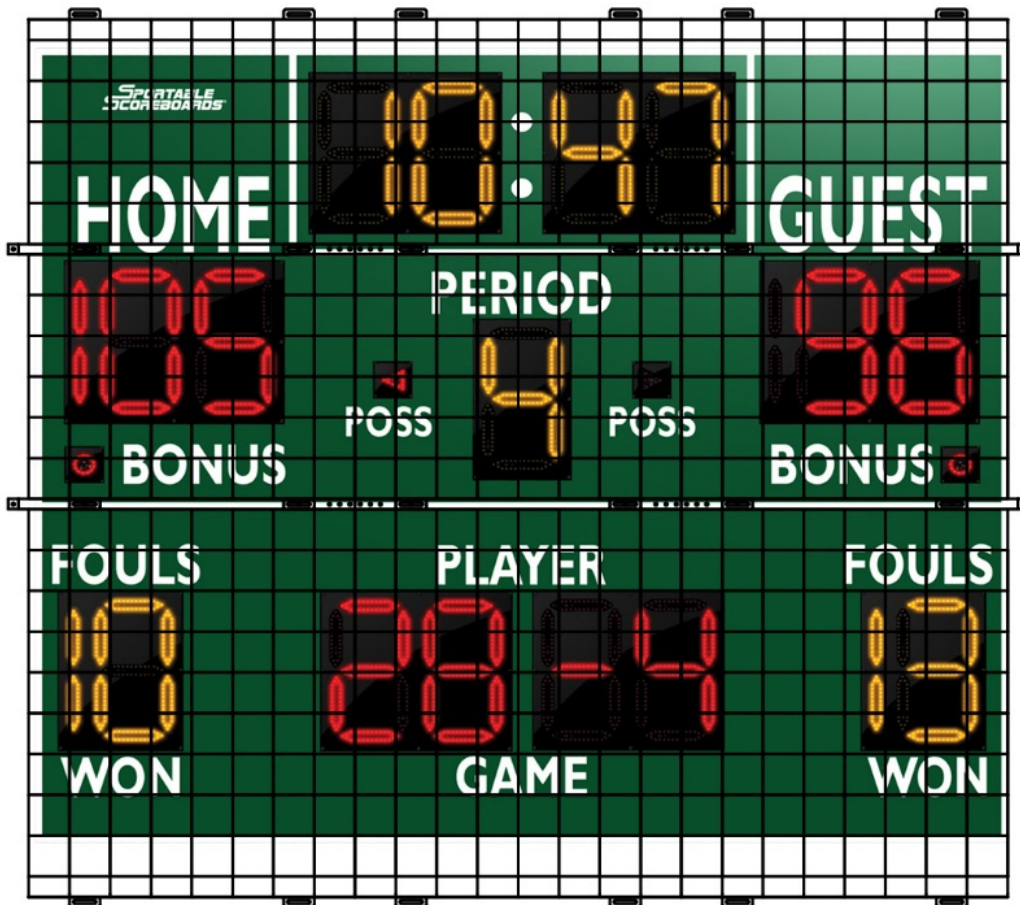


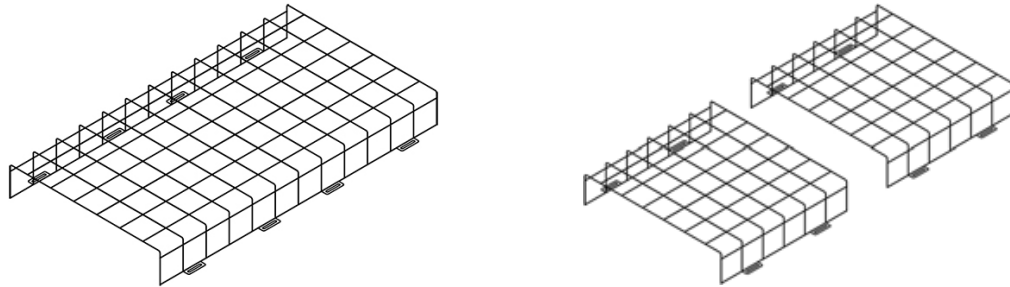
# Scoreboard Cage Assembly Instructions

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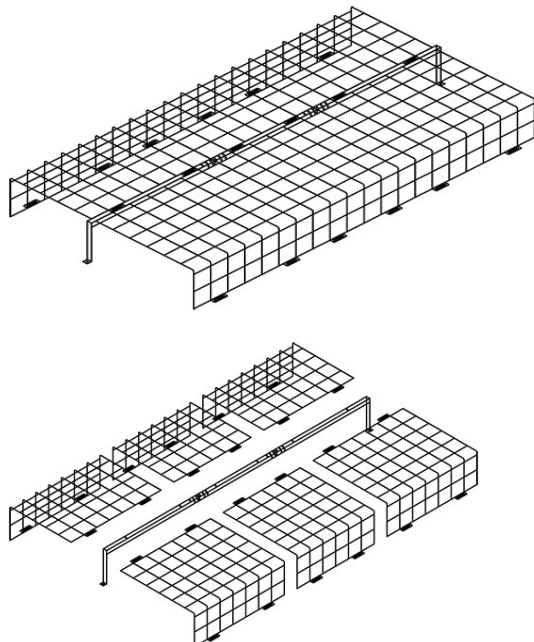
## How to Assemble Multiple Section Cages

Cages are designed to be assembled from smaller sections to ease handling and minimize shipping costs. The smallest size scoreboard cage, 4'W x 2'D x 5"H, is a simple side by side design.

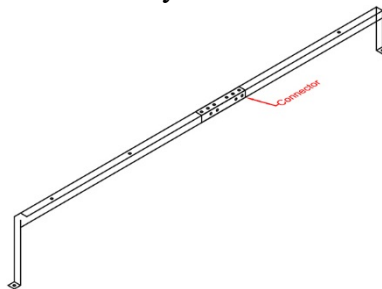


The finished cage is assembled by mounting the two sections side by side. Use the same technique for three or more sections of a cage design. The slotted brackets provide some flexibility for your mounting hardware. To service the scoreboard, simply detach the cage sections from the wall.

Larger cages use upper and lower cage sections connected near the middle by a cross bracket. The cross-bracket design is necessary to maintain the stiffness of the cage over larger expanses. Cross brackets are assembled using a 7" connector between sections of the cross bracket. The scoreboard cage designs take into account unused space on the face of the scoreboard in an effort to minimize blocking the visibility of the display.



Assemble the center bracket using the supplied screws and nuts and the 7" connector piece placed on top of the main bracket sections. We suggest assembling the center bracket on the floor and just hand tighten the screws. Once you have it laid out, go back and tighten them up.



Connector parts



Assembled connector

Note: These pictures are shown using older hardware. Our new hardware is supplied with Philips head machine screws and finish nuts. You will need a Philips screwdriver and a wrench (7/16 or 11mm) for the hex nuts to assemble the cage sections.



Connector back view



Connector 4-bolt side



## All connector bolts



The assembled center bracket is designed to go over an unused space on the face of the scoreboard. It is not necessarily in the middle. The bracket may be below or above center depending on the scoreboard layout. By mounting the cross bracket in the proper place on the scoreboard, the upper and lower cage sections will overlap the top and bottom of the scoreboard.

You can mount the upper cage sections and wall bases over the scoreboard first and let them hang from the wall. Slip the assembled center bracket under the cage sections and attach it to the cage sections before securing the legs to the appropriately mounted wall bases. Finish by adding the bottom sections and wall bases. The top and bottom sections share a common mounting point so the screw attaching the top sections will have to be removed from the center bracket and then replaced sharing the hole with top and bottom section brackets.

Upper left section



Top and bottom left sections



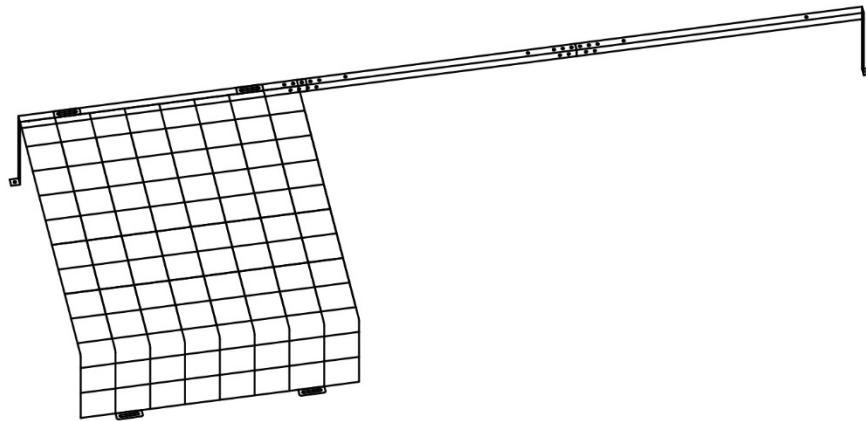
Center view



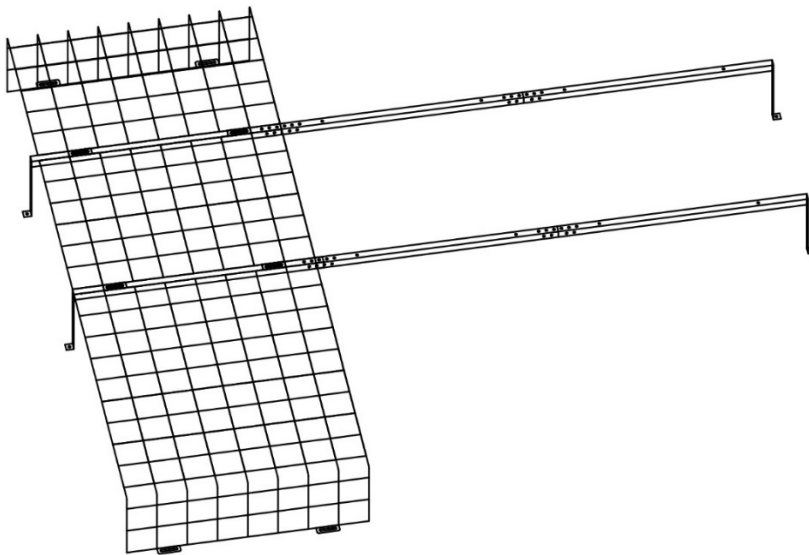


Once the cross bracket is secured, start with the lower left cage section and secure it to the cross bracket and the wall. The cage brackets will line up with the holes on the cross bracket. Next do the middle top section and then the left top section. The sections may have different heights depending on the dimensions of the scoreboard. Follow the same procedure to mount the remaining cage sections.

In the case of a cage with two cross brackets and three vertical cage sections, we suggest mounting the lower cross bracket first. The cross brackets are designed to be positioned over unused areas of the display. The cage sections are designed to overhang the top and bottom edges of the scoreboard by at least one inch. After positioning the lower cross bracket, mount a lower cage section to be sure you have the appropriate overlap on the bottom of the cage.



The upper cross bracket should also align over an unused area of the display (between the numbers). The middle cage section will attach between the lower cross bracket and the upper cross bracket. The top cage section should overlap the top edge of the scoreboard by at least one inch.



Once you have a set of two or three sections lined up over the scoreboard, continue to add the other cage sections to complete the cage build.

## How to Install Wall Bases

Wall bases are designed for masonry walls like concrete or brick where the fasteners are best left attached to the wall permanently.



Each wall base has two (.277") mounting holes for the ¼" wall hardware. In the center of each base is a threaded weld nut that accommodates the included machine screw shipped with the base. The machine screw requires a flat edge screwdriver.

In addition to a flat edged screwdriver, you will need a drill, a level and a tape measure to mount the bases. After mounting the base, you must drill a ¼" deep hole through the weld nut to allow for the depth of the machine screw.

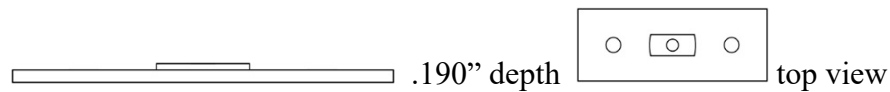
- 1) We suggest you mount one base and use the level and tape measure to place the second base. The mounting brackets on the cages are slotted so you don't have to be perfect in the lateral positioning of the bases.
- 2) Mount the top bases first, then hang the cage and position the bottom bases where they line up with the cage bottom brackets.
- 3) Mark the positions and remove the cage so that you can mount the bases.
- 4) Mount the cage to the top bases and then the bottom bases.
- 5) Tighten all the screws and you are done.

## Cabling and Conduit Considerations

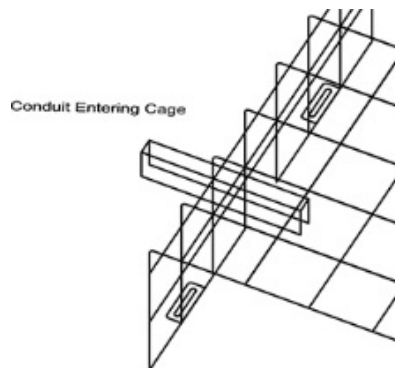
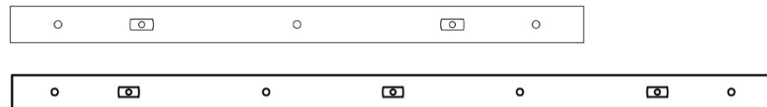
When mounting a cage, often the power or communications cabling is surface mounted. In these instances, some accommodation must be made when mounting the cage.

If you are directly mounting the cage to the wall and you need a gap for the cabling entering from the top or bottom, you can easily remove a section of the cage by clipping out the segment that is against the wall. This will leave you a 4' x 4' opening for the cabling.

In installations using the wall bases on masonry walls, there are a couple of options. If you use the 4" x 1.5" wall bases (PCWB4), you can simply remove a segment of the wire cage as noted above. If you have just a thin cable, you may be able to run it under the edge of the cage. The bases are .190" high and you also have about 1/4" of extra height in the supplied screws where you can use washers to provide additional clearance for your cable.



When using the 1/4" thick full-length bases bundled with a cage design, you have the option of slipping the base section under the surface mounted wall cable. If using cable conduit, this may not be possible. You also have the option of cutting a section out of the full-length base and a segment of the cage section to accommodate the conduit or cable. You can then drill additional holes for mounting the base to the wall. The full-length bases as provided have three or four holes for wall mounting. Depending on where your cable intersects the base, you may have to drill two additional holes in the base to securely attach the base to the wall.



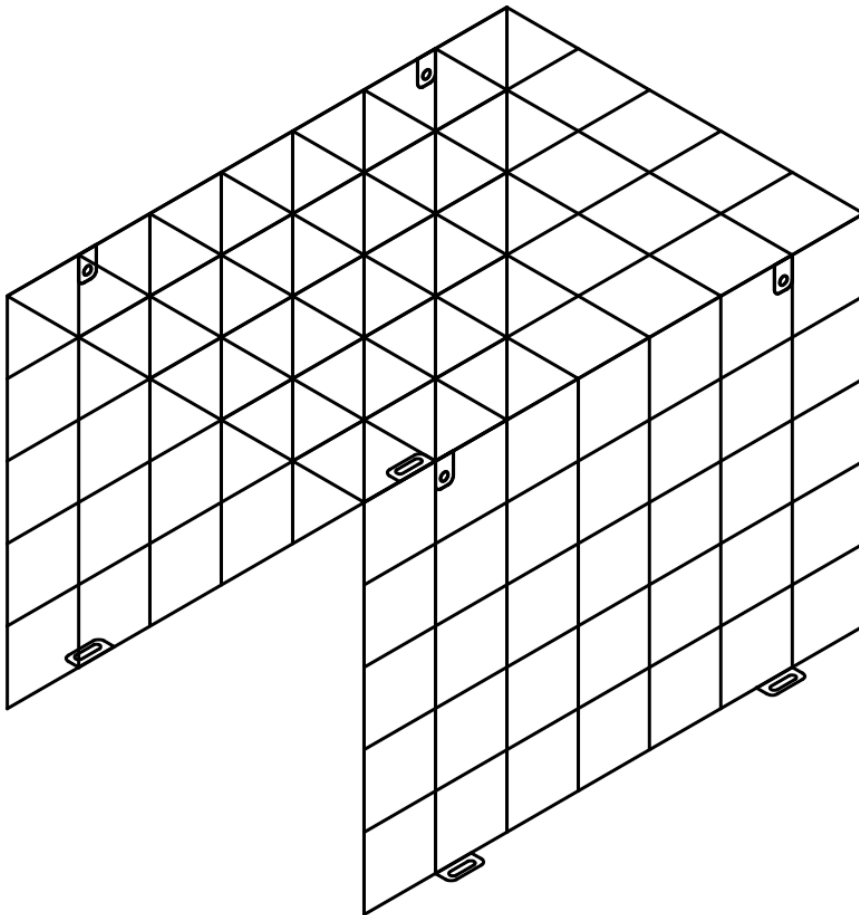
## Speaker Cage Mounting Instructions

Speaker cage installations are very simple. Wall bases are highly recommended for masonry wall installations as these will allow you to leave the masonry screws in place and easily remove the cage to service the speaker. For sheet rock wall construction, we recommend mounting a wood base to screw the cage brackets onto instead of using anchors in the sheet rock. Cages are designed to the speaker dimensions and not 16" centers for wall studs.

Speaker cages are designed using either three or five bolt together sections - two interchangeable side panels and a front panel or an additional top and bottom panel for full coverage. The hardware is all supplied to do this. You will need a Philips screwdriver and a wrench (7/16 or 11mm) for the hex nuts to assemble the cage sections. For example, a 40" high cage consists of two 20" cage sections mounted vertically.

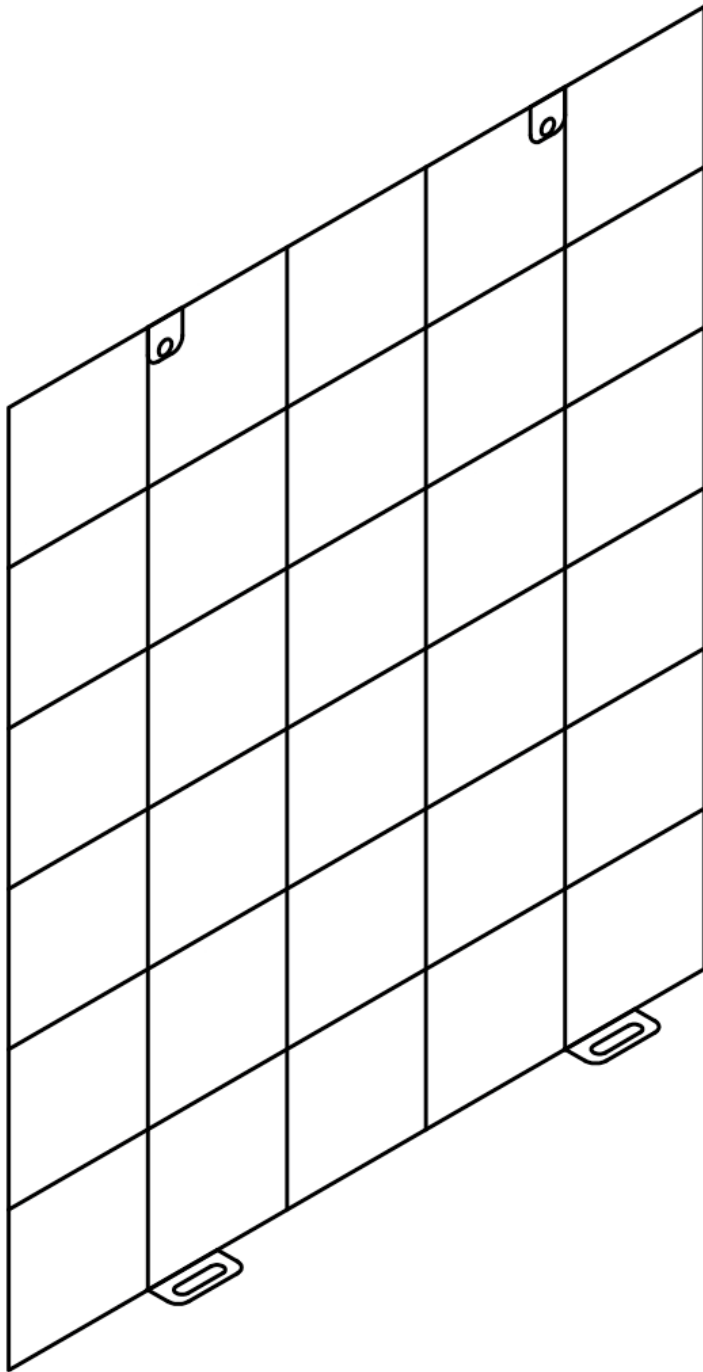
The cages should be positioned over the speakers after the speakers swivel and tilt adjustments have been made. If the speakers are swiveled to one side, position the cage to be centered over the swiveled cage, not with the cage positioned perpendicular to the wall. Move the cage position in the direction of the swivel.

Assembled section:

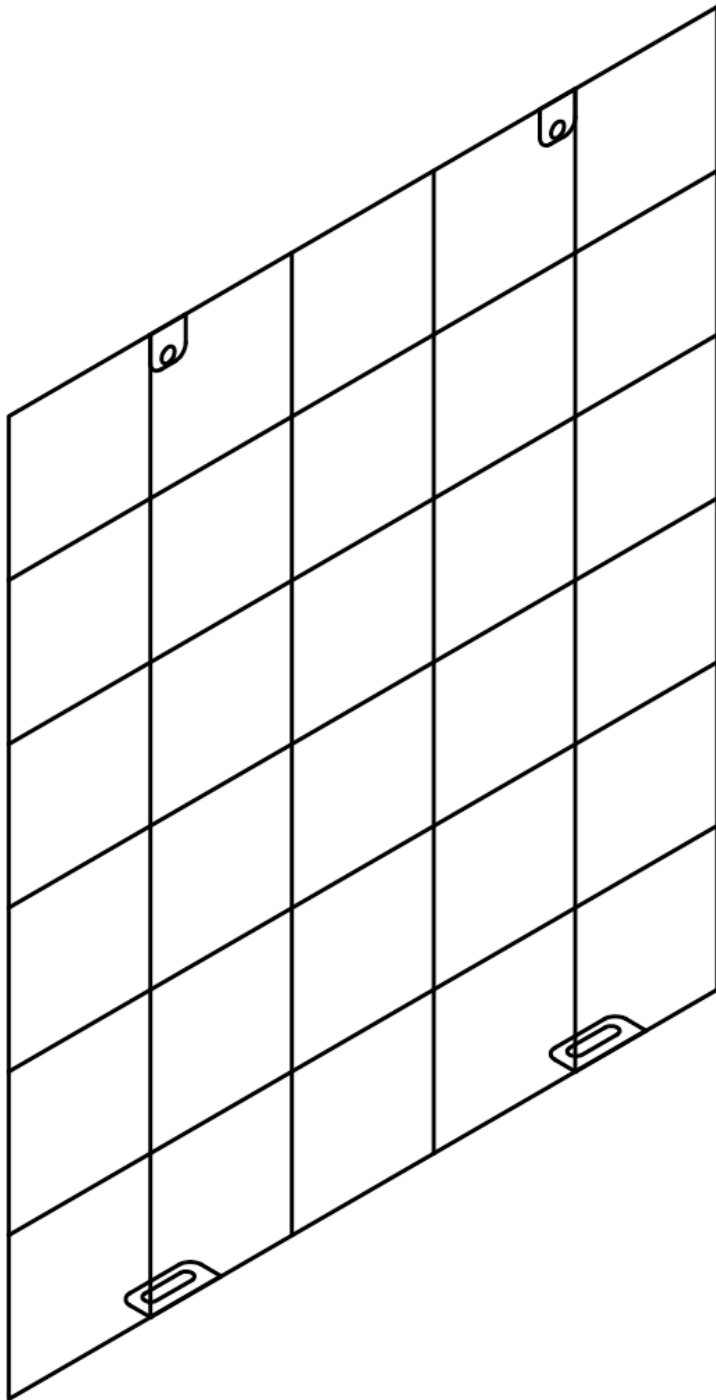




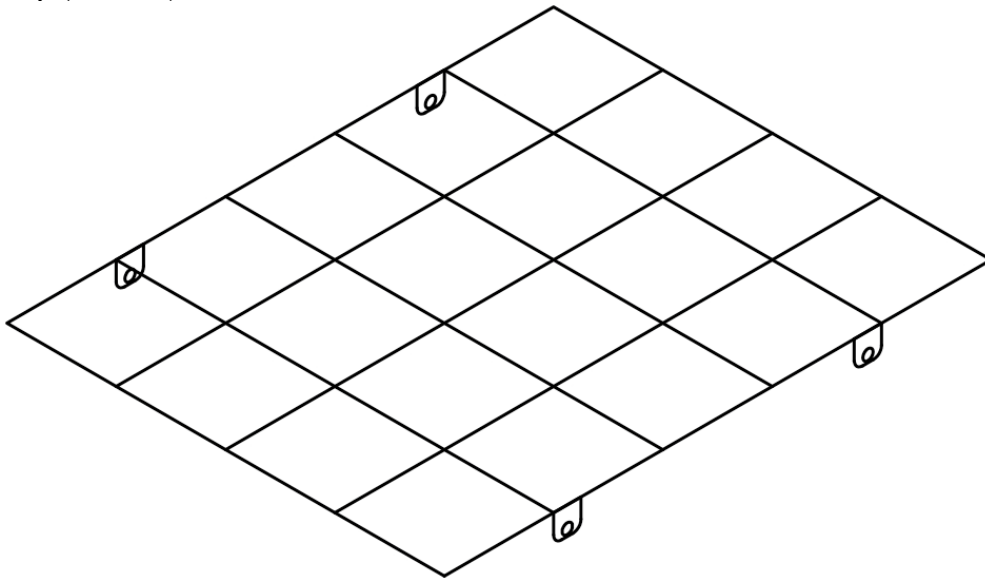
Right side:



Left side:



Top (or front):





Fully assembled speaker cage:

