

## ORION CBA4500.1D

# ORION Cobalt CBA4500.1D Monoblock Class D Amplifier User Manual

Model: CBA4500.1D | Brand: ORION

## 1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your ORION Cobalt CBA4500.1D Monoblock 1-Channel Class D Amplifier. This amplifier is designed to deliver powerful and precise audio for car subwoofers, featuring a Class D design for efficiency and robust performance.

Key features include a quality frequency response, crossover network, 1 Ohm stability, adjustable low pass and subsonic filters, bass boost, and a MOSFET power supply for reliable operation. It also incorporates a 2-way protection circuitry to safeguard against potential issues.

## 2. WHAT'S IN THE BOX

Upon unpacking your ORION Cobalt CBA4500.1D amplifier, please ensure all items are present:

- ORION Cobalt CBA4500.1D Monoblock Amplifier
- Mounting Hardware
- Remote Bass Knob
- User Manual (this document)

If any items are missing or damaged, please contact your dealer or ORION customer support immediately.

## 3. SAFETY INFORMATION

**WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, please refer to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Always ensure proper ventilation around the amplifier to prevent overheating. Incorrect installation or operation can lead to damage to the amplifier, vehicle, or personal injury. It is recommended that installation be performed by a qualified professional.

## 4. INSTALLATION GUIDE

Proper installation is crucial for optimal performance and safety. It is highly recommended to have this amplifier installed by a certified car audio professional.

### 4.1 Mounting the Amplifier

Choose a mounting location that is dry, well-ventilated, and protected from direct sunlight or excessive heat. Ensure there is sufficient airflow around the amplifier to prevent overheating. The amplifier can be mounted on a panel or using brackets.



Image: Top view of the ORION Cobalt CBA4500.1D Monoblock Amplifier, showing the ORION logo and model number.



Image: Side view of the ORION Cobalt CBA4500.1D Monoblock Amplifier, displaying the power input terminals (+12V, REM, GND) and speaker output terminals, along with the fuse slots.

## 4.2 Wiring Connections

Before making any connections, disconnect the vehicle's negative battery terminal to prevent electrical shorts.

1. **Power Connection (+12V):** Connect a heavy gauge power cable (not included) from the vehicle's positive battery terminal to the +12V terminal on the amplifier. Ensure an appropriate fuse holder is installed within 18 inches of the battery.
2. **Ground Connection (GND):** Connect a heavy gauge ground cable (not included) from the GND terminal on the amplifier to a clean, unpainted metal surface on the vehicle's chassis. The ground point should be as short as possible.
3. **Remote Turn-On (REM):** Connect a remote turn-on wire (not included) from your head unit's remote output to the REM terminal on the amplifier. This wire signals the amplifier to turn on and off with your head unit.
4. **Speaker Output:** Connect your subwoofer(s) to the speaker output terminals. This is a 1-channel monoblock amplifier, designed for a single subwoofer or multiple subwoofers wired to a 1 Ohm stable load. Refer to your subwoofer's specifications for proper wiring configurations.
5. **RCA Input (INPUT):** Connect RCA cables from your head unit's subwoofer output to the RCA input jacks on the amplifier. The amplifier supports low-level (RCA) inputs.
6. **Remote Bass Knob:** Connect the included remote bass knob to the 'REMOTE' port on the amplifier. This allows for convenient adjustment of the bass level from the driver's seat.



Image: Side view of the ORION Cobalt CBA4500.1D Monoblock Amplifier, showing RCA input/output, gain control, low pass filter, subsonic filter, phase switch, bass boost, and remote bass knob port.



Image: The remote bass knob and its connecting cable, used for convenient bass level adjustment.

## 5. OPERATING INSTRUCTIONS

Once installed, the amplifier can be configured for optimal audio performance using its various controls.

### 5.1 Gain Control (GAIN)

The GAIN control adjusts the input sensitivity of the amplifier. Start with the gain set to minimum (MIN) and slowly increase it until the desired volume is achieved without distortion. This should be matched to the output voltage of your head unit.

### 5.2 Low Pass Filter (LPF)

The LPF control allows you to set the upper frequency limit for the amplifier's output, typically ranging from 40Hz to 250Hz. This ensures that only low frequencies are sent to your subwoofer, preventing it from playing higher frequencies it's not designed for.

### 5.3 Subsonic Filter (SONIC)

The SUB SONIC filter removes extremely low frequencies (below 15Hz-50Hz) that are inaudible but can cause your subwoofer to over-excurt and waste power. Adjust this to protect your subwoofer and improve sound quality.

### 5.4 Bass Boost (BASS BOOST)

The BASS BOOST control provides an adjustable boost to low frequencies, typically from 0dB to 12dB. Use this feature to enhance the bass impact according to your preference. Use sparingly to avoid distortion or damage to speakers.

### 5.5 Phase Shift (PHASE)

The PHASE switch (0° or 180°) helps to align the phase of the subwoofer's output with the rest of your car audio system. Experiment with both settings to find the one that provides the most coherent and impactful bass response.

### 5.6 Remote Bass Knob

The remote bass knob provides convenient, real-time adjustment of the subwoofer's output level from your driving position. This allows for quick adjustments without needing to access the amplifier directly.

## 6. MAINTENANCE

To ensure the longevity and optimal performance of your ORION Cobalt CBA4500.1D amplifier, follow these maintenance guidelines:

- **Cleaning:** Periodically clean the amplifier's exterior with a soft, dry cloth. Avoid using harsh chemicals or abrasive cleaners.
- **Ventilation:** Ensure that the amplifier's ventilation openings are not obstructed. Proper airflow is essential to prevent overheating.
- **Connections:** Regularly check all wiring connections for tightness and corrosion. Loose or corroded connections can lead to performance issues or damage.
- **Fuses:** The amplifier is equipped with fuses for protection. If a fuse blows, replace it only with a fuse of the same type and rating. Never use a higher rated fuse.

## 7. TROUBLESHOOTING

If you experience issues with your amplifier, refer to the following common troubleshooting steps:

Problem	Possible Cause	Solution
No Power / Amplifier does not turn on	Blown fuse, loose power/ground/remote wire, faulty remote turn-on signal.	Check and replace fuses. Verify all power, ground, and remote connections are secure. Test remote wire for 12V when head unit is on.
No Sound Output	Loose RCA cables, incorrect gain setting, speaker wiring issues, amplifier in protection mode.	Check RCA connections. Adjust gain. Verify speaker wiring for correct polarity and impedance. Check if the PWR/PRT indicator is red (protection mode).
Distorted Sound	Gain set too high, incorrect LPF/Subsonic settings, speaker impedance mismatch.	Lower the gain. Adjust LPF and Subsonic filters. Ensure speaker impedance matches amplifier's capabilities (1, 2, or 4 Ohm stable).
Amplifier Overheating	Insufficient ventilation, impedance too low, prolonged high-power usage.	Ensure proper airflow around the amplifier. Check speaker impedance. Reduce volume or usage time.

If the problem persists after following these steps, please contact ORION customer support or a qualified service technician.

## 8. SPECIFICATIONS

Feature	Detail
Model Number	CBA4500.1D
Brand	ORION
Number of Channels	1 (Monoblock)
Amplifier Class	Class D
Output Power (Max)	4500 Watts
RMS Power @ 1 Ohm	1125W
RMS Power @ 2 Ohms	650W
RMS Power @ 4 Ohms	350W
Impedance Stability	1/2/4 Ohm Stable
Frequency Response	10~250Hz
Low Pass Filter (LPF)	Adjustable (40Hz-250Hz)
Subsonic Filter	Adjustable (15Hz-50Hz)
Bass Boost	Adjustable (0dB-12dB)
Phase Shift	0° / 180°
Power Supply	MOSFET
Protection Circuitry	2-way (Thermal Protection)
Voltage	12 Volts (Maximum Supply Voltage: 16 Volts)
Product Dimensions (L x W x H)	15 x 7 x 3 inches
Item Weight	5.48 pounds
UPC	818550017085

## 9. OFFICIAL PRODUCT VIDEO

Your browser does not support the video tag.

Video: "Unleashing the Power of the Orion CBA4500.1D Amplifier" - This video provides a visual overview of the amplifier's features, design, and internal components, demonstrating its capabilities and build quality.

## 10. WARRANTY AND SUPPORT

ORION products are designed for durability and performance. For warranty information, technical support, or service inquiries, please refer to the official ORION website or contact your authorized dealer.

Keep your purchase receipt as proof of purchase for any warranty claims.

For additional resources and product information, visit the [ORION Store on Amazon](#).

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