

**BOGEN®**

**OWNER'S GUIDE**

**MODEL A12**

**A-SERIES ENVIRONMENT-PROOF  
HIGH-OUTPUT/LONG-THROW LOUDSPEAKER**



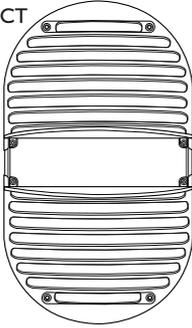
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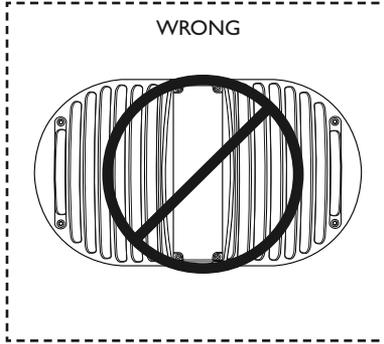
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## SPEAKER ORIENTATION

CORRECT

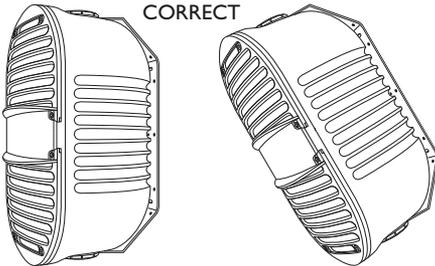


WRONG

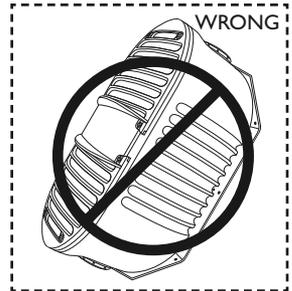


The A12 Armadillo Loudspeaker is acoustically designed to operate in a vertical orientation. This orientation will provide 90 degrees of horizontal coverage and 45 degrees of vertical coverage.

CORRECT



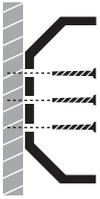
WRONG



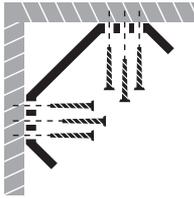
The A12 is a ported speaker, designed to shed water, and includes a unique water-repellent scrim. This scrim covers the ports and horn throat to slow the ingress of water, but a small amount of water may still enter the cabinet. Weep holes are provided at the bottom of the speaker baffle to drain any water that enters the cabinet.

**NOTE:** It is very important that the speaker be mounted with its face either vertical or facing down. Never install the speaker with the face tilted up, as this will undermine the water-shedding aspects of the design and allow excessive water to enter the cabinet.

## YOKE INSTALLATION



WALL MOUNT



90° WALL/CEILING MOUNT  
(Secure both ends)

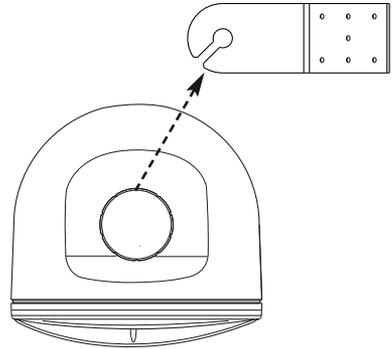
After selecting the speaker location, securely attach the yoke to the surface. An Adjustable Tilt-Mount Adapter (TMA812) is available to provide various tilt angles. The TMA812 allows attachment to walls and posts.

**WARNING:** Mounting brackets must be secured in accordance with local codes. If in doubt, consult a professional contractor to determine the integrity of the structure to which the bracket will be attached. When required, a safety cable can be secured to the back of the speaker using the threaded brass insert on the back of the speaker housing and the forged steel safety bolt (included).

## MOUNTING THE SPEAKER ON THE YOKE

The A12 yoke allows the speaker to be slipped onto it with the locking knobs attached. First, both knobs need to be removed and the supplied rubber friction disks applied to the speaker enclosure where the knobs clamp. Do not apply the friction disks directly to the mounting knobs. Next, screw the knobs back onto the enclosure about two turns and simply slide the knob shafts down the slots in the yoke. Now tighten the knobs making sure that the shoulder of the knob seats properly through the large hole at the end of the yoke.

TOP-DOWN VIEW



## SOME FACTORS TO CONSIDER

Distance is not the only factor affecting sound intensity. Also consider what adjacent surfaces may affect the sound (including but not limited to buildings, walls, and overhangs). These structures may provide positive effects (low frequency reinforcement) or negative effects (high-frequency reflections that will degrade intelligibility).

## UNDERPOWERING VS. OVERPOWERING

Surprisingly, speaker damage can be caused by amplifiers with too little power. An underpowered, overdriven amp sends heavily distorted, clipped audio to the speakers. This can damage the high-frequency drivers. Clipping is usually audible; it may vary from a harsh sound to a fuzzy or blurry sound. If you hear clipping at loud volume levels, turn down the volume until the distortion is no longer present.

On the other hand, overpowering a speaker can cause mechanical damage or electrical failure by overstressing the speaker's components. The speaker must be powered appropriately to ensure its longevity and performance.

## PAINTING

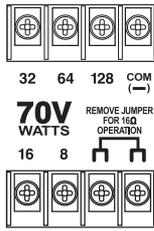
The speaker enclosure and grille can be painted with automotive paints or spray paints specially designed to adhere to plastics. Perforated grilles require special care when painting so that the holes do not become plugged with paint. Applying several very light coats works best. Be sure to mask the port and horn throat scrim so that no paint will get on those items.

## REAR-PANEL CONNECTIONS

### Low-impedance:

Remove jumper, use COM (-) and 16Ω terminals.

Jumper can be installed on any two unused terminals for safekeeping.



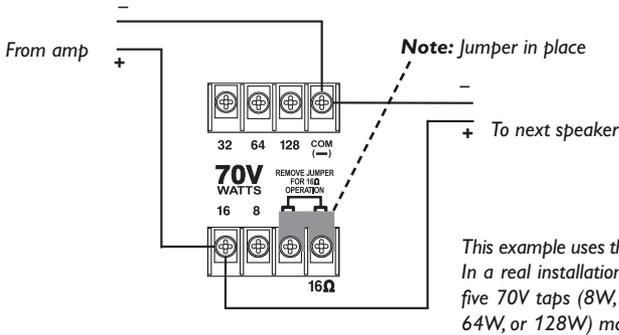
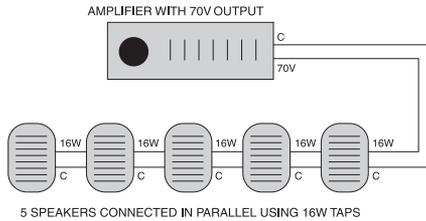
*Shown without jumper*

### 70V:

With jumper in place, use COM (-) and one tap selection (choose 8, 16, 32, 64, or 128 watts).

## 70V SYSTEM CONFIGURATION

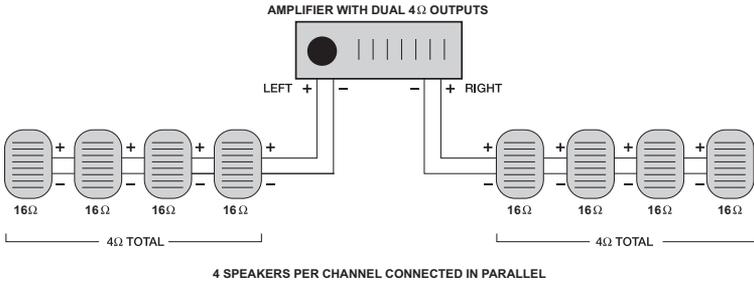
When designing a 70V system, the total of all the power tap settings of all the connected speakers cannot exceed the output power of the 70V amplifier. The example below shows five speakers connected in parallel. Using the 16W terminals, an amplifier is needed with a power rating of at least  $(5) \times (16) = 80\text{W}$ . A good rule of thumb is to select an amplifier with 20% more power; in this case, an amplifier that delivers about 100W.



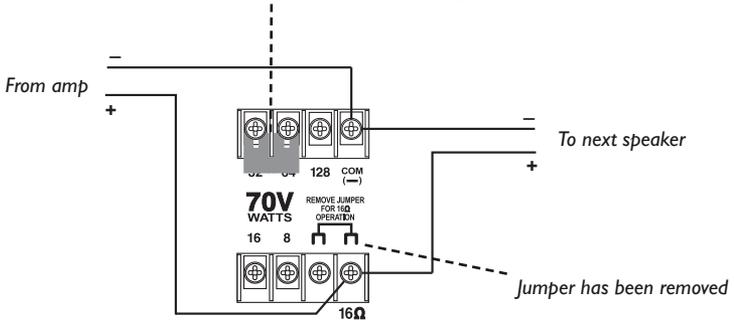
## LOW-IMPEDANCE SYSTEM CONFIGURATION

When using multiple low-impedance speakers wired in parallel, it is important to know the total load that these speakers present to the amplifier and to select an amplifier that is stable into that load. The A12 has a 16-ohm input impedance which allows for easy paralleling of multiple speakers. In the example on the next page, four speakers are paralleled on each amplifier output, so that each run has a total impedance of 4 ohms. The amplifier is selected to be stable into this load impedance.

## Example of Low-Impedance System Configuration



**Note:** Jumper stored for safekeeping



Total load impedance can be calculated this way:

$$\frac{1}{(1/R_s + 1/R_s \dots 1/R_s)} = \text{Total Load Impedance}$$

$R_s$  is the impedance of the speaker, for the A12 it is equal to 16 ohms.

Note: If all speakers are the same  $R_s$ , it is simply:

$$\frac{R_s}{\# \text{ of Speakers}} = \text{Total Load Impedance}$$

Low-impedance amplifiers have power ratings based on driving a particular load impedance, typically a 4-ohm load. Some rate power into an 8-ohm load. If the speaker load's impedance is greater than the amplifier's rated impedance, the speaker will not consume the amplifier's total rated power. Since the A12 is a 16-ohm speaker, operating a single A12 with an amplifier rated for 4 ohms will result in the A12 speaker consuming only 1/4 of the amplifier's maximum capacity. Likewise a single A12 will consume only 1/2 of the power capacity of an amplifier's 8-ohm power rating. Most real world applications will require more than a single A12, and paralleling the speakers will decrease the total impedance of the load as mentioned above.

<b>SPECIFICATIONS</b>		<b>A12</b>
<b>Frequency Response (-10 dB)*</b>	55 Hz to 17.5 kHz	
<b>LF Driver</b>	Dual Metal-Composite 6-1/2" Cone Woofers, Patented MLS Voice Coil Guidance System	
<b>HF Driver</b>	Weatherproof 1.9" Mylar Diaphragm Constant Directivity Horn, 1" Exit	
<b>Sensitivity (1W/1M)</b>	94.5 dBspl	
<b>Dispersion</b>	90° Horizontal, 45° Vertical	
<b>Impedance Ratings</b>	Low (16 ohms) / High (70V)	
<b>Power Input (Max.)</b>	225W @ 16 ohms; 128W @ 70V	
<b>Power Settings (in watts)</b>	70V: 128, 64, 32, 16, 8	
<b>Grille Material</b>	Perforated Polypropylene	
<b>Enclosure Material</b>	Mineral-filled Polypropylene, with UV Inhibitor	
<b>Terminations</b>	Dual 4-Terminal Barrier Strips with Gold-plated, Rust-proof Screws	
<b>Product Weight</b>	22 lb.	
<b>Speaker Dimensions</b>	10-1/4" W x 17-7/8" H x 11-3/4" D	
<b>Included Accessories</b>	Color-matched, Stainless Steel Mounting Bracket	
<b>Optional Accessories</b>	Adjustable Tilt-Mount Adapter (Model TMA812, sold separately)	
<b>Environmental</b>	Meets or Exceeds Mil-Std-810E	

\* Half-space response

## LIMITED WARRANTY; EXCLUSION OF CERTAIN DAMAGES

The Bogen A12 is warranted to be free from defects in material or workmanship for five (5) years from the date of sale to the original purchaser. Any part of the product covered by this warranty that, with normal installation and use, becomes defective will be repaired or replaced by Bogen, at our option, provided the product is shipped insured and prepaid to: Bogen Factory Service Department, 50 Spring Street, Ramsey, NJ 07446, USA. The product will be returned to you freight prepaid. This warranty does not extend to any of our products that have been subjected to abuse, misuse, improper storage, neglect, accident, improper installation or have been modified or repaired or altered in any manner whatsoever, or where the serial number or date code has been removed or defaced.

**THE FOREGOING LIMITED WARRANTY IS BOGEN'S SOLE AND EXCLUSIVE WARRANTY AND THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY. BOGEN MAKES NO OTHER WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED AND EXCLUDED TO THE MAXIMUM EXTENT ALLOWABLE BY LAW.** Bogen's liability arising out of the manufacture, sale or supplying of products or their use or disposition, whether based upon warranty, contract, tort or otherwise, shall be limited to the price of the product. In no event shall Bogen be liable for special, incidental or consequential damages (including, but not limited to, loss of profits, loss of data or loss of use damages) arising out of the manufacture, sale or supplying of products, even if Bogen has been advised of the possibility of such damages or losses. Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.

Products that are out of warranty will also be repaired by the Bogen Factory Service Department -- same address as above or call 201-934-8500. The parts and labor involved in these repairs are warranted for 90 days when repaired by the Bogen Factory Service Department. All shipping charges in addition to parts and labor charges will be at the owner's expense. All returns require a Return Authorization number.

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