



# MANUAL

Warwick Amplification Bass Combo Amplifiers

BC 10    BC 20    BC40

# INTRODUCTION

Thank you for purchasing a Warwick Bass Combo amplifier.

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.

# Precautions / Safety Instructions

## Volume warning

This amplifier is capable of producing high sound pressure levels. Prolonged exposure to these high sound pressure levels can cause permanent and irreversible hearing damage. Ear protection is recommended for prolonged use at high volume. If you experience hearing loss or ringing in your ears, consult a physician.

## Power supply



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).

Incorrect mains voltage may cause serious damage to the unit. Always check the mains voltage rating before connecting the power cable. Unplug the unit when not in use or during lightning storms.

## Risk of electric shock

To reduce the risk of fire or electric shock, do not remove any screws or open the unit. There are no user serviceable parts inside the amplifier. Refer all servicing to qualified service 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.



Protect the power cord from being walked on or pinched, particularly at the plugs.



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.

## Connections

Always switch off the amp and connected devices before connecting or disconnecting cables. This will help to prevent malfunctions and equipment damage. Use only high quality shielded audio cable to prevent noise issues.

## Cleaning

Clean only with a soft, dry cloth.

## Handling

Do not apply excessive force to switches or controls. Do not block ventilation openings. Install in accordance with the instructions. Do not allow paper, metal, dirt or other objects to get into the unit or its connections. Do not drop the unit or subject it to shock or excessive pressure. To avoid deformation, discoloration or other serious damage, do not expose this unit to the following conditions:

- direct sunlight
- excessively dusty or dirty environments
- heat sources
- high humidity or moisture
- strong magnetic fields
- strong vibration or shock
- extreme temperature

Never place the amplifier on a support that might give out under its weight. When a cart or rack is used, use caution when moving the cart with the device to avoid injury from tip-over.



## Notes about disposal

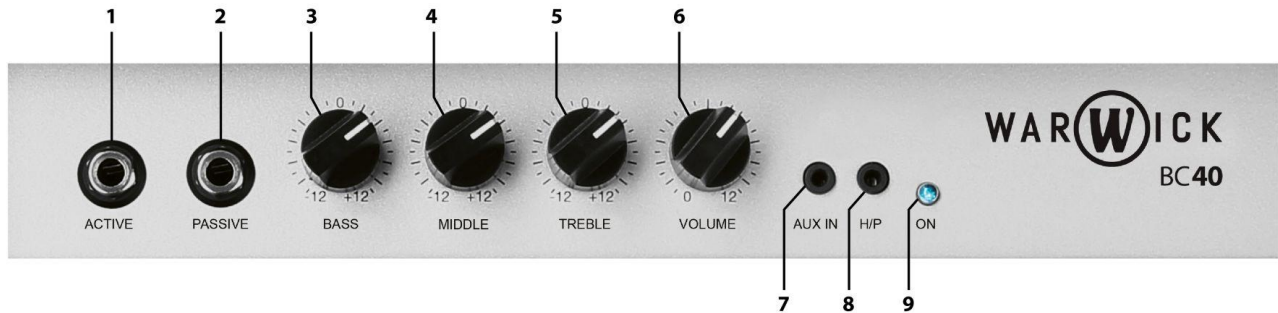
This product carries the selective sorting symbol for Waste Electrical and Electronic Equipment (WEEE). This means that this product must be treated in accordance with European Directive 2012/19/EU in order to be recycled or dismantled to minimize its impact on the environment. The user has the option of returning the product to a competent recycling organization or to the retailer when purchasing new electrical or electronic equipment.



# Main 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
- 3.5 mm (1/8") Aux-IN stereo input (Smartphone, MP3 player, CD player)
- 3.5 mm (1/8") headphone output for silent practice
- Dedicated stereo headphone amplifier
- Self-cooling construction (fanless operation)
- 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

# Front Panel



The BC 10, BC 20 and BC 40 use the same style panel with the same control elements and connections.

1. **ACTIVE:** 6.35 mm (1/4") TS jack for connecting instruments with active electronics. When using effect pedals in front of the amp, connect the output from the last device in the signal chain here. We recommend using high-quality instrument cables for the best sonic performance and reliable connection.
2. **PASSIVE:** 6.35 mm (1/4") TS jack for connecting passive instruments.
3. **BASS:** Shelving Bass control: +/- 12 dB gain at 60 Hz. The frequency response is flat in the center.
4. **MIDDLE:** Peaking Middle control: +/- 12 dB gain at 800 Hz. The frequency response is flat in the center.
5. **TREBLE:** Shelving Treble control: +/- 12 dB gain at 10 kHz. The frequency response is flat in the center.
6. **VOLUME:** Controls the output volume. Turn Volume fully counterclockwise before turning on the power and slowly increase the volume until the desired level is reached.
7. **AUX IN:** 3.5 mm (1/8") 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.
8. **H/P:** 3.5 mm (1/8") 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.
9. **POWER LED:** Indicates that the amp is connected to a power outlet and switched on.

# Rear Panel



The BC 10, BC 20 and BC 40 use the same style back panels with the same switch and mains connector.

1. **Power switch** - This switch turns the amplifier on (I) or off (O). Connect the power cord from the mains outlet to the amplifier before turning this switch on. To unplug the amplifier, turn the switch off first, then unplug the power cord from the wall outlet, then unplug the power cord from the amplifier.
2. **Mains connector** - Figure-eight socket for connection to the mains power supply. Use the supplied power cord to connect your amplifier to a suitable mains outlet. Always make sure to check the voltage ratings on the unit before connecting the power cord. Incorrect voltage may cause serious damage to the unit. Only connect the unit to a power outlet rated for the power specified above the connector.
3. **Serial number:** This is the serial number of your amplifier. You will need this number to register your warranty.

## Operation

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.

# 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 the building 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.

# Specifications

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



Note: The manufacturer reserves the right to change these specifications without notice.

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