BLACK DIAMOND DIA-R12D4

BLACK DIAMOND DIA-R12D4 12-inch Car Subwoofer

Model: DIA-R12D4

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1. Product Overview

The BLACK DIAMOND DIA-R12D4 is a 12-inch car subwoofer designed to deliver deep and impactful bass for your vehicle's audio system. Featuring a dual 4+4 Ohm voice coil, this subwoofer offers flexible wiring options to optimize performance with various amplifiers. Its robust construction ensures durability and consistent sound reproduction.



Figure 1: Front view of two BLACK DIAMOND DIA-R12D4 subwoofers.

2. Safety Information

Please read all safety instructions before installing or operating the subwoofer. Failure to follow these guidelines may result in injury or damage to the product or vehicle.

- Always disconnect the vehicle's battery before performing any electrical work.
- Ensure proper wiring and connections to prevent short circuits and electrical hazards.
- Mount the subwoofer securely to prevent movement during vehicle operation.
- Avoid exposing the subwoofer to excessive moisture or extreme temperatures.
- Consult a professional car audio installer if you are unsure about any installation steps.

3. Setup and Installation

3.1 Unpacking

Carefully remove the subwoofer from its packaging. Inspect the unit for any signs of damage during transit. Retain the packaging for future transport or service needs.

Contents:

- BLACK DIAMOND DIA-R12D4 12-inch Subwoofer (1 unit)

3.2 Mounting

The DIA-R12D4 subwoofer requires a suitable enclosure for optimal performance. Ensure the enclosure dimensions are appropriate for a 12-inch subwoofer and provide adequate air volume. The mounting depth required for this subwoofer is 6.6 inches (168mm).



Figure 2: Subwoofers installed in a car trunk, illustrating mounting considerations.

3.3 Wiring Connections

The DIA-R12D4 features a dual 4+4 Ohm voice coil, offering flexibility in wiring configurations. Proper wiring is crucial for matching the subwoofer's impedance to your amplifier's output for stable and efficient operation.



Figure 3: Subwoofer speaker terminals for wiring connections.

Dual 4 Ohm Voice Coil Wiring Options:

- **1 Ohm Load (Parallel Wiring):** Connect the positive terminals of both voice coils together, and the negative terminals of both voice coils together. Connect the amplifier's positive output to the combined positive terminals and the amplifier's negative output to the combined negative terminals. This configuration presents a 1 Ohm load to the amplifier.
- **8 Ohm Load (Series Wiring):** Connect the positive terminal of one voice coil to the negative terminal of the other voice coil. Connect the amplifier's positive output to the remaining positive terminal and the amplifier's negative output to the remaining negative terminal. This configuration presents an 8 Ohm load to the amplifier.

Always ensure your amplifier is stable at the chosen impedance load. Refer to your amplifier's manual for compatible impedance ratings.

4. Operation

4.1 Initial Power-Up

After installation, double-check all wiring connections. Turn on your car audio system at a low volume. Gradually

increase the volume and listen for proper bass output. If any distortion or unusual sounds are present, immediately reduce volume and re-check connections and settings.

4.2 Audio Settings

Adjust your amplifier's gain, low-pass filter (LPF), and bass boost settings according to your preferences and the subwoofer's capabilities. A typical LPF setting for a subwoofer is between 80Hz and 120Hz. Avoid excessive bass boost, which can lead to distortion and potential damage.

5. Maintenance

Regular maintenance helps ensure the longevity and performance of your subwoofer.

- **Cleaning:** Use a soft, dry cloth to wipe down the subwoofer cone and surround. Avoid using harsh chemicals or excessive moisture.
- **Inspection:** Periodically check the speaker terminals for secure connections. Inspect the cone and surround for any tears, punctures, or signs of wear.
- **Environment:** Ensure the subwoofer is not exposed to direct sunlight for extended periods or extreme temperature fluctuations.

6. Troubleshooting

If you encounter issues with your DIA-R12D4 subwoofer, refer to the table below for common problems and solutions.

Problem	Possible Cause	Solution
No sound from subwoofer	Loose or incorrect wiring Amplifier not powered on Amplifier in protect mode Head unit settings	Check all wiring connections (power, ground, remote, RCA, speaker). Verify amplifier power and ground connections. Check amplifier's protection indicator. Reset if necessary. Ensure subwoofer output is enabled and volume is up on head unit.
Distorted sound	Gain set too high Crossover settings incorrect Damaged subwoofer or amplifier	Reduce amplifier gain. Adjust low-pass filter (LPF) on amplifier or head unit. Inspect subwoofer cone/surround for damage. Test with another amplifier if possible.
Weak or insufficient bass	Incorrect wiring impedance Gain set too low Enclosure issues Phase mismatch	Verify wiring matches amplifier's optimal impedance. Increase amplifier gain gradually. Ensure enclosure is sealed and properly sized. Check phase setting on amplifier or head unit.
Subwoofer overheating	Overpowering Improper impedance match Insufficient ventilation	Reduce volume or amplifier gain. Ensure wiring impedance matches amplifier's stable load. Provide adequate airflow around the subwoofer and amplifier.

7. Technical Specifications

Below are the detailed technical specifications for the BLACK DIAMOND DIA-R12D4 subwoofer.



Figure 4: Key specifications of the DIA-R12D4 subwoofer.

Feature	Specification
Brand	BLACK DIAMOND
Model Number	DIA-R12D4
Speaker Type	Subwoofer
Subwoofer Diameter	12 Inches (304mm)
RMS Power Handling	600 Watts
Maximum Power Handling	1200 Watts
Nominal Impedance	Dual 4+4 Ohm
Frequency Response	20Hz - 300Hz
Voice Coil Diameter	2.5 Inches (63.5mm)
Voice Coil Material	Aluminum
Magnet Material	Ferrite (100 oz)
Cone Material	Non-pressed paper
Surround Material	Foam
Basket Material	Black Steel

Feature	Specification
Mounting Depth	6.6 Inches (168mm)
Item Dimensions (D x W x H)	7.75"D x 12.6"W x 12.6"H
Item Weight	7.41 Kilograms
Connectivity Technology	Wired
Compatible Devices	Car Audio System

8. Warranty Information

The BLACK DIAMOND DIA-R12D4 subwoofer is covered by a **1-year manufacturer's limited warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. It does not cover damage caused by improper installation, abuse, accident, neglect, or unauthorized modification. Please retain your proof of purchase for warranty claims.

9. Customer Support

For technical assistance, warranty inquiries, or further information regarding your BLACK DIAMOND DIA-R12D4 subwoofer, please contact BLACK DIAMOND customer support. Refer to the official BLACK DIAMOND website or your purchase documentation for current contact details.

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