

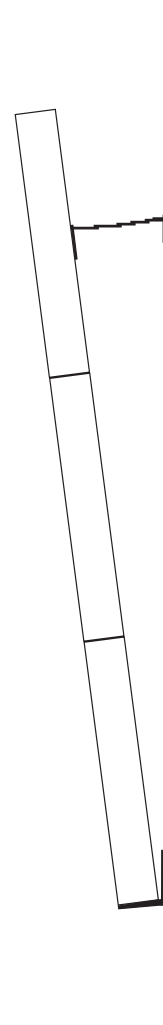
Desono™

E Series Combination Pan-Tilt Bracket Kit (ENT-PT)

Installation & Operation Guide

PRODUCT DESCRIPTION





The ENTASYS Pan-Tilt Bracket Kit, designated ENT-PT, is used to provide a down-tilt angle (rotation about a horizontal axis) and a panning action (rotation about a vertical axis) when an ENT-FR/LF column or tall array is mounted to a wall. The Pan-Tilt Bracket Kit consists of two primary parts, a Top Assembly and a Bottom Piece. The Top Assembly consists of multiple parts that are configured and assembled to yield the desired down angle for an array of up to five columns. After the Pan-Tilt Bracket Assembly is put together it is mounted to a wall and then the ENT loudspeaker(s) are attached to it. The Pan-Tilt bracket can be used with a one, two, or three column array for a down-tilt angle of up to 10°. With a four or five column array the maximum down-tilt angle is 5°. All parts in the kit are engineered to provide a high margin of safety when used in accordance with these instructions. The brackets are manufactured of steel and are covered with a durable powder-coat finish. Kits are available in either black (ENT-PT) or white (ENT-PTW) to match the color of the enclosures.





Kit Contents:

Part	Qty	Part	Qty
Top Wall Bracket	1	10mm Flat Washer	3
Top Angle Bracket	1	M10 x 20mm Hex Head Machine Screw	1
Locking Bar	1	M10 x 25mm Hex Head Screw	1
Bottom Bracket	1	M6 x 25mm Philips Pan Head Screw	1
Bracket Cover	2	M6 x 16mm Philips Pan Head Screw	12
Small Extension Bracket	1	6mm Hex Nut	21
Medium Extension Bracket	3	6mm Lock Washer	17
Large Extension Bracket	2	6mm Flat Washer	18
M10 Hex Nut	1	M6 x 30mm Flat Head Screw	4
10mm Lock Washer	2		

RIGGING AND ELECTRICAL SAFETY

-  **CAUTION:** It is strongly recommended that a licensed and certified professional structural engineer approve the mounting. Severe injury and/or loss of life may occur if this product is improperly installed.
-  **IMPORTANT:** Installation of loudspeakers should only be performed by trained and qualified personnel. All electrical connections must conform to applicable city, county, state, and national (NEC) electrical codes.
-  **WARNING:** It is possible to experience severe electrical shock from a power amplifier. Always make sure that all power amplifiers are in the "OFF" position and unplugged from an AC Mains supply before performing electrical work.
-  **WARNING:** It is essential that the secondary cable be secured to a suitable load-bearing point separate from the primary loudspeaker mounting point, with as little slack as possible so as not to develop undue kinetic force if the primary mount were to fail.

-  **WARNING:** The E Series ENT Pan-Tilt Bracket must not be used to support more than five (5) ENT-FR/LF loudspeakers. Attempting to do so will exceed the Working Load Limit of the bracket and could result in the failure of the bracket kit and potentially result in severe injury and/or loss of life
-  **WARNING:** The bolts used and wall/ceiling material into which the Pan-Tilt Bracket assembly is bolted must be capable of supporting the load of the ENT-FR/LF array to be mounted. It is the responsibility of the installer to verify these items.
- NOTE:** A single tall array of up to five (5) ENTASYS columns joined together by the ENTASYS Coupler Bracket(s) may be mounted using a single Pan-Tilt Bracket Kit. If multiple columns are to be mounted using a Pan-Tilt Bracket Kit, purchase the ENTASYS Coupler Bracket (part number ENT-CB) and follow the instructions in the complete ENTASYS Installation/Operation Manual included in the complete E Series ENT-FR/LF Installation/Operation Manual available at biamp.com

INSTALLATION

All hardware to attach the ENT column assembly and Pan-Tilt Bracket to the mounting surface must be supplied by the installer and should be sized and rated for the weight load of the enclosures. This is particularly important if the enclosures are steeply angled upward or downward, as most or all of the weight may be supported by the front or rear points only.

IMPORTANT: The installer is solely responsible for determining if all rigging components that are used to mount or suspend the enclosure(s) are adequately sized and rated, and if the structure they are mounted or suspended from is capable of safely supporting the aggregate weight load. If multiple enclosures are suspended, it is the installer's responsibility to insure that the combined weight load does not exceed the Working Load Limit of any one rigging fitting.

1. The T-Bar Mounting Bracket, sometimes referred to as the "T" Mounting Bracket, is attached to each ENT-FR/LF column loudspeaker. Remove the T-Bar Bracket(s) from each column. This is most easily accomplished by either laying the loudspeaker on its side or placing it upside down on a level surface. There are eight set screws, four on each side of the rear of the enclosure, that secure this bracket to the enclosure. Once these are loosened, the Mounting Bracket may be slid down parallel to the enclosure, and then pulled out of the slot.

If multiple columns joined in a tall array are to be mounted using a single Pan-Tilt Bracket, purchase the ENT Coupler Bracket (ENT-CB) and follow the instructions in the complete ENT-FR/LF Installation/Operation Manual.

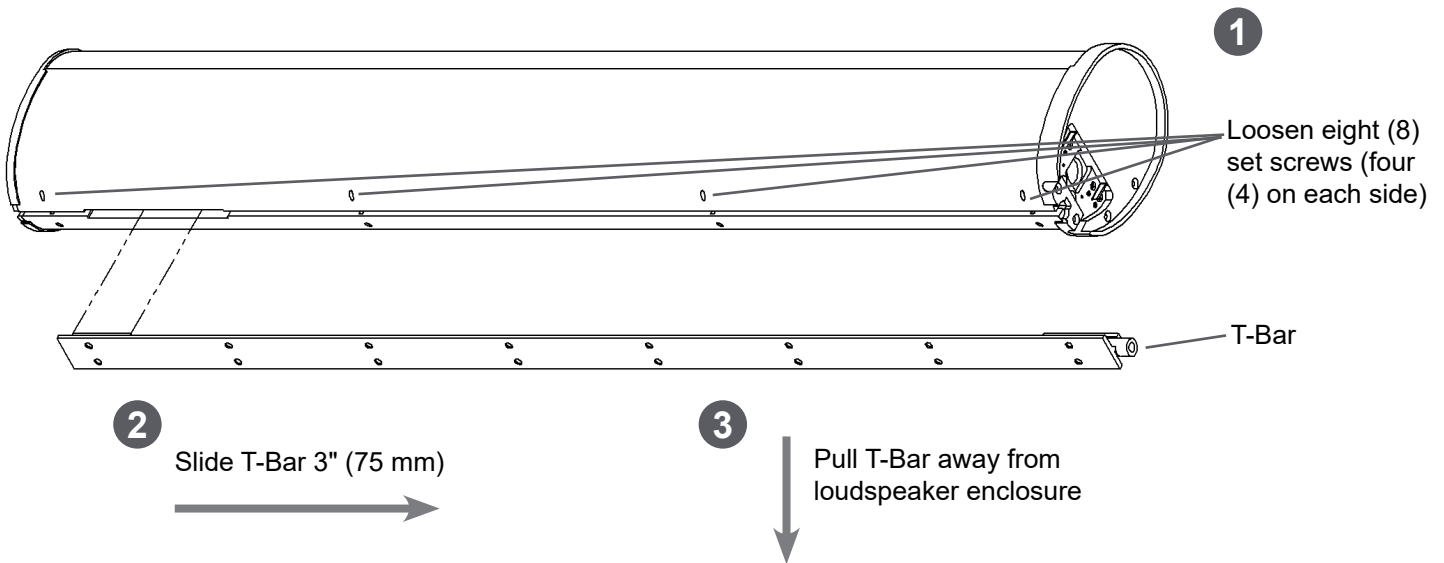


Figure 1. T-Bar bracket removal

2. For a single loudspeaker array, securely fasten four of the M6 x 30mm bolts and nuts to the "T" Bracket in the top four holes of the "T" Bracket. For a multiple loudspeaker array, securely fasten the four M6 x 30mm bolts and nuts to the top four holes in the top Coupler Bracket and "T" Bracket (Remove screws currently in the Coupler Bracket holes first). This will yield four mounting studs for the Top Angle Bracket. Do this before attaching any other parts of the Pan-Tilt Bracket or the washers to the "T" Bracket.
3. Attach the Top Angle Bracket to the four mounting studs using the M6 flat washers, lock washers and nuts shown in Figure 2. Tighten these nuts securely.
4. Attach the Top Wall Bracket to the Small Extension Bracket using the M10 x 25mm bolt, flat washer, lock washer, and nut. Be sure to place the Locking Bar into position during this step. Only finger tighten the M10 bolt and nut.

Installation (continued)

5. Attach the Medium and Large Extension Brackets to the Small Extension Bracket as needed to achieve the correct length for the desired down-tilt angle. Use the M6 x 16mm pan head screws, flat washers, lock washers, and nuts. Tighten securely. Use the fewest number of Extension Brackets possible to achieve the correct total length. Be sure to attach additional Extension Brackets below the previous Extension Bracket as they progress away from the Small Extension Bracket.
6. Insert the M6 x 25mm screw, flat washer, lock washer, and nut into position in the Locking Bar and Top Wall Bracket and tighten.
7. Attach the Extension Bracket assembly to the Top Angle Bracket using M6 x 16mm screws, flat washers, lock washers, and nuts. Tighten securely.

NOTE: Tables detailing which Extension Brackets to use for a particular array size and down-tilt angle are on pages 6-7 of this manual.

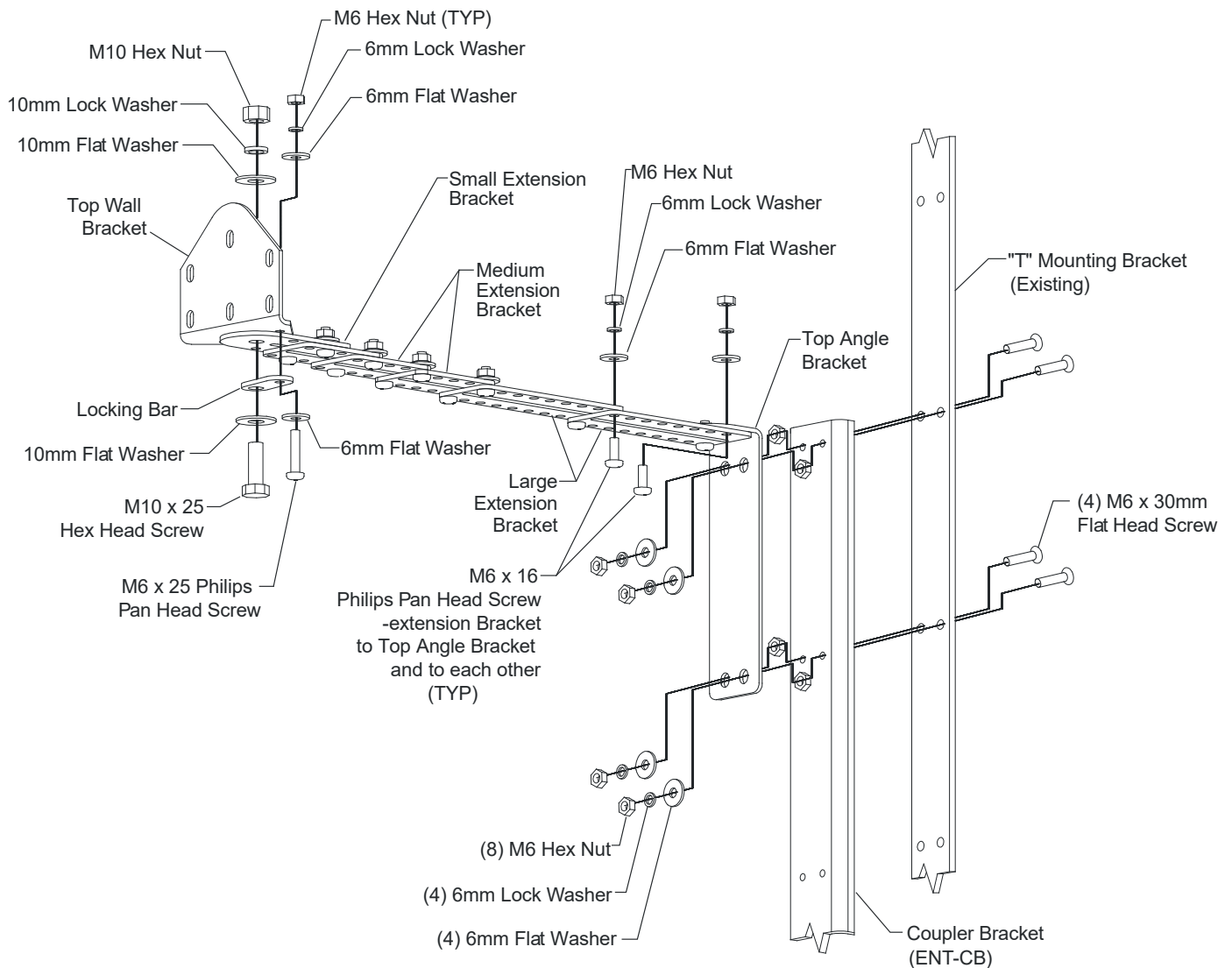


Figure 2. Top Assembly Detail

Installation (continued)

8. Attach the Bottom Bracket to the Bottom Fitting at the bottom of the "T" Bracket using the M10 x 20mm bolt, lock washer, and flat washer.
9. Place the Pan-Tilt Bracket assembly on the wall where the column array is to be installed. Mark the positions on the wall where the holes in the Pan-Tilt Bracket are located.
10. Remove the Pan-Tilt Bracket assembly from the wall and prepare the wall to accept the hardware to attach the Pan-Tilt Bracket assembly to the wall.

IMPORTANT: Installer must provide the appropriate hardware for the mounting surface and the weight of the array.

11. Attach the Pan-Tilt Bracket assembly to the wall.
12. Slide the bottom ENT loudspeaker onto the "T" Bracket. Tighten all eight of the M4 Set Screws on the enclosure. Place each additional ENT enclosure on the "T" Bracket in the desired order. Tighten all eight of the M4 Set Screws for an enclosure before another enclosure is placed on top of it. Any Dual Banana Plug Jumpers should be placed into position during this step.
13. Loosen the M6 screw on the outside portion of the Locking Bar. This will allow the array to pivot to point toward the desired location. Aim the array and then tighten the M6 screw on the Locking Bar.
14. Securely tighten the M10 bolts on the Top Wall Bracket and the Bottom Bracket.

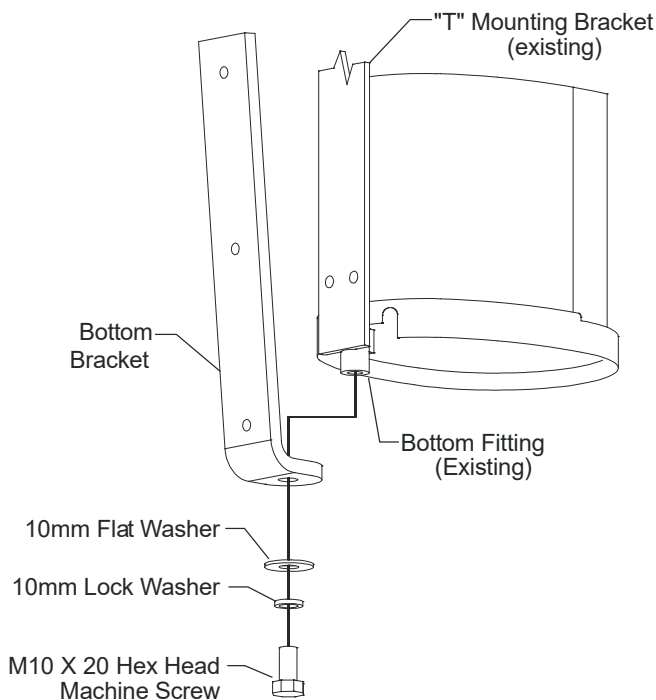


Figure 3. Pan-Tilt bottom assembly

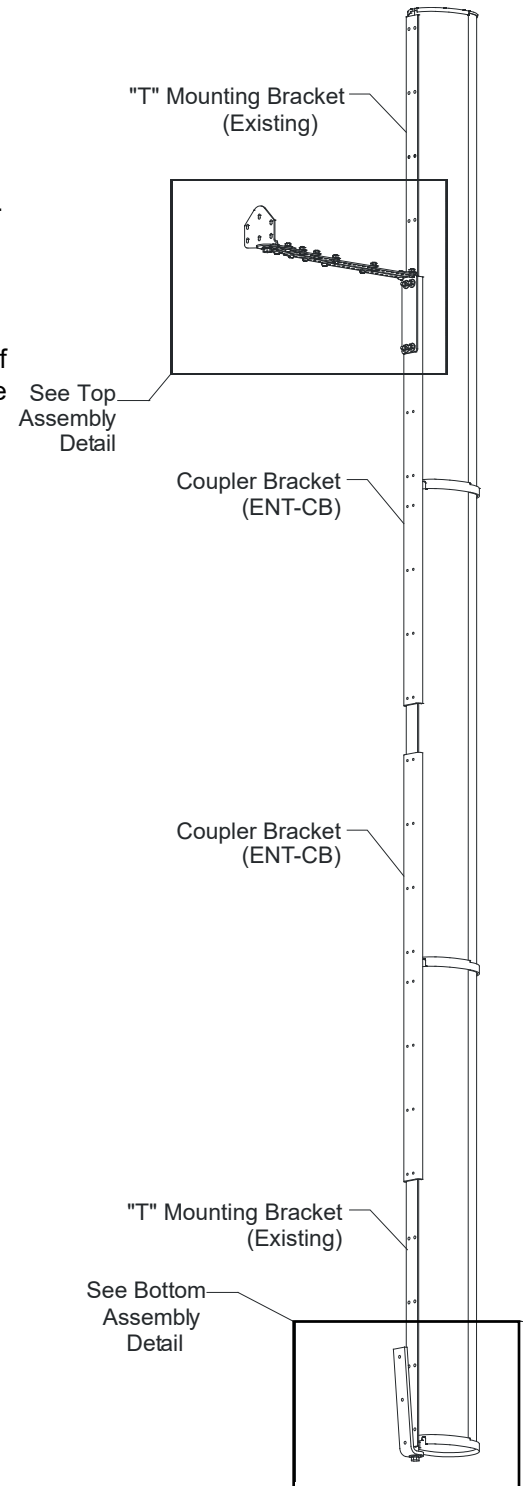


Figure 4. 3-Column array with top and bottom assemblies and brackets

Installation (continued)

A bracket cover is provided to help maintain a cosmetically appealing installation. This cover consists of two pieces of black or white PVC extrusion. These should each be cut to the required length and then placed above and below the Extension Bracket assembly as shown in Figure 5. The two pieces of extrusion will snap together to enclose the Extension Bracket assembly and hide the hardware.

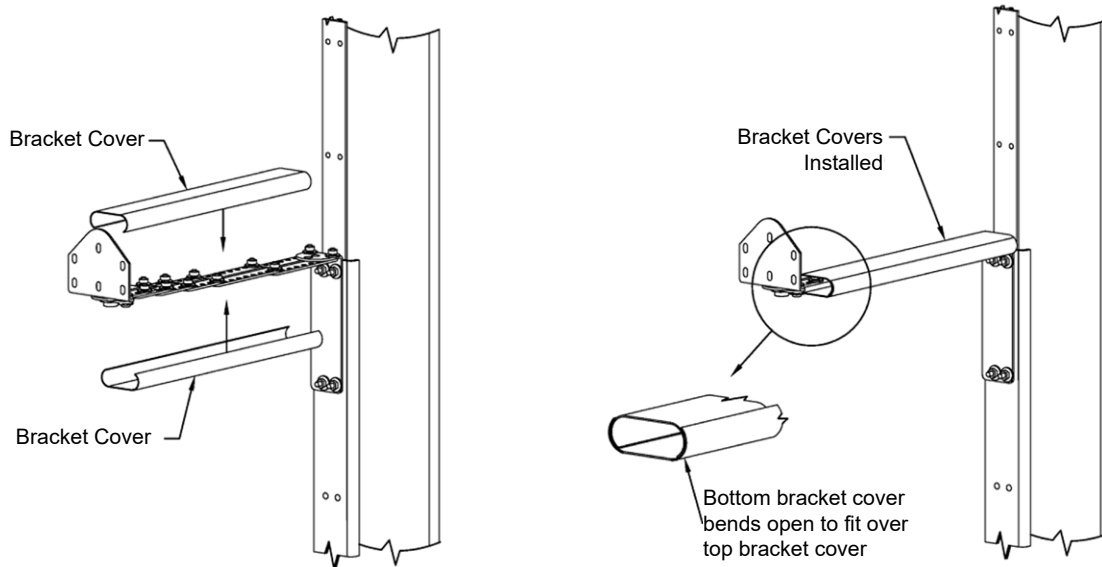


Figure 5. Pan-Tilt bracket cover assembly



IMPORTANT: Whenever ENT column loudspeakers are installed outdoors, or exposed to direct rain, water or precipitation, the loudspeaker enclosure must be angled downward at a minimum of two (2) degrees.



IMPORTANT: All rigging elements must be reviewed by a licensed engineer or certified rigging professional to ensure they are sufficient for the application.

ENT-FR/LF Column Down Angles

The following tables indicate the number of holes in an Extension Bracket that should extend past the Small Extension Bracket to the Top Angle Bracket to achieve the listed down angle. When attaching the Small Extension directly to the Top Angle Bracket there are no extra Extension Bracket holes.

The Top Angle Bracket will attach to the last of these holes that extend past the Small Extension Bracket. The holes in the small extension bracket where the Top Angle Bracket attaches must be counted as one of the holes listed in the "Holes" column in these tables.

One ENT Column Loudspeaker		
Extension Brackets	Holes	Angle
Small	-	4.7
1x Medium	1	5.4
	2	6.2
	3	7.0
	4	7.7
1x Large	5	8.5
	6	9.2
	7	9.9
	8	NA

Two ENT Column Loudspeakers		
Extension Brackets	Holes	Angle
Small	-	3.2
1x Medium	1	3.7
	2	4.2
	3	4.8
	4	5.3
1x Large	5	5.8
	6	6.3
	7	6.8
	8	7.4
1x Medium + 1x Large	9	7.9
	10	8.4
	11	8.9
	12	9.4
2x Large	13	9.9
	14	NA
	15	NA
	16	NA

Three ENT Column Loudspeakers		
Extension Brackets	Holes	Angle
Small	-	1.9
1x Medium	1	2.2
	2	2.5
	3	2.8
	4	3.1
1x Large	5	3.5
	6	3.8
	7	4.1
	8	4.4
1x Medium + 1x Large	9	4.7
	10	5.0
	11	5.3
	12	5.6
2x Large	13	5.9
	14	6.2
	15	6.5
	16	6.9
1x Medium + 2x Large	17	7.2
	18	7.5
	19	7.8
	20	8.1
2x Medium + 2x Large	21	8.4
	22	8.7
	23	9.0
	24	9.3
3x Medium + 2x Large	25	9.6
	26	9.9
	27	NA
	28	NA



WARNING: Do not extend ENT arrays beyond a 10° down angle for a one, two, or three column array or beyond a 5° down angle for a four or five column array. Attempting to do so will exceed the Working Load Limit of the bracket and could result in the failure of the bracket and potentially result in severe injury and/or loss of life.



CAUTION: The bolts used and wall material into which the Pan Bracket assembly is bolted must be capable of supporting the load of the ENT array. It is the responsibility of the installer to verify these items.

ENT-FR/LF Column Down Angles *(continued)*

Four ENTASYS Column Loudspeakers		
Extension Brackets	Holes	Angle
Small	-	1.4
1x Medium	1	1.6
	2	1.8
	3	2.0
	4	2.2
1x Large	5	2.5
	6	2.7
	7	2.9
	8	3.1
1x Medium + 1x Large	9	3.3
	10	3.6
	11	3.8
	12	4.0
2x Large	13	4.2
	14	4.4
	15	4.7
	16	4.9

Five ENTASYS Column Loudspeakers		
Extension Brackets	Holes	Angle
Small	-	1.1
1x Medium	1	1.2
	2	1.4
	3	1.6
	4	1.7
1x Large	5	1.9
	6	2.1
	7	2.3
	8	2.4
1x Medium + 1x Large	9	2.6
	10	2.8
	11	2.9
	12	3.1
2x Large	13	3.3
	14	3.5
	15	3.6
	16	3.8
1x Medium + 2x Large	17	4.0
	18	4.1
	19	4.3
	20	4.5
2x Medium + 2x Large	21	4.7
	22	4.8
	23	5.0
	24	NA



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NOTE: Every effort has been made to ensure that the information contained in this manual was complete and accurate when printed. However, due to ongoing technical advances, changes or modifications may have occurred that are not covered in this manual. The latest version is available at biamp.com.



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