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> Cerwin Vega HED H400.2D 2-Channel Digital Amplifier User Manual

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Model: H400.2D

INTRODUCTION

This manual provides instructions for the installation, operation, and maintenance of your Cerwin Vega HED H400.2D 2-Channel Digital Amplifier. Please read this manual thoroughly before attempting installation or operation to ensure proper use and to prevent damage.

SAFETY INFORMATION

- Always disconnect the vehicle's battery negative terminal before installing or servicing any electrical components.
- Ensure all wiring is properly routed and secured to prevent damage from sharp edges or moving parts.
- Use appropriate gauge wiring for power and ground connections as specified in the installation section.
- Do not mount the amplifier in locations exposed to direct sunlight, excessive heat, moisture, or dust.
- If you are unsure about any part of the installation process, consult a professional car audio installer.
- This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm (Proposition 65 warning).

PACKAGE CONTENTS

- 1 x Cerwin Vega HED H400.2D Amplifier
- User Manual (this document)
- Mounting Hardware (screws, etc. - typical inclusion)

PRODUCT OVERVIEW

The Cerwin Vega HED H400.2D is a compact 2-channel Class D digital amplifier designed for car audio systems. Below are images illustrating the amplifier's exterior and connection panels.



Figure 1: Top view of the Cerwin Vega HED H400.2D amplifier, showing the Cerwin Vega Mobile logo and model number H400.2D.



Figure 2: Front view of the amplifier, detailing the control panel. This panel includes RCA input jacks (L/R), RCA preouts, a "Turn On Mode" switch (REM, DC, VOX), Gain control, X-Over switch (HPF, FULL, LPF), Frequency (FREQ) adjustment, Boost control, and a

Clip indicator LED.



Figure 3: Rear view of the amplifier, showing the power and speaker terminal block. This section includes terminals for bridged speaker output (L+, R-), two 30A fuses, and power input terminals (+12V, REM, GND). A Protect/Power LED is also visible.

Control Panel Functions (Refer to Figure 2)

- **INPUT (RCA):** Connects to the RCA outputs of your head unit or signal processor.
- **PREOUTS (RCA):** Provides a pass-through signal for connecting additional amplifiers.
- **TURN ON MODE:**
 - **REM:** Remote turn-on via a dedicated remote wire from the head unit.
 - **DC:** DC offset turn-on, senses a DC offset on the speaker level inputs.
 - **VOX:** Audio signal sensing turn-on.
- **GAIN:** Adjusts the input sensitivity of the amplifier to match the output of your head unit.
- **X-OVER (Crossover Switch):** Selects the type of filter.
 - **HPF (High Pass Filter):** Allows frequencies above the set frequency to pass.
 - **FULL:** Full range signal, no filter applied.
 - **LPF (Low Pass Filter):** Allows frequencies below the set frequency to pass.
- **FREQ (Frequency Adjustment):** Adjusts the crossover frequency for HPF or LPF modes.
- **BOOST:** Adjusts the bass boost level.
- **CLIP LED:** Illuminates when the amplifier's output signal is clipping, indicating distortion.

Power and Speaker Terminal Functions (Refer to Figure 3)

- **BRIDGED (+L, -R):** Terminals for connecting speakers in bridged mode for higher power output.
- **FUSE (2 x 30A):** Protects the amplifier from overcurrent. Replace only with fuses of the same type and rating.
- **+12V:** Main power input from the vehicle's positive battery terminal.
- **REM (Remote):** Connects to the remote turn-on output of your head unit.
- **GND (Ground):** Connects to a solid chassis ground point in the vehicle.
- **PROTECT/POWER LED:** Indicates amplifier status. Green for power, Red for protection mode.

SETUP AND INSTALLATION

Proper installation is crucial for optimal performance and safety. Follow these steps carefully.

1. Mounting Location

- Choose a location that is dry, well-ventilated, and away from direct heat sources.
- Ensure sufficient airflow around the amplifier for cooling.
- Securely mount the amplifier to a solid surface using the provided mounting hardware.

2. Power Wiring

- **Battery Connection (+12V):** Run a power cable (minimum 8 AWG recommended) directly from the vehicle's positive battery terminal to the amplifier's +12V terminal. Install an in-line fuse holder (rated 60A, matching the amplifier's internal fuses) within 18 inches (45 cm) of the battery.
- **Ground Connection (GND):** Run a ground cable (minimum 8 AWG recommended) from the amplifier's GND terminal to a clean, unpainted metal surface on the vehicle's chassis. Ensure a good electrical connection. The ground cable should be as short as possible, ideally less than 3 feet (1 meter).
- **Remote Turn-On (REM):** Connect a remote turn-on wire (18 AWG) from your head unit's remote output to the amplifier's REM terminal. If your head unit lacks a remote output, use the DC or VOX turn-on modes (refer to Product Overview).

3. Signal Input (RCA)

- Connect RCA cables from your head unit's pre-amp outputs to the amplifier's INPUT RCA jacks.
- If using speaker-level inputs (not shown on this model, but common for DC/VOX turn-on), ensure proper connections as per your head unit's manual.

4. Speaker Wiring

- Connect your speakers to the amplifier's speaker terminals. Ensure correct polarity (+ to + and - to -).
- For 2-channel operation, connect one speaker to the L+ and L- terminals, and the second speaker to the R+ and R- terminals.
- For bridged operation (e.g., for a subwoofer), connect the speaker to the BRIDGED L+ and R- terminals. Refer to the amplifier's specifications for minimum impedance in bridged mode.

5. Initial Settings

- **Gain:** Start with the Gain control set to minimum. Gradually increase it until the sound is clear and loud without distortion. If the CLIP LED illuminates frequently, reduce the gain.
- **Crossover (X-OVER):**
 - For full-range speakers, set to **FULL**.
 - For tweeters or mid-range speakers, set to **HPF** and adjust FREQ to filter out low frequencies (e.g., 80-120 Hz).
 - For subwoofers, set to **LPF** and adjust FREQ to filter out high frequencies (e.g., 80-120 Hz).
- **Boost:** Use the Boost control sparingly. Excessive boost can cause distortion and damage speakers.

OPERATING INSTRUCTIONS

- Once installed and configured, turn on your vehicle's ignition and head unit. The amplifier should power on, indicated by the green POWER LED.
- Play audio at a moderate volume. Listen for clear sound reproduction.
- Adjust the head unit's volume and the amplifier's gain as needed to achieve desired sound levels without distortion.

- If the PROTECT LED illuminates, the amplifier has entered protection mode. Turn off the system and troubleshoot the issue (see Troubleshooting section).

MAINTENANCE

- **Cleaning:** Periodically wipe the amplifier's exterior with a soft, dry cloth. Do not use harsh chemicals or abrasive cleaners.
- **Connections:** Regularly check all power, ground, remote, and speaker connections to ensure they are secure and free from corrosion.
- **Fuses:** If the amplifier does not power on, check both the in-line fuse near the battery and the fuses on the amplifier itself. Replace blown fuses only with those of the identical type and rating (2 x 30A ATC fuses).

TROUBLESHOOTING

Problem	Possible Cause	Solution
Amplifier does not power on (POWER LED off)	<ul style="list-style-type: none"> ◦ Blown fuse (in-line or on amplifier) ◦ Poor power or ground connection ◦ No remote turn-on signal ◦ Incorrect TURN ON MODE setting 	<ul style="list-style-type: none"> ◦ Check and replace fuses. ◦ Verify +12V, GND, and REM connections. ◦ Check remote wire from head unit. ◦ Ensure TURN ON MODE is set correctly (REM, DC, or VOX).
Amplifier goes into protection mode (PROTECT LED on)	<ul style="list-style-type: none"> ◦ Speaker short circuit ◦ Overheating ◦ Low impedance load ◦ Faulty wiring 	<ul style="list-style-type: none"> ◦ Check speaker wiring for shorts. ◦ Ensure adequate ventilation; allow amplifier to cool. ◦ Verify speaker impedance matches amplifier's minimum rating. ◦ Inspect all wiring for damage.
No sound output	<ul style="list-style-type: none"> ◦ No input signal ◦ Incorrect gain setting ◦ Speaker wires disconnected ◦ Head unit settings 	<ul style="list-style-type: none"> ◦ Check RCA input connections. ◦ Adjust gain control. ◦ Verify speaker connections. ◦ Ensure head unit's volume is up and source is selected.
Distorted sound	<ul style="list-style-type: none"> ◦ Gain set too high (clipping) ◦ Incorrect crossover settings ◦ Poor ground connection ◦ Damaged speakers 	<ul style="list-style-type: none"> ◦ Reduce gain until CLIP LED no longer illuminates. ◦ Adjust X-OVER and FREQ settings. ◦ Verify ground connection. ◦ Test speakers with another amplifier if possible.

SPECIFICATIONS

Feature	Detail
Model	H400.2D
Number of Channels	2
Output Power	125 Watts (RMS per channel, typical 4 Ohm)
Amplifier Class	Class D
Item Dimensions (L x W x H)	9 x 6.3 x 1.9 inches
Item Weight	3.5 Pounds
Voltage	12 Volts (Nominal)
Minimum Supply Voltage	12 Volts
Maximum Supply Voltage	14.4 Volts
Supply Current	0.5 Amps (Idle/Standby, typical)
Mounting Type	Surface Mount
Fuses	2 x 30A ATC
Certifications	CE, FCC, RoHS, WEEE
UPC	847169059087

Note: Specifications are subject to change without notice.

WARRANTY INFORMATION

Cerwin Vega products are designed and manufactured to the highest quality standards. This product is covered by a limited warranty against defects in materials and workmanship. The specific terms and duration of the warranty may vary by region and retailer. Please retain your proof of purchase for warranty claims.

For detailed warranty information, please refer to the warranty card included with your product or visit the official Cerwin Vega website.

CUSTOMER SUPPORT

If you encounter any issues or have questions regarding your Cerwin Vega HED H400.2D amplifier that are not addressed in this manual, please contact Cerwin Vega customer support or your authorized dealer for assistance. You can often find support contact information on the manufacturer's website: www.cerwinvega.com