

User Manual

Galeo S / Galeo S Sub



Version 1.3

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S E E B U R G
a c o u s t i c l i n e

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2 Foreword

The Galeo S is a premium class 2x 6.5"/ 1x 1.4" line array top unit with an integrated passive crossover and a power handling capacity of 400 Watt (AES) and 1200 Watt (peak). The Galeo S is available in the 100° and in the 70° version. Replacing the AMR-Panels ® that define the horizontal coverage of the line array unit can be done easily by the customer himself. It's absolutely necessary to operate the Galeo S with the dedicated controller setup that fits for both versions (70°/100°). Up to 8 units Galeo S units can be driven by an amplifier channel that's stable down to a 2 Ohm load. The Galeo S is angled in 1° steps over a range of 0° to 16°.

The Galeo S Sub is a compact sized 1x 15" subwoofer with a power handling capacity of 1000 Watt (AES) and 3000 W (Peak). It features integrated flying hardware and two M20 threaded sockets for mounting speaker poles.

Keep this manual in a safe place so that it is quickly available if there are any questions. Provide the user (e.g. Stage Hand) with a copy or the digital version of it. You can find the current version in the download area of our website at www.seeburg.net/downloads in the section "User Manuals".

In case of reselling the concerned products please advice this manual to the new customer.

If you would like further information about SEEBURG acoustic line products, or have any comments or suggestions regarding this handbook or the product, you can contact us here:

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3 Safety instructions



Acoustic

Even a low input level can result in a sound pressure level at the loudspeaker which can be damaging to your hearing. Do not remain in close proximity to the loudspeaker when it is being operated. Use hearing protection. Observe all relevant Health and Safety and Environmental Protection regulations.



Mechanical

Movable parts and falling objects during installation and de-rigging can cause serious injury. Observe at all times all relevant Health and Safety regulations and regulations on the installation and operation of PA systems.



Magnetic und electrical

Loudspeakers generate a magnetic field even without a source of power connected. This can damage or destroy magnetic storage devices. The PowerCon loop-through connector is under power when the device is in operation. Observe all relevant safety regulations at all times.



General safety precautions

Make sure that every user of the products concerned has read and understood this manual completely. The installation and de-rigging of this equipment should only be carried out by appropriately qualified and experienced personnel, and according to all relevant safety regulations.

Please note that all of the mentioned regulations apply primarily to Germany. If you work in other countries, inform yourself about the regulations that apply there and work according to them. These can deviate from the German regulations!

Do not operate a loudspeaker box if you have safety concerns or if the loudspeaker box malfunctions. The device does not feature any parts that can be repaired by the user, contact your dealer or quali-

fied specialists for repairs.

Do not expose the loudspeaker to rain, and avoid operating in environments below -5°C or above 40°C . Be aware of the possibility of condensation forming inside the housing due to rapid changes in temperature. Allow the loudspeaker to adjust to ambient temperature before operation.

To prevent overheating, do not operate the loudspeaker in the direct vicinity of strong heat sources, and avoid direct sunlight. After long periods of operation, the loudspeaker, particularly metallic components such as the pole mount and the connector panel, can reach temperatures exceeding 40°C .

The components of the rigging system described here (Flying Frame, ball-lock pins, load adapter) are only to be used with SEEBURG Galeo S and Galeo S Sub systems in the manner described here (specified normal use)!

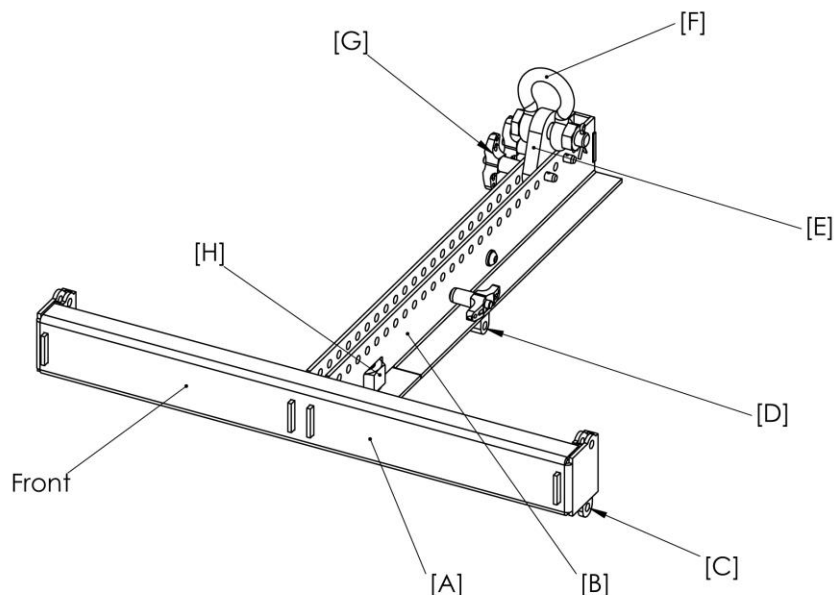
Make sure that the limit loads specified in this manual are not exceeded and also that the suspension points are intended for the purpose and are sufficiently load-bearing!

Observe all relevant regulations for accident prevention. Make sure that suitable protective equipment (gloves, shoes, helmet) is worn during installation and de-rigging!

While moving the loads with chain and / or rope hoists, nobody is allowed to be in the danger zone below the array! A speaker array is not a ladder: climbing on it is prohibited!

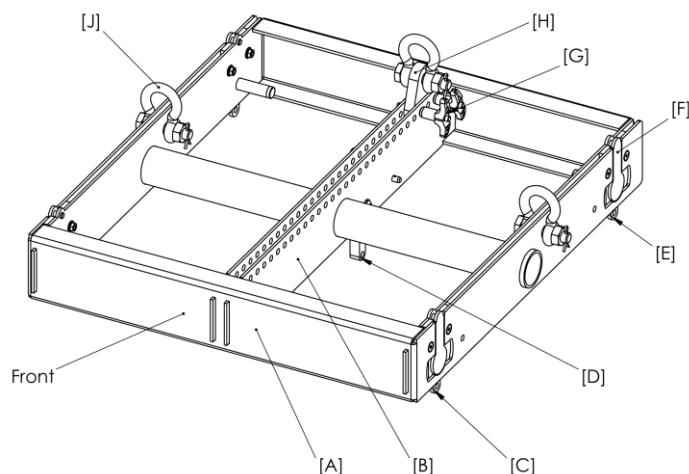
4 Components of the system

4.1 Galeo S Flying Cradle



Position	Name	Description
A	Galeo S Flying Cradle (Art. 01312)	For up to 20 flown Galeo S; For up to four stacked Galeo S on the ground or on top of Galeo S Sub; For up to four Galeo S on a Wind-Up or a speaker pole on top of a SEEBURG subwoofer
B	Indexed Profile Rails	Perforated profile rails; provides 25 different pinpoint positions to mount the load adapter [E]
C	Front Links	Front link points; The Snap-Fly connectors of the Galeo S unit are locked in here; In stacked application the Galeo S is to be mounted from above and locked with Locking Pins
D	Center Link	Retractable link to connect the uppermost Galeo S unit; Parking position is locked with the spare pin
E	Load Adapter	Symmetrical load adapter which is being mounted between the perforated profile rails [B] by using Locking Pins [G] Alternatively a Clamp Adapter (Art. 01313) can be used
F	1,5 to Shackle	1.5 t shackle for rigging (e.g. for chain or rope hoists)
G	Locking Pins	Three ball-lock pins 6x20 mm with T-handle; For mounting the load adapter [E] respectively for rearward connecting with the first Galeo S unit.
H	M20 Thread	M20 internal thread for mounting a flange with M20 external thread or a TV spigot with M20 external thread

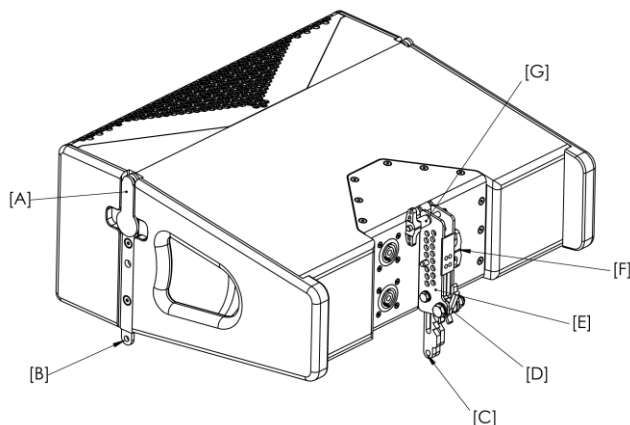
4.2 Galeo S Flying Frame



Position	Name	Description
A	Galeo S Flying Frame (Art. 01310)	For up to 20 flown Galeo S; For up to six stacked Galeo S on the ground or on top of Galeo S Sub; For up to nine flown Galeo S Sub; For the connection between flown respectively stacked Galeo S Sub and Galeo S
B	Indexed Center Rails	Perforated rails; provides 26 different pinpoint positions to mount the load adapter [H]
C	Front Links	Front link points; The Snap-Fly connectors of the Galeo S or Galeo S Sub unit are locked in here
D	Center Link	Retractable link to connect the uppermost Galeo S unit; Parking position is locked with the spare pin
E	Rear Links	Rear link points; The rear Snap-Fly connectors of the Galeo S Sub unit are locked in here
F	Snap-Fly Links	Four locking connecting links to mount the Flying Frame under flown Galeo S Sub respectively for stacking Galeo S on top of Galeo S Sub
G	Locking Pins	Three ball-lock pins 6x20 mm with T-handle; For mounting the load adapter [H] respectively for rearward connecting with the first Galeo S unit
H	Load Adapter	Symmetrical load adapter which is being mounted between the perforated profile rails [B] by using Locking Pins [G] Alternatively a Clamp Adapter (Art. 01313) can be used
J	1,5 t Shackles	1.5 t shackle for rigging (e.g. for chain or rope hoists), two 1.5 t shackles at the outside for mounting a safety rope

4.3 Galeo S (Line Array mid-high unit)

4.3.1 Cabinet



Position	Name	Description
A	Snap-Fly Links	Two locking connecting links to mount the Galeo S unit to the Flying Frame or to the next Galeo S unit above
B	Front Links	Counter piece to the Snap-Fly links [A]; Connected to the Flying Frame from above in stacked application
C	Center Link	For rear connection to the next lower Galeo S unit or for connection to the perforated rail of the Flying Frame in stacked application; Is extended to the maximum length in the transport position and is getting locked to the desired length when in use
D	Auto-Locking Hook	Two hooks that latch alternately in to the Center Link [C] to take the load in a curved array
E	Indexed Center Rails	Perforated rail with 16 holes for the Stop Pin [F] to pre-select the splay angle between 0° and 15° in one degree steps. For a 16° angle, the Stop Pin [F] is not inserted. Additional hole at the top of the rail is for the Link Pin [G]
F	Stop Pin	Stop ball-lock pin 6x20 mm with T-handle; Pin is inserted in the lowest hole of the perforated rail [E] for transport; Is being plugged (without any load on it) in the position of the desired splay angle to the next lower Galeo S unit
G	Link Pin	Link ball-lock pin 6x20 mm with T-handle; Pin is inserted in the uppermost hole of the perforated rail [E]; For connection to the Center Link of the Galeo S unit above respectively to a Flying Frame

4.3.2 AMR-Panels

The coverage of a sound reinforcement system is of primary importance: only a very small part of the audience is exactly on the axis of one loudspeaker array system. Therefore, we placed a lot of value during the development of the Galeo S system on an absolutely symmetrical horizontal coverage over the entire frequency range.

The mid-range speakers are covered by AMR-Panels which also function as the horn for the high-frequency drivers.

Due to the special arrangement, size and shape of the hole, an ideal ratio of sound outlet for the mid-range and horn guidance for the high range is achieved. The Galeo S is delivered as standard with horn elements (Art. 08141/100) that provide uniform horizontal coverage over 100°. By replacing the 100° panels with covers with a 70° (Art. 08141/70) horn function, the nominal coverage can be changed accordingly. This change is particularly appropriate for the uppermost elements of an array, where the width of coverage is not required and a longer throw is necessary. The front grille is held by small neodymium magnets and secured by a steel cable (safety).

The vertical coverage is determined by the curving and the tilt of the array (section 6.3)

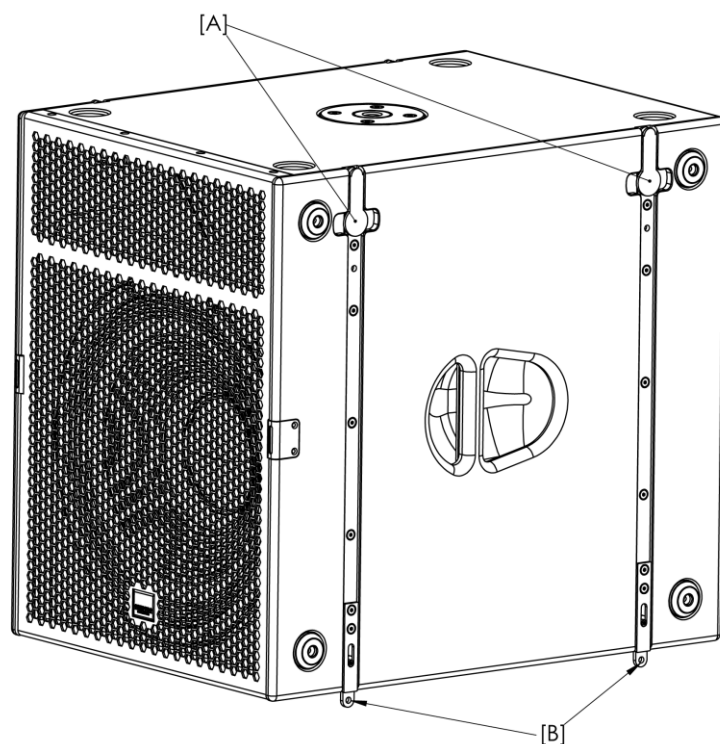


70° AMR-Panels (Art. 08141/70)

100° AMR-Panels (Art. 08141/100)

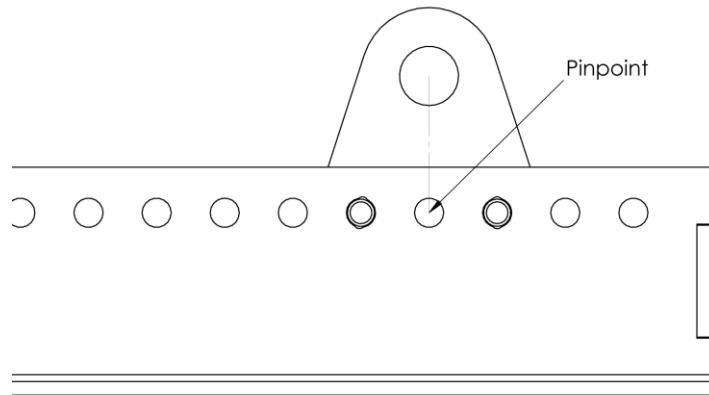
The AMR-Panels are mounted directly over the mid-range drivers via four M5 x 30 hex-head screws.

4.4 Galeo S Sub (flyable subwoofer)



Position	Name	Description
A	Snap-Fly Links	Four locking connecting links to mount the Galeo S Sub to the Galeo S Flying Frame or to the next Galeo S Sub above
B	Front/Rear Links	Counter piece to the Snap-Fly links [A]; held in the parking position for transport with magnets; front and rear position of the links is symmetrical for flying cardioids sub arrays

4.5 Definition of the pin point for the load adapter



The load adapter for connecting the Flying Frame to a chain hoist or winch is constructed symmetrically to prevent confusion. The pin point calculated by the simulation software EASE Focus 3 is always the empty hole between the two Locking Pins used to secure the load adapter. This hole is consequently always directly below the shackle in the load adapter.

5 Permitted loads

5.1 Galeo S with Galeo S Flying Cradle

The Galeo S Flying Cradle can be used to fly up to a maximum of 20 Galeo S line array units. The actually permitted number of elements is, however, dependent on the vertical angle (down tilt) of the array and the pin point in use. The vertical angle is dependent on the length of the array, the pin point and the curving of the array. The Cradle is always at an angle of 0° to the uppermost Galeo S element, so therefore the Cradle angle (or Frame angle) is automatically the vertical angle of the uppermost element in the array.

It is recommended to simulate the desired system configuration using the EASE Focus 3 software and use the following table to check whether the combination of the number of elements, the pin point and the maximum downtilt is permissible.

Permitted no. of Galeo S units

Pinpoint	Max. downtilt +/- 5°	Max. downtilt +/- 5-15°	Max. downtilt +/- 15-30°
1 - 18	20	16	11
19	19	16	11
20	18	16	11
21	17	16	11
22	16	16	11
23	15	16	11
24	15	16	11
25	14	14	11

Example: For a flown array of 16 Galeo S units, the pin point must be 22 or lower if the curving of the array results in a vertical angle of +/- 5°. If the curving results in a vertical angle of between 5° and 15° (positive or negative), the pin point can be up to 24.

5.2 Galeo S stacked on a Flying Cradle

If a Galeo S array is stacked on a Flying Cradle mounted with a flange (with M20 thread) on a speaker stand or speaker pole, the maximum permissible number of units is 4. If necessary, the system has to be secured against tipping over.

5.3 Galeo S and Galeo S Sub with Galeo S Flying Frame

The Galeo S Flying Frame can be used to fly up to a maximum of 20 Galeo S line array units, nine Galeo S Sub or combinations of three Galeo S Sub and nine Galeo S. The actually permitted number of elements is, however, dependent on the vertical angle (down tilt) of the array and the pin point in use. The vertical angle is dependent on the length of the array, the pin point and the curving of the array. The Cradle is always at an angle of 0° to the uppermost Galeo S element, so therefore the Cradle angle (or Frame angle) is automatically the vertical angle of the uppermost element/subwoofer in the array.

It is recommended to simulate the desired system configuration using the EASE Focus 3 software and use the following table to check whether the combination of the number of elements, the pin point and the maximum downtilt is permissible.

Permitted no. of Galeo S

Pinpoint	Max. downtilt +/- 5°	Max. downtilt +/- 5-15°	Max. downtilt +/- 15-30°
1 - 19	20	20	20
20	20	20	19
21	20	20	18
22	20	20	17
23	20	20	16
24	20	20	15
25	20	20	15
26	20	20	14

Example: For a flown array of 16 Galeo S units, the pin point must be 23 or lower if the curving of the array results in a vertical angle between 15° and 30° (positive or negative).

5.4 Weight overview

Galeo S

No. of Galeo S units	Weight incl. Cradle	Weight incl. Frame
1	16,10 kg	21,50 kg
2	29,60 kg	35,00 kg
3	43,10 kg	48,50 kg
4	56,60 kg	62,00 kg
5	70,10 kg	75,50 kg
6	83,60 kg	89,00 kg
7	97,10 kg	102,50 kg
8	110,60 kg	116,00 kg
9	124,10 kg	129,50 kg
10	137,60 kg	143,00 kg
11	151,10 kg	156,50 kg
12	164,60 kg	170,00 kg
13	178,10 kg	183,50 kg
14	191,60 kg	197,00 kg
15	205,10 kg	210,50 kg
16	218,60 kg	224,00 kg
17	232,10 kg	237,50 kg
18	245,60 kg	251,00 kg
19	259,10 kg	264,50 kg
20	272,60 kg	278,00 kg

Galeo S Sub

No. of Galeo S Sub	Weight incl. Frame
1	41,00 kg
2	74,00 kg
3	107,00 kg
4	140,00 kg
5	173,00 kg
6	206,00 kg
7	239,00 kg
8	272,00 kg
9	305,00 kg

6 Transport and preparation

6.1 Transport in Galeo S/Galeo S Sub dolly

Galeo S units are transported as a vertical stack with the elements linked and the splay angle set to 0°. The Galeo S dolly carries multiples of 2 Galeo S units. The recommended maximum number of elements is 12; otherwise the dolly may be unstable and prone to tipping over.

The top cover of the dolly must be secured to the lower part using a ratchet strap.

Transport of the Galeo S Sub is possible using the wheel-boards with cover, the single dolly or the double dolly. The recommended maximum is 3 Galeo S Subs on a single dolly or 6 on a double dolly. Exceeding the recommended maximum may cause the dolly to be unstable and prone to tipping over.

The top cover of the subwoofer dolly must also be secured with a ratchet strap.



Galeo S units in dolly, Galeo S Sub with wheel-board, Galeo S Subs in single- and in double dolly

6.2 General preparations and checks

Make yourself familiar with the relevant dimensions of the venue and plan the arrays in the EASE Focus 3 software. The software calculates the position of the pick point, the pin point for the load adapter on the Frame, the splay angles between the array elements and the total vertical angle (down tilt) of the array.

Before installation, assure the perfect condition of all rigging points, hoists and winches. Make sure the position is correct, and ensure there is enough free area to work safely. Check that all the material to be used for the installation is suitable and certified for the intended use, and has been subjected to all pertinent checks.

Check the condition of all components of the integrated flying hardware, the Flying Frame or Cradle, and all adapters. If you have even the slightest doubt about the condition of any component, **DO NOT USE IT**. Change the component for one whose condition is without any doubt.

Make sure that the material and rigging points to be used have sufficient load bearing capacity for the weight of the planned array, and are certified. The weight of the array components can be found in the calculation in the EASE Focus 3 software or in the table in section 5 of this manual.

6.3 Simulation with EASE Focus 3

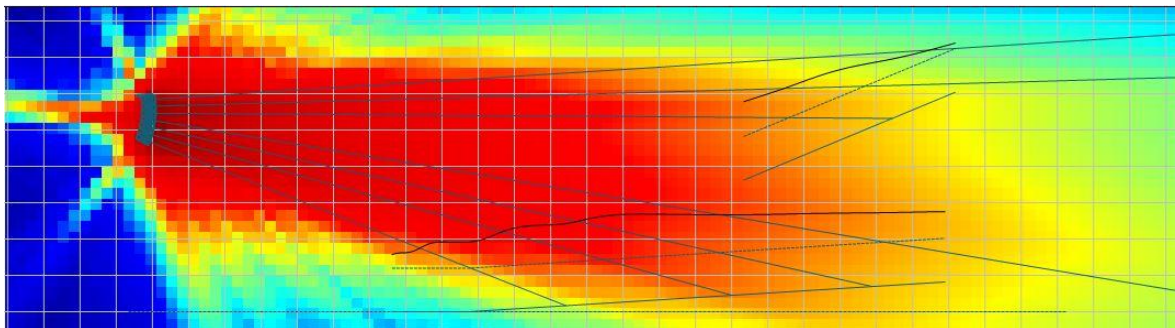
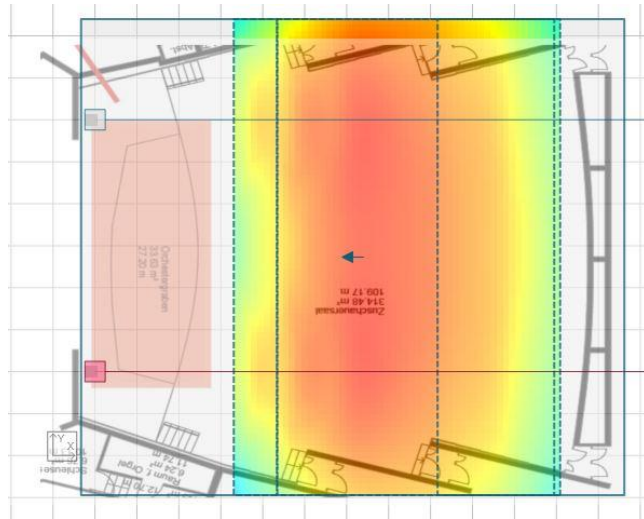
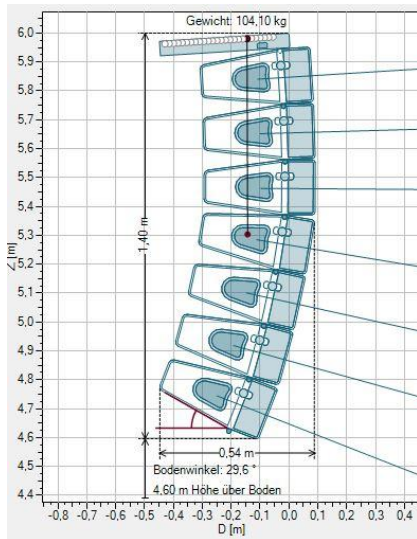
Use the EASE Focus 3 software to make an acoustic and mechanical simulation of the Galeo S System. The software is available for download on our internet site in the download section under "software" (<https://www.seeburg.net/en/downloads>). The software allows easy simulation of how the Galeo S array must be tilted and angled to provide ideal coverage of the audience area. Whilst using the software, take heed of any warnings which the software may show, and check the data which is generated by the software for plausibility.

The best results for coverage and reach are generally achieved when the line array is aimed relatively flat over the heads of the public, and is not hung too high. Try and keep the splay angles in the array as small as possible, and use the Auto-splay function in the software. The lowest element in the array should be just above the heads of the persons on the stage. The array can then be hung with small angles between the elements, allowing the most benefit from the acoustic coupling between the single array elements (cylindrical wave front). Additionally, less time and effort is required for the rigging when the array is flown from a single point. More vertical angle than can be achieved with setting the load adapter in position 20 on the Flying Cradle or in position 26 on the Flying Frame is not permissible. Observe at all times the load limits specified in the section 5 of this manual.

Even small deviations in the vertical angle of the array or the curving can have a very strong influence on the quality of the acoustic result.

General information about using EASE Focus is available in the internet at:

<https://focus.afmg.eu/index.php/fc-software-en.html>



Simulation example EASE Focus 3

7 Installing the line array system

7.1 Mounting the load adapter

The load adapter is mounted in the Cradle or Frame in the required position using two Locking Pins. Information about positioning the load adapter and a definition of the pin point can be found in section 4.5 of this manual. The mounting hole in the load adapter is suitable for shackles with a rating of up to 1.5 t.

7.2 Mounting Galeo S to the Flying Cradle or Flying Frame

First of all the Snap-Fly links are pulled out a bit and then turned to the side. The Link Pin of the uppermost Galeo S unit is also removed. The Flying Cradle or Frame is set onto the array from above, and the Snap-Fly links rotated in and locked into place. The Center Link of the Flying Cradle or Frame is connected to the Center Rail of the uppermost Galeo S unit with a Link Pin in the uppermost hole in the Center Rail. Pay attention that the Snap-Fly links are properly locked in to the front links of the component above such that they sit flush to the side of the cabinet and are not standing out of the side surface.

7.3 Flying and securing the Galeo S

The Galeo S system is flown using an appropriate shackle (up to 1.5 t) mounted to the load adapter. The shackle is hung using appropriate lifting accessories (steelflex, sling, chain hoist, winch, etc.). All relevant safety regulations that are customary in the country must be observed at all times.

The system is additionally secured using a non-flammable safety cable (e.g. steel cable, chain) with sufficient load bearing capacity. This material must also meet the requirements of all relevant safety regulations. The Flying Frame has a hole in each side rail which will accept shackles for this purpose. When using the Flying Cradle, the safety cable should be secured with a second load adapter or with 2 M10 eye screws mounted in the flying points on the uppermost Galeo S element.



7.4 Mounting additional Galeo S units

Additional Galeo S units are mounted to the array following the same principle as for mounting to the Flying Frame or Cradle (see section 7.2) using the Snap-Fly links at the front and the Center Link at the rear.



7.5 Setting splay angles and lifting in operation position

When the array is flown, the Stop Pins on the rear of the Galeo S elements, which specify the splay angles, are not under load. They can be removed from the 0° position and placed in the position required for the desired splay angle. The uppermost Galeo S unit, which is connected to the Flying Cradle or Flying Frame, always has a splay angle of 0° for mechanical reasons.

The angles for the rest of the Galeo S units are set by placing the Stop Pin in the hole for the required splay angle for each element in the Indexed Center Rail of the next highest element. This should be done for all Galeo S units in the array before the curving is done.



Presetting the desired splay angles in flown, not curved array

Once all the Stop Pins are in their appropriate positions, the curve is set by “compressing” the rear of the array. This can be done by lifting the lowest cabinet by hand or with a hand chain hoist / motor chain hoist or by placing the array on the floor.



Setting the curve of the Galeo S Arrays by lifting the lowest Galeo S unit

After curving the array, it is vitally important to check that all of the Auto-Locking Hooks have locked in correctly. This can be easily seen with a visual inspection. If the Auto-Locking Hooks have set correctly, one of the two hooks on each element will be exactly parallel to the Center Rail. Should this not be the case, it must be corrected immediately because the load of the lower units is based on a too small surface of the indexed Center Rail. An incorrectly set auto-locking hook may lose its hold and slip to a smaller splay angle.

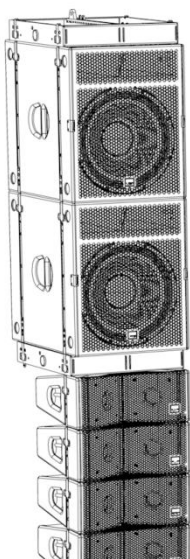


Checking that all of the Auto-Locking Hooks have locked in correctly

7.6 Mounting Galeo S Sub Units to the Flying Frame

To fly Galeo S Subs, a Galeo S Flying Frame is required because it provides the necessary four front/rear links. The method for mounting using the Snap-Fly links is the same as for the Galeo S elements, as described in section 7.2. The maximum number of Galeo S Subs permissible on one Flying Frame is described in section 5.

7.7 Mounting Galeo S units under flown Galeo S Sub units



It's possible to mount Galeo S units under flown Galeo S Subs by using a further Galeo S Flying Frame that's mounted under the lowest Galeo S Sub. The maximum number of flown subwoofers and Galeo S units can be found in the description in section 5.3. For the flown Galeo S Subs it is recommended to use the same controller setup as for the ones on the ground.

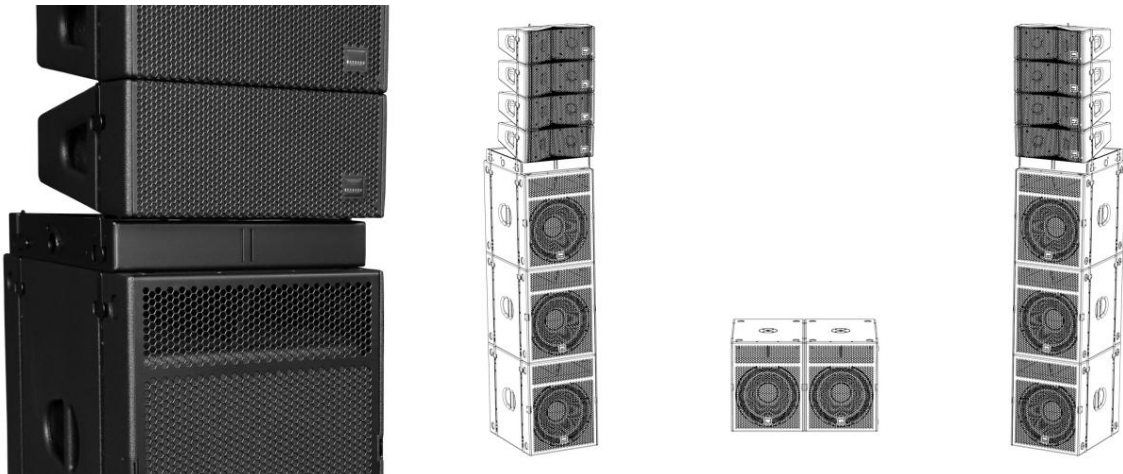
7.8 Mounting the Galeo S Flying Cradle on a speaker pole



On the underside of the Flying Cradle is a socket with a female M20 thread. This thread is intended for a TV-spigot with an M20 male thread or a speaker stand flange adapter with an M20 male thread. Using these accessories, up to four Galeo S elements can be mounted directly on a speaker stand or speaker pole (with a 28 mm. TV-spigot adapter socket or 35 mm outside diameter).

7.9 Usage groundstacked on Flying Cradle or Flying Frame

Galeo S units can be stacked in different ways. When using Galeo S Subs, the Flying Frame is mounted between the subwoofer and Galeo S units. If a Flying Cradle is used, this must be secured against tipping forward using a ratchet strap.



Galeo S units, stacked on Galeo S Subs via Flying Frame

A further stacking option is provided by the Galeo S Stacking Board, which can be mounted on the top of any subwoofer using an M20 screw.



Galeo S units, stacked on a subwoofer via Galeo S Stacking Board



Galeo S unit, mounted on a Galeo S Flying Cradle with maximum down-tilt

When mounting Galeo S units on a Flying Frame or Flying Cradle, the Center Link of the bottom Galeo S is connected to the Indexed Center Rail of the Frame or Cradle using a Link Pin. The appropriate hole in the mounting rail is marked on the Frame (pin point 16) and on the Cradle (pin point 17). The front links of the bottom Galeo S unit are connected to the Flying Frame using the Snap-Fly Links on the Frame, or to the upper side of the front links of the Flying Cradle using Locking Pins.

To set the maximum possible 7° down-tilt for the bottom Galeo S element, the Stop Pin on this element must be in the 0° position in the Indexed Centre Rail. When the Stop Pin of this Galeo S element is in the 7° position, the element has 0° tilt. For applications with an upwards raising audience area (e.g. grandstands), a negative tilt angle for the system can be set.

Galeo S tilt angle	Stop Pin Position in the Galeo S Indexed Center Rail
-9°	Stop Pin not set
-8°	15
-7°	14
-6°	13
-5°	12
-4°	11
-3°	10
-2°	9
-1°	8
0°	7°
1°	6°
2°	5°
3°	4°
4°	3°
5°	2°
6°	1°
7°	0°

7.10 De-rigging the array and preparing for transport

The Galeo S array is rigged down in the reverse order of the setup. Firstly, the array is lowered to a comfortable working height. Then the single Galeo S units are set to 0° by releasing the Auto-Locking Hooks. The Auto-Locking Hook to be unlocked should first be relieved for a smooth workflow. Afterwards the Stop Pin has to be set in the 0° position. That prevents the array from collapsing in itself when it is placed in the dolly.

Repeat this procedure for all Galeo S units until the whole array is in a straight position. Then the packets in desired number of Galeo S units can be set onto the dolly.

For transport the top cover of the dolly is to be secured with a ratchet strap.

7.11 Setting up Galeo S Subs/Cardioid Presets

When using Galeo S subs in a cardioid setup, it's important the subwoofer that is facing to the rear must be driven using the appropriate controller setup. The cross-over frequencies for all subwoofers must be set to the same value. The subwoofers must be set up in a 2:1 ratio, i.e. two units facing forwards to one facing the rear. If only 2 units in total are available, the rear-facing unit should be reduced in level by 3 dB.

In a ground-stack of three units, the bottom subwoofer is should face rear. When three units are placed next to each other on the ground, it's recommended the middle unit to face rear. In a flown array of three units likewise the middle unit should face rear.

A cardioid sub-array requires a minimum of 1.5 m. space to the nearest wall in order to function correctly. If this is not possible, it is preferable to place all the subs as close as possible to the wall and not use the cardioid function.

Application examples

The following illustrations show various constellations of Galeo S Subs in a cardioid application.



2x Galeo S Sub stacked



3x Galeo S Sub next to each other on the ground



3x Galeo S Sub stacked



3x Galeo S Sub flown

8 Care and maintenance

8.1 Protection against corrosion

If the Galeo S system has been exposed to unfavorable weather (rain/snow), the components should be dried immediately. Storage in the wet state can lead to corrosion in various parts of the flight mechanics. For this reason, it is particularly important to ensure that movable parts of the flying hardware are oiled / greased. This increases the life of the product and also makes the rigging of the system easier.

8.2 Regular inspections

With the flying hardware in particular, the system must be checked for visible damage (e.g. caused by improper use or external influences) before each use. Defective parts have to be replaced immediately. Only the perfect condition of the flying hardware can ensure safe installation and the intended use of the system. If you are not sure, contact your dealer or contact SEEBURG acoustic line directly.

9 Recommended amplifiers and controller setups

9.1 System rack



The 7U standard system rack offers 8x inputs (4x analog and AES, 8x DANTE optional) and 8x amplifier outputs for the speakers. The heart of the system is the HDLM 8 system controller, which is responsible for the entire speaker processing. All connections required for the system are located on the front of the CP 4.8. connection panel and can therefore be reached quickly by the user. On the rear of the CP 4.8 there is also the three-phase power distribution with the CEE 16 A connector.

The assignment of the outputs for the loudspeakers can be selected almost freely and is shown in the color display of the controller. The concept therefore is designated that all amplifier channels provide identical nominal power. The most powerful amplifier variant delivers up to 4x 8 kW by using two Hoellstern Delta 20.4.

For more flexibility, the single parts can also be distributed to smaller SD racks (Slide Door 19" racks), which can be connected to larger units again using overlatch butterflies. For example, a 4 U SD rack can be equipped with the HDLM 8, the CP 4.4 connection panel and a 2 U power amplifier.

Use the system racks in accordance with the regulations of the manufacturers of the built-in components. In particular this includes dampness and rain protection, the permissible temperature range and the required power supply.

9.2 Controller setups

The default state includes several pre-prepared "projects" for various sized systems and applications. These projects define the amplifier channel assignment, additional EQ settings and delay times.

The user can create individual configurations using the HDLM8 loudspeaker library, and the loudspeaker data are available in text form on the SEEBURG website in the download section under "controller setups": <http://www.seeburg.net/en/downloads>

9.2.1 Galeo S

The preset “Galeo S Flat” is used for both the 70° and the 100° version of the Galeo S. This preset is optimized for 3 elements flown with 0° splay angles. Due to the increase in coupling in the low-mid range with increasing length of the array, an increase in high-frequency level is necessary for longer arrays. Generally, a high-shelf filter at 2.5 kHz is used to achieve this. The following table can be used as a guideline for this adjustment. The values assume a standard J curve for the array and moderate level:

Number of Galeo S Units	High-Shelf boost
3	0 dB
6	2 dB
9	4 dB
12	6 dB
15	8 dB

Note: At higher sound pressure levels, less HF boost should be used.

9.2.2 Galeo S Sub

We recommend the preset “Galeo S Sub 100 Hz.” for the Galeo S Subs. A higher cross-over frequency may be useful for open air events to provide more energy in the higher low-frequency range. Details about using the cardioid mode can be found in section 7.11.

10 Technical specifications

10.1 Galeo S

Speaker Components	2 x 6,5" Nd / 1,4" Nd
Description	Two-Way Line Array Unit
Power (AES / Peak)	400 W / 1200 W
Impedance (nominal)	16 Ω
SPL (1W/Peak @ 1m)	95 dB / 126 dB
Usable Range	80 Hz - 18 kHz (-6dB)
Tuning Frequency (excursion minimum)	90 Hz
X - Overpoint (acoustical)	1 kHz
Coverage (horizontal / vertical)	100° x 16° (100°-version) 70° x 16° (70°-version)
Max. Splay Angle	16°
Connectors	2 x Neutrik Speakon NL4MP in/out Coding: 1 +/- HiMid, 2 +/- loop thru
Handles	2 x
Rigging / Fittings	2 x M10 Integrated Flying Hardware
Weight	13,5 kg
Size (height x width x depth)	19,0 x 45,0 x 38,5 cm
Order No.	00450/100 (100°-version) 00450/70 (70°-version)

The technical data sheet and further information about possible applications for the system and available accessories can be downloaded at the following Internet addresses:

https://www.seeburg.net/download_getfile.php?file=downloads_EN/06-Datasheets/Galeo/Galeo-S_Datasheet_engl.pdf

10.2 Galeo S Sub

Speaker Components	15" Nd
Description	Passive Bass Extension
Power (AES / Peak)	1000 W / 3000 W
Impedance (nominal)	8 Ω
SPL (1W/Peak @ 1m)	101 dB / 135 dB
Usable Range	35 Hz - 220 Hz (-6dB)
Tuning Frequency (excursion minimum)	42 Hz
Connectors	2 x Neutrik Speakon NL4MP in/out Coding: 1+/- loop thru, 2+/- Sub
Handles	4 x
Fittings	M20 on top and side Wheelboard fittings Integrated flying hardware
Weight	33 kg (+ 7 kg wheelboard)
Size (height x width x depth)	56,0 x 45,0 x 60,0 cm
Order No.	00460

The technical data sheet and further information about possible applications for the system and available accessories can be downloaded at the following Internet addresses:

https://www.seeburg.net/download_getfile.php?file=downloads_EN/06-Datasheets/Galeo/Galeo-S-Sub_Datasheet_engl.pdf

11 Declaration of conformity

EG Declaration of conformity

These products

Galeo S / Galeo S Sub

confirm to the following EU guidelines, including any additions:

- ✓ 2006/42/EG, EC-machinery directive
- ✓ BGV-C1
- ✓ BGI 810-3

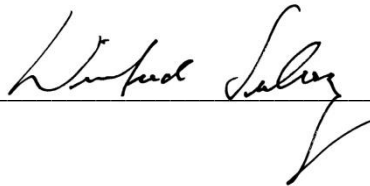
The following standards have been applied:

- ✓ DIN EN 62368-1
- ✓ DIN EN ISO 12 100

Declared by: Winfried Seeburg, SEEBURG acoustic line GmbH

Place and date: Senden, 01.01.2018

Legally binding sign: _____



The attachments constitute part of this declaration. This declaration certifies conformity with the listed guidelines, but does not guarantee any product characteristics. The safety precautions listed in the product documentation must be observed.

SEEBURG acoustic line Produktions- und Vertriebsgesellschaft mbH

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**Benutzerhandbuch / User Manual
Galeo S / Galeo S Sub**

Irrtum bei Beschreibung
sowie technische
Änderungen vorbehalten.

Alle SEEBURG acoustic line
Produkte sind nur für den
gewerblichen Einsatz bestimmt.

All specifications are
current at the time of publishing
but are subject to change.

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