



Manuals.plus /

- › Dayton Audio /
- › Dayton Audio UMII10-22 Ultimax II 10-inch DVC Subwoofer Instruction Manual

Dayton Audio UMII10-22

Dayton Audio UMII10-22 Ultimax II 10-inch DVC Subwoofer Instruction Manual

Model: UMII10-22

1. INTRODUCTION

The Dayton Audio UMII10-22 Ultimax II 10-inch Dual Voice Coil (DVC) Subwoofer is engineered for high-performance bass reproduction. This manual provides essential information for the proper installation, operation, and maintenance of your subwoofer to ensure optimal performance and longevity. Please read this manual thoroughly before proceeding with installation or use.



Figure 1.1: Front view of the Dayton Audio UMII10-22 Ultimax II 10-inch DVC Subwoofer. This image displays the subwoofer's cone and surround, indicating its robust construction.

2. KEY FEATURES

- **Optimized Motor Structure:** Features a large aluminum shorting cap and sleeve for linear inductance and minimal distortion.
- **Carbon Fiber Cone:** A rigid yet lightweight woven carbon fiber cone ensures quick, detailed, and accurate bass response.
- **High Excursion Capability:** With ± 20 mm Xmax, the subwoofer delivers powerful and deep bass.
- **High Power Handling:** Equipped with a 4-layer 2-1/2" flat wound voice coil capable of handling up to 600 watts RMS.
- **Efficient Cooling:** The frame and motor include extensive venting for efficient heat dissipation, consistent operation, and minimized power compression.
- **Enhanced Linearity:** Dual spiders maintain cone linearity even at extreme excursion levels, ensuring peak audio performance.
- **Versatile Enclosure Design:** Optimized for compact sealed enclosures, but also capable of exceptional low-frequency extension in vented designs.

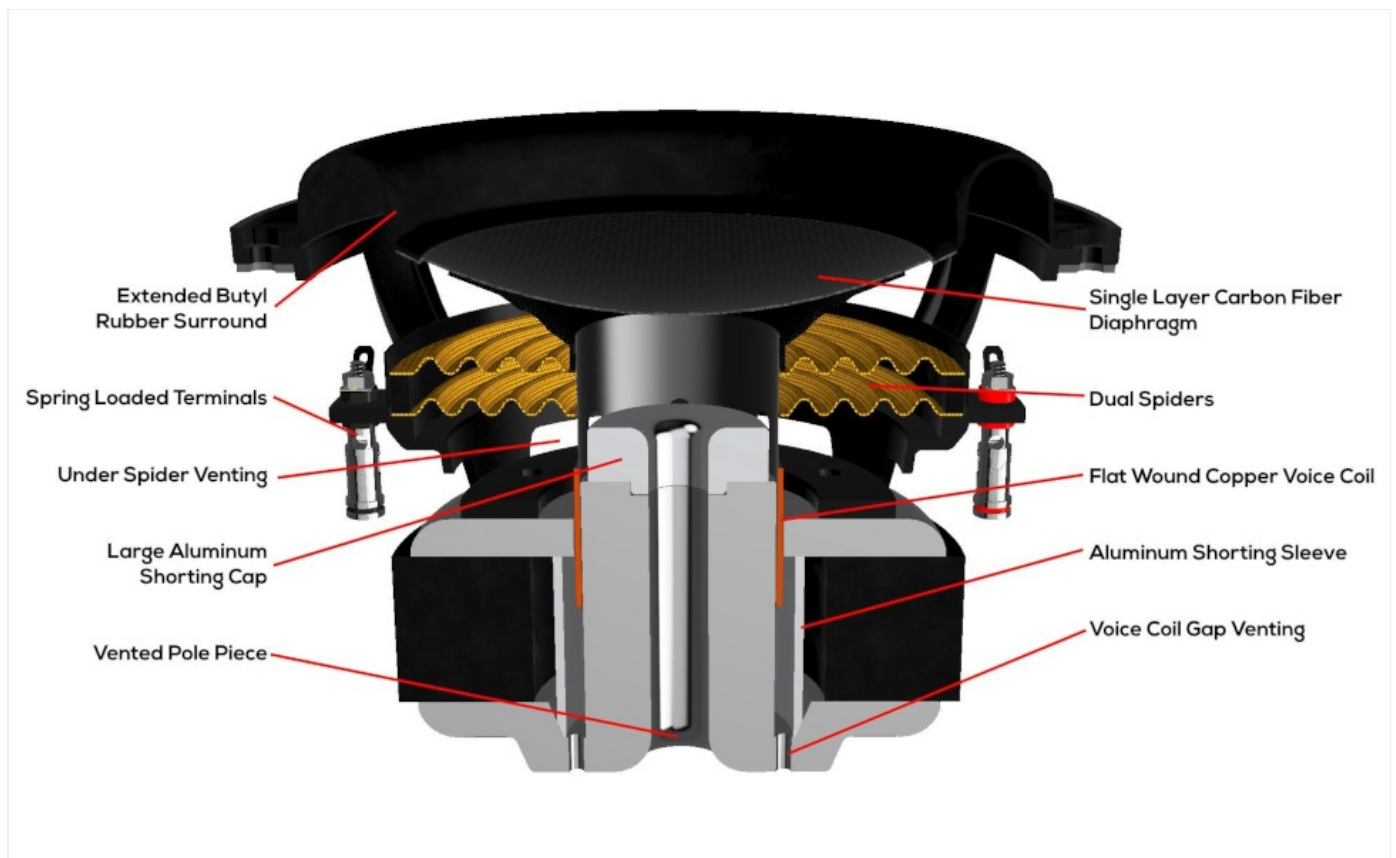


Figure 2.1: Internal components of the Ultimax II subwoofer, illustrating the extended butyl rubber surround, single layer carbon fiber diaphragm, dual spiders, flat wound copper voice coil, aluminum shorting sleeve, vented pole piece, and various venting points.

3. SETUP AND INSTALLATION

Proper installation is crucial for the performance and longevity of your Dayton Audio UMII10-22 subwoofer. This section outlines general guidelines. For specific enclosure designs and wiring configurations, consult a qualified audio technician or refer to detailed speaker building resources.

3.1 Unpacking

Carefully remove the subwoofer from its packaging. Inspect for any signs of damage during transit. Retain all packaging materials for future transport or warranty claims.

Included Components:

- 1 x Dayton Audio UMII10-22 Subwoofer

3.2 Enclosure Design

The UMII10-22 is versatile and performs well in both sealed and vented enclosures. The optimal enclosure volume will depend on your desired frequency response and system goals. Consult the Thiele-Small parameters provided in the specifications section for precise enclosure calculations.

- **Sealed Enclosures:** Generally provide tighter, more accurate bass response, ideal for critical listening and smaller spaces.
- **Vented (Ported) Enclosures:** Can achieve higher output and deeper low-frequency extension, often preferred for home theater or car audio applications where maximum impact is desired.

3.3 Wiring (Dual Voice Coil)

The UMII10-22 features a Dual Voice Coil (DVC) design with two 2-ohm voice coils. This allows for flexible wiring configurations to match your amplifier's impedance requirements. Common configurations include:

- **1 Ohm (Parallel Wiring):** Connect the positive terminals of both voice coils together, and the negative terminals of both voice coils together. Connect the combined positive to the amplifier's positive output and the combined negative to the amplifier's negative output. ($2 \text{ Ohms} / 2 = 1 \text{ Ohm}$)
- **4 Ohms (Series Wiring):** Connect the positive terminal of one voice coil to the negative terminal of the other voice coil. Connect the remaining positive terminal to the amplifier's positive output and the remaining negative terminal to the amplifier's negative output. ($2 \text{ Ohms} + 2 \text{ Ohms} = 4 \text{ Ohms}$)

Always ensure your amplifier is stable at the chosen impedance. Incorrect wiring can damage both the subwoofer and the amplifier.



Figure 3.1: Rear view of the subwoofer, showing the dual voice coil terminals. Note the clear markings for positive and negative connections for each coil.

4. OPERATING GUIDELINES

Once installed, follow these guidelines for optimal operation:

- **Break-in Period:** Allow a break-in period of approximately 20-50 hours of moderate listening before operating the subwoofer at high volumes. This allows the suspension components to loosen and reach their optimal compliance.
- **Amplifier Matching:** Ensure your amplifier's power output matches the subwoofer's RMS power handling (600W RMS). Underpowering can lead to clipping and distortion, which can damage the voice coil. Overpowering can also

cause damage.

- **Crossover Settings:** Use an appropriate low-pass filter (LPF) to prevent the subwoofer from playing frequencies above its intended range. A typical starting point is 80-100 Hz, but this may vary based on your main speakers and room acoustics.
- **Gain Adjustment:** Set the amplifier gain correctly to match the output of your source unit. Avoid setting the gain too high, as this can introduce distortion.
- **Listen for Distortion:** If you hear any audible distortion, rattling, or unpleasant sounds, immediately reduce the volume. Continued operation with distortion can cause permanent damage.

5. MAINTENANCE

The Dayton Audio UMII10-22 subwoofer requires minimal maintenance to ensure long-term performance.

- **Cleaning:** Use a soft, dry cloth to gently wipe down the cone and surround. Avoid using harsh chemicals or abrasive cleaners.
- **Inspection:** Periodically inspect the subwoofer for any signs of physical damage, such as tears in the surround or cone, or loose connections.
- **Environmental Conditions:** Avoid exposing the subwoofer to extreme temperatures, direct sunlight, or excessive moisture.

6. TROUBLESHOOTING

If you encounter issues with your subwoofer, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No Sound	Loose wiring connection; Amplifier off or in protect mode; Incorrect source selection.	Check all wiring connections; Verify amplifier power and status; Confirm correct input selection on your audio system.
Distorted Sound	Over-driven amplifier (clipping); Incorrect gain setting; Damaged voice coil.	Reduce volume; Adjust amplifier gain correctly; Inspect subwoofer for physical damage.
Weak Bass Output	Incorrect enclosure volume; Phase issues; Low-pass filter set too low.	Verify enclosure design; Check phase setting on amplifier/receiver; Adjust LPF to a higher frequency.
Subwoofer Overheating	Excessive power input; Inadequate ventilation; Prolonged high-volume operation.	Reduce power/volume; Ensure proper airflow around the subwoofer and amplifier; Allow cooling periods.

If the problem persists after attempting these solutions, contact Dayton Audio customer support or a qualified audio technician.

7. SPECIFICATIONS

Detailed technical specifications for the Dayton Audio UMII10-22 Ultimax II 10-inch DVC Subwoofer.

Parameter	Value
Model Name	Dayton Audio UMII10-22
Speaker Type	Subwoofer
Speaker Size	10 Inches
Woofer Diameter	10 Inches
Impedance	2 Ohms per coil (Dual Voice Coil)
Power Handling (RMS)	600 Watts
Power Handling (Max)	1200 Watts (Estimated Peak)
Material	Carbon Fiber (cone), Aluminum (shorting cap/sleeve)
Voice Coil	4-layer 2-1/2" flat wound
Xmax	±20 mm
Product Dimensions	10"D x 10"W x 8"H
Item Weight	26 pounds
Connectivity Technology	Wired
Recommended Uses	Home Theater Systems, Car Audio, High-End Music Systems
UPC	848791010224



Figure 7.1: Bottom view of the subwoofer, showcasing the motor structure and the polished back plate with laser-engraved details.

8. PRODUCT OVERVIEW VIDEO

Watch this official overview video for a visual guide to the Dayton Audio Ultimax II subwoofer series.

Your browser does not support the video tag.

Video 8.1: An overview of the Dayton Audio Ultimax II subwoofer series, presented by Parts Express. This video highlights key design features and performance benefits of the subwoofer.

9. WARRANTY AND SUPPORT

9.1 Warranty Information

The Dayton Audio UMII10-22 Subwoofer comes with a Full Warranty. For specific terms and conditions, please refer to the warranty documentation included with your purchase or visit the official Dayton Audio website.

9.2 Customer Support

For technical assistance, troubleshooting, or warranty inquiries, please contact Dayton Audio customer support:

- **Website:** www.daytonaudio.com
- **Manufacturer:** Dayton Audio

