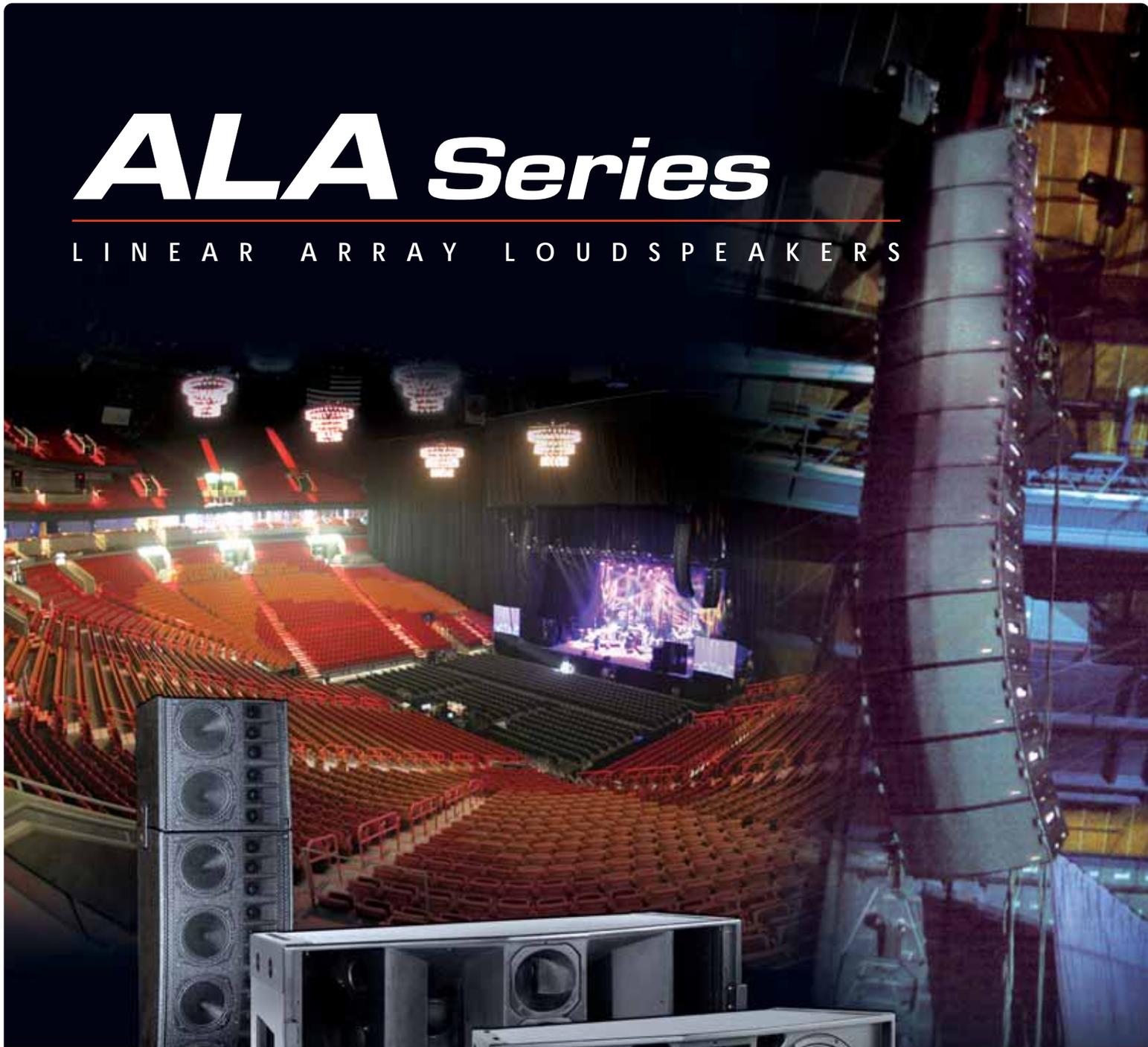


# **ALA Series**

L I N E A R   A R R A Y   L O U D S P E A K E R S



**APOGEE**  
SOUND INTERNATIONAL



*Chinese National Olympic Games  
Guangdong, China  
ALA-9 Loudspeakers*



*Le Theatre du Casino de Hull  
Hull, Canada  
ALA-5 Loudspeakers*



*Overlake Christian Church  
Redwood, WA, U.S.A.  
ALA-3 Loudspeakers*

# ALA Series

## LINEAR ARRAY LOUDSPEAKERS

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ALA Series Loudspeakers bring a new experience to sound reinforcement. Vertical pattern control is like nothing you've ever experienced; horizontal patterns are available in 60 degree and 90 degree wide formats, depending on the model. The result is greater clarity, articulation, and coherence, with phenomenal freedom from feedback. In many cases, an ALA system can eliminate or reduce the need for delay speakers, and/or critical placement of microphones to achieve adequate gain levels. Apogee's ALA Series will transform your most troublesome shows and installations into "another job well done."

Apogee Sound's award-winning Linear Array loudspeakers differ significantly from conventional sound systems. ALA models allow you to achieve unprecedented directional control and phenomenal off-axis rejection. Capable of precisely focusing the sound where it's needed, ALA Series loudspeakers are especially effective in difficult acoustic environments but equally potent in outdoor use. Each model, coupled with the ease of their unique rigging systems, brings Linear Array Technology to a new level of versatility and effectiveness.

### ***Why a Linear Array?***

A properly designed linear array can have enormous benefits in many applications, especially in problematic venues. The Apogee Linear Array Series is an intelligent and practical implementation of both the line array principle and the doublet principle. Each ALA model behaves similarly, but is scaled in size to perform optimally in a specific range of applications.

An Apogee Linear Array behaves quite differently from a conventional loudspeaker. Each Linear Array enclosure is really a modular component of a complete system. In the ALA-1, each unique module is designed to perform a specific function. In the other ALA models, identical modules are used in multiples in order to obtain the desired power and coverage needed for larger venues.

The primary benefits of the linear array are the extremely narrow vertical coverage angle of each module and the seamless acoustic transition between multiple modules. Low frequency pattern control is obtained by the "line array effect" which occurs when multiple units are used together.

By starting with a narrow vertical angle, a properly constructed array produces the exact coverage required, and nothing more. In the ALA-1 Series, each module extends the vertical coverage pattern (Long Throw or Down Fill modules). In the larger models, identical modules may be assembled in 'flat-pack' formations, 'tight-pack' formations, or combinations of both. When tight-packed, each additional module adds 10 degrees of vertical coverage. Flat-packing the modules adds 5 degrees of vertical coverage, plus 6 dB of additional forward radiated power. In either case, it's easy to calculate the obtainable power levels and the resultant dispersion pattern.

The predictability of the system gives the designer the means to accurately direct the acoustical energy to the audience areas, but not beyond. This precise pattern control eliminates unwanted spillage onto ceilings, floors, walls, and other surfaces, which would otherwise cause destructive reflections.

### ***How do Apogee Linear Arrays achieve control?***

The pattern in the mid and high frequencies is obtained by a coupling of multiple waveguides in the enclosures. This coupling sums the forward radiated power while narrowing the vertical dispersion. Low frequency vertical pattern control is governed by the total size of the array, and that control can be extended lower and lower as modules are added.

Horizontal dispersion in the high frequency range is controlled by the HF horn flares (60 degrees or 90 degrees, depending on model). Horizontal dispersion control in the low frequencies is achieved by a refinement of the doublet principle (ALA-3, ALA-5, ALA-9). The precise spacing and angulations of the paired cone drivers produces a well-defined directional pattern that maximizes forward radiated power while attaining superb off-axis rejection. Crossover points are carefully chosen to avoid destructive cancellation in the upper frequencies.

## ALA-1 SERIES LINEAR ARRAY LOUDSPEAKER SYSTEM

The **ALA-1 Series** is designed to provide extremely high fidelity, controlled pattern, and uniform coverage in small- and medium-sized venues. This easy to use system takes the difficulty out of designing and installing with line arrays.

The main array (ALA-1) incorporates four metal-alloy woofer cone drivers featuring the pioneering voice-coil guidance system by NEAR, utilizing a unique Ferrofluid in the magnet gap.

The Long-Throw module (ALA-1LT) increases the array length by 50%, focusing this extra energy to augment and extend the performance of the ALA-1 for longer distances. Both models (ALA-1 and ALA-1LT) also use horn-loaded high frequency metal dome drivers for added clarity and detail in the upper ranges, without the harshness of traditional high-frequency units.

The Down-Fill module (ALA-1DF) increases vertical coverage below the main array greatly improving articulation in front row nearfield listening areas often eliminating the need for stage-based front fill speakers.

When the application requires high-output low-frequency energy, the ALA-1S is a perfect partner to the rest of the ALA system. A neodymium driven 12-inch woofer provides high output and extended bass for music and video productions.

Its unique mounting bracket allows the full ALA-1 Line Array to be suspended and tilted. Combined with the other ALA modules, the full system represents the most cost-effective way to achieve a true professional-quality system with unmatched realism.



## ALA-1 LOUDSPEAKER

### ENGINEERING DATA

*Performance Specifications in red*

**Format:**  
Passive/Two-way Line Array

**Coverage Angles:**  
Horizontal: 130°  
Vertical: Graduated 10° up,  
35° down

**Freq. Response (1m on axis):**  
64 Hz to 18 kHz (+/- 3 dB)

**Sensitivity (1W @ 1m):** 94 dB

**Max. SPL (@1m):**  
121 dB cont./127 dB peak

**Nominal Impedance:** 8-ohms

**Max. Power Handling:**  
500W cont./2000W peak

**Dimensions:**  
**height:** 27-5/8" (702mm) H  
**width:** 14-1/8" (359mm) W  
**depth:** Top- 9-7/8" (251mm) D  
Bottom- 6-1/4" (155mm) D  
**weight:** 39 lb. (17.7 kg)

**Driver Complement:**  
(4) 6-1/2" metal-alloy  
cone drivers;  
(12) 1" horn-loaded metal  
diaphragm drivers

**Input Connectors:**  
Barrier Strip, #8 Screw Type

**Rigging Hardware:**  
101-2000 Yoke (sold separately),  
Allen Products MM-120

**Options/Accessories:**  
DLC24 Digital Controller,  
Stand Fitting for Yoke  
(140-05)



## ALA-1LT LONG-THROW LOUDSPEAKER

### ENGINEERING DATA

*Performance Specifications when added to the ALA-1 in red*

**Format:**  
Passive/Two-way Line Array

**Coverage Angles:**  
Horizontal: 130°  
Vertical: Graduated 15° up,  
35° down

**Freq. Response (1m on axis):**  
64 Hz to 18 kHz (+/- 3 dB)

**Sensitivity (1W @ 1m):** 95 dB

**Max. SPL (@1m):**  
122 dB cont./128 dB peak

**Nominal Impedance:** 4-ohms  
(Wired in parallel w/ALA-1)

**Max. Power Handling:**  
750W cont./3000W peak

**Dimensions:**  
**height:** 14-1/8" (359mm) H  
**width:** 14-1/8" (359mm) W  
**depth:** 9-7/8" (251mm) D  
**weight:** 24 lb. (10.9 kg)

**Driver Complement:**  
(2) 6-1/2" metal-alloy  
cone drivers

**Driver Complement (cont'd):**  
(6) 1" horn-loaded metal diaphragm  
drivers

**Input Connectors:**  
Barrier Strip, #8 Screw Type

**Rigging Hardware:**  
101-2001 Coupling Plates  
(two units included w/ALA-1LT)

**Options/Accessories:**  
DLC24 Digital Controller



# ALA-1S SUBWOOFER

## ENGINEERING DATA *Performance Specifications in red*

**Format:**  
Dual-Vented, Single Amp,  
Electronically Coupled

**Freq. Response (1m on axis):**  
40 Hz to 140 kHz (+/- 3 dB)

**Sensitivity (1W @ 1m):** 96 dB

**Max. SPL (@1m):**  
121 dB cont./127 dB peak

**Nominal Impedance:** 8-ohms

**Max. Power Handling:**  
300W cont./1200W peak

**Dimensions:**  
*height:* 17-7/8"(454mm) H  
*width:* 14-1/8"(359mm) W  
*depth:* Top- 16-5/8"(422mm) D  
*weight:* 35 lb. (15.8 kg)

**Driver Complement:**  
(1) 12" Weatherproof Cone Woofer  
w/Neodymium Magnet Structure

**Input Connectors:**  
Barrier Strip, #8 Screw Type

**Rigging Hardware:**  
101-2000 Yoke (sold separately),  
101-2001 Coupling Plates included  
w/ALA-1S

**Options/Accessories:**  
DLC24 Digital Controller



# ALA-1DF DOWN-FILL LOUDSPEAKER

## ENGINEERING DATA *Performance Specifications when added to the ALA-1 in red*

**Format:**  
Passive/Line Array

**Coverage Angles:**  
Horizontal: 130°  
Vertical: Graduated 10° up,  
50° down

**Input Connectors:**  
Barrier Strip, #8 Screw Type

**Dimensions:**  
*height:* 13-1/2"(343mm) H  
*width:* 14-1/8"(359mm) W  
*depth:* Top- 11"(279mm) D  
Bottom- 2-3/4"(70mm) D  
*weight:* 14 lb. (6.4 kg)

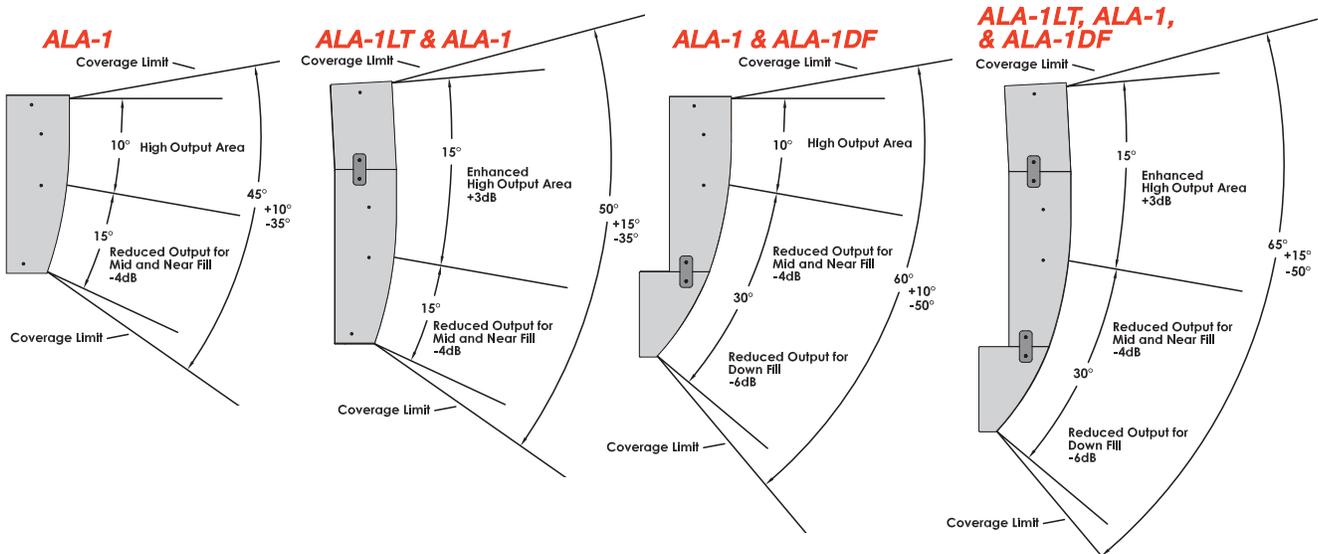
**Driver Complement (cont'd):**  
(6) 1" horn-loaded metal diaphragm  
drivers

**Rigging Hardware:**  
101-2001 Coupling Plates  
(two units included w/ALA-1DF)

### ALA-1 SERIES VERTICAL COVERAGE

The ALA-1 is a 4 element line array, pre-articulated and fixed in a single enclosure. The preset vertical coverage creates a 10 degree high output zone at the top of the array to better reach the back of the average venue. Sound Pressure Level below this high output on axis zone gradually decreases towards the bottom of the array. Because the listening area covered by the bottom of the array is generally closer to the speaker and the Sound Pressure Level from the speaker is reduced in this area, sound pressure levels will remain very consistent from the back of a venue to the front.

Should a greater vertical coverage angle be required to cover audience areas at the front of the venue, the ALA-1DF (Down-Fill) module may be added, increasing vertical coverage by 15 degrees. If higher Sound Pressure Levels are desired, because of the use of the venue or because of its depth, the ALA-1LT (Long Throw) module may be added. This module increases the on axis level by 3 dB and the vertical coverage by 5 degrees. The relative level of each module has been preset so a complete array including the LT and DF can be connected to a single amplifier channel.



# ALA-9

## ACOUSTIC LINEAR ARRAY LOUDSPEAKER

The tri-amped **ALA-9** is the largest in the ALA Series family of loudspeakers. Its wide dynamic range makes it ideally suited for applications that may require extremely high SPL capability such as rock concerts, sporting events, and outdoor pageantry. You will find the ALA-9 loudspeakers installed in some of the most prestigious arenas and stadiums throughout the world.



### ENGINEERING DATA

#### Performance Specifications in red

**Format:**

Tri-amped/Three-way Line Array/  
Electronically-Coupled

**Dispersion:**

ALA-9W: Horiz.: 90° x Vert.: 10°

**Freq. Response (1m on axis):**

45 Hz to 17.5 kHz (+/- 3 dB)

**Sensitivity (1W @ 1m):**

LF: 100 dB MF: 108 dB HF: 112 dB

**Nominal Impedance:**

LF: 8 ohms x 2 MF: 4 ohms  
HF: 4 ohms

**Max. SPL (@1m):**

136 dB cont./142 dB peak

**Max. Power Handling:**

LF: 1200W cont./4800W peak

MF: 600W cont./2400W peak

HF: 450W cont./1800W peak

**Driver Complement:**

Dual 15" Cone Type, Dual 10"  
Cone Type, Three Horn-  
Loaded, Fluid Cooled 4" VC,  
2" Exit Compression Type

**Dimensions:**

**front:** 47"(1194mm) W x  
24"(610mm) H

**rear:** 47"(1194mm) W x  
20-1/8"(511mm) H

**depth:** 22-3/4"(577mm) D

**weight:** 255 lb. (116 kg)  
without rigging

**Rigging Hardware:**

Rigging Pins & Plates (included)

**Processor Model:**

DLC-24

# ALA-5

## ACOUSTIC LINEAR ARRAY LOUDSPEAKER

The **ALA-5** is a modestly sized and easily handled loudspeaker system. Eminently versatile, it provides a very wide frequency response and enough power output for concerts, musical theatre, industrial settings, theme parks, and many more related applications. The ALA-5 features very low distortion, and very high directivity to meet the most demanding applications of any professional large scale SR requirement.



### ENGINEERING DATA

#### Performance Specifications in red

**Format:**

Bi-amped/Two-way Line Array/  
Electronically-Coupled

**Dispersion:**

ALA-5: Horiz.: 45° x Vert.: 10°

ALA-5W: Horiz.: 90° x Vert.: 10°

**Freq. Response (1m on axis):**

50 Hz to 17.5 kHz (+/- 3 dB)

**Sensitivity (1W @ 1m):**

HF: 99 dB LF: 110 dB

**Max. SPL (@1m):**

132 dB cont./138 dB peak

**Nominal Impedance:**

LF: 4 ohms HF: 4 ohms

**Max. Power Handling:**

LF: 900W cont./3600W peak

HF: 300W cont./1200W peak

**Dimensions:**

**front:** 43-1/3"(1100mm) W x  
18-1/2"(468mm) H

**rear:** 36-1/2"(928mm) W x  
15-3/4"(400mm) H

**depth:** 15-1/2"(393mm) D

**weight:** 141 lb. (64 kg)

**Driver Complement:**

Dual 15" Cone Type; Dual Horn-  
Loaded, Fluid Cooled 2" VC,  
1" Exit Compression Type

**Rigging Hardware:**

Rigging Bars (included)

**Processor Model:**

DLC-24

# ALA-3

## ACOUSTIC LINEAR ARRAY LOUDSPEAKER

The ALA-3 is the most compact model of the ALA Series. Intended for applications that require clarity, power, and precise directivity, especially in the vocal range, the ALA-3 is ideally suited for theaters, hotel ballrooms, and houses of worship. Multiple ALA-3 loudspeakers, combined with subwoofers, will comprise a formidable system.



### ENGINEERING DATA

Performance Specifications in red

#### Format:

Bi-amped/Two-way Line Array/  
Electronically-Coupled

#### Dispersion:

ALA-3: Horiz.: 60° x Vert.: 10°  
ALA-3W: Horiz.: 90° x Vert.: 10°

#### Freq. Response (1m on axis):

65 Hz to 17.5 kHz (+/- 3 dB)

#### Sensitivity (1W @ 1m):

HF: 99 dB LF: 110 dB

#### Max. SPL (@1m):

127 dB cont./133 dB peak

#### Nominal Impedance:

LF: 4 ohms HF: 4 ohms

#### Max. Power Handling:

LF: 600W cont./2400W peak  
HF: 150W cont./600W peak

#### Dimensions:

front: 35"(889mm) W x  
14.5"(368mm) H

rear: 29-1/3"(745mm) W x  
12-1/3"(313mm) H

depth: 13"(330mm) D

weight: 95 lb. (43 kg)

#### Driver Complement:

Dual 10" Cone Type; Dual Horn-  
Loaded, Fluid Cooled 2.5" VC,  
1" Exit Compression Type

#### Rigging Hardware:

Rigging Bars (included)

#### Processor Model:

DLC-24

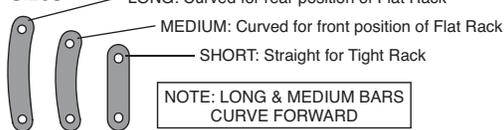
### ALA-3, ALA-5, & ALA-9 RIGGING COMPONENTS

#### It All Lines Up

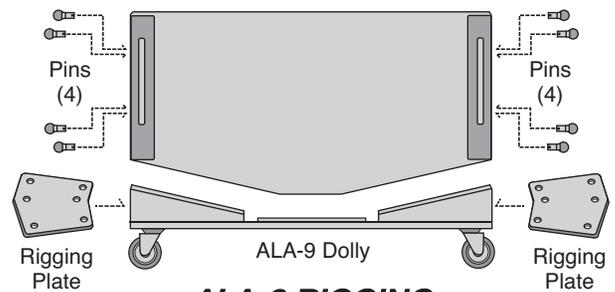
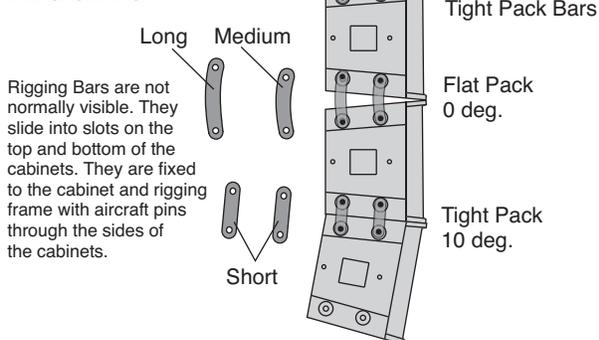
ALA loudspeakers bring a new experience to sound reinforcement. Vertical pattern control is like nothing you've ever experienced; horizontal patterns can be ordered in either 60 or 90 degree formats for optimum design flexibility, and off-axis rejection is nothing short of astounding. The result is greater clarity, articulation, and coherence, with phenomenal freedom from feedback. In many cases an ALA system can eliminate or reduce the need for delay speakers, and/or critical placement of mics to achieve adequate gain levels. Apogee's ALA Series will transform your most troublesome shows and installations into "another job well done."

Apogee Linear Array loudspeakers use a simple and effective rigging system that is both quick and easy to assemble. The enclosures are joined together with various lengths of connecting bars to achieve the desired angular relationship – either a flat-pack or a tight-pack formation. The bars are secured in place by aircraft grade retention pins. The configurations can be altered in seconds, without any special skills or equipment. The rigging system is equally effective for stacking enclosures on ground supports when augmented with optional outrigger bars.

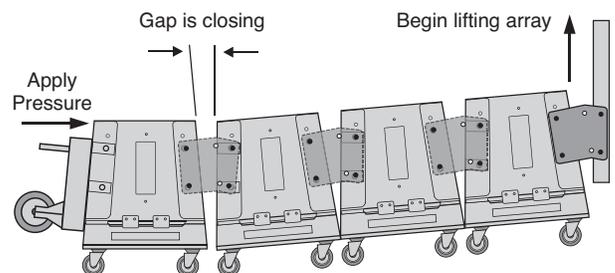
#### 3 Bar Sizes



#### ALA-3 & ALA-5 RIGGING

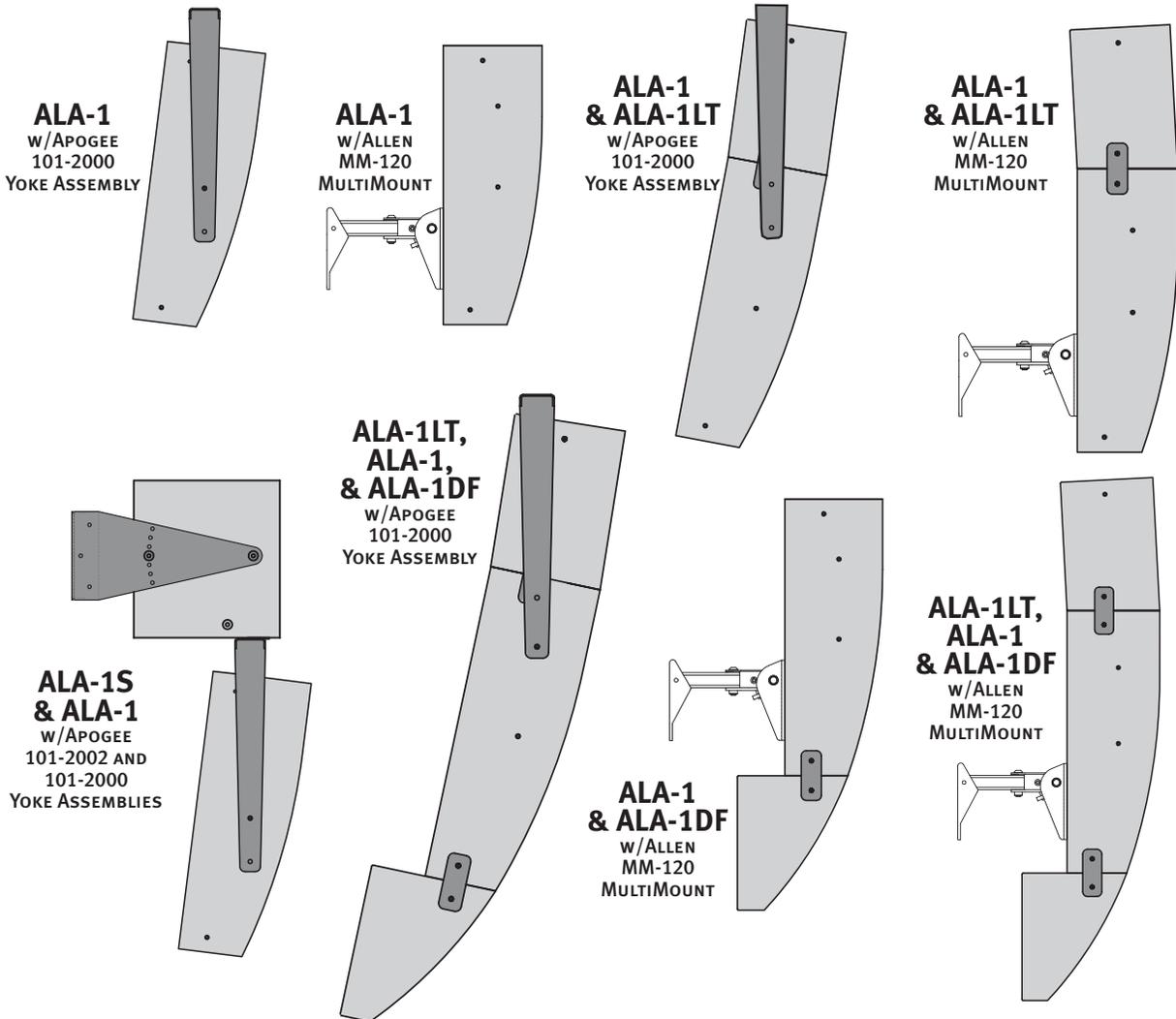


#### ALA-9 RIGGING

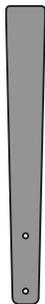


## ALA-1 SERIES RIGGING COMPONENTS

The ALA-1 Series Linear Array System can be mounted in a variety of positions and configurations. The flexibility of the system allows the user to set up the exact sound solution desired to fit specific needs. Using Apogee supplied Coupling Plates, speaker elements of the ALA-1 system can be assembled and, using either an Apogee Yoke or other vendor's equipment, mounted to fit neatly into nearly any environment.



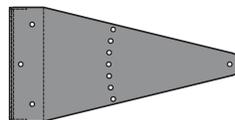
### RIGGING HARDWARE



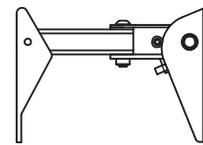
**ALA-1 Yoke  
101-2000**  
(sold separately)



**Coupling Plate  
101-2001**  
(2 ea. included w/ ALA-1S,  
ALA-1DF, ALA-1LT)



**ALA-1S Yoke  
101-2002**  
(sold separately)



**Allen Products  
MultiMount  
MM-120**  
(purchase direct  
from Allen)

