User's Manual

æro 38A & LX-218RA

Antes de utilizar el equipo, lea la sección "Precauciones de seguridad" de este manual. Conserve este manual para futuras consultas.

Before operating the device, please read the "Safety precautions" section of this manual. Retain this manual for future reference.

æro 38A
&
LX-218RA

æro 38A

Precauciones de Seguridad
Safety Precautions

Cajas acústicas activas / Self-powered loudspeaker enclosures

El signo de exclamación dentro de un triángulo indica la existencia de importantes instrucciones de operación y mantenimiento en la documentación que acompaña al producto.
Conserve y lea todas estas instrucciones.
Siga las advertencias.

The exclamation point inside an equilateral triangle is intend to alert the users to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.
Heed all warnings. Follow all instructions.
Keep these instructions.

Equipo de Clase I.

Class I device.

El signo del rayo con la punta de flecha, alerta contra la presencia de voltajes peligrosos no aislados. Para reducir el riesgo de choque eléctrico, no retire la cubierta.

The lightning and arrowhead symbol warns about the presence of uninsulated dangerous voltage. To reduce the risk of electric shock, do not remove the cover.

No instale el aparato cerca de ninguna fuente de calor como radiadores, estufas u otros aparatos que produzcan calor. Debe instalarse siempre sin bloquear la libre circulación de aire por las aletas del radiador.

Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus that produce heat.
The circulation of air through the heatsink must not be blocked.

No exponga este equipo a la lluvia o humedad sin el protector de lluvia recomendado. No use este aparato cerca del agua (piscinas y fuentes, por ejemplo). No exponga el equipo a salpicaduras sin el protector de lluvia recomendado, ni coloque sobre él objetos que contengan líquidos, tales como vasos y botellas.

Do not expose this device to rain or moisture without the rain protector supplied. Do not use this apparatus near water (for example, swimming pools and fountains). Do not place any objects containing liquids, such as bottles or glasses, on the top of the unit. Do not splash liquids on the unit without the rain protector supplied.

Este símbolo indica que el presente producto no puede ser tratado como residuo doméstico normal, sino que debe entregarse en el correspondiente punto de recogida de equipos eléctricos y electrónicos.

This symbol on the product indicates that this product should not be treated as household waste. Instead it shall be handed over to the appicable collection point for the recycling of electrical and electronic equipment.

Equipo diseñado para funcionar entre 15ºC y 42ºC con una humedad relativa máxima del 95%, con un rango de ±10% de la tensión nominal de alimentación indicada en la etiqueta trasera (según IEC 60065:2001). Si debe sustituir el fusible preste atención al tipo y rango.

Working temperature ranges from 15ºC to 42ºC with a relative humidity of 95%, with ±10% of the rated main voltage value indicated on the rear label (according to IEC 60065:2001). If the fuse needs to be replaced, please pay attention to correct type and ratings.

El cableado exterior conectado al equipo requiere de su instalación por una persona instruida o el uso de cables flexibles ya preparados.

The outer wiring connected to the device requires installation by an instructed person or the use of a flexible cable already prepared.

Si el aparato es conectado permanentemente, la instalación eléctrica del edificio debe incorporar un interruptor multipolar con separación de contacto de al menos 3mm en cada polo.

If the apparatus is connected permanently, the electrical system of the building must incorporate a multipolar switch with a separation of contact of at least 3mm in each pole.

Desconecte este aparato durante tormentas eléctricas, terremotos o cuando no se vaya a emplear durante largos periodos.

Unplug this apparatus during ligtning storms, earthquakes or when unused for long periods of time.

No emplace altavoces en proximidad a equipos sensibles a campos magnéticos, tales como monitores de televisión o material magnético de almacenamiento de datos.

Do not place loudspeakers in proximity to devices sensitive to magnetic fields such as television monitors or data storage magnetic material.

El colgado del equipo sólo debe realizarse utilizando los herrajes de colgado recomendados y por personal cualificado. No cuelgue la caja de las asas y respete los valores máximos de carga dados en el manual.

The appliance should be flown only from the rigging points and by qualified personnel. Do not suspend the box from the handles and respect the maximium load values given in the manual.

No existen partes ajustables por el usuario en el interior de este equipo. Cualquier operación de mantenimiento o reparación debe ser realizada por personal cualificado. Es necesario el servicio técnico cuando el equipo se haya dañado de alguna forma, como que haya caído líquido o algún objeto en el interior del aparato, haya sido expuesto a lluvia o humedad, no funcione correctamente, haya recibido un golpe o su cable de red esté dañado.

No user serviceable parts inside. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally or has been dropped.

Limpie con un paño seco. No use limpiadores con disolventes.

Clean only with a dry cloth. Do not use any solvent based

LX-218A

Precauciones de Seguridad
Safety Precautions

Cajas acústicas activas / Self-powered loudspeaker enclosures

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ATENCIÓN: Es un producto clase A, por lo que en entornos domésticos puede causar radio-interferencias, en cuyo caso el usuario tendrá que tomar las medidas oportunas.
De acuerdo con EN55103-2, usar el equipo sólo en entornos E1, E2, E3 ó E4.

The exclamation point inside an equilateral triangle is intend to alert the users to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.
Heed all warnings. Follow all instructions. Keep these instructions.
WARNING: This is a class A product. In a domestic environment this product my cause radio interferences in which case the user may be required to take adequate measures.
Use this product only in E1, E2, E3 or E4 environments according to EN55103-2.

No desconecte la tierra en el conector de alimentación pues el peligroso e ilegal. Equipo de Clase I.

Do not remove mains connector ground, it is dangereous and illegal. Class I device.

El signo del rayo con la punta de flecha, alerta contra la presencia de voltajes peligrosos no aislados. Para reducir el riesgo de choque eléctrico, no retire la cubierta.

The lightning and arrowhead symbol warns about the presence of uninsulated dangerous voltage. To reduce the risk of electric shock, do not remove the cover.

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The circulation of air through the heatsink must not be blocked.

No exponga este equipo a la lluvia o humedad. No use este aparato cerca del agua (piscinas y fuentes, por ejemplo). No exponga el equipo a salpicaduras ni coloque sobre él objetos que contengan líquidos, tales como vasos y botellas. Equipo IP-20.

Do not expose this device to rain or moisture. Do not use this apparatus near water (for example, swimming pools and fountains). Do not place any objects containing liquids, such as bottles or glasses, on the top of the unit. Do not splash liquids on the unit. IP-20 equipment.

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The outer wiring connected to the device requires installation by an instructed person or the use of a flexible cable already prepared.

Si el aparato es conectado permanentemente, la instalación eléctrica del edificio debe incorporar un interruptor multipolar con separación de contacto de al menos 3mm en cada polo.

If the apparatus is connected permanently, the electrical system of the building must incorporate a multipolar switch with a separation of contact of at least 3mm in each pole.

Desconecte este aparato durante tormentas eléctricas, terremotos o cuando no se vaya a emplear durante largos periodos.

Unplug this apparatus during ligtning storms, earthquakes or when unused for long periods of time.

No emplace altavoces en proximidad a equipos sensibles a campos magnéticos, tales como monitores de televisión o material magnético de almacenamiento de datos.

Do not place loudspeakers in proximity to devices sensitive to magnetic fields such as television monitors or data storage magnetic material.

No emplace el producto sobre un carro, base, tripode, soporte o mesa inestables. El dispositivo puede caer, causando serias heridas y dañándose gravemente.

Do not place the product on an unstable cart, stand, tripod, bracket or table. The device may fall, causing serious injury, and serious damage to the device itself.

El colgado del equipo sólo debe realizarse utilizando los herrajes de colgado recomendados y por personal cualificado. No cuelgue la caja de las asas.

The appliance should be flown only from the rigging points and by qualified personnel. Do not suspend the box from the handles.

No existen partes ajustables por el usuario en el interior de este equipo. Cualquier operación de mantenimiento o reparación debe ser realizada por personal cualificado. Es necesario el servicio técnico cuando el equipo se haya dañado de alguna forma, como que haya caído líquido o algún objeto en el interior del aparato, haya sido expuesto a lluvia o humedad, no funcione correctamente, haya recibido un golpe o su cable de red esté dañado.

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Limpie con un paño seco. No use limpiadores con disolventes.

Clean only with a dry cloth. Do not use any solvent based cleaners.

La reventa del producto sólo es posible incluyendo el manual de usuario. Cualquier cambio producido en el producto tiene que ser documentado por escrito y aprobado por el comprador en el momento de la reventa.

Reselling of the product is only possible if the user manual is aviable. Any changes made to the product have to be documented in writing and passed on to the buyer in the event of resale.

DECLARACIÓN DE CONFORMIDAD
DECLARATION OF CONFORMITY

D.A.S. Audio, S.A.
C/ Islas Baleares, 24 - 46988 - Pol. Fuente del Jarro - Valencia. España (Spain).

Declara que la *aero 38A*, *LX-218A* y *LX-218RA*:
Declares that *aero 38A*, *LX-218A* and *LX-218RA*:

Cumple con los objetivos esenciales de las Directivas:
Abide by essential objectives relating Directives:

- Directiva de Baja Tensión (Low Voltage Directive) 2006/95/CE
- Directiva de Compatibilidad Electromagnética (EMC) 2004/108/CE
- Directiva RoHS 2002/95/CE
- Directiva RAEE (WEEE) 2002/96/CE

Y es conforme a las siguientes Normas Armonizadas Europeas:
In accordance with Harmonized European Norms:

- EN 60065:2002 Audio, video and similar electronic apparatus. Safety requirements.
- EN 55103-1:1996 Electromagnetic compatibility. Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 1:Emission.
- EN 55103-2:1996 Electromagnetic compatibility. Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 2:Immunity.

GARANTÍA

Todos nuestros productos están garantizados por un periodo de 24 meses desde la fecha de compra.

Las garantías sólo serán válidas si son por un defecto de fabricación y en ningún caso por un uso incorrecto del producto.

Las reparaciones en garantía pueden ser realizadas, exclusivamente, por el fabricante o el servicio de asistencia técnica autorizado.

Otros cargos como portes y seguros, son a cargo del comprador en todos los casos.

Para solicitar reparación en garantía es imprescindible que el producto no haya sido previamente manipulado e incluir una fotocopia de la factura de compra.

WARRANTY

All D.A.S. products are warrantied against any manufacturing defect for a period of 2 years from date of purchase.

The warranty excludes damage from incorrect use of the product.

All warranty repairs must be exclusively undertaken by the factory or any of its authorised service centers.

To claim a warranty repair, do not open or intend to repair the product.

Return the damaged unit, at shippers risk and freight prepaid, to the nearest service center with a copy of the purchase invoice.

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SYSTEM DESCRIPTION

DAS Audio offers the ***aero 38A*** and ***LX-218RA***, self powered cabinets, for applications requiring precise control of the vertical coverage and high sound pressure levels. The ***aero 38A*** is a three way system which integrates two 12" low frequency units, two 10" mid range devices and one compression driver coupled to the SERPIS-38 high frequency plane wave adaptor insuring coherent high frequency summing and the generation of a flat, isophasic wave front. When increased sound pressure level in the low frequency range is required, the system can be used in conjunction with ***LX-218RA*** subwoofer units.

The system is ideal for applications such as large-scale outdoor/indoor events in arenas, stadiums or theaters.

Both units are manufactured using 15/18 mm Finnish Birch plywood. The ***aero 38A*** enclosure shape is trapezoidal with 5º angles. The ***LX-218RA*** enclosures are rectangular.

The ***aero 38A*** and ***LX-218RA*** systems incorporate captive rigging hardware which is compatible with one another and designed to provide a fast, simple and safe rigging by means of quick release safety pins. Splay angles can be changed from 0º to 3.2º in 0.8º increments and from 3.2º to 9.6º in 1.6º increments.

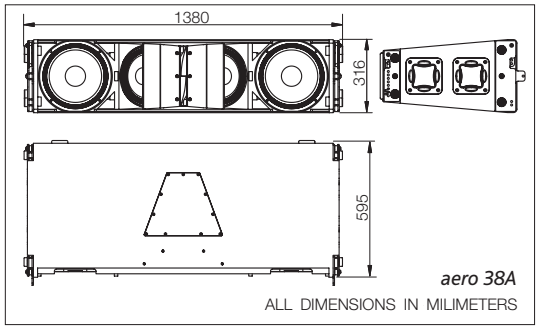
To facilitate transport, the ***aero 38A*** units are equipped with a ***PL-38*** front dolly panel attached by means of the rigging hardware. The front dolly panel is useful when rigging systems. The ***PL-48S***, a metal dolly for vertically stacking 3 to 4 ***aero 38A*** units is available as an accessory. The ***LX-218RA*** system incorporates a ***PL-LX218*** dolly panel usefull to transport the cabinet. The ***PL-218S***, a metal dolly platform for vertically stacking 3 to 4 ***LX-218RA*** units is available as an accessory.

The loudspeakers used in the system feature advanced technologies; new TAF (total air flow) cooling systems, Neodymium magnetic circuits which allow for important weight reductions, titanium diaphragms for the high frequency sections, and low-mid frequency cones manufactured using crossed fibers and elastic suspension that provide exceptional stability in the vertical plane.

The model ***aero 38A*** includes two ***12GNC*** 12" cone transducer with 4" EFW voice coils and Neodymium magnet assemblies in a bass-reflex configuration. Two ***10LMN16***, 10" speakers arranged in a V shape, incorporating 3" EFW voice coils, Neodymium magnet assemblies and TAF cooling system are used for mid-range reproduction. High frequencies are handled by one ***ND-10*** high frequency compression driver with 4" EFW coil, Neodymium magnet and 1.5" exit coupled to one ***Serpis 38*** plane wave guide. The ***Serpis 38*** plane wave adaptor also serves as a heat sink for the compression driver. The ***LX-218RA*** include two ***18LX*** 18" cone transducers long excursion loudspeakers with enhanced performance and optimized design.

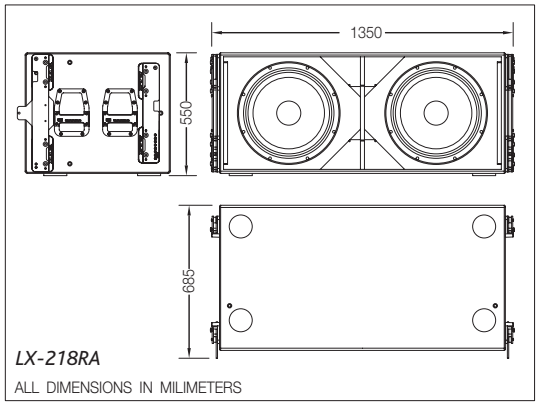
The ***aero 38A*** reproduces frequencies from 60 Hz. To combine the ***aero 38A*** with subwoofer units, the ***LX-218A*** is recommended for ground stacking and the ***LX-218A*** is recommended when subwoofers are to be flown. The ***LX-218*** subwoofers as well as the ***aero 38A***´s include the correct signal treatment and crossover points. Using an external DSP will only be necessary to adjust the delay between the ***aero 38A*** units and the subwoofers used as there were be an overlap of the frequencies between 60 Hz and 80 Hz.

LINE DRAWINGS



aero 38A

ALL DIMENSIONS IN MILIMETERS



LX-218RA

ALL DIMENSIONS IN MILIMETERS

EN

AMPLIFIER DESCRIPTION

aero 38A

Three way self powered system.
Nominal amplifier power: LF:1000W, MF:500W, HF:500W, (RMS, class D).

A) LIMIT:
Amplifier limiter indicator lights. When lit, the level of the signal source should be reduced.

B) SIGNAL:
Signal presence indicator at the amplifier's inputs.

C) ON:
Indicator light for amplifier channels.

D) PROTECTION:
Indicates that the amplifier is under protection mode because damage risk due to short circuit or extreme working temperature.

E) FUSE.

F1) AC INPUT: With PowerCon NAC 3 FCA connector. Only when the connector is inserted and rotated (clicked) into place will the AC turn on. The connector can be used as a switch, rotating the connector to or from the locked position will turn the unit on or off, respectively. Mute the signal feeding the INPUT before turning the unit on or off.

F2) AC OUTPUT: With (white) PowerCon NAC 3 FCB connector. This is used as an AC loop thru so that up to 6 boxes (at 230V) can be power from a single AC line.

G) INPUT: Balanced signal XLR. Pin assignments as follows :
1=GND (ground)
2=(+) Non inverted input
3=(-) Inverted input

H) LOOP THRU: Used for paralleling several units, which will share the same input. The output can also be used to provide signal for an outboard power amplifier.

LX-218A & LX-218RA

Low frequency mono-amplified system.
Nominal amplifier power: 2400W (RMS, class D).

A) INPUT CLIP:
Red LED indicates and excessive input signal, saturation of the DSP and excessive increases in distortion.
B) LOOP THRU :
XLR-type output signal connector for connecting several units together and sending them all the same signal.
C) INPUT :
XLR-type input signal connector, which just like the LOOP THRU connector, is a balanced connector with the following pins:
1=GND (Ground).
2=(+) Non invertided input.
3=(-) Invertided input.
D) CLIP :
Red LED indicates amplifier saturation, in other words, when it reaches Clip.
E) PROTECTION :
Yellow LED indicates that the protection system has been activated. If the problem that activated the protection is resolved, the amplifier will restart. The problems that can activate the protection system are:
-Mains power out of operating range
-Overheating.
-Overload or short-circuit.
-DC voltage present at the loudspeaker output.
F) SIGNAL :
Green LED indicates signal.
G) POWER :
Green LED indicates ON.
H) Heatsink.
Although the heatsink does not reach high temperatures (during normal use), the heatsink should not be covered or obstructed in any way and it should not be touched.
I) AC INPUT :
Neutrik model PowerCon 'NCA3' connector for connection to the mains supply. This only connects when it is turned and locked and is equipped with a securing tab.

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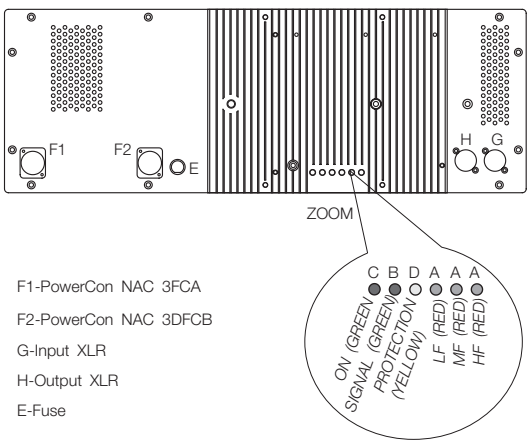
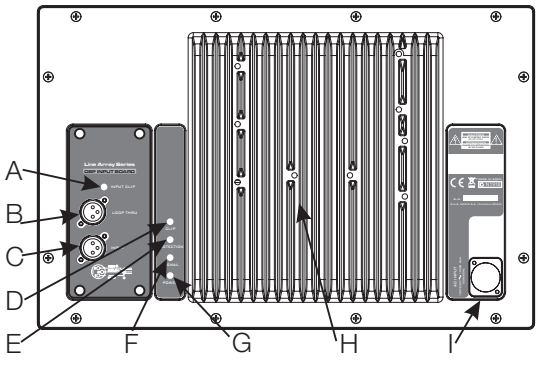




Preliminary

This product should only be used in E1, E2, E3 or E4(*) environments, in accordance with standard EN55103-2 (Electromagnetic compatibility. Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 2: Immunity.)

Do not cover the amplifier's radiator nor obstruct its ventilation (except for the rain protector supplied by DAS).

For consumption reasons, it is important not to connect the equipment to the same line as the lighting systems, thus avoiding interruptions or sudden drops in lighting intensity.

ON / OFF

A sound system should be switched on sequentially. Switch on the self-powered units last in your sound system (switch on the subwoofer before the mid-high system). Switch on the sund sources such as CD players or turntables, then the mixer, then the processors, and finally the self-powered unit. If you have several units, it is recommended that you switch them on sequentially one at a time.

Follow the inverse order when switching off, turning self-powered units off before any other element in the sound system.

Disconnect the device by removing the mains connector from the mains socket. The mains connector and mains socket must always be freely accessible and never covered or blocked in any way. The mains cable can be detached from the device by disconnecting the Neutrik PowerCon connector. Pull the metal lock back, turn the Neutrik PowerCon counter clockwise to stop and pull the Neutrik PowerCon connector out. Always disconnect the device by removing the mains connector from the mains socket before detaching the mains cable at the Neutrik PowerCon connector.

IMPORTANT: Do not disconnect the Neutrik PowerCon connector during music.

Ensure that the device is disconnected from mains by observing that the lamp marked POWER is turned off. Please note that the POWER lamp can stay on for several seconds after the mains power has been disconnected.

Overload indicators

This device has two indicators (red leds), one for overload input signal and other for the amplifier's clip.

The indicators should not be lit continuously. This distorts the signal (quickly fatiguing your ears) and may damage the speakers. Therefore, it is recommended that you never work with this leds on; at most they should blink only occasionally.

Overheating

This equipment does not normally overheat during normal conditions of use. When overheating occurs, the unit protects itself and the yellow LED 'Protection' lights up. You should then find out why and if necessary contact an authorised dealer for Technical Assistance.

Normally it is enough just to let the unit cool down after you have corrected the problem so that the system functions properly again.

Equalisation

The units does not need extreme settings of equalisation to produce quality sound. Avoid high levels of gain on the equalisers. Gain values above +3 dB on a console's EQ are not recommended.

Low mains voltage

If mains voltage falls below the shutdown voltage for the unit, it will stop playing (the yellow led is on: Protection activated). When acceptable levels are regained, the unit will switch back on automatically (the yellow led is off: Protection deactivated).

In the case of the *aero 38A*, the maximum voltage is 264 Vrms and the shutdown voltage is 156 Vrms (divide by 2 for 115V).

In the case of the *LX-218A* and *LX-218RA*, the mains supply input can assess the network's voltage level and thus makes the system work in two possible voltage ranges: From 85 Vrms to 130 Vrms; and from 170 Vrms to 260 Vrms.

Therefore, in a country with a nominal mains supply voltage of 120 Vrms, the unit will disconnect when the voltage in the socket goes below 85V or above 130V (both Vrms). Likewise, in a country with a nominal mains supply voltage of 230 Vrms, the unit will disconnect itself when the voltage at the plug goes below 170V or above 260V (both Vrms).

The current draw for 230 V can be seen on the accompanying table. Double the ratings to get the 115V current consumption.

(*)Note

E1.- Residential.
E2.- Commercial and light industrial.
E3.- Urban outdoors.
E4.- Controlled EMC environment and the rural outdoors environment.

EN

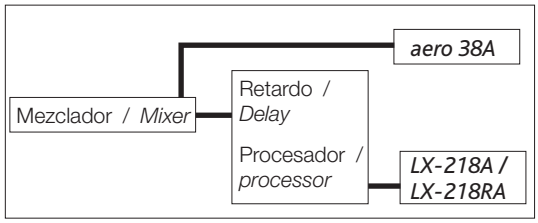
Current consumption: AC input =230 Vrms

aero 38A	Pink Noise	Sinusoidal
Max. Power	2.5A	8A
1/3 Power	---	3.2A
1/8 Power	---	1.6A
Idle	0.25A	0.25A
LX-218A & *LX-218RA*		
Max. Power	8A	10.8A
1/3 Power	5.2A	---
1/8 Power	2.4A	---
Idle	0.6A	---

Conexiones

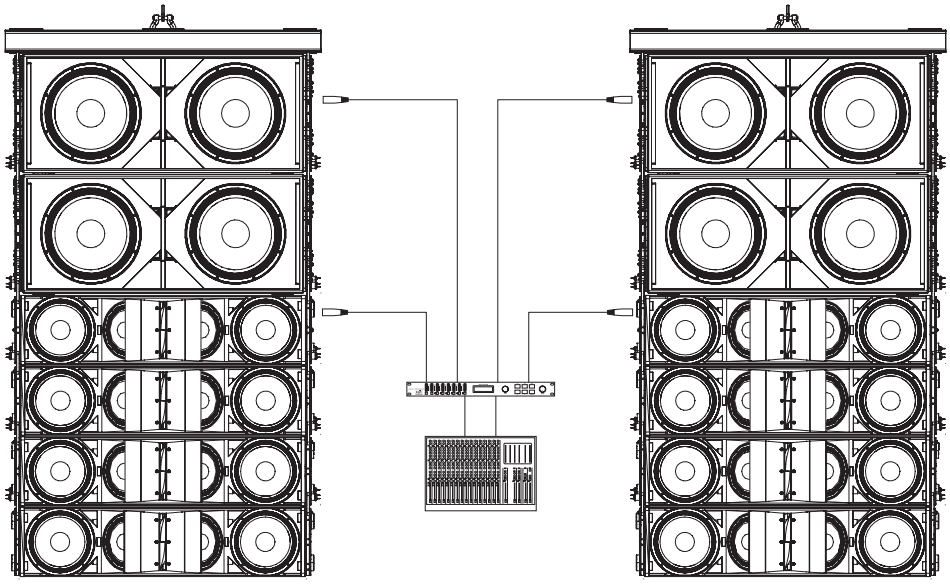
The *aero 38A* can be used full-range. Full-range use is only recommended for applications where low SPL level and no bass reinforcement is adequate. To use it in this mode simply plug the mixer into the enclosure's input.

The most common use will be combined with the *LX-218A* or *LX-218RA*. In this case different outputs of the mixing console will be used with the *aero 38A* and the SUBs. Both sub systems, *LX-218A* and *LX-218RA* include signal treatment in the amplifiers extending their frequency range up to 85Hz. As well, the amplifier of the *aero 38A* incorporates signal treatment which provides frequency range extension down to 60Hz. Due to this overlap between 60-85Hz the use of an **external delay** to control and adjust the phase of the subs is recommended (with a digital processor, for example).



The LOOP THRU connector is an output XLR in parallel with the input connector and is useful for daisy chaining the input signal to a number of boxes, connecting them in parallel.

The number of units that can be linked this way depends on the output impedance of the equipment driving the enclosure, such as the mixer or processor. Typically, to avoid signal degradation, the maximum number that can be daisy chained is given by the formula Zc>10Zs, where Zc is the load impedance and Zs is the output impedance of the equipment driving the enclosure (mixer, console, etc). For instance, a mixing console with 100 ohm output impedance allows daisy chaining 20 boxes, when the input impedance of the cabinets is 20K ohm.



As can be seen in the diagram, independent signal lines exist for the subwoofer units, *LX-218RA*. The signal that goes to the subs is processed by means of a DSP to adjust the delay between both systems.

EN

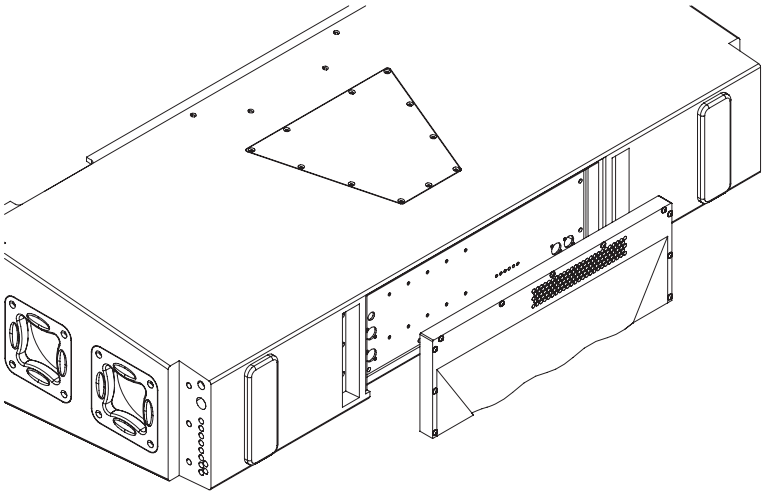
Rain protector

Electronic devices can be damaged when exposed to water or moisture. ***aero 38A***, ***LX-218A*** and ***LX-218RA*** amplifiers must be protected when installed outdoors. A rain protector is supplied with each ***aero 38A***, ***LX-218A*** and ***LX-218RA*** unit.

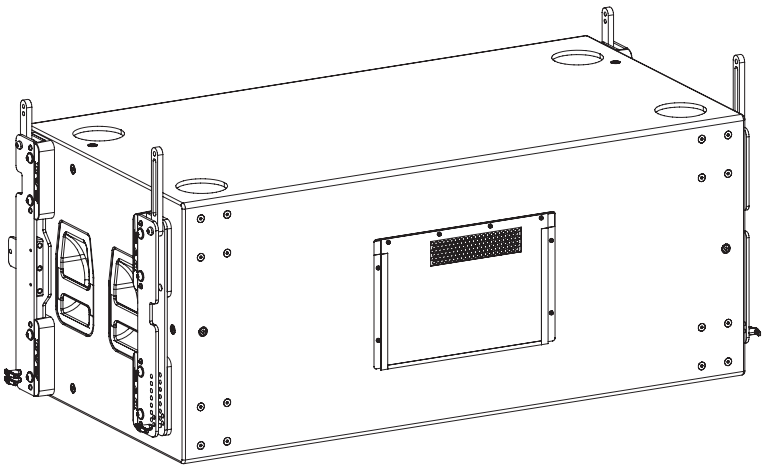
The rain protector is specially designed to withstand soft rain and other meteorological conditions for short periods of time. In the case of heavy rains, storms or permanent outdoors installations the sound system must be protected with additional elements.

The rain protectors supplied with each unit have been manufactured with fireproof materials.

The ***aero 38A***'s rain protector features several small holes on the top side to allow convection cooling of the amplifier.



aero 38A rain protector.



LX-218RA or ***LX-218A*** rain protector.

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Troubleshooting

PROBLEM	CAUSE	SOLUTION
No sound from the unit. The SIGNAL presence LED indicator(s) do(es) not light up.	1 – The signal source is sending no signal. 2 – Defective cable.	1 – Check that the mixer or sound source is sending signal to the UNIT. 2 – Check that the cable from the sound source to the UNIT is connected correctly. Replace the cable if defective.
Full power cannot be obtained. The overload LED indicator(s) never light(s) up.	The signal source does not have a hot enough output.	If using a mixer, use the balanced output if available. Use a professional mixer with a hotter output.
Sound is distorted. The overload LED indicator(s) is/are not on, or only light up occasionally.	The mixer or signal source is distorting.	Turn mixer channel gains down. Check that none of your signal sources are distorting.
Sound is distorted and very loud. One or more overload LED indicators light up.	The system is overloaded and has reached maximum power.	Turn down the mixer's output.
Hum or buzz when a mixer is connected to the unit.	1.– The console probably has un-balanced outputs. You may be using an incorrect un-balanced to balanced cable. 2.– The mixer and the powered speaker are not plugged into the same mains outlet. 3.– The audio signal cable is too long or too close to an AC cable	1.– Read the appendix of this manual to make a correct un-balanced to balanced cable. 2.– Connect the mixer and the unit to the same mains outlet. 3.– Use a cable that is as short as possible and/or move the audio signal cable away from mains cables.
Hum or buzz when using lighting controls in the same building.	1.– The audio signal cable is too long or too close to the lighting cable. 2.– On a sound system with three-phase AC, the lighting equipment and the UNIT are connected to the same phase.	1.– Move the audio signal cable away from lighting cables. Try to find out at what point the noise is leaking into the system. 2.– Connect the sound system to a different phase than the lights. You may need the help of an electrician.
The power on LED indicator(s) do(es) not light up when the power connector is rotated and locked at the ON (LOCK) position.	1.– Bad or loose AC connection to the UNIT or the mains outlet. 2 – Faulty AC cable. 3 – Blown Fuse.	1.– Check you connections. 2.– Check the cables, connectors and AC power with a suitable mains tester. 3.- Take the unit to a service centre for replace the blown fuse.
No sound from the unit. The Protection LED indicator is on.	1.- Mains voltage very low or very high. 2.- Overheating. 3.- Overload or short-circuit. 4.- DC at amplifier's output.	1.- Check mains voltage with a suitable mains tester. 2.- Check input signal because the level or the EQ are very high. 3.- Take the unit to a service centre. 4.- Take the unit to a service centre.

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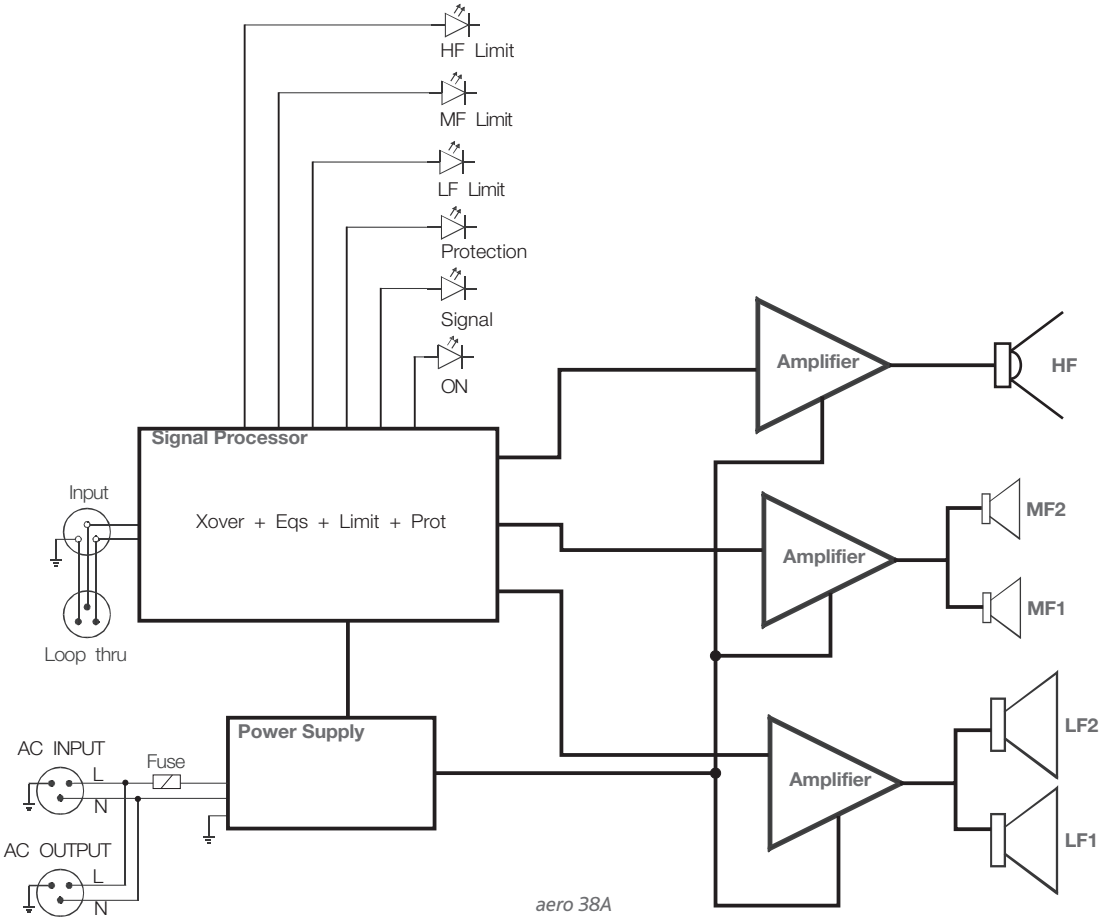
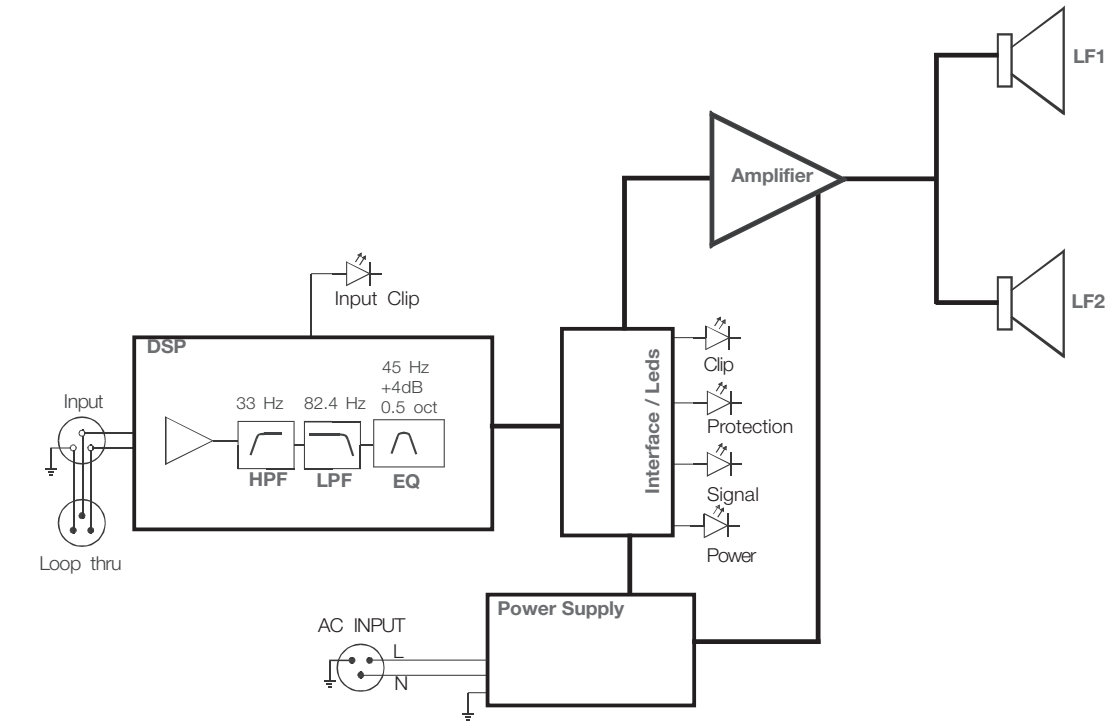
BLOCK DIAGRAMS



aero 38A



LX-218 & LX-218RA

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RIGGING SYSTEM

Warning

This manual contains needed information for flying D.A.S. Audio line array systems, description of the elements and safety precautions. To perform any operations related to flying the system, read the present document first, and act on the warnings and advice given. The goal is to the allow the user to become familiar with the mechanical elements required to fly the acoustic system, as well as the safety measures to be taken during set-up and teardown.

Only experienced installers with adequate knowledge of the equipment and local safety regulations should fly speaker boxes. It is the user's responsibility to ensure that the systems to be flown (including flying accessories) comply with state and local regulations.

The working load limits in this manual are the results of tests by independent laboratories. It is the user's responsibility to stay within safe limits. It is the user's responsibility to follow and comply with safety factors, resistance values, periodical supervisions and warnings given in this manual. Product improvement by means of research and development is on going at D.A.S. Specifications are subject to change without notice.

To this date, there is no international standard regarding the flying of acoustic systems. However, it is common practice to apply 5:1 safety factors for enclosures and static elements. For slings and elements exposed to material fatigue due to friction and load variation the following ratios must be met; 5:1 for steel cable slings, 4:1 for steel chain slings and 7:1 polyester slings. Thus, an element with a breaking load limit of 1000 kg may be statically loaded with 200 kg (5:1 safety factor) and dynamically loaded with 142 Kg (7:1 safety factor).

When flying a system, the working load must be lower than the resistance of each individual flying point in the enclosure, as well as each box. Hanging hardware should be regularly inspected and suspect units replaced if in doubt. This is important to avoid injury and absolutely no risks should be taken in this respect. It is highly recommended that you implement an inspection and maintenance program on flying elements, including reports to be filled out by the personnel that will carry out the inspections. Local regulations may exist that, in case of accident, may require you to present evidence of inspection reports and corrective actions after defects were found.

Absolutely no risks should be taken with regards to public safety. When flying enclosures from ceiling support structures, extreme care should be taken to assure the load bearing capabilities of the structures so that the installation is absolutely safe. Do not fly enclosures from unsafe structures. Consult a certified professional if needed. All flying accessories that are not supplied by D.A.S. Audio are the user's responsibility. Use at your own risk.

Description

D.A.S. Audio *aero 38A* and *LX-218RA* line array systems, include 2 rigging structures on each side of the box. Manufactured from zinc plated steel they are painted black and are affixed to an internal plate with special crop resistant screws. Two special stainless steel guides are assembled to each of the structures: G1A48 (front guide) and G2A48 (back guide), allow for stacking or flying of boxes. Splay angles can be changed from 0º to 3.2º in 0.8º increments and from 3.2º to 9.6º in 1.6º increments. To lock both guides, six (6) quick release safety pins (supplied) must be used.

The G1A48 front guide provides a solid connection to the box and whatever is on top of it, while the G2A48 rear guide determines the vertical splay angle (whether stacked or flown), as a function of the hole where the pin gets inserted.

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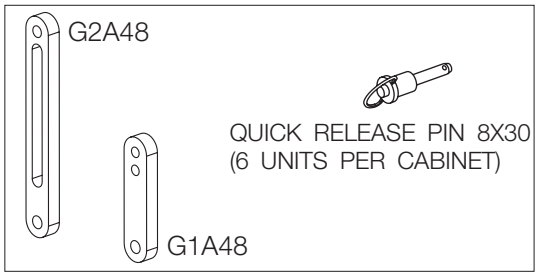
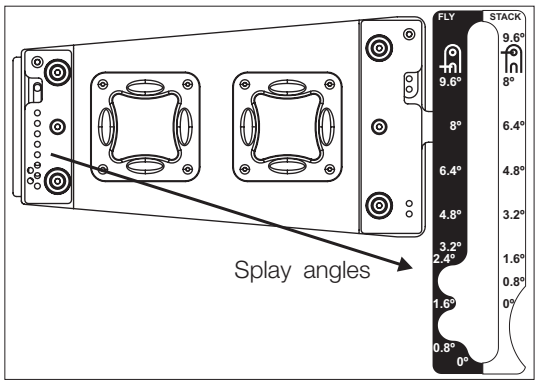
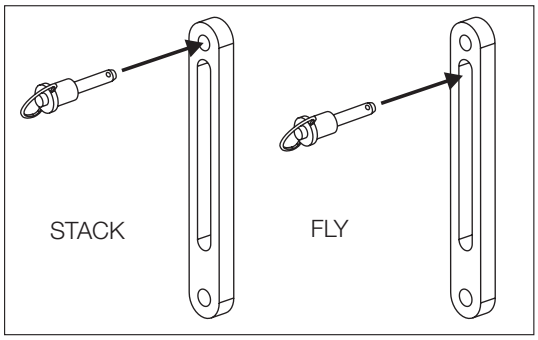


To aid the setting of the G2A48 guide in the corresponding hole in the top box, each hole is labeled with an associated angle, both for stacked and flown applications. To fit the guides into the holes, highly resistant 8 mm quick release pins with a ball safety lock are used.



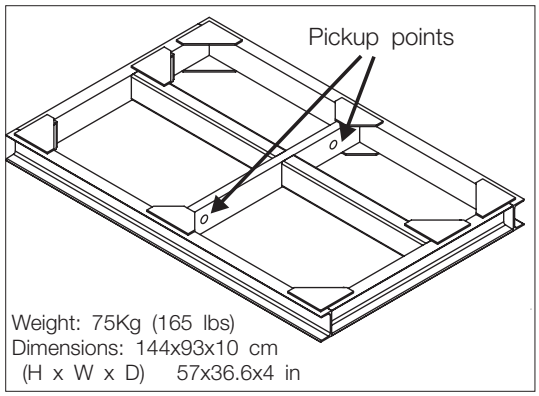
For flying boxes and defining the splay angle, the pins must be inserted in the slot of guide 2, G2A48, whereas for stacking (stacked), the pin goes through the top hole of the guide:



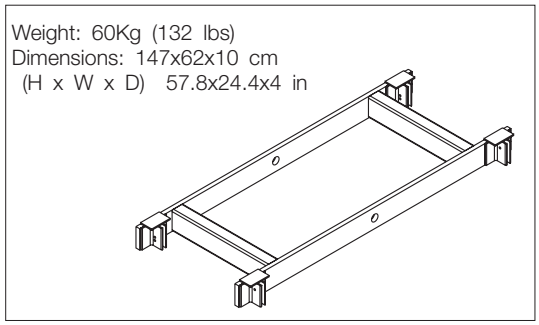
All of the elements needed to rig or stack the systems are integral to the enclosure (G1A48, G2A48 and the quick release safety pins). The additional items needed are the ***AX-AERO48*** or ***AX-AERO38*** flying grids (bumper bars), chains and hoists, the ***PL-38*** or ***PL-48S*** dolly platforms and the ***AX-COMBO*** flying grid.

A) ***AX-AERO48*** Y ***AX-AERO38***

The ***AX-AERO48*** grid is made from 100 x 50 x 6mm steel beams and is designed to handle great loads. It features a center reinforcement bar that is also used for the lifting slings. The force of both the rear and the front chain hoist will determine the tilt angle of the whole array. The structure will be attached to the first enclosure of the array by means of the guides G1A48, G2A48, and six quick release safety pins.



The ***AX-AERO38*** grid is lighter than the other one, and it is recommended to be used to fly a maximum of 8 units ***aero 38A*** or 6 units ***LX-218RA***.



B) Chain hoist

All units in a column will be flown from the ***AX-AERO48*** (***AX-AERO38***) flying grid (bumper bar), which should be used with two hoists, one located in the front and the other in the rear. Each hoist should have a minimum of 1 Ton load capacity when flying up 8 units and a 2 Ton load capacity when flying 9 to 16 units.

Load capacity per hoist
(safety factor 10:1)

		AX-AERO48			*AX-AERO38*
LX-218RA	1-->8 units	**>1000Kg**	*LX-218RA*	1-->6 units	**>750Kg**
	9-->16 units	**>2000Kg**			
aero 38A	1-->10 units	**>750Kg**	*aero 38A*	1-->8 units	**>750Kg**
	11-->20 units	**>1500Kg**			

For example, if 12 units ***LX-218RA***, are going to be flown from the ***AX-AERO48***, each hoist to be used should have a load capacity of 2 ton.

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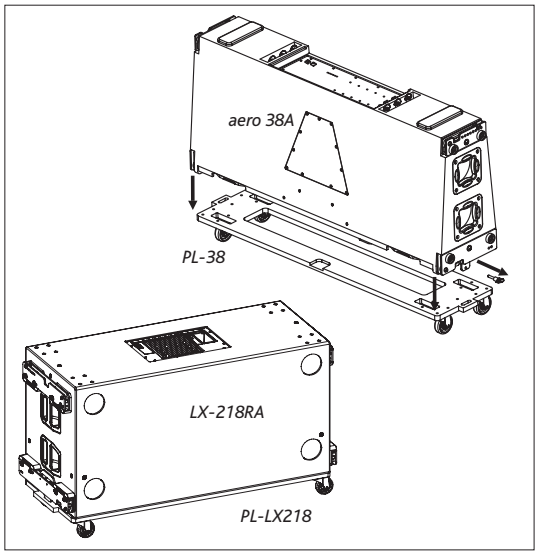
C) Platforms *PL-38* and *PL-LX218*

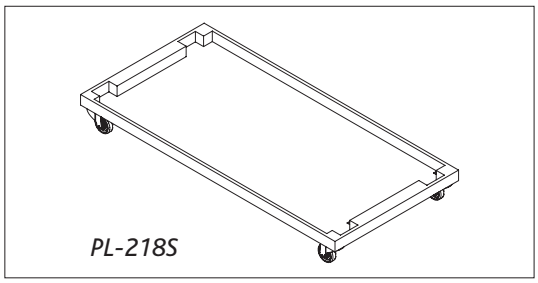
The *PL-38* dolly panels facilitate transport of the *aero 38A* systems. They can also be used to facilitate flying the systems. Each cover is attached to the enclosure by using the flying hardware attached to each box and is fixed with the quick release safety pins. The *LX-218RA* systems also include one *PL-LX218* dolly panel per cabinet.

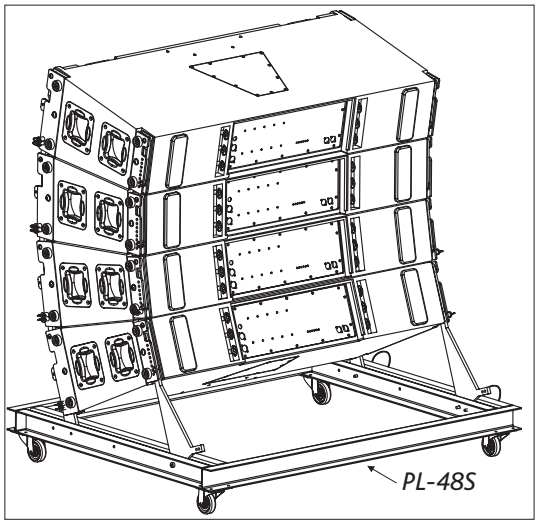


D) *PL-48S* and *PL-218S*

The *PL-48S* platform is a valuable accesory which allows up to 4 *aero 38A* units to be transported in a stacked position, ready to be flown. The *PL-48S* is made from steel and has 4 heavy duty casters with locking brakes.

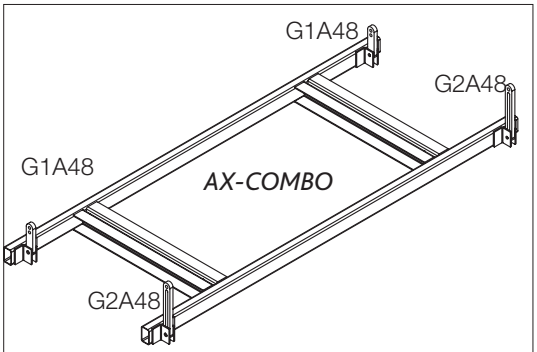
Also, the *PL-218S* is the platform indicated for *LX-218RA*.



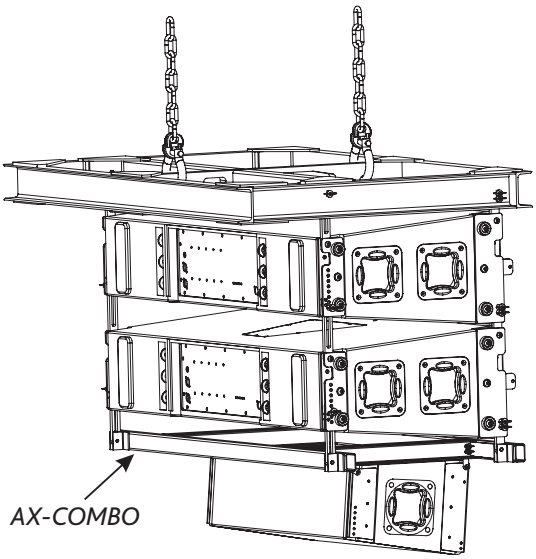


E) *AX-COMBO*

The *AX-COMBO* is a rigging adapter to be used when *aero 28* units are needed to be flown under *aero 38A* units as dowfill systems. Maximum 6 *CA-28A* units and 8 *CA-28B* units can be flown from this rigging grid. The *AX-COMBO* includes front and rear steel guides which permit variation of the angle between it and the last *aero 38A* cabinet in the cluster. Angles vary from 0.0º to 9.6º.



Weight: 16.5Kg (36.3 lbs)
Dimensions: 143x60x5cm (56.3x23.6x2in)



The *AX-COMBO* is joined to the last *aero 38A* cabinet using G1A48 and G2A48 included steel guides and 6 quick release pins. The angle depends on the hole of the rigging structures where the pins are inserted, through the slots of G2A48. The first *aero 28* unit is joined to the *AX-COMBO* using its G1A and G2A included cam links.

On the next page is a table with the angles between both systems depending on the hole where the quick release pin is being inserted.

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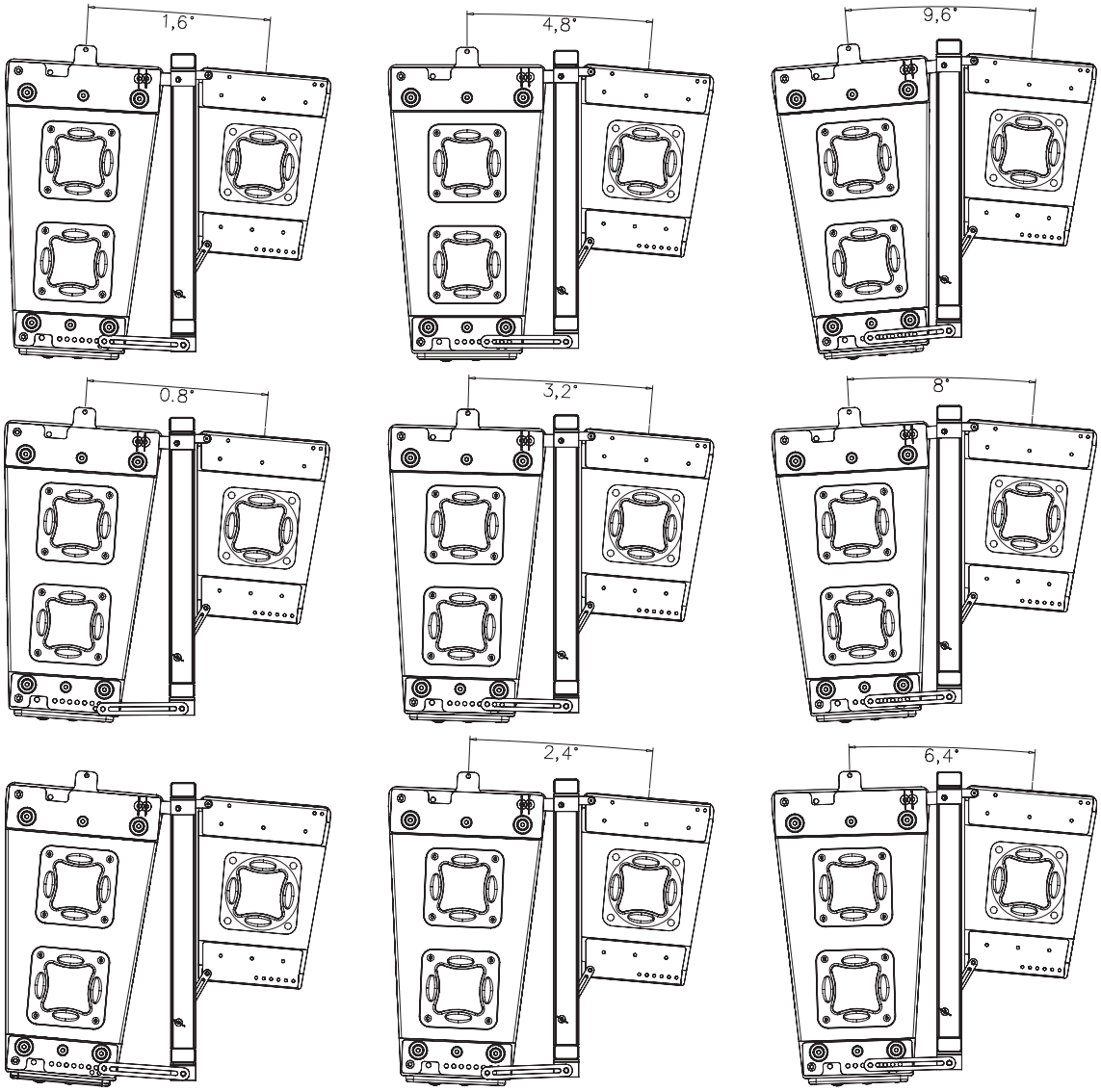
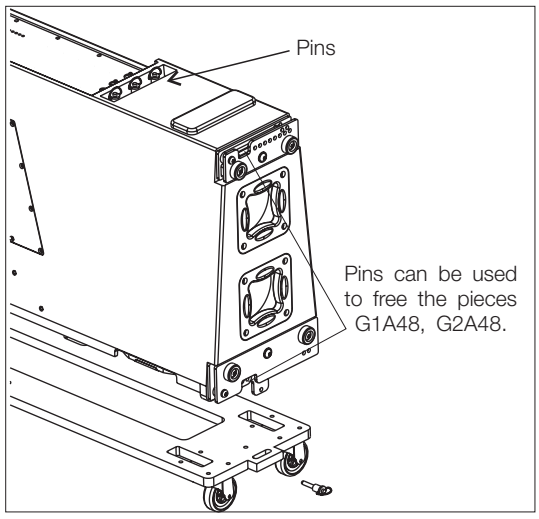


Splay angles using the *AX-COMBO***.**

F) Quick release pins

Each cabinet includes 6 steel heavy duty quick release pins stored on the rear panel of the cabinets.

Both systems ***aero 38A***, and ***LX-218RA*** can be flown using steel structures located on boths sides of the cabinets. NEVER REPLACE QUICK RELEASE PINS WITH SCREWS OR OTHER ELEMENTS !!!



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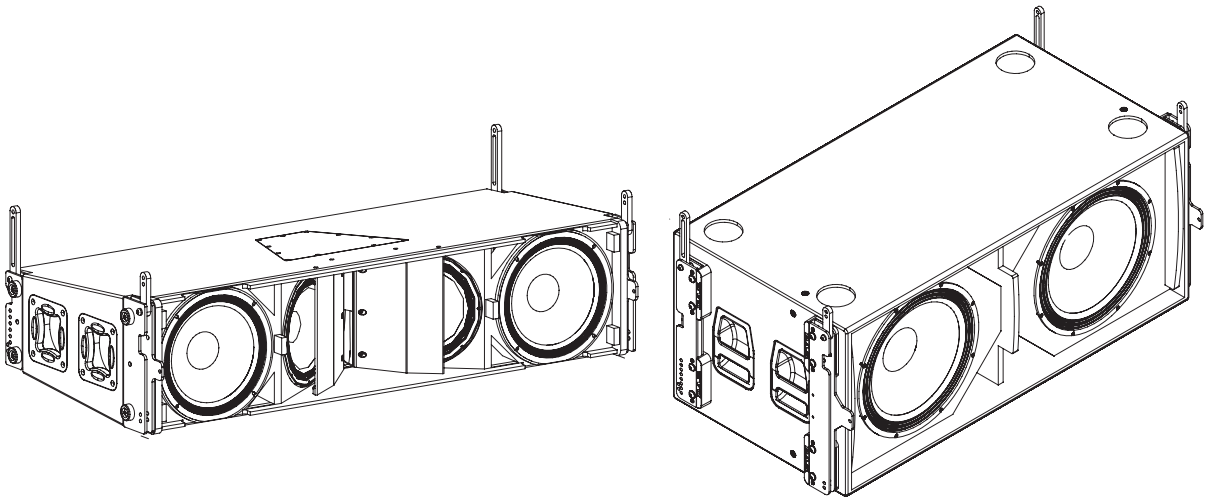
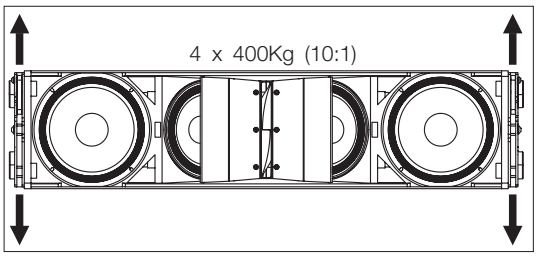


Rigging systems for *aero 38A* **and** *LX-218RA***.**

Safety factors

The safety factor is defined as the coefficient between the breaking load limit and the maximum safe working load limit (SWLL). In this case, the breaking load limit of each of the flying points is 4,000 kg (8,820 lbs) as determined by destructive testing in independent laboratories. With a 10:1 safety factor, a total amount of 1,600 kg (3,527 lbs) can be flown from the 4 flying points. Each flying point has a capacity of 400 kg (882 lbs) with a 10:1 safety factor.



Each of the flying point have a load of 400Kg (882lbs) with a 10:1 safety factor.

The maximum number of ***aero 38A*** units that can be suspended from the ***AX-AERO48*** flying grid is 20 (with 10:1 safety factor). The maximum number of ***LX-218RA*** units that can be suspended from the ***AX-AERO48*** flying grid is 16 (10:1). The maximum limits established by the manufacturer should never be exceeded.

The use of two hoists with a load capacity as expressed on the previous page is mandatory. It should be kept in mind that at certain moments, the complete load may be supported by only one of the hoists. This is why the load capacity of the individual hoist must be superior to the weight of the array column.

NOTE: The rigging systems of the ***aero 38***, ***aero 38A*** and the ***aero 48*** are compatible. Some accessories (***AX-AERO38***, ***AX-AERO48***) can be used by both systems.

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SPECIFICATIONS

MODEL	*aero 38A*	*LX-218A*	*LX-218RA*
Nominal LF Amplifier Power	1000 W	2400 W	2400 W
Nominal MF Amplifier Power	500 W		
Nominal HF Amplifier Power	500 W		
Input Type	Balanced	Balanced	Balanced
Input Impedance	20 kohms	20 kohms	20 kohms
Sensitivity	Line: 1.95 V (+8 dBu)	Line: 1.95 V (+8 dBu)	Line: 1.95 V (+8 dBu)
Frequency Range (-10 dB)	60 Hz-18 kHz	28 Hz - 100 Hz	28 Hz - 100 Hz
Rated Maximum Peak SPL at 1 m(1)	137 dB	142 dB	142 dB
Coverage Angles(H)	90º Nominal		
(V)	Splay Angle Dependent		
Enclosure Material	Plywood	Plywood	Plywood
Enclosure Geometry	Trapezoidal 5º	Rectangular	Rectangular
Color/Finish	Black Paint	Black Paint	Black Paint
Rigging System	Integrated in box design	Ground Stackable	Integrated in box design
Transducers/Replacement Parts	LF: 2 x *12GNC / GM 12G* MF: 2 x *10LMN16 / GM 10LMN16* HF: 1 x *ND-10 / GM K-8H*	2 x *18LX / GM 18LX*	2 x *18LX / GM 18LX*
Connectors	INPUT: Female XLR LOOP THRU: Male XLR AC INPUT: PowerCon AC OUTPUT: PowerCon	INPUT: Female XLR LOOP THRU: Male XLR AC INPUT: PowerCon AC OUTPUT: PowerCon	INPUT: Female XLR LOOP THRU: Male XLR AC INPUT: PowerCon AC OUTPUT: PowerCon
AC Power Requirements	115 V, 50 Hz/60 Hz 230 V, 50 Hz/60 Hz	Universal Mains, 85 – 230 V (dual voltage)	Universal Mains, 85 – 230 V (dual voltage)
Dimensions (H x W x D)	31.6 x 138 x 60 cm 12.4 x 55 x 23.6 in	55 x 128 x 65 cm 22 x 51 x 26 in	55 x 135 x 69 cm 22 x 54 x 28 in
Weight	80 kg (176 lb)	73.5 kg (161.7 lb)	87.5 kg (192.5 lb)
Accessories	*AX-AERO38* Rigging Grid *AX-AERO48* Rigging Grid *AX-Combo* Rigging Adapter *PL-38* Dolly Panel (included) *PL-38S* Steel Dolly *PL-48S* Steel Dolly	*AX-AERO38* Bumper *AX-AERO48* Bumper *KITR-LX218* Rigging Hardware Kit *KITW-100* Caster Kit *PL-LX218* Dolly Panel *PL-218S* Flat Bed Dolly	*AX-AERO38* Bumper *AX-AERO48* Bumper *KITW-100* Caster Kit *PL-LX218* Dolly Panel (included) *PL-218S* Flat Bed Dolly

Notes: 1. Maximum calculated Peak SPL based on sensitivity and RMS amplifier power.

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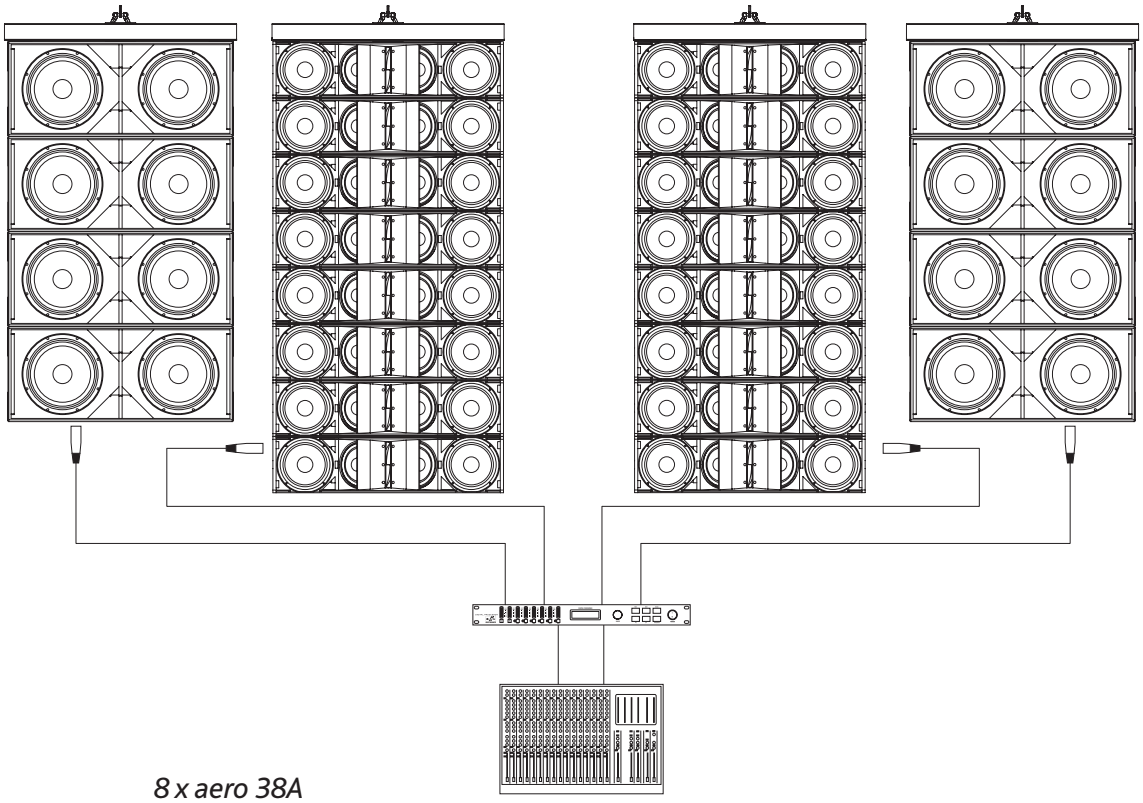
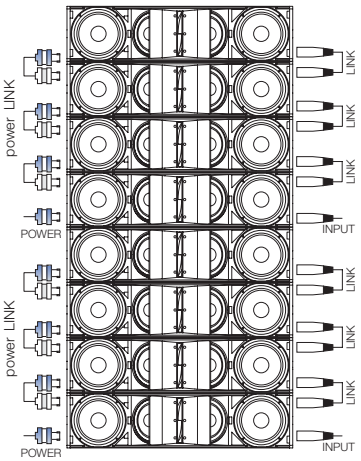
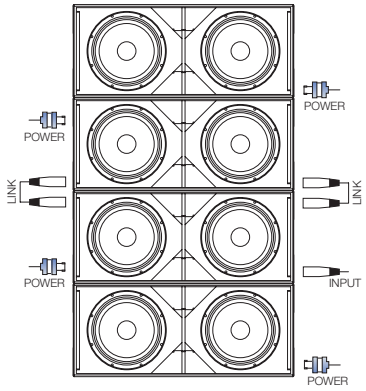
CONFIGURATION 1



8 x aero 38A



4 x LX-218RA



In the above diagram, there are independent sends for the ***aero 38A*** and the ***LX-218RA*** units. The signal is sent from the mixer to the systems through a DSP to control the "delay" of the subwoofer systems. This is the basic set-up for the ***aero 38A*** with ***LX-218RA*** (flown+flown).

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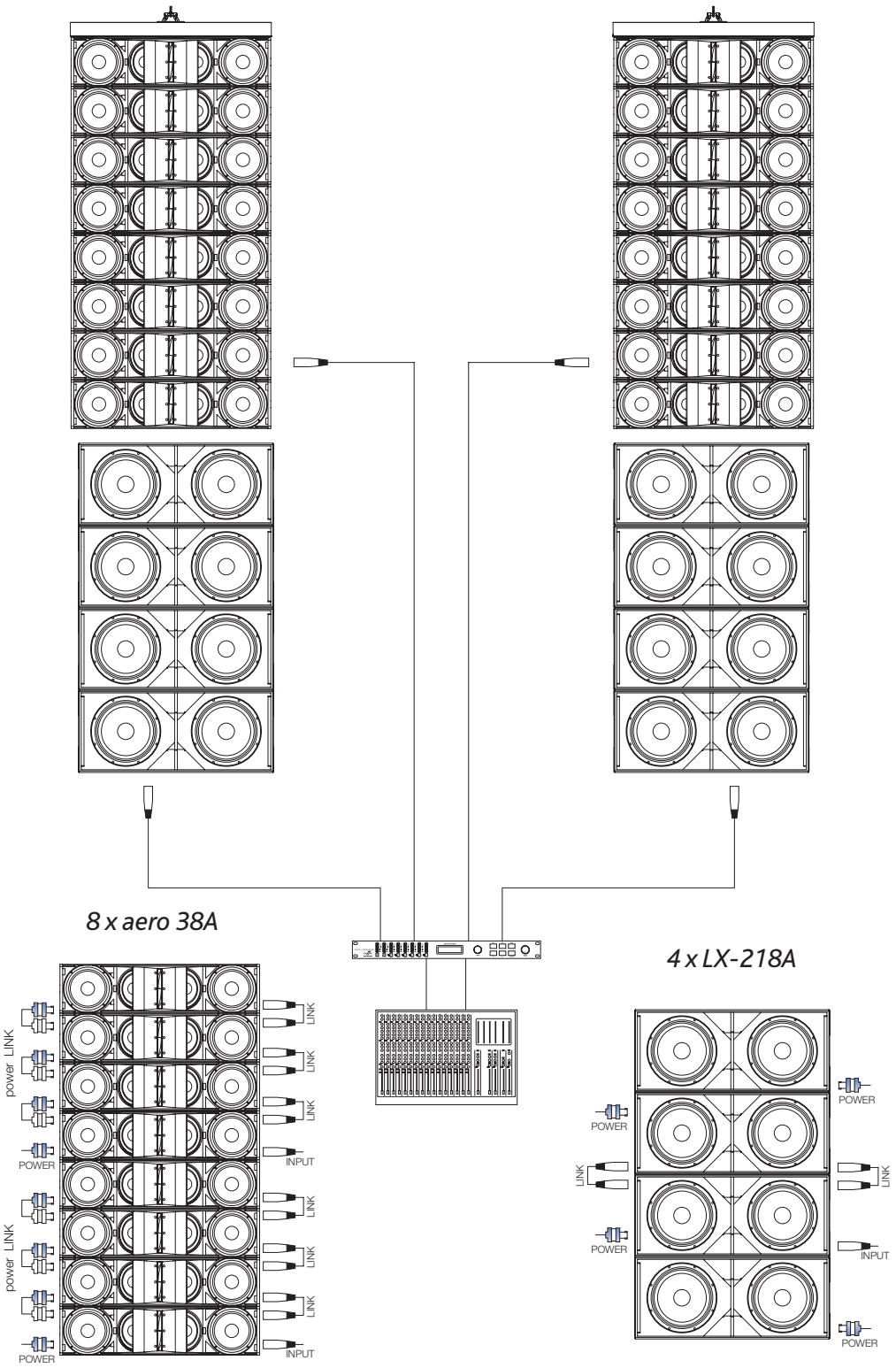
CONFIGURATION 2



In the above diagram, there are independent sends for the ***aero 38A*** and the ***LX-218RA*** units. The signal is sent fromt the mixer to the systems through a DSP to control the "delay" of the subwoofer systems. This is the basic set-up for the ***aero 38A*** with ***LX-218A*** (flown+stacked).

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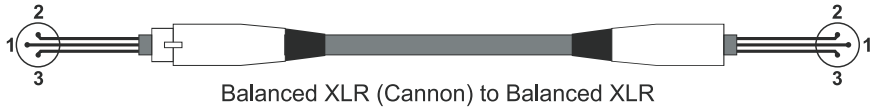
APPENDIX: Line connections: unbalanced and balanced

There are two basic ways to transport an audio signal with microphone or line level:

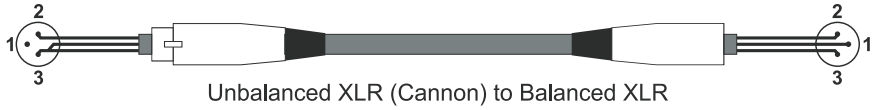
Unbalanced line: Utilising a two conductor cable, it transports the signal as the voltage between them. Electromagnetic interference can get added to the signal as undesired noise. Connectors that carry unbalanced signals have two pins, such as RCA (Phono) and ¼" (6.35mm, often referred to as jack) mono. 3 pin connector such as XLR (Cannon) may also carry unbalanced signals if one of the pins is unused.

Balanced line: Utilising a three conductor cable, one of them acts as a shield against electromagnetic noise and is the ground conductor. The other two have the same voltage with respect to the ground conductor but with opposite signs. The noise that cannot be rejected by the shield affects both signal conductors in the same way. At the device's input the two signals get summed with opposite sign, so that noise is cancelled out while the programme signal doubles in level. Most professional audio devices use balanced inputs and outputs. Connectors that can carry balanced signal have three pins, such as XLR (Cannon) and ¼" (6.35mm) stereo.

The graphs that follow show the recommended connection with different types of connectors to balanced processor or amplifier inputs. The connectors on the left-hand side come from a signal source, and the ones on the right hand side go to the inputs of the processor or amplifier. Note that on the unbalanced connectors on the left-hand side, two terminals are joined in side the connector. If hum occurs with balanced to balanced connections, try disconnecting the sleeve (ground) on the input connector. Note that the illustrations show what should be connected to what, but that pin locations on an actual XLR connector are different. Also, pin 2 hot is assumed on XLR connectors.



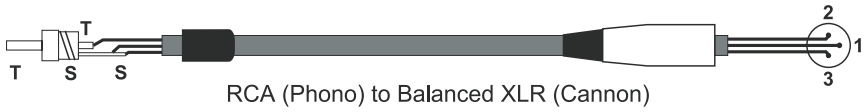
Balanced XLR (Cannon) to Balanced XLR



Unbalanced XLR (Cannon) to Balanced XLR

Balanced 1/4" (*Jack*) to Balanced XLR (Cannon)

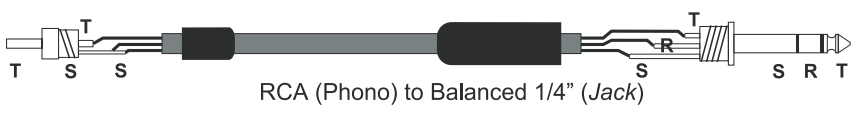
Unbalanced 1/4" Jack to Balanced XLR (Cannon)



RCA (Phono) to Balanced XLR (Cannon)

Balanced 1/4" (*Jack*) to Balanced 1/4" (*Jack*)

Unbalanced 1/4" (*Jack*) to Balanced 1/4" (*Jack*)



RCA (Phono) to Balanced 1/4" (*Jack*)

EN

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