

Nesa TD-45

NESA TD-45 1200W 4-Channel Micro Amplifier User Manual

Model: TD-45

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your NESAs TD-45 1200W 4-Channel Micro Amplifier. Please read this manual thoroughly before use to ensure proper function, safety, and to maximize the performance of your car audio system.

The NESAs TD-45 is a compact yet powerful 4-channel amplifier designed to enhance your vehicle's sound system. Key features include:

- 1200W peak power output.
- 8GA power terminals and 12GA speaker outputs for robust connections.
- Minimum speaker impedance of 2 ohms for flexible speaker configurations.
- Adjustable input sensitivity from 200mV to 6V.
- Stable performance with low total harmonic distortion (0.5%) and a wide frequency response (10-35 KHz).

2. SAFETY INFORMATION

To prevent injury or damage to the amplifier and other components, observe the following safety precautions:

- **Professional Installation Recommended:** Installation of car audio equipment can be complex. If you are unsure about any part of the installation process, seek assistance from a qualified professional installer.
- **Disconnect Battery:** Always disconnect the vehicle's negative battery terminal before starting any electrical work to prevent short circuits.
- **Proper Wiring:** Ensure all wiring is correctly connected and insulated to prevent shorts and electrical hazards. Use appropriate gauge wires as specified (8GA for power, 12GA for speakers).
- **Ventilation:** Mount the amplifier in a location that allows for adequate air circulation to prevent overheating. Avoid mounting in enclosed spaces without ventilation.
- **Avoid Moisture:** Do not expose the amplifier to water or excessive moisture.
- **Correct Impedance:** Ensure connected speakers meet the minimum impedance requirement of 2 ohms. Connecting speakers with lower impedance can damage the amplifier.
- **Fuse Protection:** Always use an external fuse on the main power wire, close to the battery, with an

appropriate rating for the amplifier.

3. SETUP AND INSTALLATION

3.1 Unpacking

Carefully remove the amplifier from its packaging. The box should contain:

- NESA TD-45 1200W 4-Channel Micro Amplifier

3.2 Mounting the Amplifier

Choose a secure, dry, and well-ventilated location for mounting the amplifier. Ensure there is sufficient space around the amplifier for air circulation to prevent overheating. Avoid mounting it directly on carpet or in areas prone to vibration or moisture.

3.3 Wiring Connections

Refer to the diagram below for proper wiring connections. Ensure all connections are tight and secure.



Figure 1: NESA TD-45 4-Channel Micro Amplifier. This image displays the compact design and the various input and output terminals for power, ground, remote, and speaker connections.

Power Connections

- **+12V (Power):** Connect an 8-gauge (8GA) power cable directly from the positive terminal of the vehicle's battery to the +12V terminal on the amplifier. Install an appropriate fuse (not included) within 18 inches (45 cm) of the battery.
- **GND (Ground):** Connect an 8-gauge (8GA) ground cable from the GND terminal on the amplifier to a clean, unpainted metal surface of the vehicle's chassis. Ensure a good electrical connection.
- **REM (Remote Turn-On):** Connect a remote turn-on wire 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.

Audio Input Connections

Connect RCA cables from your head unit's pre-amp outputs to the RCA input jacks on the amplifier.

Speaker Output Connections

Connect your speakers to the 12-gauge (12GA) speaker output terminals. Ensure correct polarity (+ to + and - to -) for each speaker. The amplifier supports a minimum speaker impedance of 2 ohms per channel in stereo mode.

- **Stereo Mode:** Connect one speaker per channel.
- **Bridged Mode:** For higher power output to a single speaker (e.g., a subwoofer), two channels can be bridged. Refer to the amplifier's specific bridging instructions, typically found on the unit itself or in a separate diagram. When bridging, ensure the combined impedance of the bridged speaker meets the amplifier's minimum bridged impedance requirement (e.g., 4 ohms).

Input Sensitivity Adjustment

The amplifier features an input sensitivity control (gain) with a range of 200mV to 6V. This control matches the amplifier's input level to the output level of your head unit. To set the gain:

1. Turn the amplifier's gain control to its minimum (fully counter-clockwise) setting.
2. Set your head unit's volume to about 75-80% of its maximum.
3. Slowly increase the amplifier's gain control until you hear slight distortion, then back it off slightly until the sound is clear.

4. OPERATING THE AMPLIFIER

4.1 Power On/Off

The amplifier will automatically turn on when your head unit is powered on (via the remote turn-on wire) and turn off when the head unit is switched off.

4.2 Understanding Output Power

The NESA TD-45 offers versatile power output configurations:

- **Stereo Output:** 100W x 4 channels at 4-Ohm impedance.
- **Stereo Output:** 150W x 4 channels at 2-Ohm impedance.
- **Bridged Output:** 300W x 2 channels at 4-Ohm impedance (for two bridged pairs).

4.3 Audio Performance Characteristics

The amplifier is designed for clear audio reproduction:

- **Total Harmonic Distortion (THD):** 0.5% (ensures minimal signal distortion).
- **Frequency Response:** 10-35 KHz (covers a wide range of audible frequencies).
- **Signal-to-Noise Ratio (SNR):** 70dB (indicates a good ratio of music signal to background noise).

5. MAINTENANCE

The NESA TD-45 amplifier requires minimal maintenance to ensure long-term performance:

- **Cleaning:** Periodically wipe the amplifier's exterior with a soft, dry cloth. Do not use harsh chemicals or abrasive cleaners.
- **Ventilation:** Ensure that the amplifier's cooling fins are free from dust and debris to maintain proper heat dissipation.
- **Connections:** Occasionally check all power, ground, remote, and speaker connections to ensure they remain tight and free from corrosion.
- **Avoid Moisture:** Keep the amplifier away from any sources of moisture or liquids.

6. TROUBLESHOOTING

If you experience issues with your amplifier, consult the following troubleshooting guide:

Problem	Possible Cause	Solution
Amplifier does not turn on	<ul style="list-style-type: none"> • No power to +12V terminal • Poor ground connection • No remote turn-on signal • Blown fuse 	<ul style="list-style-type: none"> • Check power wire and battery connection. • Ensure ground wire is securely connected to clean chassis. • Verify remote wire connection to head unit. • Replace fuse if blown (ensure correct rating).
No sound output	<ul style="list-style-type: none"> • RCA input cables disconnected • Speaker wires disconnected or shorted • Head unit not sending signal 	<ul style="list-style-type: none"> • Check RCA connections at both amplifier and head unit. • Inspect speaker wiring for breaks or shorts. • Verify head unit is powered on and playing audio.
Distorted sound	<ul style="list-style-type: none"> • Gain set too high • Incorrect speaker impedance • Poor quality audio source 	<ul style="list-style-type: none"> • Reduce the input sensitivity (gain) setting. • Ensure speakers meet the minimum 2-ohm impedance. • Test with a different audio source or lower head unit volume.
Amplifier overheats	<ul style="list-style-type: none"> • Insufficient ventilation • Speaker impedance too low • Overdriving the amplifier 	<ul style="list-style-type: none"> • Relocate amplifier to a better ventilated area. • Check speaker impedance; ensure it's not below 2 ohms. • Reduce gain or volume levels.

7. SPECIFICATIONS

Detailed technical specifications for the NESAs TD-45 amplifier:

Feature	Specification
Model	TD-45
Number of Channels	4
Output Power (Peak)	1200W
RMS Power (4-Ohm Stereo)	100W x 4
RMS Power (2-Ohm Stereo)	150W x 4
RMS Power (4-Ohm Bridged)	300W x 2
Minimum Speaker Impedance	2 Ohm
Input Sensitivity	200mV - 6V
Total Harmonic Distortion (THD)	0.5%
Frequency Response	10-35 KHz
Signal-to-Noise Ratio (SNR)	70dB
Power Terminals	8GA
Speaker Outputs	12GA
Item Dimensions (L x W x H)	9 x 4.75 x 1.5 inches
Voltage	6 Volts (Operating Voltage Range)
Item Weight	9 Pounds

8. WARRANTY INFORMATION

Warranty terms and conditions for the NESAs TD-45 amplifier are provided by the manufacturer or retailer at the time of purchase. Please retain your proof of purchase for warranty claims. For specific details regarding warranty coverage, duration, and procedures, please refer to the documentation included with your product or contact your point of purchase.

9. SUPPORT

For technical assistance, installation questions, or service inquiries not covered in this manual, please contact your authorized NESAs dealer or the manufacturer's customer support. Contact information can typically be found on the product packaging or the manufacturer's official website.

