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Dayton Audio RC180-55

Dayton Audio RC180-55 Res-Core Neodymium Woofer Instruction Manual

Model: RC180-55

1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of your Dayton Audio RC180-55 Res-Core Neodymium Woofer. The RC180-55 is a 2" x 7" woofer designed with patented Res-Core technology, offering exceptional low-frequency response and reduced distortion in compact audio systems. It features a unique flat wound voice coil and a powerful quad-gap neodymium motor, ensuring high excursion capability, minimal compression, and a smooth frequency response. Please read this manual thoroughly before use to ensure optimal performance and longevity of your product.



Image 1: The Dayton Audio RC180-55 Res-Core Neodymium Woofer. This image displays the rectangular woofer with its black frame and cone, highlighting the model number and brand label.

2. Key Features

- **Res-Core Technology:** Patented design by Resonado Labs for enhanced low-frequency performance in compact enclosures.
- **Neodymium Motor:** Powerful quad-gap neodymium motor for high efficiency and control.
- **Flat Wound Voice Coil:** Unique voice coil design contributing to high excursion and minimal compression.
- **Optimized for Compact Systems:** Engineered to deliver deep bass from small form factor applications.
- **Low Distortion:** Designed to produce clear audio with reduced harmonic distortion.
- **4 Ohm Impedance:** Compatible with a wide range of audio amplifiers.

3. Safety Information

Please observe the following safety precautions to prevent damage to the woofer or injury to yourself:

- **Power Handling:** Do not exceed the woofer's rated power handling capabilities to prevent damage.
- **Impedance Matching:** Ensure your amplifier's output impedance matches the woofer's 4 Ohm impedance. Incorrect impedance can lead to amplifier or woofer damage.
- **Wiring:** Always use appropriate gauge speaker wire for connections. Ensure correct polarity (+ to + and - to -) to avoid phase issues and degraded sound quality.
- **Mounting:** Securely mount the woofer in a suitable enclosure. Loose mounting can cause vibrations and potential damage.
- **Environment:** Avoid exposing the woofer to extreme temperatures, moisture, or direct sunlight. This product is not waterproof.
- **Hearing Protection:** Prolonged exposure to high volume levels can cause permanent hearing damage. Use caution when operating audio systems.

4. Setup and Installation

Proper installation is crucial for optimal performance. This section outlines general steps for integrating the RC180-55 woofer into your audio system.

1. **Enclosure Design:** The RC180-55 is designed for compact systems. Consult speaker design software or professional resources for optimal enclosure volume and port tuning (if applicable) to maximize its performance.
2. **Mounting:**
    - Cut an appropriate mounting hole in your enclosure. Refer to the specifications for precise dimensions.
    - Ensure a tight, airtight seal between the woofer frame and the enclosure baffle. Gasketing material is recommended.
    - Secure the woofer using appropriate screws, ensuring even pressure around the mounting flange.
3. **Wiring:**
    - Connect the positive (+) terminal of the woofer to the positive (+) output of your amplifier or crossover.
    - Connect the negative (-) terminal of the woofer to the negative (-) output of your amplifier or crossover.
    - Double-check all connections for correct polarity and secure contact. Loose connections can cause intermittent sound or damage.
4. **Crossover Integration:** For optimal sound quality and protection, use an appropriate low-pass crossover to filter out high frequencies from reaching the woofer. The crossover frequency will depend on your system's design and other speakers used.
5. **Amplifier Selection:** Choose an amplifier that can provide sufficient power within the woofer's recommended power handling range. An underpowered amplifier can clip and damage the woofer, while an overpowered amplifier can

also cause damage if not used carefully.

5. Operating Guidelines

Once installed, follow these guidelines for safe and effective operation:

- **Initial Power-Up:** Start with the amplifier volume at its lowest setting. Gradually increase the volume to a comfortable listening level.
- **Break-in Period:** Allow a break-in period of approximately 20-50 hours of normal listening at moderate volumes. This allows the woofer's suspension components to loosen and reach their optimal performance characteristics.
- **Volume Control:** Avoid operating the woofer at excessively high volumes for extended periods, especially if you notice distortion. Distortion is a sign that the woofer or amplifier is being overdriven.
- **System Tuning:** If your system includes equalization or bass boost features, use them judiciously. Excessive boosting of low frequencies can quickly exceed the woofer's excursion limits and power handling.

6. Maintenance

The Dayton Audio RC180-55 woofer requires minimal maintenance.

- **Cleaning:** Gently wipe the woofer cone and frame with a soft, dry cloth to remove dust. Do not use harsh chemicals or abrasive cleaners. Avoid applying pressure to the cone or surround.
- **Inspection:** Periodically inspect the woofer for any signs of physical damage, such as tears in the cone or surround, or loose connections.
- **Storage:** If storing the woofer for an extended period, keep it in a cool, dry place, away from direct sunlight and extreme temperatures.

7. Troubleshooting

If you encounter issues with your RC180-55 woofer, refer to the following common troubleshooting steps:

Problem	Possible Cause	Solution
No Sound from Woofer	Loose or incorrect wiring Amplifier not powered on or faulty Crossover settings incorrect Woofer damaged	Check all speaker wire connections for secure contact and correct polarity. Verify amplifier power and functionality. Ensure low-pass filter is enabled and set appropriately. Test woofer with a known good amplifier/source.
Distorted Sound	Amplifier clipping (overdriven) Woofer over-excursion Incorrect crossover settings Loose mounting or enclosure rattle	Reduce amplifier gain or volume. Check crossover settings; ensure high frequencies are filtered out. Inspect woofer mounting for tightness and enclosure for rattles. Ensure amplifier power matches woofer rating.

Problem	Possible Cause	Solution
Weak or Muffled Bass	Incorrect wiring polarity Improper enclosure volume Crossover frequency too high or too low	Verify correct wiring polarity (+ to + and - to -). Review enclosure design against woofer specifications. Adjust crossover frequency for optimal integration with other speakers.

If these steps do not resolve the issue, please contact Dayton Audio customer support.

8. Specifications

Attribute	Value
Model Name	RC180-55
Speaker Type	Woofer
Speaker Size	2" x 7" (Rectangular)
Woofer Diameter (Nominal)	7 Inches
Impedance	4 Ohm
Item Weight	16 ounces (1 pound)
Product Dimensions	8 x 3 x 3 inches
Manufacturer	Dayton Audio
UPC	848791008030
Connectivity Technology	Wired
Audio Output Mode	Stereo (Component)
Mounting Type	Tabletop Mount (referring to general speaker type, actual mounting is enclosure-dependent)
Is Waterproof	No

Note: Specifications are subject to change without notice.

9. Warranty and Support

Dayton Audio products are designed for reliability and performance. This product comes with a Full Warranty. For specific warranty terms and conditions, please refer to the documentation included with your purchase or visit the official Dayton Audio website.

For technical support, troubleshooting assistance beyond this manual, or warranty claims, please contact Dayton Audio customer service through their official website or the retailer from whom you purchased the product.

Dayton Audio Official Website: www.daytonaudio.com

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