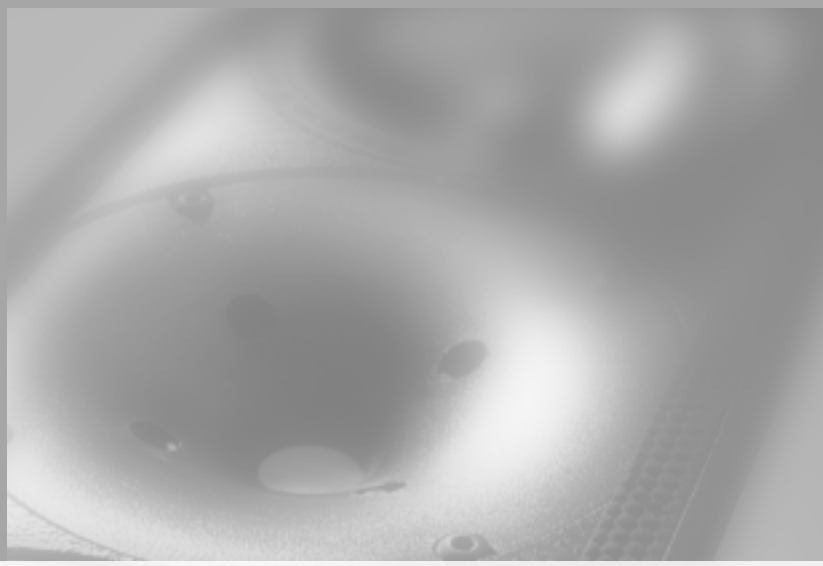
EAW LOUDSPEAKER OWNER'S MANUAL



EAW
EASTERN ACOUSTIC WORKS

Loudspeaker Owner's Manual

Congratulations on the purchase of your new EAW loudspeaker. You now own one of the finest professional audio products available - the result of exceptional engineering and meticulous craftsmanship. Please read these instructions to get the maximum performance from your new loudspeaker.

Section 1 Read This First

1.1 Rigging Precautions

Prior to suspending any EAW loudspeaker enclosures, it is essential that the user be familiar with the load ratings, rigging techniques, and special safety considerations appropriate for this use. Use only the mounting/rigging points on the loudspeaker enclosure intended for this purpose. The user must determine the load requirements, dynamic loading and any other contributing factors affecting the flown loudspeakers. The user must determine the proper safety factor for specific applications and the required load rating of the connection to structure. EAW strongly recommends that all rigging be done by qualified personnel in accordance with and in compliance with all federal, state and local regulations, relative to properly securing suspended loads.

NOTICE: The user assumes liability for proper design, installation and use of rigging systems.

EAW strongly recommends the following rigging system practices:

1. Documentation: Thoroughly document the rigging design with detailed drawings and parts lists.
2. Analysis: Have a licensed structural engineer, registered architect or other qualified professional review and approve the rigging design before its implementation.
3. Installation: Have a qualified professional rigger install and inspect the rigging system.

DANGER: Loudspeakers should be suspended only by persons with a knowledge of proper hardware and rigging techniques. When stacking or pole-mounting loudspeakers, be sure they are stabilized and secured from falling over or being accidentally pushed over. Failure to follow these precautions may result in damage to the equipment, personal injury or death.

Section 2 Unpacking

2.1 Shipping Damage

You should have visually inspected the outside of the shipping carton and noted any damage on the shipping bill you signed. After unpacking, if you find concealed damage to the loudspeaker, save the packing materials for the carrier's inspection, notify the carrier immediately and file a shipping damage claim. Although EAW will help in any way possible, *it is always the responsibility of the receiving party to file any shipping damage claim.* The carrier will help prepare and file this claim.

2.2 Returning Products to EAW

If this loudspeaker must be returned to EAW, contact the EAW Service Department for a *Return Authorization*. Use the original shipping carton and packing materials. If the shipping carton is damaged, contact EAW for a new carton at a nominal cost. EAW will not be responsible for damage caused by inadequate packing.

Section 3 Description

3.1 System Overview

This loudspeaker is intended for professional use. The construction, components and hardware have been designed to provide robust, reliable performance for its intended application. Please ensure that you fully understand its proper installation and operation before use.

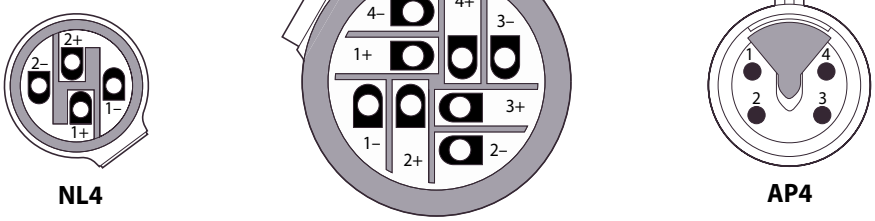
Section 4 Operation

4.1 Amplifier Power Requirements

There is no exact answer to the question of what amplifier size you should use for a loudspeaker. The power rating in EAW's specifications only means it has passed our standard noise test, providing a rating that can be used as a point of comparison with other loudspeakers. This rating does not necessarily correspond to the best amplifier size to use. Rather, the amplifier should be sized according to both the sound levels required and the type of audio signals that will be reproduced. If you are unsure of how to determine this, consult with a qualified professional or contact EAW's Application Support Group (see paragraph 4.5). Preventing damage to the loudspeaker is a function of operating your audio system so that the loudspreaker is not stressed beyond its design limits. If operated improperly, such as driven into clipping, even an amplifier sized below EAW's power rating can cause damage to your loudspeaker.

4.2 Audio Signal Connections

The input connector on the loudspeaker will be one of the following types with the pin connections as listed. Because of possible prodution changes, check the input panel labeling to verify proper connections. For barrier strips, the proper connections are marked for each terminal on the loudspeaker input label.



NL4 NL8 AP4

Cable Connector Views From Wiring Side

NL4 Full Range:	
Pin 1-	Negative
Pin 1+	Positive
Pin 2-	No connection
Pin 2+	No connection

Except KF300e:
pin 2– = negitive
pin 2+ = positive

NL4 Bi-amplified:	
Pin 1-	Low or Low/Mid negative
Pin 1+	Low or Low/Mid positive
Pin 2-	Mid/High or High negative
Pin 2+	Mid/High or High positive

NL4 One Driver Subs:	
Pin 1-	Driver negative
Pin 1+	Driver positive
Pin 2-	Loop through
Pin 2+	Loop through

Except LA118 & LA400:
pin 2– = negative
pin 2+ = positive
pins 1–/+ = loop through.

NL4/AP4 Two Driver Subs:	
Pin 1-/1	Driver 1 negative
Pin 1+/2	Driver 1 positive
Pin 2-/3	Driver 2 negative
Pin 2+/4	Driver 2 positive

Except DCS2, FR250z & LA128:
pin 2– = negative
pin 2+ = positive
pins 1–/+ = loop through.

NL4 MQ LF Systems:	
L-Pin 1–	Driver 1 negative
L-Pin 1+	Driver 1 positive
L-Pin 2–	Driver 2 negative
L-Pin 2+	Driver 2 positive
R-Pin 1–	Driver 3 negative
R-Pin 1+	Driver 3 positive
R-Pin 2–	Driver 4 negative
R-Pin 2+	Driver 4 positive

L–Pin = Left NL4; R–Pin = Right NL4
3 Drivers: 1-3 = top to bottom
4 Drivers: 1- 4 = top to bottom

NL8 Tri-amplified:	
Pin 1–	No connection
Pin 1+	No connection
Pin 2–	Low negative
Pin 2+	Low positive
Pin 3–	Mid negative
Pin 3+	Mid positive
Pin 4–	High negative
Pin 4+	High positive

AP4 Full Range:	
Pin 1	Negative
Pin 2	Positive
Pin 3	No connection
Pin 4	No connection

Except KF300:
pin 1–/+ = no connection
pin 3 = negative
pin 4 = positve

AP4 Bi-amplified:	
Pin 1	Low negative
Pin 2	Low positive
Pin 3	Mid/High negative
Pin 4	Mid/High positive

4.3 Two Connectors

If the loudspeaker has two connectors for the same mode of operation, they are wired in parallel so you can "daisy chain" multiple loudspeakers together to a single amplifier channel.

4.4 Loudspeaker Cable

To minimize power losses and provide a sufficient damping factor (DF) for low frequency drivers, use loudspeaker cable with conductor sizes per the following chart. For cable lengths over 200 feet at 8 ohms and over 100 feet at 4 ohms, the conductor sizes needed for an adequate damping factor are rarely practical for physical and cost reasons. For these situations, 10 AWG / 25 metric gauge are recommended as the most practical sizes.

Cable Length	8 ohm Loudspeakers AWG / Metric Gauge	4 ohm Loudspeakers AWG / Metric Gauge
10 ft / 3 m	16 / 14	14 / 16
25 ft / 8 m	14 / 16	12 / 20
50 ft / 15 m	12 / 20	10 / 25
Over 75 ft / 25 m	10 / 25	10 / 25

Minimum Loudspeaker Cable Conductor Sizes

4.5 Signal Processing

Many EAW loudspeakers are designed to be used with an electronic signal processor such as EAW's MX Series Close Coupled™ Processors.: the analog MX250 or digital MX8700 and MX8750. Contact EAW's Application Support Group to determine the correct processor and settings for your loudspeaker.

Eastern Acoustic Works
EAW Applications Support Group
One Main Street
Whitinsville, MA 01588 USA

Tel 800-992-5013 (USA only)
Tel 508-234-6158
e-mail asg@eaw.com
Web Site www.eaw.com

4.6 Operating Tips

- Do NOT drive any of your electronic equipment into clipping, particularly the power amplifiers. This can easily damage the loudspeaker.
- If driven into clipping, even the amplifier with a power output rating lower than EAW's power rating can cause damage to a loudspeaker.
- Avoid sustained microphone feedback. This can quickly cause failure of mid and high frequency drivers.
- Avoid extreme boosts on equalizers as these can cause excessive input to the drivers at the boosted frequencies. Generally, cutting frequencies is preferred to correct for frequency response problems. These problems include attenuating feedback frequencies or reducing excessive energy at certain frequencies due to room acoustics.
- With appropriate signal processing, your loudspeaker should produce exceptionally good sound. If used in a room with problematic acoustics, there is little you can do to overcome room problems with electronic adjustments. Your best solution is careful placement and aiming of the loudspeaker so that most of the sound is directed only at the audience.
- EAW loudspeakers are capable of sound levels that can be damaging to human hearing. Take precautions so that audiences are not exposed to such levels. If you must expose yourself to these kinds of volume levels, wear adequate hearing protection.
- Take care when moving or lifting the loudspeaker. Injury to you or damage to the loudspeaker can result from careless handling.

Section 5 Service and Maintenance

5.1 Warranty

Your EAW loudspeaker is warranted against factory defects for a period of six years (five years for Weather Protected products) from the date of purchase. See your warranty card for the complete warranty statement.

IMPORTANT: Retain your sales receipt as this is proof of your warranty coverage.

5.2 How to Contact EAW Service

Eastern Acoustic Works	Tel	800-992-5013, ext. 6001 (USA only)
EAW Service Department	Tel	508-234-6158, ext. 6001
One Main Street	Fax	508-234-3776
Whitinsville, MA 01588 USA	e-mail	service@eaw.com
	Web Site	www.eaw.com

5.3 Literature and Specifications

Eastern Acoustic Works	Tel	800-992-5013, ext. 253 (USA only)
EAW Literature Department	Tel	508-234-6158, ext. 253
One Main Street	Fax	508-234-8251
Whitinsville, MA 01588 USA	e-mail	litperson@eaw.com
	Web Site	www.eaw.com

5.4 Maintenance

Your EAW loudspeaker normally requires no regular maintenance for normal use. However, you can do several things to keep your loudspeaker in good operating and cosmetic condition.

1. Testing: Periodically test your loudspeaker for proper performance. A simple test is to play a CD through it using well-defined, articulate, wide-range program material. Listen to ensure all drivers are working properly and for any evidence of distortion or other extraneous sounds. Test at several volume levels: very low, normal and high.
2. Mounting/Rigging: Any mounting or rigging hardware should be regularly inspected for security, wear, deformation, corrosion, and any other circumstances that may affect the load handling capability.
3. Cleaning: Cleaning the exterior of the enclosure will depend on the type of "dirt". Dust, food spills or similar can usually be removed with a cloth dampened with water or a mild household cleaner. Avoid using any strong solvents as this may damage the finish.
4. Scratches or Dents: Minor scratches on the enclosure can be painted over with an outdoor latex paint or simply colored in with a "Sharpie" or artist's marking pen. More serious gouges or dents should be sanded out, filled with wood putty and repainted. Black touch-up paint in pints (part #810050) or quarts (part #810049) is available from the EAW Service Department. Tips for repainting are on EAW's website: http://eaw.com/pages/TechSupport/FAQs/RepaintInstructions.pdf.

Section 6 Troubleshooting

Loudspeaker difficulties usually fall into one of the following categories. The causes for each problem are listed in the most likely order of probability.

6.1 No Sound or Low Output

1. Loudspeaker cables or connectors are mis-wired or faulty. Check all cabling. Refer to these instructions for correct loudspeaker cable connections. The best way to check a suspect cable is to swap it with a known good cable. Read the loudspeaker's input panel to verify correct cable connections.
2. Electronic equipment is not turned on or level controls are not adjusted properly. Make sure that all equipment in the signal path is powered up and that all controls are set to appropriate levels for normal operation.
3. Loudspeaker is not working. Connect the loudspeaker cable to a known good loudspeaker leaving all equipment set to the same levels. If the problem disappears, the loudspeaker is probably not working. Contact EAW Service for appropriate troubleshooting.

6.2 Distorted Sound

1. The power amplifier is clipping. The signal level is exceeding the limits of your system and you must reduce the level.
2. Other electronic equipment is clipping. Ensure that no equipment in the signal chain is being overdriven. For example: input(s) or summing bus in the mixing console, equalizers, etc.
3. Driver(s) not working properly. Contact EAW Service for appropriate troubleshooting.

6.3 Partial Sound (Some Frequency Bands Missing)

1. Incorrect EQ settings in the electronic equipment. Ensure all EQ settings and filters on the mixing console or preamplifier and on other equipment are set for normal operation. Ensure level controls on electronic crossovers and associated amplifiers are correctly set and that all cables and connections for such equipment are working properly.

2. Incorrect processor configuration. Make sure the processor configuration is correct for the loudspeaker and its intended mode of operation.

3. Incorrect mode switch setting on the loudspeaker input panel. Ensure this switch is set for the operating mode you are using: single, bi-amplified or tri-amplified.

4. Driver(s) not working properly. Contact EAW Service for appropriate troubleshooting.

5. The crossover network inside the loudspeaker is not working properly. Contact EAW Service for appropriate troubleshooting.

The Laws of Physics | *The Art of Listening*

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One Main Street, Whitinsville, MA 01588 ***tel:*** 800 992 5013 / 508 234 6158 ***fax:*** 508 234 8251 ***web:*** www.eaw.com

PN 425017 (0)

EAW is the worldwide technological and market leader in the design and manufacture of high-performance professional loudspeaker systems.