



## Installation Instructions

### Design Reference Series

### DR-330/DR-328/DR-326 BassPump™ Subwoofer/Woofer System

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## Congratulations...

...on your purchase of our Coustic Design Reference Series BassPump™ Woofer/Subwoofer System engineered specially for use in automotive environments. This special design is optimized for exceptionally natural and musical low end response, yet requiring minimal installation and virtually no enclosure design work.

Over the years, this woofer/subwoofer system, together with other speaker components such as tweeters, mid-ranges and woofers, will give you countless hours of unparalleled listening pleasure while you are on the road.

However, to ensure that your woofer/subwoofer system will perform at its highest level of efficiency, read the manual thoroughly and follow the precautionary steps and installation instructions as listed. That done, you will then have rich and true-to-life bass reproduction from a woofer/subwoofer system designed and manufactured in the U.S.A. by Coustic for use in automobiles.

Coustic's Design Reference Series also include a state-of-the-art Digital-to-Analog processor, high-fidelity power amplifiers, easy-to-install and sweet-sounding neodymium tweeters, and a full-range of woofer/subwoofer component speakers. In other words, everything you need to create the ultimate car audio system.

Coustic ...a sound investment.

## FEATURES

### Easy to Install

This special design only requires a minimal trunk space to achieve the same, if not higher, SPL output as conventional enclosed woofer/subwoofer system which may occupy a few times its volume.

With the supplied mounting hardware, installation can be completed quickly and easily.

### Treated Paper Cones

The drivers are made with specially treated paper cones for uniformity and are fitted with concave dust caps to provide naturally warm bass while reducing spurious high frequency content.

### Aluminum High Temperature Voice Coil

Aluminum voice coil is used due to their efficient heat dissipation properties in order to sustain high power handling capabilities.

### Butyl Rubber Surrounds

Butyl rubber is chosen because of its ability to resist the harsh environmental effects of automotive applications.

## PLACEMENT SUGGESTIONS

Care in placement and installation of woofers/subwoofers can make a big difference in the sound you get. Coustic's Design Reference BassPump™ woofer/subwoofer system is designed for either rear deck or behind rear seat (trunk) mounting (Figures 1 and 2).

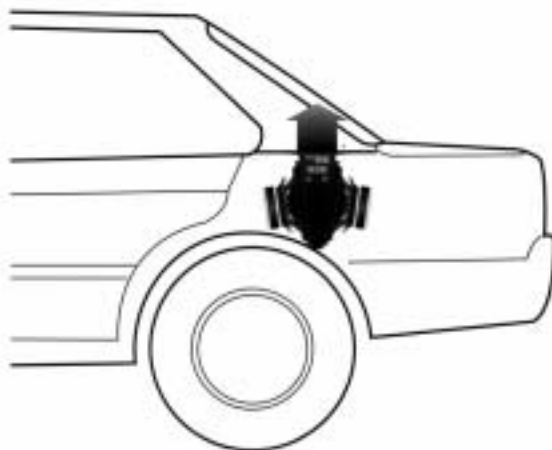


Figure 1. Rear Deck Mounting

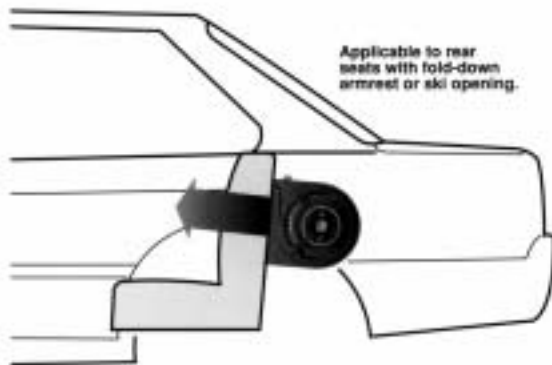


Figure 2. Behind Rear Seat (Trunk) Mounting

## INSTALLATION PREPARATIONS AND PRECAUTIONS

### A. GENERAL PRECAUTIONS

1. Make sure car audio system is turned off before installation begins.
2. Metal clips and filings should be kept away from subwoofers; **WORK AS CLEANLY AS POSSIBLE.**
3. Install the speaker system as firmly as possible. To maximize bass reproduction, make sure there are no air gaps between the metal frame and mounting surface. Use the supplied foam gasket as acoustic sealing between the mounting surface and the metal frame, if necessary.
4. It is essential that the opening is covered with an acoustically transparent material to allow for unrestricted sound to travel to the listening area. Use the grille provided, if applicable.
5. Ideally, the crossover point (woofer cutoff point) should be around 80 Hz to 150 Hz (consult your local Coustic dealer/installer for details).

### B. REAR DECK MOUNTING PRECAUTIONS

1. Rear decks tend to be the most accessible and sturdiest areas to install woofers. Most rear decks need to be reinforced to support the weight of this speaker system.
2. Double check the rear deck and its space below to ensure that the frame will not:
  - A. Hit or hinder trunk torsion bars.
  - B. Hit rear window frame or glass.
  - C. Cause damage to fuel hose(s), gas tank or electrical system.
3. The metal frame of the DR-326 is specially designed to fit most 6"x9", 6 1/2" and 5 1/4" factory openings. Please refer to the supplied mounting template for mounting hole locations.

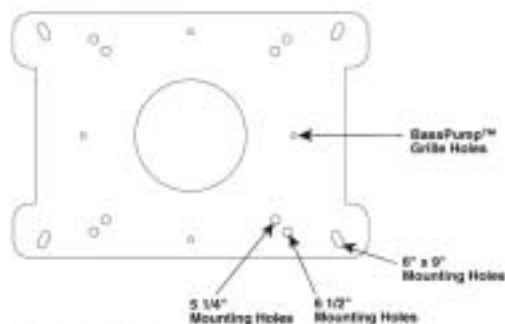


Figure 3. DR-326 Mounting Hole Configuration

## BASSPUMP™ SYSTEM INSTALLATION

### A. REAR DECK INSTALLATION (FREE-AIR)

1. Locate and examine under deck or panel for obstruction (please refer to section titled INSTALLATION PREPARATIONS AND PRECAUTIONS for details).
2. Remove rear deck material and determine if deck structure requires reinforcement.
3. If reinforcement is necessary, select a rigid material of sufficient thickness (3/8" - 1/2") to support the speaker system.
4. Measure, cut and prepare rear deck. Repeat same procedure for reinforcement. That done, secure reinforcement to deck.
5. Cut deck material to allow for port opening and cover deck with an acoustically transparent cloth material (please refer to section titled INSTALLATION PREPARATIONS AND PRECAUTIONS for details).
6. Secure the metal frame to underside of deck (or reinforcement) surface.

**NOTE:** Since the BassPump™ system is specially designed for free-air application, it is not necessary to house this speaker system in an enclosure.

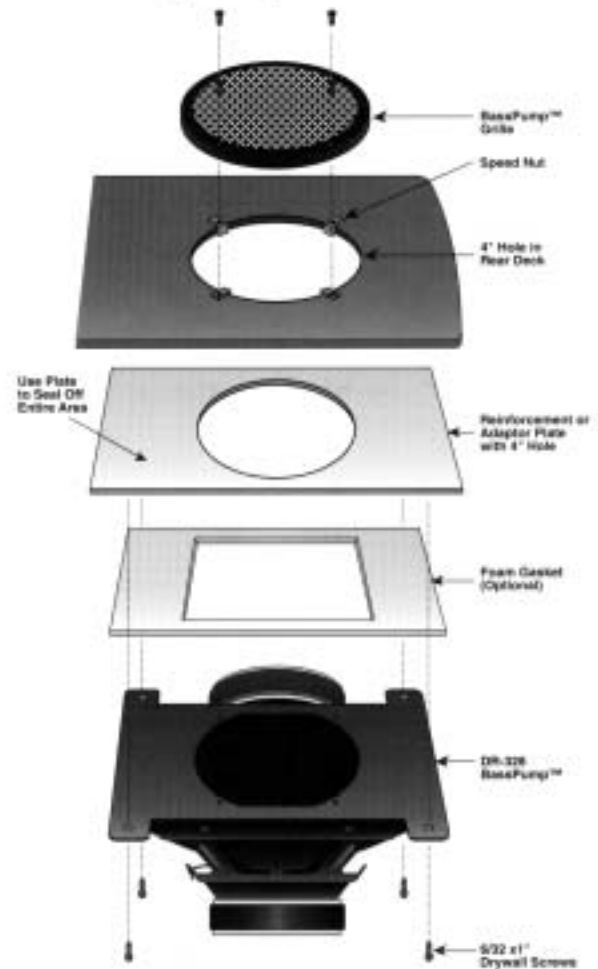


Figure 4. Rear Deck Installation

## BASSPUMP™ SYSTEM INSTALLATION

### B. TRUNK — BEHIND REAR SEAT INSTALLATION (FREE-AIR)

1. Since the BassPump™ system requires a port opening, it is advisable to locate a place such that minimal cutting and modification behind the rear seat is required when preparing the port opening.  
**Note:** Applicable to rear seats with fold-down armrest or ski opening.
2. Repeat procedures 2-6 as described in "REAR DECK INSTALLATION".

### ELECTRICAL CONNECTION

Refer to the following diagrams for connection methods.

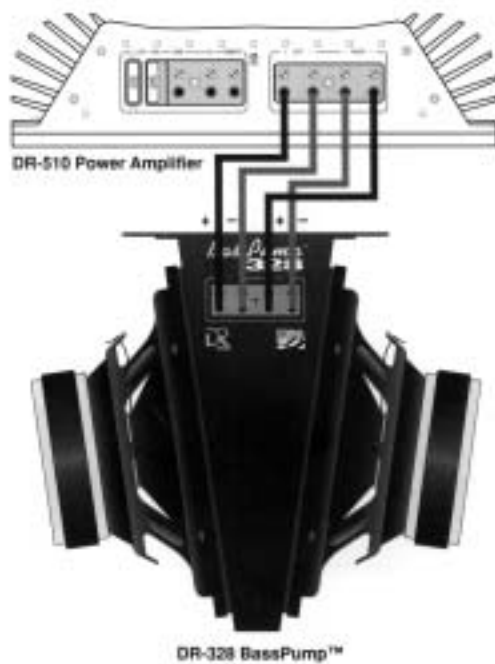


Figure 5a. Electrical Connection (Stereo)

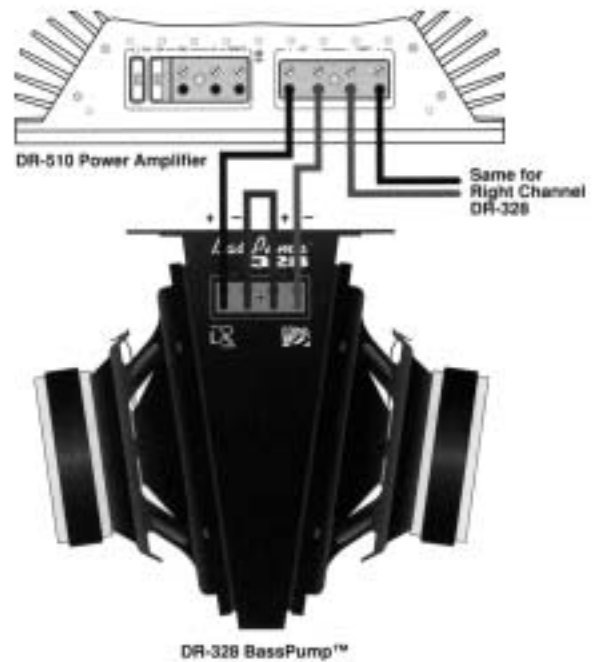


Figure 5b. Electrical Connection (Mono - Series connection)

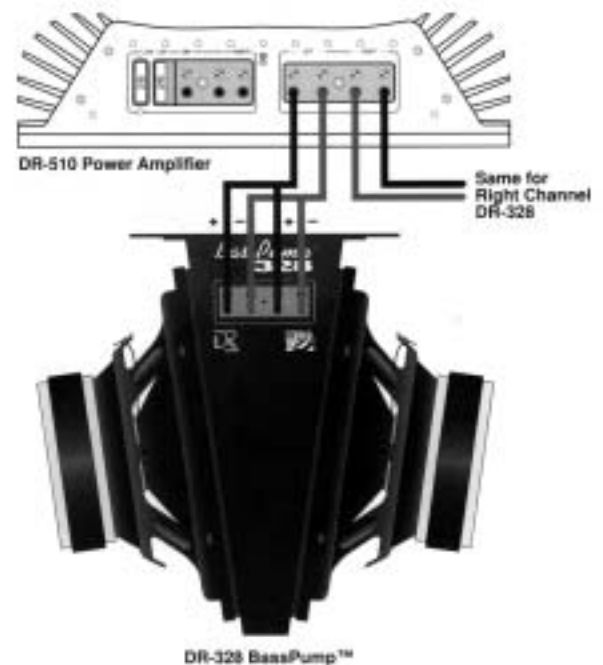


Figure 5c. Electrical Connection (Mono - Parallel connection)

# SYSTEM DESIGN

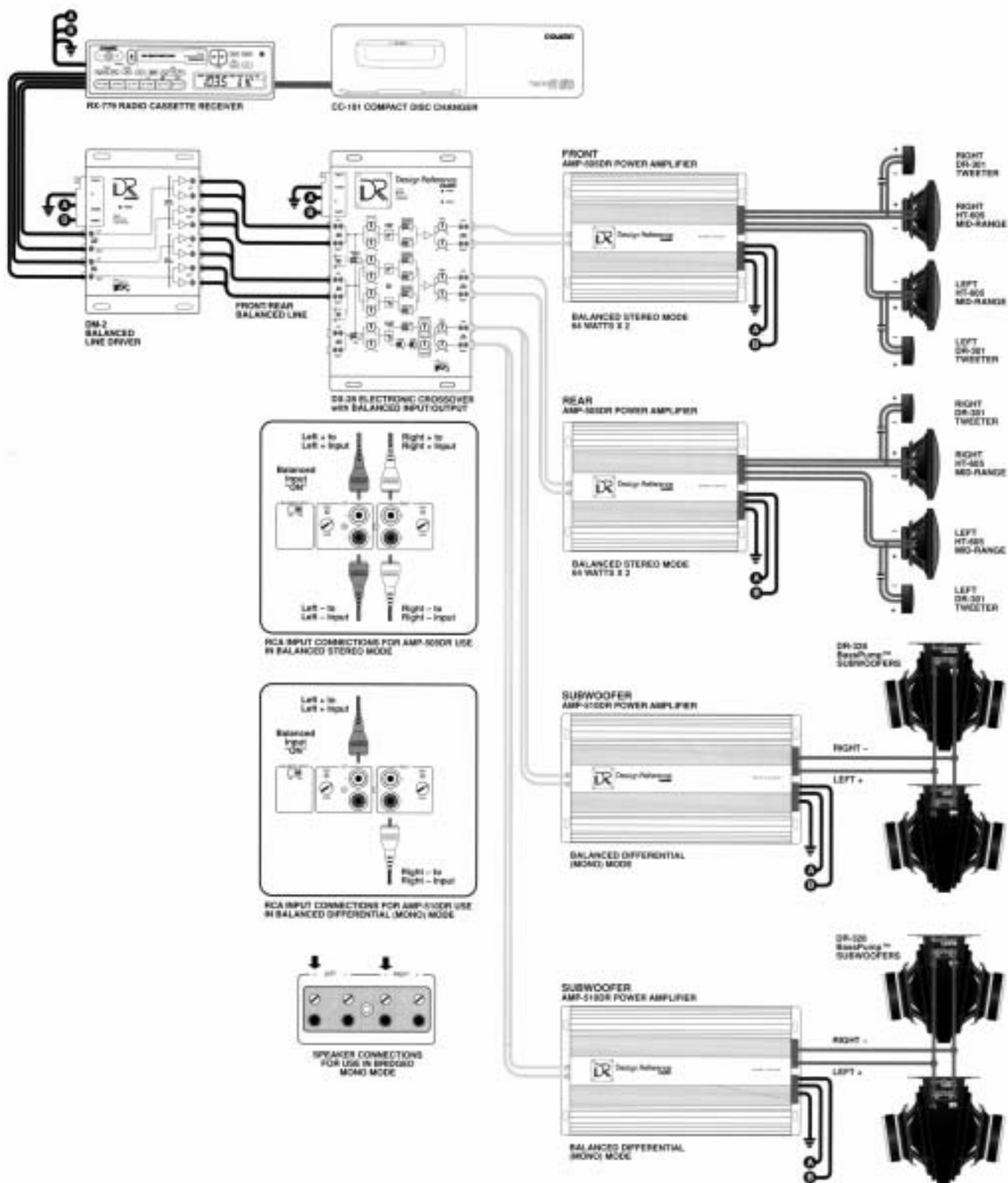


Figure 6. BassPump™ System Installation

## SPECIFICATIONS

<b>Model</b>	<b>DR-330</b>	<b>DR-328</b>	<b>DR-326</b>
Driver Diameter:	10"	8"	6"
Magnet Size:	30 Oz.	20 Oz.	13 Oz.
Voice Coil diameter:	1.5"	1.5"	1.25"
Dynamic Power:	250 Watts	150 Watts	60 Watts
Rated Power:	150 Watts	100 Watts	30 Watts
Frequency Response (-3 dB):	25-1,000 Hz	35-2,000 Hz	45-2,000 Hz
System Sensitivity (SPL @ 1W/1M):	92 dB	90 dB	89 dB

## TABLE OF INSTALLATION MEASUREMENTS

<b>Model</b>	<b>DR-330</b>	<b>DR-328</b>	<b>DR-326</b>
Depth Behind Panel:	11"	9"	7.25"
Maximum Width:	12"	10"	8"
Port Opening Required:	5.25" Diameter	4" Diameter	2.5" Diameter