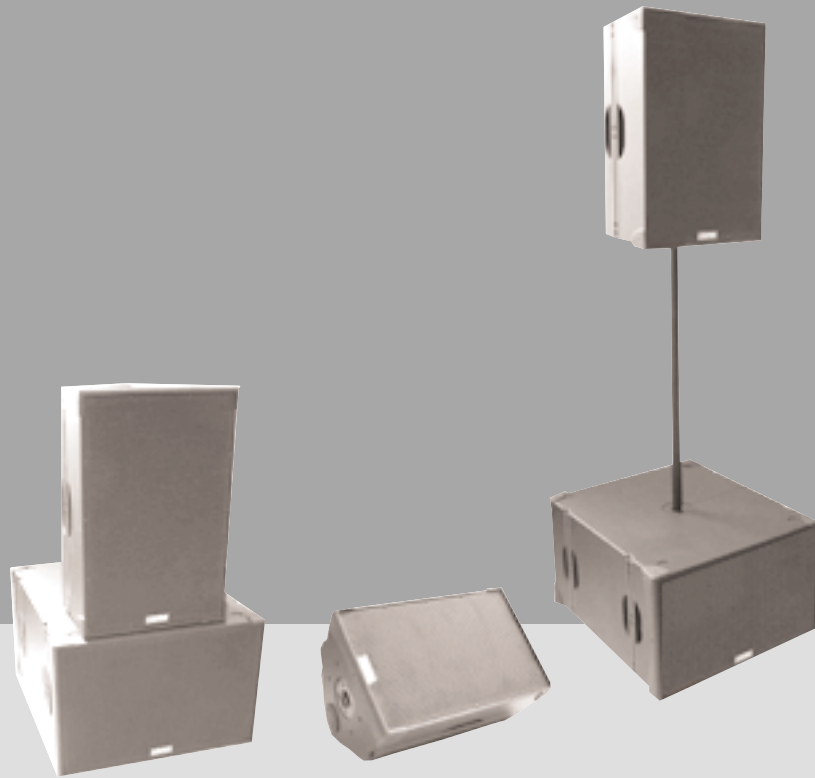


NT SERIES  
OWNER'S MANUAL  
FULL-RANGE AND SUBWOOFER  
LOUDSPEAKERS



**JBL**



# 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.*

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## **Section 1 Safety Precautions - READ THIS FIRST**

### **1.1 Safety Instructions**

Read and heed all warnings and safety instructions in the accompanying "EAW Loudspeaker Manual" before using this product. Failure to follow this precaution may result in equipment damage, personal injury, or death.

**WARNING:** The loudspeaker is supplied with an ac mains power cable. Depending on the voltage model ordered, this cable is configured with the most common ac mains connector for that voltage. If the connector is not compatible with the local ac mains receptacle, employ a licensed electrician to re-configure the cable with the proper connector. Ensure that ac power supply has a properly grounded safety ground. Failure to follow this warning could cause equipment damage, injury, or death.

## **1 Consignes de Sécurité - À Lire en Premier**

### **1.1 Instructions Relatives À la Sécurité**

Lisez et respectez toutes les consignes de sécurité et les mises en garde fournies dans le manuel des enceintes EAW avant d'utiliser ce produit. Le non-respect de ces consignes et mises en garde peut entraîner des dommages aux équipements et des accidents aux personnes pouvant être fatals.

**ATTENTION:** L'enceinte est fournie avec un cordon secteur. Selon la tension du modèle commandé, ce câble est fourni avec la fiche la plus communément utilisée avec cette tension. Si la fiche n'est pas compatible avec les prises secteur de votre région, faites appel à un électricien agréé pour modifier le cordon secteur en fonction du format local. Vérifiez que la fiche secteur dispose d'une mise à la terre. Le non-respect de la mise à la terre peut entraîner des dommages aux équipements et des accidents aux personnes pouvant être fatal.

## **1 Precauzioni di Sicurezza - Da Leggere per Primo**

### **1.1 Norme di Sicurezza**

Prima di procedere con l'utilizzo del prodotto, leggere e rispettare ogni avvertenza e norma di sicurezza riportata nel "Manuale EAW Loudspeaker". Il mancato rispetto di ogni precauzione può causare danni all'apparecchiatura, nonché infortuni alle persone o la morte.

**ATTENZIONE:** Il diffusore è completo di cavo d'alimentazione AC fornito in dotazione. In base al voltaggio del modello di diffusore acquistato, il cavo è configurato con il connettore AC più adeguato. Nel caso in cui il connettore non sia compatibile con le prese di corrente adottate nell'area d'impiego, rivolgersi ad un elettricista qualificato per ri-configurare il cavo con il connettore più appropriato. Assicurarsi che la presa di corrente sia adeguatamente collegata a terra. Il mancato rispetto di tali norme può causare danni all'apparecchiatura, nonché infortuni alle persone o la morte.

# 1 Precauciones de Seguridad - Lea Esto Primero

## 1.1 Instrucciones de Seguridad

Lea y observe todos los avisos e instrucciones de seguridad que aparecen en el "Manual de altavoces EAW" adjunto antes de usar este aparato. El no observar esta precaución puede dar lugar a averías en el aparato, daños en las personas o incluso la muerte.

**PRECAUTION:** El altavoz viene de fábrica con un cable de corriente. Dependiendo del voltaje que use el modelo solicitado, este cable estará configurado con el enchufe más habitual para ese tipo de corriente. Si ese enchufe no es compatible con su salida de corriente, contacte con un electricista profesional para que cambie el enchufe del cable por el tipo adecuado. Asegúrese de que la salida de corriente tenga una conexión a tierra adecuada. El no observar esta advertencia puede dar lugar a averías en el aparato, años en las personas o incluso la muerte.

# 1 Sicherheitshinweise - Lesen Sie Diesen Abschnitt Zuerst

## 1.1 Sicherheitsanweisungen

Lesen und beachten Sie alle Warnungen und Sicherheitsanweisungen der mitgelieferten "EAW Lautsprecher Bedienungsanleitung" vor der Benutzung des Produkts. Nichtbeachtung dieser Hinweise können möglicherweise zu Schäden am Equipment oder zu Verletzungen bzw. zum Tod von Personen führen.

**WARNUNG:** Der Lautsprecher wird mit einem Netzkabel geliefert. Abhängig von der jeweiligen Netzspannung wird das Kabel mit dem für die jeweilige Netzspannung gängigsten Netzstecker ausgeliefert. Sollte der Netzstecker nicht in Ihre Netzsteckdose passen, dann lassen Sie von einem zugelassenen Elektrobetrieb einen passenden Netzstecker montieren. Stellen Sie sicher, dass der Schutzkontakt der Netzsteckdose einen guten Kontakt zur Erde hat. Nichtbeachtung dieser Hinweise können möglicherweise zu Schäden am Equipment oder zu Verletzungen bzw. zum Tod von Personen führen.

## 1.2 EC Declaration of Conformity

Eastern Acoustic Works, as the manufacturer, hereby certifies that, in their delivered versions,  
Product Models: NT26, NT29, NT56, NT59, and NTS22  
Product Description: Self-powered loudspeaker  
comply with the provisions of the standards listed below.

European Council Directive on Low Voltage, 73/23/EEC  
EN 60065:2002 Audio, video, and similar electronic apparatus - safety requirements  
European Council Directive on Electromagnetic Compatibility 89/336/EEC and 93/68/EEC  
EN 55103-1:1997 Electromagnetic compatibility. Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use - Emission  
EN 55103-2:1997 Electromagnetic compatibility. Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use - Immunity

Harmonized Standards:  
EN55103-1 emissions  
EN55103-2 immunity  
EN60065 safety

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# NT Series Owner's Manual

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## Section 2 Unpacking

### 2.1 Contents

Qty	Item
1	NT Series Product
1	Power Cable (dependent on product's ac mains rating) 115 V - Neutrik PowerCon to Nema 15R plug 230 V - Neutrik PowerCon to male Schuko plug
1	Owner's Manual (this document)
1	EAW Loudspeaker Owner's Manual
1	Warranty Card

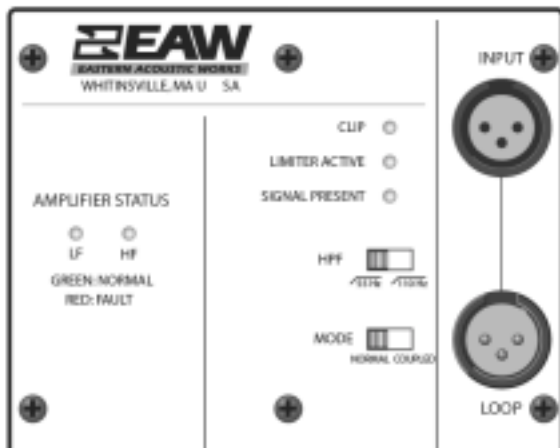
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## Section 3 Quick Start

If you are in a hurry or are knowledgeable about using powered loudspeakers, these Quick Start instructions provide the details particular to the NT Series loudspeakers. For the instructions in this section, refer to the accompanying Figures.

### 3.1 Initial Control Settings

Use these nominal settings for the rear panel switches.



Full-Range with no subwoofer	
HPF	55 Hz
Mode	Normal

Full-Range with subwoofer	
HPF	110 Hz
Mode	Normal

Subwoofer	
Gain	0 dB
Polarity	Normal

**WARNING:** Before connecting an NT loudspeaker to the ac mains supply, completely turn down the input signal to the loudspeaker using the signal source's output level (master volume control or other output level control). If not, there could be excessive and possibly damaging sound levels from the loudspeaker when energized.

### 3.2 Audio Connection

Connect the output from your line-level signal source to the XLR-3F Input connector on the rear panel. This is an electronically balanced input.

### 3.3 AC Mains Connection

Connect the supplied ac mains cord to the Neutrik PowerCon socket on the rear of the loudspeaker. Connect the other end to an ac mains supply receptacle, nominal 115 V 60 Hz or 230 V 50 Hz as labeled on the loudspeaker. If necessary, have a qualified electrician change the cable plug as required for compatibility with the local ac mains receptacle.

**CAUTION:** There is no power switch on the loudspeaker. When connected to the ac mains the loudspeaker will be fully operational, with the output level controlled by the signal source feeding the loudspeaker.

### 3.4 Adjusting the Output Level

With a source program playing, gradually turn up the level of your signal source until the desired volume is reached but below the point where the CLIP and/or LIMITER lights illuminate.

**CAUTION:** If there is no sound, turn down the signal source's output level before investigating the problem. Do this to avoid excessive and possibly damaging sound levels from the loudspeaker.

## 3 Mise en ŒUVRE

Si vous êtes pressé ou déjà familiarisé avec l'utilisation des enceintes actives, ces instructions de mise en œuvre vous donneront les détails spécifiques aux enceintes de la gamme NT Series. Pour les instructions de cette section, consultez les figures.

### 3.1 Réglages Initiaux

Utilisez ces réglages de face arrière.

Large bande sans Subwoofer

HPF 55 Hz  
Mode Normal

Large bande avec Subwoofer

HPF 110 Hz  
Mode Normal

Subwoofer

Gain 0 dB  
Polarité Normale

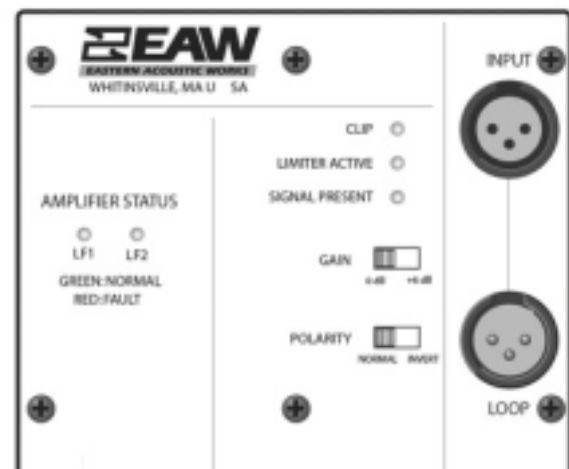
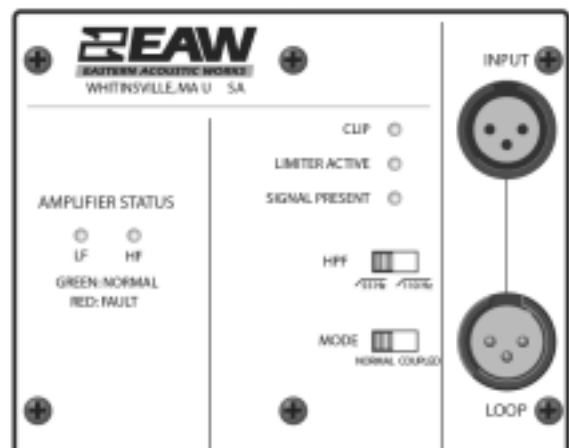
**ATTENTION :** Avant de connecter une enceinte NT au secteur, coupez le signal arrivant en entrée de l'enceinte en réglant le niveau de sortie de la source au minimum (réglage de niveau général Master ou tout autre réglage de niveau de sortie). Dans le cas contraire, le niveau sonore risque d'être excessif, ce qui peut détruire l'enceinte lors de sa mise sous tension.

### 3.2 Connexions Audio

Connectez la sortie de la source de signal à niveau ligne à l'entrée XLR femelle 3 broches de la face arrière. Cette entrée est à symétrie électronique.

### 3.3 Raccordement au Secteur

Connectez le cordon secteur fourni à l'embase Neutrik PowerCon, située en face arrière de l'enceinte. Connectez l'autre extrémité à une prise secteur, avec une tension de 115 V 60 Hz ou 230 V 50 Hz, indiquée sur l'enceinte. Si nécessaire, faites appel à un électricien agréé pour modifier la fiche secteur en fonction du format utilisé dans votre région.



**ATTENTION** : L'enceinte n'est pas équipée d'un interrupteur secteur. Lorsque l'enceinte est connectée au secteur, celle-ci est opérationnelle et son niveau est contrôlé pr le signal source alimentant l'enceinte.

### 3.4 Référence du Niveau de Sortie

Utilisez un signal source de référence, augmentez progressivement son niveau jusqu'à obtenir le niveau souhaité en veillant à rester sous le point où la Led d'écrêtage CLIP et/ou d limitation LIMITER s'allume.

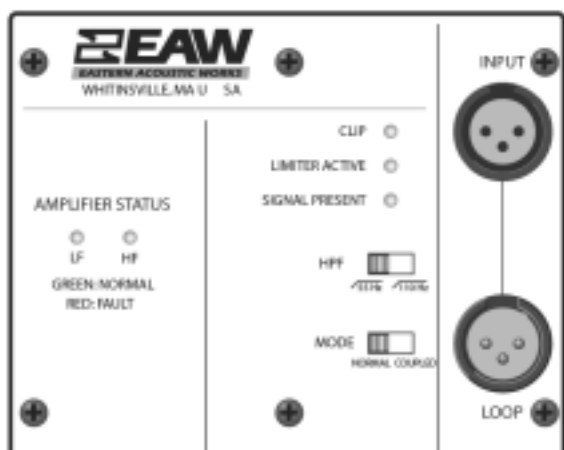
**ATTENTION:** En absence de son, commencez par diminuer le niveau de sortie de la source avant de rechercher le problème. Ceci évite la présence de tout niveau sonore excessif et dangereux dans l'enceinte.

## 3 Guida Rapida

Se ai già esperienza nell'impiego di diffusori attivi, o se desideri utilizzarlo da subito, questa Guida Rapida fornisce ogni dettaglio utile per l'impiego dei diffusori NT Series. Per le istruzioni di questa sezione, fare riferimento alle figure.

### 3.1 Imposazioni Iniziali dei Controlli

Usa queste regolazioni nominali per gli switches del pannello posteriore.



Full-Range senza subwoofer

HPF	55 Hz
Mode	Normal

Full-Range con subwoofer

HPF	110 Hz
Mode	Normal

Subwoofer

Gain	0 dB
Polarity	Normal

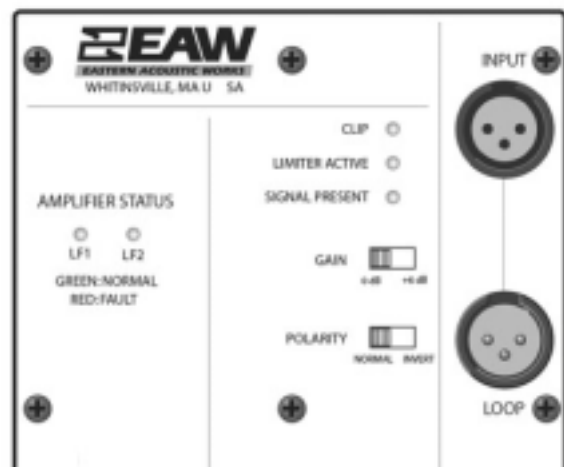
**ATTENZIONE:** Prima di collegare il diffusore NT alla presa di alimentazione, abbassa completamente il livello del segnale in ingresso, agendo sul controllo di livello d'uscita della sorgente del segnale (controllo Master Volume o altri controlli di livello d'uscita. In caso contrario, alimentando il diffusore potrebbero verificarsi livelli di segnale eccessivi e potenzialmente pericolosi.

### 3.2 Connessione Audio

Collega l'uscita di linea della sorgente del segnale all'ingresso XLR-3F presente nel pannello posteriore. Questo ingresso è bilanciato elettronicamente.

### 3.3 Connessione di Alimentazione AC

Collega il cavo di alimentazione AC fornito in dotazione al connettore Neutrik PowerCon presente nel pannello posteriore del diffusore. Collega l'altra estremità del cav ad una presa di corrente AC (115 V 60 Hz o 230 V 50 Hz, come





indicato nell'etichetta presente nel diffusore). Se necessario, rivolgersi ad un elettricista qualificato per cambiare la spina del cavo, in base ai requisiti di compatibilità alle prese d'alimentazione AC utilizzate nell'area d'impiego.

**CAUTELA:** Il diffusore non dispone di un interruttore per l'attivazione. Collegando il cavo di alimentazione alla presa di corrente, il diffusore si attiverà: il livello d'uscita è controllabile dalla sorgente del segnale.

### 3.4 Regolare il Livello D'uscita

Con il segnale in esecuzione, aumenta gradualmente il livello della sorgente sonora fino a raggiungere il volume desiderato, prestando attenzione a non far attivare gli indicatori CLIP e/o LIMITER.

**CAUTELA:** Se il diffusore non emette alcun suono, assicurati di abbassare il livello d'uscita della sorgente sonora, prima di investigare sulle cause del problema. In questo modo eviterai la generazione di eventuali livelli di segnale eccessivi e dannosi da parte del diffusore.

## 3 Inizio Rapido

Si quiere empezar a usar la unidad inmediatamente o si ya tiene un cierto conocimiento acerca del uso de altavoces autoamplificados, en estas instrucciones de Inicio Rápido encontrará los detalles relativos a estos altavoces N Series. Para comprender las instrucciones de esta sección, consulte las figuras que se acompañan.

### 3.1 Ajustes de Control Iniciales

Utilice estos ajustes nominales para los interruptores del panel trasero.

Rango completo sin subwoofer

HPF 55 Hz  
Mode Normal

Rango completo con subwoofer

HPF 110 Hz  
Mode Normal

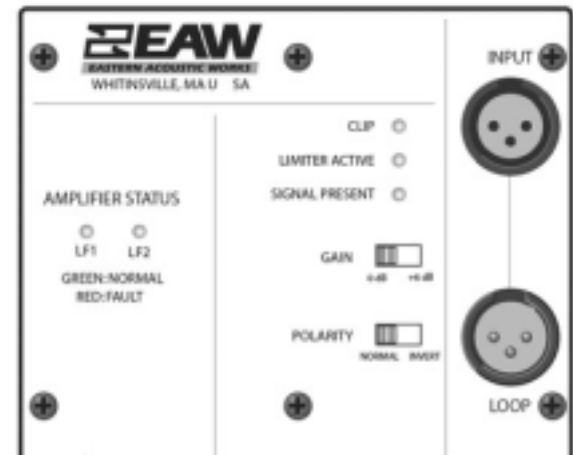
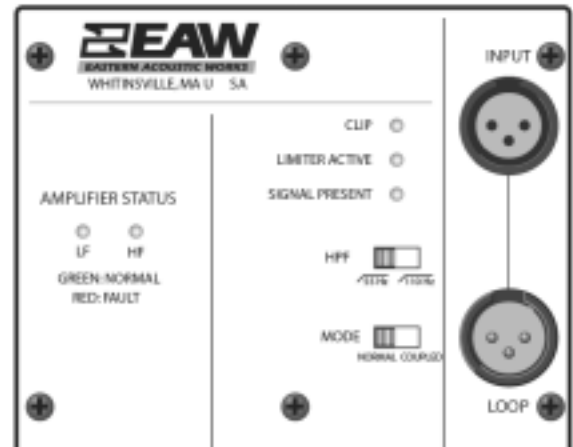
Subwoofer

Gain 0 dB  
Polarity Normal

**PRECAUCION:** Antes de conectar uno de estos altavoces NT a la salida de corriente, reduzca al mínimo o anule la señal de entrada que va a estos altavoces usando el nivel de salida de la fuente de señal (control de volumen master u otro control de nivel de salida). En caso contrario, podrían llegar a producirse niveles de sonido excesivos y posiblemente dañinos en el momento de encender los altavoces.

### 3.2 Conexión Audio

Conecte la salida de su fuente de señal de nivel de línea al conector de entrada XLR-3F del panel trasero. Esta es una entrada balanceada electrónicamente.



### 3.3 Conxion de Corriente

Conecte el cable de alimentación incluido a la toma Neutrik owerCon de la parte trasera del altavoz. Conecte el otro extremo a una salida de corriente, con un voltaje nominal de 115 V 60 Hz ó 230 V 50 Hz dependiendo de lo que aparezca indicado en el propio altavoz. Si es necesario, haga que un electricista profesional cambie el tipo de enchufe del cable caso de que no encaje en su salida de corriente.

**PRECAUCION:** En este altavoz no hay ningún interruptor de encendido. Cuando lo conecte a la corriente ya quedará totalmente operativo, con el nivel de salida controlado por la fuente de señal que tenga conectada.

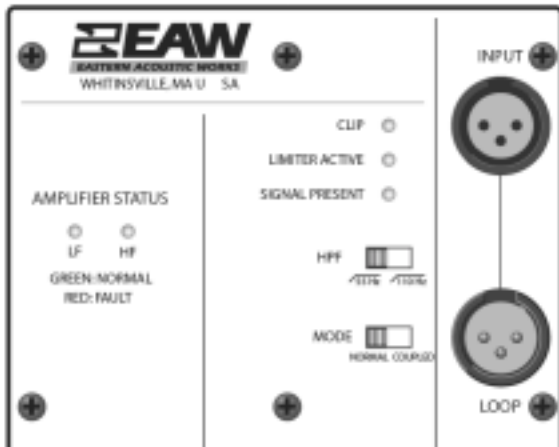
### 3.4 Ajuste del Nivel de Salida

Mientras se reproduce un programa fuente, suba gradualmente el nivel de su fuente de señal hasta llegar al nivel de volumen que quiera, pero en un punto antes de que se ilumine los pilotos CLIP y/o LIMITER.

**PRECAUCION:** Si no escucha el sonido, reduzca el nivel de salida de la fuente de señal antes de investigar cual es el problema. El hacer esto evitará la entrada de niveles de sonido excesivos y posiblemente dañinos al altavoz.

## 3 Schnellanleitung

Falls Sie sich in Eile befinden oder bereits mit der Nutzung aktiver Lautsprecher vertraut sind, können Sie dieser Schnellanleitung produktspezifische Details zu den Lautsprechern der NT Serie entnehmen. Für die Anweisungen in diese Kapitel finden Sie entsprechende Abbildungen.



### 3.1 Anfangseinstellungen

Stellen Sie die Schalter auf der Rückseite auf die folgenden Positionen (nominale Einstellungen).

Full-Range-Betrieb ohne Subwoofer

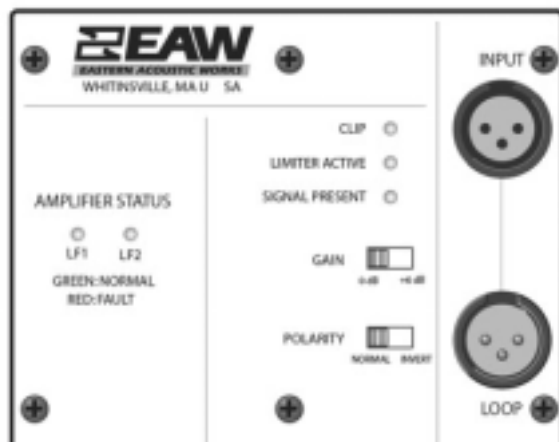
HPF	55 Hz
Mode	Normal

Full-Range-Betrieb mit Subwoofer

HPF	110 Hz
Mode	Normal

Subwoofer

Gain	0 dB
Polarity	Normal



**WARNUNG:** Stellen Sie das Ausgangssignal der Signalquelle (z.B. Masterregler eines Mischpultes) auf den kleinsten Wert, bevor Sie den NT Lautsprecher an das Stromnetz anschließen. Da dieses Signal zum Lautsprecher geschickt wird, könnten bei starkem Quellsignal extrem bzw. schädliche Ausgangspegel von der Box produziert werden, wenn diese mit Netzstrom versorgt wird.

### 3.2 Audioanschluss

Verbinden Sie die Ausgangsbuchse Ihrer Linepegelquelle mit der 3-poligen Eingangsbuchse auf der Rückseite der Box. Dieser Eingang ist elektronisch symmetriert.

### 3.3 Anschluss an Das Stromnetz

Stecken Sie das eine Ende des mitgelieferten Netzkabels in die Neutrik PowerCon Buchse auf der Rückseite des Lautsprechers. Stecken Sie den Stecker am anderen Ende in die Netzsteckdose, die eine nominale Netzspannung von 230 V 50 Hz oder 115 V 50 Hz liefert (muss mit den Angaben auf der Rückseite des Lautsprechers übereinstimmen). Falls notwendig, kann ein zugelassener Elektrobetrieb einen anderen Netzstecker anbringen.

**VORSICHT:** Der Lautsprecher besitzt keinen Netzschalter. Wenn der Lautsprecher an die Netzspannung angeschlossen ist, ist der Lautsprecher im Betriebszustand und gibt alle an seiner Eingangsbuchse anliegenden Signale wieder.

### 3.4 Einstellung des Ausgangspegels

Schicken Sie ein Signal mit normalem Betriebspegel in die Box und drehen Sie den Pegelregler der Quelle langsam bis zum gewünschten Wert auf, aber nur maximal bis die CLIP und/oder LIMITER LED ufluchtet. Nun nehmen Sie den Pegel ein wenig zurück.

**VORSICHT:** Wenn die Box kein Signal wiedergibt, drehen Sie den Pegelregler der Signalquelle ganz zu, bevor Sie sich an die Fehlersuche machen. Damit werden extrem laute und möglicherweise schädliche Lautsprecher-Ausgangspegel vermieden.

---

## Section 4 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 proper installation and operation before use.

### 4.1 Using the Loudspeaker

You will need to perform the following general tasks to properly put the loudspeaker into service. The details for each task are provided in this manual.

1. Design and install a rigging or mounting system to support the loudspeaker in its intended location and aimed in the desired direction.
2. Connect a line level audio signal to the loudspeaker.
3. Connect the loudspeaker to an ac mains supply as specified for the particular model.
4. Set-up and adjust system gain, signal processing, and limiting, as needed to maximize the loudspeaker's performance.
5. Provide training to operate the loudspeaker within its limits.
6. Provide regular inspection and maintenance to maintain the integrity of the installation and the performance of the loudspeaker system.

### 4.2 Description

The NT Series of loudspeakers represents true breakthrough technology with Guinness Focusing™. In basic form, NT loudspeakers are compact, self-powered, and extremely lightweight while providing the exceptionally high output capabilities required for professional applications. However, to complement these features, new DSP (digital signal processing) technology corrects inherent problems with compression driver phase plugs and horns as well as the LF drivers. This processing is called Guinness Focusing™ after its inventor David Guinness, EAW's Director of R&D. Guinness Focusing™, along with the highest quality amplification, affords sonic performance comparable to the highest quality, direct radiating, studio monitors but at much higher output levels.

NT loudspeakers are designed to meet the requirements and demands of portable applications as well as permanent installations. The integral electronics are based on proven, high efficiency amplifier technology, with field-replaceable amplifier modules. The loudspeakers need to be connected to an ac mains supply and a line level audio signal. The internal DSP is factory preset to provide correct and consistent performance.

#### 4.2.1 Models

The 2-way NT loudspeakers are available in both 12-inch and 15-inch LF driver formats. Different beamwidths are offered to meet typical coverage requirements in their intended applications. The trapezoidal design of the enclosures makes them easy to use as a main PA loudspeaker or as a floor wedge for stage monitor applications.

A companion NT subwoofer is engineered to complement the NT full-range loudspeakers. It extends the low frequency response of an NT full-range system and increases the output capabilities at low frequencies. The drivers are installed so one is facing into the enclosure, but connected with opposite polarity so both cones move in the same direction. At high output levels each cone "loads" the other in the opposite direction to smooth out any mechanical asymmetries. The result is significantly reduced distortion.

NT Models:

Full-range	Nominal Beamwidths H x V	LF Driver	H F Driver
NT26	60° x 45°	12 in cone, 3 in voice coil	3 in / 1.4 in exit compression driver
NT29	90° x 45°	12 in cone, 3 in voice coil	3 in / 1.4 in exit compression driver
NT56	60° x 45°	15 in cone, 4 in voice coil	3 in / 1.4 in exit compression driver
NT59	90° x 45°	15 in cone, 4 in voice coil	3 in / 1.4 in exit compression driver
Subwoofer			
NTS22	N/A	2x 12 in cone, 4 in voice coil	N/A

#### 4.2.2 Amplification

As is true of all professional loudspeaker systems, the performance of the NT Series loudspeakers depends on amplifiers delivering an adequate supply of clean power. To maximize performance, the full-range loudspeakers are bi-amplified, meaning the LF and HF drivers each have their own signal processing and built-in, high-efficiency amplifier. The subwoofer is dual-amplified, meaning each driver has its own, built-in, high efficiency amplifier.

Loudspeaker	LF Amplifier	HF Amplifier
Full-range	1000 W	500 W
Subwoofer	2x 1000 W	N/A

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## Section 5 Physical Installation

### 5.1 Mounting/Rigging

Read and heed all warnings and safety instructions in the supplied "EAW Loudspeaker Manual" before using this product. Failure to follow this precaution may result in equipment damage, personal injury, or death.

**NOTE:** The CSA (Canadian Standards Association) approval rating does not include any evaluation of mounting / rigging capabilities.

## 5.1 Montage/Installation

**ATTENTION :** Lisez et respectez toutes les consignes de sécurité et toutes les mises en garde dans le manuel de l'enceinte EAW avant d'utiliser ce produit. Le non-respect de ces précautions peut entraîner des dommages aux équipements et des accidents aux personnes pouvant être fatals.

## 5.1 Montaggio/Rigging

**ATTENZIONE:** Prima di procedere con l'utilizzo del prodotto, è necessario leggere e rispettare ogni avvertenza e norma di sicurezza riportata nel "Manuale EAW Loudspeaker" fornito in dotazione. Il mancato rispetto di ogni precauzione può causare danni all'apparecchiatura, nonché infortuni alle persone o la morte.

## 5.1 Montaje/Anclaje

**PRECAUCION:** Lea y observe todos los avisos e instrucciones de seguridad que aparecen en el "Manual de altavoces EAW" adjunto antes de usar este aparato. El no observar esta precaución puede dar lugar a averías en el aparato, daños en las personas o incluso la muerte.

## 5.1 Montge/Aufhängung(Rigging)

**WARNUNG:** Lesen und beachten Sie alle Warnungen und Sicherheitshinweise in der mitgelieferten "EAW Lautsprecher Bedienungsanleitung" bevor Sie das Produkt benutzen. Nichtbeachtung dieser Hinweise können möglicherweise zu Schäden am quipment oder zu Verletzungen bzw. zum Tod von Personen führen.

### 5.1.1 Mounting Point Working Load Limits

Enclosure Oriented Horizontally: NT's integral mounting points and fly tracks are designed to support only the weight of their own loudspeaker with suitable, external hardware. This means that each NT loudspeaker must be supported independently of any other NT loudspeaker and any other loads.

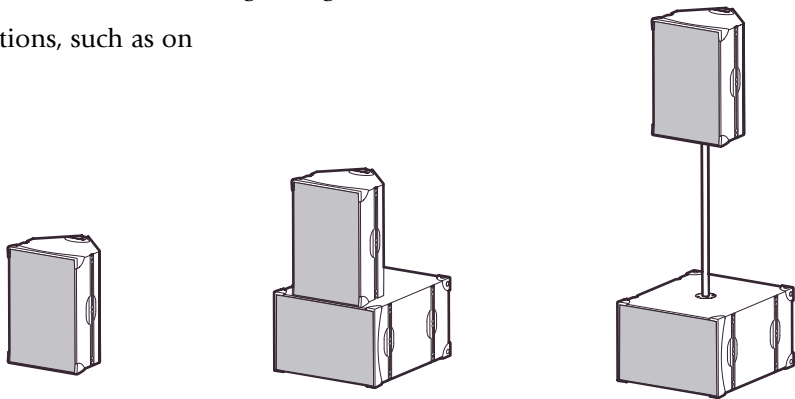
Enclosure Oriented Vertically: NT's integral mounting points and fly tracks are designed to support two loudspeakers with suitable, external hardware. This means that each NT loudspeaker can be supported from the fly-tracks of the loudspeaker above it.

## 5.2 Application Configurations

### 5.2.1 Full-Range Loudspeaker

The NT loudspeaker is intended for use in several mounting configurations:

Placement in typical loudspeaker locations, such as on the floor, a stage, a subwoofer stack, or other stable, solid platform.



Placement on shelving designed specifically to support the loudspeaker's weight with a design factor that meets applicable structural codes and regulations.

- Pole-mounted on an NT Subwoofer or a standard, loudspeaker stand using the integral pole cup. The pole cup is designed to accommodate 1-3/8 in diameter poles.
- Suspension using the integral, fly-track rigging hardware, EAW accessory double-stud fittings, and user-supplied, external, mounting/rigging fittings that are suitable for supporting the loudspeaker from structure.
- Wall or ceiling mounted using the integral 5/16-18 mounting points on the enclosure bottom and a user-supplied Omnimount™ 120.0 Series or similar mounting bracket.

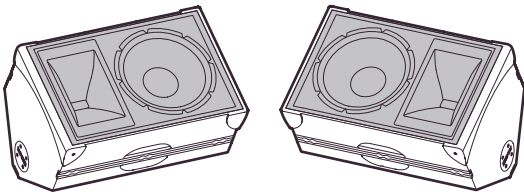
### 5.2.2 Subwoofer

The NT subwoofer is intended for several mounting configurations:

- Placement or stacked on a floor or the ground. This provides an additional 6 dB output as these locations are acoustically half-space.
- Placement or stacked on shelving designed specifically to support the subwoofer's weight with a design factor that meets applicable structural codes and regulations.

### 5.2.3 Stage Monitor

As a stage monitor, the NT full-range loudspeaker is designed to lay on one of its angled sides on the floor. The enclosure's trapezoidal shape provides an ideal angle for aiming up toward performers from a stage floor.



Because of the enclosure's symmetrical shape, you can place the loudspeakers in a matched left/right pair with both HF horns inward or outward with respect to the performer. For this configuration, each loudspeaker must lay on its side opposite the amplifier module. This means the amplifier module with its panel for one of the loudspeakers must be moved to the opposite side of the enclosure from the factory installed position.

### 5.2.4 Moving the Amplifier Module:

**WARNING:** Disconnect the ac mains cable before doing this procedure.

#### Displacement du module d'amplification:

**ATTENTION:** Déconnectez le cordon du secteur avant d'entamer cette procédure.

#### Spostare il modulo d'amplificazione:

**ATTENZIONE:** Prima di procedere con questa operazione, disconnettere il cavo d'alimentazione AC.

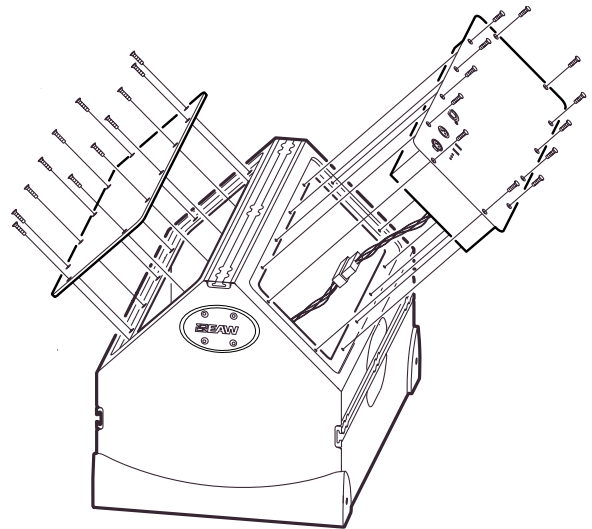
#### Despazamiento del módulo amplificador:

**PRECAUCION:** Desconecte el cable de alimentación antes de realizar este proceso.

#### Ausbau des Endstufenmoduls:

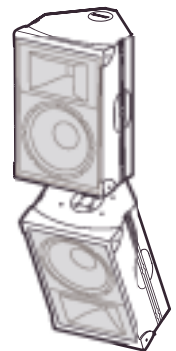
**WARNUNG:** Ziehen Sie den Netzstecker aus der Steckdose, bevor Sie mit dieser Prozedur beginnen.

1. Remove the back panel from one side of the enclosure by removing its 12 retaining screws.
2. Remove the amplifier module from the other side of the enclosure by removing its 12 retaining screws.
3. Pass the amplifier module through the openings in the enclosure and position it in place of the blank panel. You may also disconnect the quick release connector and move the amplifier outside the enclosure, reconnecting it through the other opening.
4. NOTE: To keep the input and power cabling close to the floor when in use, rotate the panel so that the input connectors are adjacent to the rear "spine" of the enclosure.
5. Refasten both the blank panel and amplifier panels, securely tightening all screws.



### 5.3 Configuring Arrays

NT loudspeakers can be arrayed in various ways. However, arraying loudspeakers requires special consideration for the overall array's mounting angle, projection pattern, rigging/mounting method, and for system tuning adjustments. These issues can be significantly more complex than when the loudspeakers are used singly. For assistance in configuring NT arrays, contact EAW's Application Support Group.



#### 5.3.1 Center of Gravity

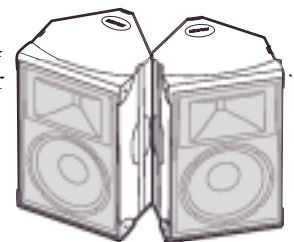
It might seem intuitive that for the NT full-range models, the side of the enclosure with the amplifier would be heavier. However, the center of gravity for all models is on the left to right centerline. Thus, when suspending NT loudspeakers, there is no weight or balance advantage to moving an amplifier module as described in Section 5.2.4.

#### 5.3.2 Vertical Array

1. Orient the enclosures so the LF drivers are adjacent (i.e. enclosure bottom to bottom).
2. Use a 45° splay between the enclosure "bottoms".
3. Set the MODE switch for each loudspeaker to COUPLED.

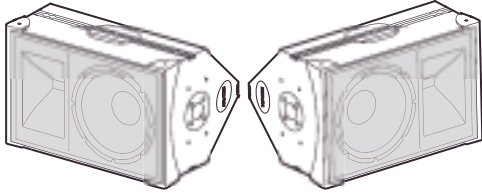
#### 5.3.3 Horizontal Array

NOTE: It may be desirable to move an amplifier module as described in section 5.2.4 so the enclosures are symmetrical left to right. This can facilitate running cabling and/or help hide cabling from audience view.



#### Enclosures Vertical

1. NT26 and NT56: use a 60° splay between the enclosure sides.
2. NT29 and NT59: use a 90° splay between the enclosure sides.
3. To avoid interference with the input and ac mains connections, move the amplifier module to the opposite side of one or both of the enclosures. See Section 5.2.4.
4. Set the MODE switch for each loudspeaker to COUPLED.



#### Enclosures Horizontal

1. Orient the enclosures so the LF drivers are adjacent (i.e. enclosure bottom to bottom).
2. Use a 45° splay between the enclosure "bottoms".
3. Set the MODE switch for each loudspeaker to COUPLED.

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## Section 6 Electrical Installation

For the instructions in this section, refer to the accompanying Figures.

### 6.1 Audio Signal Connection

Connect the audio signal to the loudspeaker BEFORE connecting the loudspeaker to the ac mains supply.

**WARNING:** Before connecting an NT loudspeaker to the ac mains supply, completely turn down the input signal to the loudspeaker using the signal source's output level (master volume control or other output level control). If not, there could be excessive and possibly ear-damaging sound levels from the loudspeaker when energized.

#### Connexion du Signal Audio

Connectez le signal audio à l'enceinte AVANT de connecter l'enceinte au secteur.

**ATTENTION:** Avant de connecter une enceinte NT au secteur, coupez le signal arrivant en entrée de l'enceinte en réglant le niveau de sortie de la source au minimum (réglage de niveau général Master ou tout autre réglage de niveau de sortie). Dans le cas contraire, le niveau sonore risque d'être excessif, ce qui peut causer des lésions auditives irréversibles lors de la mise sous tension de l'enceinte.

#### Connessione del Segnale Audio

Collega il segnale audio al diffusore PRIMA di collegare il diffusore all'alimentazione AC.

**ATTENZIONE:** Prima di collegare il diffusore NT alla presa di alimentazione, abbassa completamente il livello del segnale in ingresso, agendo sul controllo di livello d'uscita della sorgente del segnale (controllo Master Volume o altri controlli di livello d'uscita). In caso contrario, alimentando il diffusore potrebbero verificarsi livelli di segnale eccessivi e potenzialmente pericolosi.

#### Conexion de la Señal Audio

Conecte la señal audio al altavoz ANTES de conectar el altavoz a la salida de corriente.

**PRECAUCION:** Antes de conectar uno de estos altavoces N a la salida de corriente, reduzca al mínimo o anule la señal de entrada que va a estos altavoces usando el nivel de salida de la fuente de señal (control de volumen master u otro control de nivel de salida). En caso contrario, podrían llegar a producirse niveles de sonido excesivos y posiblemente dañinos en el momento de encender los altavoces.



## Audiosignalverbindung

Schließen Sie das Audiosignal am Lautsprecher an, BEVOR Sie den Lautsprecher an das Stromnetz anschließen.

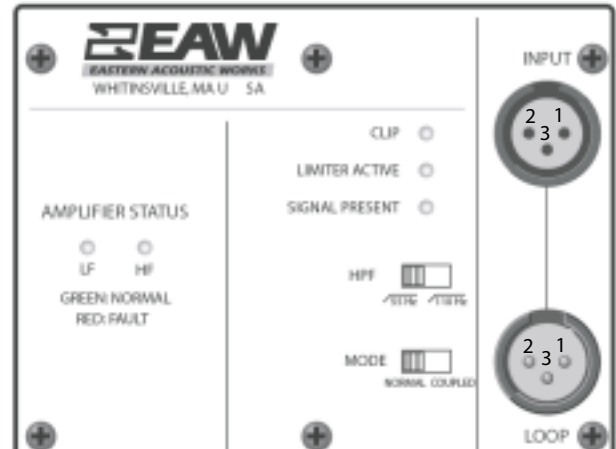
**WARNUNG:** Stellen Sie das Ausgangssignal der Signalquelle (z.B. Masterregler eines Mischpultes) auf den kleinsten Wert, bevor Sie den NT Lautsprecher an das Stromnetz anschließen. Da dieses Signal zum Lautsprecher geschickt wird, könnten bei starkem Quellsignal extrem bzw. schädliche Ausgangspegel von der Box produziert werden, wenn diese mit Netzstrom versorgt wird.

### 6.1.1 Input Panel

The audio input connection to the loudspeaker can be made to either the female INPUT or male LOOP connector on the rear of the loudspeaker. Normally, the female connector is used for the input signal. Connect the output from your signal source (mixing console, microphone preamp, or other line-level source) to either XLR-3 connector. This is an electronically balanced input designed to be connected to a balanced signal source.

#### Pin Connection

- 1 shield
- 2 signal plus or cold
- 3 signal minus or hot



### 6.1.2 Loop Connector

The Loop connector is hard-wired to the Input connector and thus carries the identical signal. This connector is used to "daisy-chain" the input signal to multiple NT loudspeakers and NT subwoofers. Because the signal processing, including the crossover, is built in, full-range loudspeakers and subwoofers may be daisy-chained together from a single signal source.

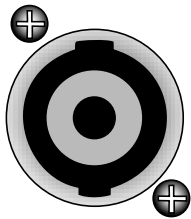
**NOTE:** To avoid potential interference, do not leave an un-terminated cable attached to either the Input or the Loop connector.

## 6.2 System GAIN

### 6.2.1 Level Control

The electronic sensitivity and gain in all full-range NT models is fixed by design. There are no adjustable, input level controls. This means that whenever the loudspeaker is connected to the ac mains and provided with audio signal the output level is always controlled externally to the loudspeaker. This way, there is no question about a misadjusted level control on the loudspeaker. This also largely prevents overdriving the equipment directly upstream of the loudspeakers.

The sensitivity is designed to match with a wide range of professional line level audio equipment with nominal operating levels of 0 dBu (= 0.775 V). Consumer equipment has nominal operating levels of 8 dB to 10 dB below 0 dBu. If used with the latter equipment, it may not be possible to reach full output before clipping upstream equipment. In such cases, there are 3rd party devices available that can be inserted into the signal path to match the impedance and level between consumer and professional equipment.



### AC MAINS

~100 - 120VAC /  
50 - 60Hz / 10A

## 6.3 AC MAINS Connection

This section details the requirements for the ac mains connection required by each NT loudspeaker and subwoofer.

### 6.3.1 AC MAINS Supply

**WARNING:** Read all instruction and cautionary notes concerning electrical power in the EAW Loudspeaker Manual.

**DANGER:** Ensure that the ac mains voltage matches the voltage rating listed on the loudspeaker next to the AC Mains connector. **DO NOT APPLY 230 V MAINS POWER IF THE VOLTAGE RATING ON THE LOUDSPEAKER IS 115 V. IMMEDIATE AND CATASTROPHIC DAMAGE TO THE LOUDSPEAKER WILL RESULT AND MAY CAUSE A FIRE HAZARD, SERIOUS PERSONAL INJURY, OR DEATH.**

## Alimentation Secteur

**ATTENTION:** Lisez toutes les instructions et notes de sécurité sur l'alimentation secteur, dans le mode d'emploi de l'enceinte EAW.

**DANGER:** Vérifiez la tension secteur de l'enceinte, sérigraphiée à côté de l'embase secteur de l'enceinte. **NE PAS APPLIQUER UNE TENSION SECTEUR DE 230 V SI L'ENCEINTE EST DE 115 V. LES DOMMAGES À L'ENCEINTE SERAIENT IMMÉDIATS ET IRRÉVERSIBLES - DE PLUS, CES DOMMAGES PEUVENT ÊTRE SOURCE D'INCENDIE, DE BLESSURES GRAVES VOIRE FATALES.**

## Alimentazione AC

**ATTENZIONE:** Leggere tutte le istruzioni e le avvertenze riguardanti l'alimentazione elettrica, incluse nel Manuale EAW Loudspeaker.

**PERICOLO:** Assicurarsi che il voltaggio dell'alimentazione utilizzata nell'area in cui si intende utilizzare il diffusore, corrisponda al voltaggio riportato nel pannello posteriore del diffusore, vicino alla connessione di alimentazione AC. **NON UTILIZZARE UN VOLTAGGIO DI 230 V SE NEL DIFFUSORE VIENE INDICATO UN VOLTAGGIO DI 115 V. IL DANNO PER IL DIFFUSORE SAREBBE IMMEDIATO E MOLTO SERIO, E POTREBBE CAUSARE INCENDI, DANNI FISICIALE PERSONE E LA MORTE.**

## Fuente de alimentación

**PRECAUCION:** Lea todas las instrucciones y advertencias relativas a la corriente eléctrica que aparecen en el manual de altavoces EAW.

**PELIGRO:** Asegúrese que el voltaje de la salida de corriente coincida con el que aparece indicado en el propio altavoz al lado del conector de entrada de corriente. **NO APLIQUE UN VOLTAJE DE 230 V SI SU ALTAVOZ FUNCIONA CON UN VOLTAJE DE ENTRADA DE 115 V. EL NO CUMPLIR ESTO PUEDE DAR LUGAR A DAÑOS INMEDIATOS Y CATASTROFICOS EN E ALTAVOZ, ASI COMO AL RIESGO DE INCENDIOS, DAÑOS SERIOS O INCLUSO LA MUERTE.**

## Netzstromversorgung

**WARNUNG:** Lesen Sie alle Anweisungen und Sicherheitshinweise bezüglich der Netzspannung in der EAW Lautsprecher Bedienungsanleitung.

**GEFAHR:** Versichern Sie sich, dass die zur Verfügung stehende Netzspannung mit der auf der Rückseite des Lautsprechers angegebenen Spannung übereinstimmt. SCHLIESSEN SIE KEINE 230 V NETZSPANNUNG AN, WENN DER LAUTSPRECHER FÜR 115 V KONFIGURIERT IST. SOFORTIGE, KATASTROPHALE SCHÄDENSIND DIE FOLGE. ES BESTEHT DIE GEFAHR VON FEUER, VERLETZUNG ODER TOD.

Each NT model is manufactured for a particular nominal ac mains voltage, either 115 V or 230 V.

Provide the loudspeaker with ac mains circuit capable of:

	115 V Model	230 V Model
	100 V to 120 V, 50 Hz to 60 Hz	220 V to 240 V, 50 Hz to 60 Hz
Full-range	10 A	6.3 A
Subwoofer	10 A	6.3 A

### 6.3.2 AC Mains Cable

The supplied Neutrik® PowerCon® NAC3FCA plug mates with the Neutrik PowerCon NAC3MPA AC MAINS jack on the loudspeaker.

**CAUTION:** The supplied ac mains plug may not be appropriate for local ac mains receptacles. If not, have a qualified electrician remove the existing ac mains plug and install a plug appropriate for the ac mains supply receptacle. Follow all local codes for this wiring.

**WARNING:** Ensure that ac power supply has a properly grounded safety ground. Failure to follow this warning could cause equipment damage, injury, or death.

### Cordon secteur

Le cordon secteur fourni est équipé d'une fiche Neutrik® PowerCon® NAC3FCA adaptée à l'embase secteur Neutrik PowerCon NAC3MPA de l'enceinte.

**ATTENTION :** Il se peut que le format de la fiche secteur ne corresponde pas à celui de votre situation géographique. Dans ce cas, faites appel à un électricien agréé pour qu'il remplace la fche par une autre du bon format. Respectez les normes électriques de câblage locales.

**ATTENTION:** Assurez-vous que la ligne secteur dispose d'une terre. Le non-respect de cette précaution peut entraîner des dommages aux équipements et des accidents aux personnes pouvant être fatals.

### Cavo d'alimentazione AC

Il cavo Neutrik® PowerCon® NAC3FCA fornito in dotazione è collegabile al connettore Neutrik PowerCon NAC3MPA AC MAINS presente nel diffusore.

**CAUTELA:** Il connettore del cavo d'alimentazione AC fornito in dotazione potrebbe non essere adeguato per le prese di corrente impiegate nell'area in cui il diffusore viene utilizzato. In questo caso, contattare un elettricista qualificato per sostituire la presa di corrente con una dotata di connessione adeguata. Per il cablaggio, occorre seguire la codifica corretta utilizzata nell'area d'utilizzo.

**ATTENZIONE:** Assicurarsi che la presa d'alimentazione sia correttamente collegata a terra. Il mancato rispetto di tali avvertenze potrebbe causare danni all'apparechiatura, nonché infortuni alle persone o la morte.

## Cable de alimentación

El enchufe Neutrik® PowerCon® NAC3FCA incluido en el cable encaja en la toma de entrada Neutrik PowerCon NAC3MPA AC MAINS del altavoz.

**PRECAUCION:** El enchufe que viene en el cable de alimentación incluido puede no encajar en las salidas de corriente de su zona. Si ocurre esto, contacte con un electricista profesional para que sustituya el enchufe problemático y lo cambie por uno adecuado para la salida de corriente. Compruebe que se sigan todas las normativas de seguridad aplicables.

**PRECAUCION:** Asegúrese que la fuente de alimentación tenga una conexión a tierra correcta. El no cumplir con esta advertencia puede dar lugar a daños en el equipo, en las personas que lo manejen o incluso la muerte.

## Netzkabel

Das mitgelieferte Kabel kann an der Seite mit dem Neutrik® PowerCon® NAC3FCA in die PowerCon NAC3MPA Buchse auf der Rückseite des Lautsprechers gesteckt werden.

**VORSICHT:** Das mitgelieferte Netzkabel besitzt möglicherweise einen Netzstecker, der nicht in Ihre Steckdose passt. In diesem Fall können Sie sich von einem zugelassenen Elektrobetrieb einen passenden Netzstecker unter Berücksichtigung der jeweils gültigen Vorschriften montieren lassen.

**WARNUNG:** Stellen Sie sicher, dass der Schutzleiter der Netzsteckdose eine gute Verbindung zur Erde hat. Nichtbeachtung dieses Hinweises kann zu Schäden am Equipment, zu Verletzungen oder zum Tod führen.

Power Cable Color Coding:

Conductor	115 V Models	230 V Models
Ungrounded	Black	Brown
Grounded or Neutral	White	Blue
Earth or Safety Ground	Green	Green / Yellow Stripping

**NOTE:** If an extension cord is used for the ac mains, use only a cord rated for at least 1800 VA.

### 6.3.3 Power On / Off

**CAUTION:** There is no power switch on the loudspeaker. When connected to the ac mains, the loudspeaker will be energized and fully operational with the output level controlled by the signal source feeding the loudspeaker.

Connect the supplied ac mains cord to the PowerCon jack on the rear of the loudspeaker. The PowerCon system uses a locking connector. To lock, twist 1/4 turn clockwise after fully inserting it into the jack. Then, connect the other end of the cable to the ac mains supply receptacle. This will energize the loudspeaker.

#### Power On Sequence:

When energized, the loudspeaker's electronics will initialize. The initialization sequence will last between 1.5 and 2 seconds, during which time the amplifier outputs are muted. The indications for normal initialization are:

1. The Clip, Limit, and Signal Presence LEDs will flash together.
2. The LEDs will then flash twice in the following sequence:  
Clip, Limit, and Signal Presence.
3. The Clip, Limit, and Signal Presence LEDs will go off; the Amplifier Status LEDs will come on, illuminated green.

If it is desired to completely power off (de-energize) the loudspeaker, a conveniently located ac mains disconnect must be supplied or the power cable must be unplugged from the ac mains supply.

## 6.4 Operating Controls - Full Range Loudspeakers

For the instructions in this section, refer to the accompanying Figure.

These switches electronically configure the loudspeaker for use with and without a subwoofer and for different mounting positions.

NOTE: The recommendations given are general guidelines and cannot address all applications or loudspeaker configurations. Use measurements and listening tests to determine the best setting for a particular situation.

### 6.4.1 Setting the HPF (High Pass Filter)

The HPF switch sets the low frequency roll-off frequency of the system. This means that, below the roll-off frequency, the lower the frequency the more the attenuation is applied to the input signal.

Recommended Use:

**55 Hz (switch to left):**

Without Subwoofer:

Provides normal low frequency response for music or a combination of music and speech.

With Subwoofer:

Not recommended. This will cause excessive energy between 55 Hz and 110 Hz.

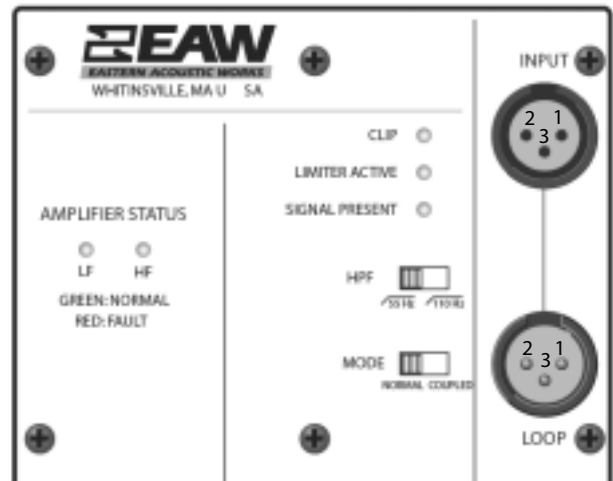
**110 Hz (switch to right):**

With Subwoofer:

Provides normal acoustic integration with a subwoofer.

Without a Subwoofer:

Recommended for speech only; not recommended for music.



### 6.4.2 Setting the Operating Mode

The Mode switch sets the voicing of the loudspeaker for different applications. It compensates for differences in performance caused by different mounting conditions with a LF shelving filter in the coupled position. The filter reduces the LF output in the range of frequencies affected by 1/2 space loading.

Recommended Usage:

**Normal (switch to left):**

Use when the loudspeaker is aimed at the audience, typically stacked on stage or stand/pole mounted.

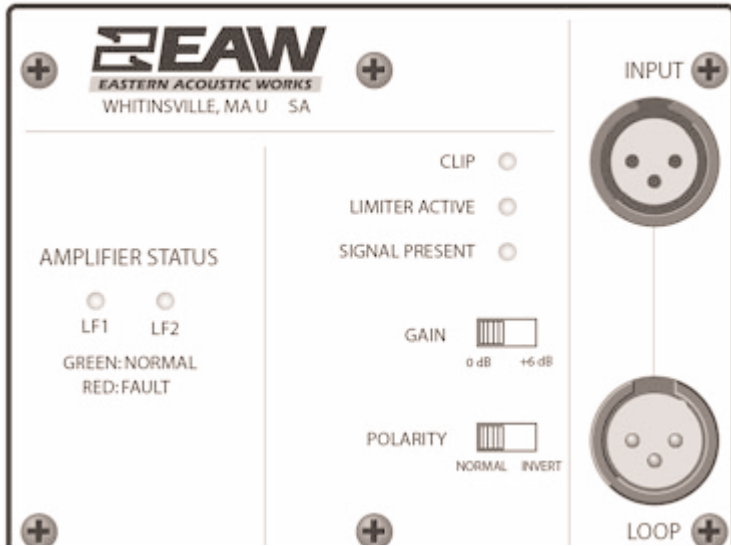
**Coupled (switch to right):**

Use when the loudspeaker is coupled to a surface such as the stage floor as a performer monitor or when mounted on a wall or the ceiling.

Use when arrayed with other NT loudspeakers to attenuate excess energy caused by mutual coupling.

Use when room acoustics are "live", meaning with higher reverberation times, to improve intelligibility by reducing the amount of LF reverberant energy excited by the loudspeaker.

## 6.5 Operating Controls - Subwoofer



For the instructions in this section, refer to the accompanying Figure.

These switches electronically configure the subwoofer for use with a full-range loudspeaker depending on the subwoofer's positioning relative to the full-range loudspeaker.

NOTE: The recommendations given are general guidelines and cannot address all applications or loudspeaker configurations. Use measurements and listening tests to determine the best setting for a particular situation.

### 6.5.1 Setting the Gain Switch

The gain switch adjusts the input to 0 dB or +6 dB gain.

#### 0 dB (switch to left)

Use for the common situation where the subwoofer is floor-mounted and the full-range loudspeaker is pole or stand mounted above it.

#### +6 dB (switch to right)

Use when more subwoofer level is needed, such as when both the full-range and subwoofer are suspended.

For situations where a wider range of gain control is needed, use either of these recommended methods.

1. Provide a separate signal feeds to the full-range and subwoofer, each feed having its own level control. This is normally accomplished using separate auxiliary or matrix outputs on a mixing console
2. Provide an external attenuator to the loudspeaker that needs less gain. This can be a fixed resistive attenuator, ideal for permanent installations. Where frequent adjustment may be needed, such as in a portable system, an adjustable level control may be inserted into the signal line to the loudspeaker needing less gain. A 20k ohm to 40k ohm potentiometer with an audio or log taper can provide the desired results.

### 6.5.2 Setting the Polarity

Recommended usage:

#### Normal (switch to left)

Use to provide normal integration with a full range loudspeaker that is either stacked on top of or pole mounted to the subwoofer.

#### Invert (switch to right)

Use when the sound of the subwoofer and full-range loudspeaker do not integrate well, meaning there is bass loss in the listening area. This is usually caused when the subwoofer is located at a different distance to the listeners than the full-range loudspeaker or because of destructive room reflections. Given the unpredictability of low frequency response in a room, the Polarity setting may or may not improve the results. In some cases, there may be a difference in the results, but not a better or worse result.

## Section 7 Operation

### 7.1 Operating Limits

#### 7.1.1 Operator Responsibility

It is the responsibility of the audio system operator to operate the loudspeaker within its capabilities. This is the only way to ensure that the loudspeaker is not stressed beyond its limits to the point of damage or failure. Refer to the EAW Loudspeaker Manual for detailed Operating instructions and suggestions. NT's LED status indicators will show when the loudspeaker is operating at or beyond its maximum capabilities.

### 7.2 Adjusting the Output Level

With a source program playing, gradually turn up the level of your signal source until the desired volume is reached or until the CLIP light flashes only occasionally, whichever comes first.

### 7.3 Operating Indicators

For the instructions in this section, refer to the accompanying Figures.

#### 7.3.1 Limiter Active

The limiting parameters set in NT's DSP are engineered to provide a high level of protection for the transducers while maximizing sonic performance and output. A Limiter Active indicator in the rear input panel illuminates when limiting is occurring. If this is flashing occasionally, meaning no more than once every 3 seconds or so, then levels are probably OK, but at maximum. If this indicator is flashing more than once every 3 seconds or so, reduce the input signal level.

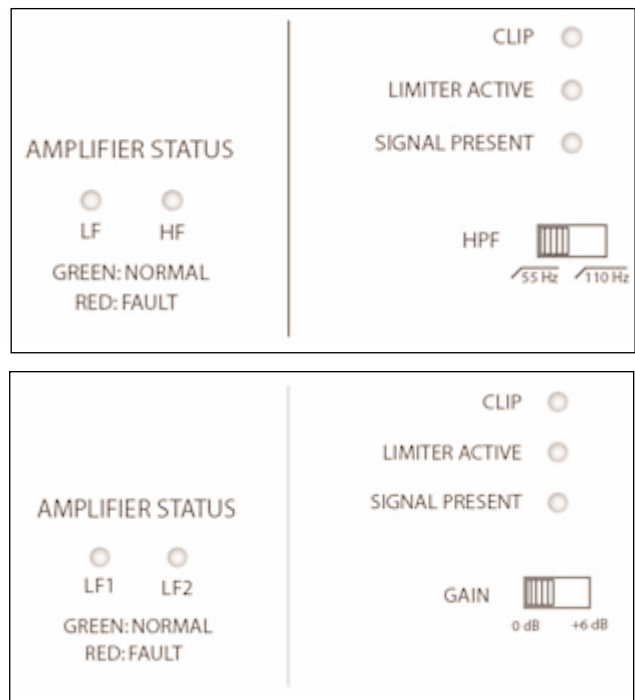
#### 7.3.2 Clip

A Clip indicator on the rear panel illuminates if any of NT's electronics are being driven into clipping. This includes the entire signal chain from the input stage through the DSP. Clipped signals can more easily damage transducers as they can raise the average signal level significantly with a spectrum that differs significantly from the input signal.

#### 7.3.3 IMPORTANT: Operator Response

If either or both of the Limiter Active and Clip indicators are flashing occasionally, meaning no more than once every 3 seconds or so, then the signal level may not be excessive. However, this is a CLEAR indication the loudspeaker is being operated near or at its maximum limits. If either or both of these indicators are flashing more than once every 3 seconds or so, or are on steadily, reduce the input signal level or damage to the drivers is likely to occur.

**CAUTION:** Electronic limiters cannot provide absolute protection against driver failure. Thus, if limiting is occurring, it is a warning that excessive signal levels are being approached. It is NOT an indication that the loudspeaker is successfully protecting itself.



#### **7.3.4 Amplifier Status**

An Amplifier Status indicator monitors the status of each of the two amplifiers in the full-range and subwoofer models. If illuminated Green, the amplifier status is Normal. If illuminated Red, a protection circuit has activated and the amplifier is in Fault status.

The causes for a Fault indication can be:

- Amplifier overheating
- Power supply overheating
- Excessive amplifier output current
- Excessive power supply current
- Low ac mains voltage
- Low amplifier output voltage
- Electronic failure

To minimize audio downtime or operation at reduced levels, the protection circuits will automatically reset after the fault condition is lowered to an acceptable level or removed. The only exception is protective shut-down due to electronic failure.

#### **7.3.5 Signal Present**

The Signal Present indicator illuminates when an audio signal greater than 30 dBu (25 mV) is present at the input connector.

### **7.4 Signal Processing**

#### **7.4.1 Internal Signal Processing**

The NT Series incorporates sophisticated, digital signal processing to optimize performance and reliability. Normally, no external signal processing is required. The internal processing will provide excellent results in a variety of venues. The processing was determined from extensive laboratory measurements and field testing to provide the maximum performance in terms of frequency response, phase response, power handling, and audio quality. It affects many aspects of the loudspeaker's performance including frequency response, beamwidth consistency, output level capability, and wavefront coherency.

#### **7.4.2 External Signal Processing**

In some applications, external signal processing may be used because of room acoustics, audio program content, or personal taste. In such cases, use standard analog or digital equalizers. Avoid radical settings as these can alter the performance in adverse ways not readily apparent, such as reducing power handling or altering the beamwidth.

#### **7.4.3 Limiters**

NT loudspeakers have built-in, factory set limiting. The limiter characteristics and settings were determined to provide the maximum protection possible, to minimize the sonic effects, and to integrate closely with the amplifier capabilities. Defeating such limiting by using an external limiter could expose the drivers or amplifiers to operation beyond their limits.

External limiting should only be used to limit the maximum output to some level below that allowed by the factory limiting. In this case, choose limiter settings that minimize the sonic effects when the limiting is active.



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## Section 8 Maintenance and Service

### 8.1 Maintenance

Your EAW loudspeaker may require little to no regular attention for normal use. However, performing regular inspections and maintenance can ensure your loudspeaker remains in optimum operating and cosmetic condition. Refer to the EAW Loudspeaker Manual for periodic inspection and maintenance recommendations and procedures.

### 8.2 General Service

**CAUTION: THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.**

**WARNING:** Disconnect the ac mains cable before performing any servicing.

#### Entretien Général

**ATTENTION:** Déconnectez le cordon secteur avant tout entretien.

#### Assistenza Tecnica

**ATTENZIONE:** Disconnettere l'alimentazione AC prima di effettuare qualsiasi intervento tecnico.

#### Mantenimiento General

**PRECAUCION:** Desconecte el cable de alimentación antes de realizar ningún tipo de mantenimiento o reparación.

#### Service

**WARNUNG:** Ziehen Sie das Netzkabel aus der Steckdose, bevor an der Box gearbeitet wird.

Certain NT loudspeaker components are field replaceable. These include the drivers and amplifier module. All other service and repair information must be obtained by contacting the EAW Service Department or the service department of the EAW Distributor for your country. See the EAW Loudspeaker Manual for contact information. This applies to both warranty and non-warranty faults.

#### 8.2.1 AC Mains Fuse

**CAUTION:** To maintain safety approval certifications, use a fuse that meets the specific time delay, pulse current capability/melting integral (I<sub>2t</sub> / A<sub>2s</sub>), and breaking capability listed.

**DANGER:** Note and be sure to replace the fuse in the same physical orientation as when it was removed. Double check the circuit board labeling to ensure the orientation is correct for the proper ac mains input voltage. Failure to follow this warning could result in the incorrect voltage being applied to the loudspeaker. IF 230 V IS APPLIED TO A 115 V LOUDSPEAKER, IMMEDIATE AND CATASTROPHIC DAMAGE TO THE LOUDSPEAKER WILL RESULT AND MAY CAUSE A FIRE HAZARD, SERIOUS PERSONAL INJURY, OR DEATH.

Fuse Type:

115 V models

T10A H 125 V:  $I_{2t} \geq 180$  A2s, T = time lag (slo-blow), H = high-breaking (1500 A)

Vendor: Wickmann, part #181 2100 002 (= qty 10)

230V models

T6.3A H 125 V,  $I_{2t} \geq 110$  A2s, T = time lag (slo-blow), H = high-breaking (1500 A)

Vendor: Wickmann, part #181 1630 002 (= qty 10)

## Fusible secteur

**ATTENTION:** Pour que l'enceinte respecte les normes de sécurité imposées, utilisez un fusible offrant les mêmes caractéristiques de temporisation, de capacité en courant/fusion ( $I_{2t}/A2s$ ), et de capacité de rupture que celles données.

**DANGER:** Notez l'orientation du fusible lors de son retrait et respectez cette orientation lors du montage du nouveau fusible. Vérifiez à nouveau les indications sur le circuit imprimé pour garantir l'orientation correcte en fonction de la tension secteur. Le non-respect de ces instructions peut entraîner l'application d'une mauvaise tension secteur à l'enceinte. SI VOUS APPLIQUEZ UNE TENSION SECTEUR DE 230 V À UNE ENCEINTE DE 115 V, LES DOMMAGES À L'ENCEINTE SERONT IMMÉDIATS ET IRRÉVERSIBLES - DE PLUS, CES DOMMAGES PEUVENT ÊTRE SOURCE D'INCENDIE, DE BLESSURES GRAVES VOIRE FATALES

Type de fusible :

Modèles en 115 Vca

T10A H 125 V :  $I_{2t} \geq 180$  A2s, T = temporisation (fusion lente), H = haute rupture (1500 A)

Revendeur : Wickmann, pièce référence 181 2100 002 (= par 10)

Modèles en 230 Vca

T6.3A H 125 V,  $I_{2t} \geq 110$  A2s, T = temporisation (fusion lente), H = haute rupture (1500 A)

Revendeur : Wickmann, pièce référence 181 1630 002 (= par 10)

## Fusibile AC

**CAUTELA:** Per essere conformi alle certificazioni di sicurezza approvate, utilizzare fusibili che soddisfino le specifiche relative ai tempi di ritardo, alla capacità d'impulso di corrente/fusione integrale ( $I_{2t} / A2s$ ) e il potere d'interruzione riportati.

**PERICOLO:** Assicurarsi di sostituire il fusibile inserendolo nella medesima posizione del fusibile originale. Controlla attentamente le indicazioni del circuito stampato assicurandoti che la posizione sia corretta per il voltaggio dell'alimentazione AC. In caso contrario, si rischia che un voltaggio non corretto venga applicato al diffusore. APPLICANDO UN VOLTAGGIO DI 230 V AD UN DIFFUSORE DA 115 V, IL DANNO PER IL DIFFUSORE SAREBBE IMMEDIATO E MOLTO SERIO, E POTREBBE CAUSARE INCENDI, DANNI FISICI ALLE PERSONE E LA MORTE.

Tipo di fusibile:

Modelli a 115 V

T10A H 125 V:  $I_{2t} \geq 180$  A2s, T = Time Lag (Slo-Blow), H = High-Breaking (1500 A)

Prodotto da: Wickmann, parte #181 100 002 (= qtà 10)

Modelli a 230 V

T6.3A H 125 V,  $I_{2t} \geq 110$  A2s, T = Time Lag (slo-blow), H = High-Breaking (1500 A)

Prodotto da: Wickmann, parte #181 1630 002 (= qtà 10)

## Fusible de corriente

**ATENCIÓN:** Para mantener los niveles de seguridad adecuado, use un fusible que cumpla con los valores específicos de tiempo de retardo, capacidad de corriente de pulsos / integral de corriente ( $I_{2t}$  / A2s) y punto de ruptura que aparezcan indicados.

**PELIGRO:** Asegúrese de sustituir el fusible colocando el de recambio en la misma orientación física que el original. Compruebe la indicación de la placa de circuitos para asegurarse de que la orientación sea la correcta para el voltaje de entrada que corresponda. El no cumplir con esta advertencia puede hacer que se aplico un voltaje de entrada incorrecto al altavoz. EL APLICAR UN VOLTAJE DE 230 V A UN ALTAVOZ QUE FUNCIONE CON UN VOLTAJE DE ENTRADA DE 115 V PUEDE DAR LUGAR A DAÑOS INMEDIATOS Y CATASTROFICOS EN EL ALTAVOZ, ASI COMO AL RIESGO DE INCENDIOS, DAÑOS SERIOS O INCLUSO LA MUERTE.

Tipos de fusible:

modelos de 115 V

T10A H 125 V:  $I_{2t} \geq 180$  A2s, T = retardo (ruptura lenta), H = corriente elevada (1500 A)

Distribuidor: Wickmann, n° referencia 181 2100 002 (cantidad mínima 10)

modelos de 230 V

T6.3A H 125 V,  $I_{2t} > 110$  A2s, T = retardo (ruptura lenta), H = corriente elevada (1500 A)

Distribuidor: Wickmann, n° referencia 181 1630 002 (cantidad mínima 10)

## Netzsicherung

**VORSICHT:** Um die Sicherheitsbestimmungen zu erfüllen, verwenden Sie ausschließlich Sicherungen die die korrekte Charakteristik, Spitzenstrombelastbarkeit und Auslösezeit ( $I_{2t}$  / A2s) sowie Auslösestrom besitzen.

**GEFAHR:** Beachten Sie, dass die Sicherung in der gleichen Position eingesetzt wird, wie sie herausgenommen wurde. Überprüfen Sie abschließen, ob der Sicherungseinsatz so eingesetzt wurde, dass die korrekte Netzspannung eingestellt ist. Durch fehlerhaften Einbau gelangt die falsche Netzspannung zum Lautsprecher. SCHLIESSEN SIE KEINE 230 V NETZSPANNUNG AN, WENN DER LAUTSPRECHER FÜR 115 V KONFIGURIERT IST. SOFORTIGE, KATASTROPHALE SCHÄDEN SIND DIE FOLGE. ES BESTEHT DIE GEFAHR VON FEUER, VERLETZUNG ODER TOD.

## Sicherungstyp:

115 V Modelle

T10A H 125 V:  $I_{2t} \geq 180$  A2s, T = Zeitcharakteristik (Träge), H = Auslösespitzenstrom (1500 A), Anbieter: Wickmann, Teilenummer: 181 2100 002 (= VPE 10)

230 V Modelle

T6.3A H 125 V,  $I_{2t} \geq 110$  A2s, T = Zeitcharakteristik (Träge), H = Auslösespitzenstrom (1500 A), Anbieter: Wickmann, Teilenummer 181 1630 002 (= VPE 10)

If excessive ac mains input current is detected, an internal fuse will blow. This can occur for a variety of reasons, such as internal failure, excessive ac mains voltage, or excessive amplifier output levels. If the fuse blows, have a technician replace it with the identical type of fuse.

In the unlikely event the fuse blows again, internal failure is indicated, requiring troubleshooting and repair by a qualified service technician. Do not attempt further use of the loudspeaker until such repairs are made.

### 8.3 Field Troubleshooting

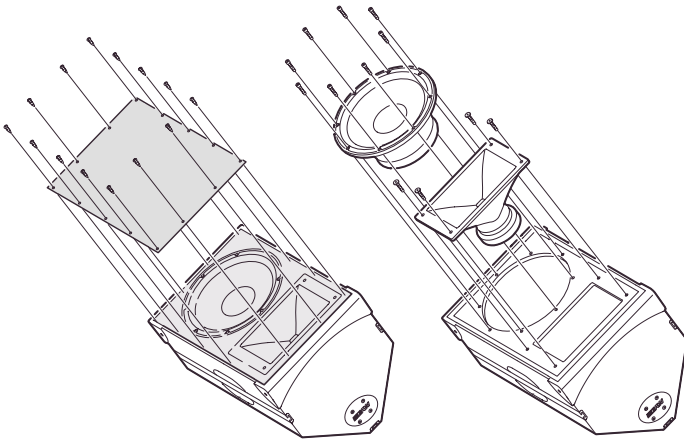
See the EAW Loudspeaker Manual for field troubleshooting procedures.

### 8.4 Driver Service

For the instructions in this section, refer to the accompanying Figures.

#### Full-Range

The drivers can be field serviced by replacing the entire driver or having the driver repaired (such as diaphragm replacement) by a qualified service technician.



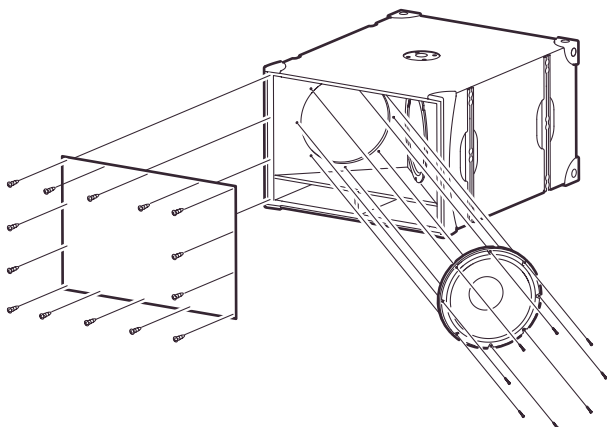
1. Access the drivers by removing the front grille.
2. Remove the LF driver or HF horn/driver assembly by unscrewing their retaining screws.
3. Lift the LF driver or HF horn/driver assembly from the baffle.
4. Disconnect the signal cable from the driver (not shown).

To reinstall or replace the component, reverse the above steps.

**IMPORTANT:** When reconnecting the signal wires to the transducer, connect the colored wire to the plus (+) terminal and the black wire to the (-) minus terminal.

#### Subwoofer

The drivers can be field serviced by replacing the entire driver or having the driver repaired (such as diaphragm replacement) by a qualified service technician.



1. Access the drivers by removing the front grille.
2. Remove the LF driver(s) by unscrewing their retaining screws.
3. Lift the driver(s) from the baffle.
4. Disconnect the signal cable from the driver.

To reinstall or replace the driver, reverse the above steps. Make sure the reversed transducer is installed reversed and is connected with the blue and black signal wires.

**IMPORTANT:** When reconnecting the signal wires to the transducer, connect the colored wire to the plus (+) terminal and the black wire to the (-) minus terminal.

## 8.5 Amplifier Service

**WARNING:** Disconnect the ac mains cable before doing this procedure.

**ATTENTION:** Déconnectez le cordon du secteur avant d'entamer cette procédure.

**ATTENZIONE:** Prima di procedere con questa operazione, disconnettere il cavo d'alimentazione AC.

**PRECAUCION:** Desconecte el cable de alimentación antes de realizar este proceso.

**WARNUNG:** Ziehen Sie den Netzstecker aus der Steckdose, bevor Sie mit dieser Prozedur beginnen.

Faulty electronics are serviced by replacing the entire amplifier module.

### 8.5.1 Amplifier Modules

There are two types of NT amplifier modules:

one for the NT full-range models and one for the subwoofer.

1. Full-range: Input, DSP, 1000 W @ 4 ohm LF amplifier, 500 W @ 4 ohm HF amplifier, and power supply.
2. Subwoofer: Input, DSP, two 1000 W @ 4 ohm amplifiers, and power supply.

For the NT full-range models (NT2x & NT5x), each amplifier module has the DSP settings for all models stored in on-board memory. The active settings are determined by on-board dip switch settings. Thus, amplifier modules for the full-range models are interchangeable by simply resetting the dip switches for that particular model.

### 8.5.2 NT Amplifier Replacement Modules and Dip Switch Settings

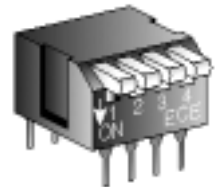
An amplifier replacement module consists of the power amplifiers, DSP board, power supply, connectors, and indicators; all pre-mounted on the amplifier panel.

Amplifier Module Replacement Part Numbers & Dip Switch Settings

**NOTE:** If the incorrect DIP switch position is used, poor/incorrect performance will result, at best sounding bad, at worst causing equipment failure.

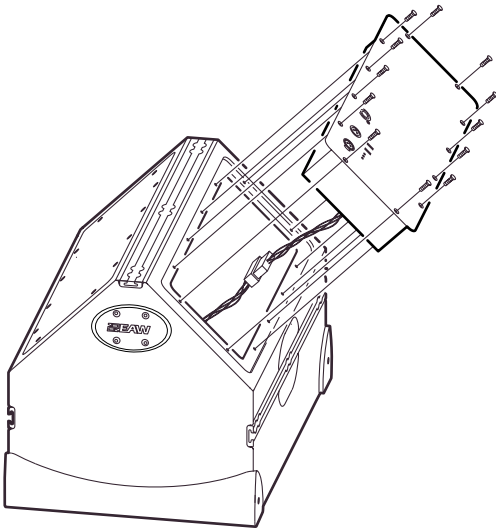
NT Model #	115 V Module	230 V Module	Dip Switch Settings			
			1	2	3	4
<b>NT26</b>	#0016088	#0016584	Off	Off	Off	Off
<b>NT29</b>	#0016088	#0016584	Off	Off	Off	On
<b>NT56</b>	#0016088	#0016584	Off	Off	On	Off
<b>NT59</b>	#0016088	#0016584	Off	Off	On	On
<b>NTS22</b>	#0016090	#0016585	Off	On	Off	Off

**NOTE:** Off is up, On is down.



### 8.5.3 Replacing the Amplifier Module

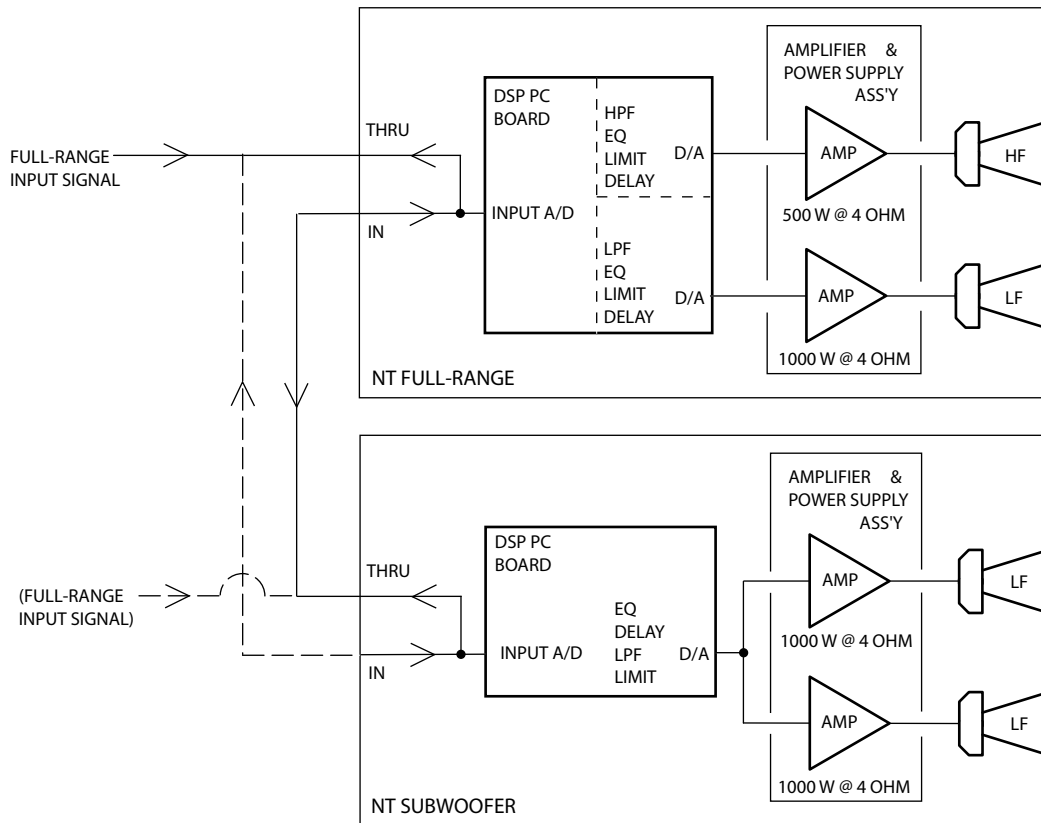
1. Remove the amplifier module from the other side of the enclosure by removing its 12 retaining screws.
2. Disconnect the quick release connector for the transducer cabling.
3. Configure the replacement amplifier for the NT model by setting the dip switch. See the chart in Section 8.5.2 for the correct settings. The dip switch is located behind the input receptacles on the backside of the amplifier module.
4. Once the dip switch is programmed, connect the transducer cabling to the replacement module.



5. Install and refasten the amplifier panel, securely tightening all screws.

## Section 9 Block Diagram

This is a block diagram of an NT Full-Range with an NT subwoofer. A full-range input signal is connected to the full-range loudspeaker and looped through to the subwoofer (solid lines). Alternately, the full-range input can be connected to the subwoofer and looped through to the full-range loudspeaker (dotted lines).





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