liking.

Caution: If you hear distortion or clipping in the output signal, please reduce the output by turning back the VOLUME control and / or reduce the input signal by turning down the output of amplifying pedals in front of the amp (booster, overdrive, etc.).

Excessive and distortion of the output signal is an indication for an overloaded power amp circuit and can result in damage to the power amp stage.

PANEL CONTROLS



- ACTIVE** Input to plug in instrument using shielded guitar cable. This input is low sensitivity to suit the output from instruments with active electronics.

- PASSIVE** Input to plug in instrument using shielded guitar cable. This input is high sensitivity to suit the output from instruments with passive electronics.

- BASS** Shelving Bass control: +/- 12 dB gain at 60 Hz. The control is flat in the center position.

- MIDDLE** Peaking Middle control: +/- 12 dB gain at 800 Hz. The control is flat in the center position.

- TREBLE** Shelving Treble control: +/- 12 dB gain at 10 kHz. The control is flat in the center position.

- VOLUME** Controls the output volume.

- AUX IN** 3.5 mm input for connection to an external sound source. This can be used for connecting a Smartphone or MP3 player into the amp or for connecting an external preamp.

- H/P** 3.5 mm headphone output for practice use in situations when speakers are too loud. The amp features a dedicated stereo headphone amplification circuit where the aux input will be played back in stereo and the instrument signal will be reproduced in the center of the stereo field.

- POWER LED** Indicates that the amp is connected to a power outlet and switched on.

REAR PANEL

Power switch - ON/OFF switch for mains power.

Mains connector - Figure-eight socket for connection to the mains power supply.
Only connect the unit to a power outlet rated for the power specified above the connector.



For your safety, remember to plug the power cord into the amplifier first and then into the wall outlet before turning on the POWER switch.

If you want to disconnect the unit, first turn off the POWER switch, then unplug the power cord from the wall outlet, and finally unplug the power cord from the amplifier.

SPECIFICATIONS

	BC 10	BC 20	BC 40
Input sensitivity: Active input: Passive input: Aux input:	360 mV / 50 k Ω 110 mV / 500 k Ω 750 mV / 50 k Ω		380 mV / 50 k Ω 130 mV / 500 k Ω 630 mV / 50 k Ω
Tone controls:	Bass: +/- 12 dB @ 60 Hz Middle: +/- 12 dB @ 800 Hz Treble: +/- 12 dB @ 10 kHz		
Frequency response:	20 Hz - 20 kHz +/- 0.5 dB		
THD:	less than 0.3 % at rated output power		
Output Power:	10 W @ 8 Ω	20 W @ 8 Ω	40 W @ 8 Ω
Power consumption:	22 W	43 W	78 W
Speaker specifications:	8" Bass Driver: 10 W, impedance: 8 Ω , SPL: 90 dB frequency response: 80 Hz - 10 kHz	8" Bass Driver: 20 W, impedance: 8 Ω , SPL: 97 dB frequency response: 80 Hz - 10 kHz 2" HF Driver with Horn: 10 W, impedance: 8 Ω , SPL: 97 dB frequency response: 1 kHz - 20 kHz	10" Bass Driver: 40 W, impedance: 8 Ω , SPL: 89 dB, frequency response: 50 Hz - 8 kHz 2" HF Driver with Horn: 10 W, impedance: 8 Ω , SPL: 97 dB frequency response: 1 kHz - 20 kHz
Weight:	6.5 kg / 13.2 lbs.	9 kg / 19.8 lbs.	15 kg / 33 lbs.
Dimensions (W/H/D):	320 x 250 x 220 mm 12.6" x 9.8" x 8.7"	310 x 390 x 370 mm 12.2" x 15.4" x 14.6"	360 x 440 x 370 mm 14.2" x 17.3" x 14.6"

TROUBLESHOOTING

When your unit seems to not work properly, take a few minutes to troubleshoot before calling service. You can save yourself time and money by doing it yourself, because the source of problem is often something quite simple.

What is the problem?

- The signal sounds distorted.
 - Reduce output by turning back the VOLUME control.
 - Reduce the input signal by turning down the output of amplifying pedals in front of the amp (booster, overdrive, etc.).
 - WARNING:** Excessive and distortion of the output signal is an indication for an overloaded power amp circuit and can result in damage to the power amp stage.
- There is no sound from the amp and POWER LED does not light up.
 - Check your AC outlet.
 - Check power cord, and power switch.
 - Outlet delivers no power. -> Check fuse box.
- There is no sound from the amp, but POWER LED is lit.
 - Check the volume setting on your amp, check your guitar controls. If controls are ok and all set above zero then listen for hum in the speaker.
 - There is no hum in the speaker. -> Internal speaker or power amp may need servicing.
 - Faint hum coming from the speaker. -> Unplug your guitar, touch tip of cable and listen.
 - Hum is now very loud. -> Check your guitar electronics or try a different guitar.
 - Hum does not change. -> Replace your guitar cable.