# GRACE
## DESIGN



# SPACEBAR

## Modular Microphone Positioning System

User Manual, Revision E, April 2023

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Welcome and thanks for purchasing a Grace Design Spacebar microphone positioner. We build all of our products to be completely reliable and easy to use, so you can concentrate on making great recordings, not struggling with complicated equipment or difficult product manuals. While you will find the Spacebar is completely straightforward to use, we do ask that you familiarizie yourself with this product manual to help avoid any common user difficulties.

The Grace Design Spacebar modular microphone positioning system allows for precise and repeatable setting of microphone capsule spacing and angle of incidence in a wide array of microphone configurations. With precision scales for angle and distance engraved on the Spacebar components, it becomes easy to make perfectly repeatable stereo and multichannel microphone setups.

The Spacebar modular system components can be purchased in pre-configured assemblies for several standard microphone arrays. As well, it is possible to build a virtually limitless range of microphone holding structures to meet any need.

The Spacebar system is precision fabricated from machined aircraft aluminum, brass, and stainless steel. If properly cared for it should last a lifetime. In the event that you encounter any technical or operational difficulties with this or any Grace Design products, please feel free to contact us at 303-823-8100, 9 to 5, Monday through Friday, MST. Or you can email any questions to: info@gracedesign.com


**Note:**

As of March 2023 the following systems will be available with the SB-SMA-HD Heavy Duty Stand Mount adapter.

SB-DT-HD     Decca Tree

SB-SUR-HD   Surround Tree

SB-3D11       2L 1M Cube

These systems can be large and heavy. The SB-SMA-HD is much stronger than the regular SB-SMA stand mount adapter that uses 5/8-27 microphone threads.  The SB-SMA-HD does require a stand with a 5/8" (16mm) "baby" pin or a 1-1/8" (23mm) "junior" socket.

If you already own one of the multichannel arrays listed above we highly recommend purchasing the SB-SMA-HD.

## *Standard Pre-configured Arrays:*

**SB-SUR-HD** Surround Tree

Holds 5 microphones
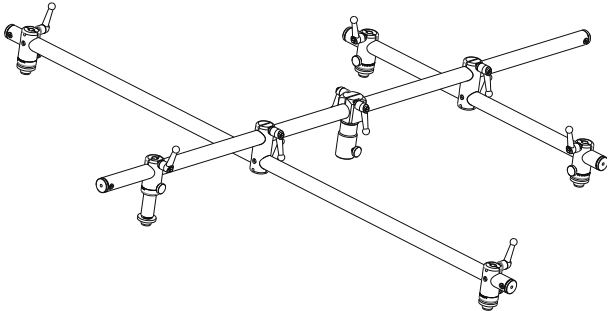
**SB-3D** 2L 1M Cube

Holds 11 microphones
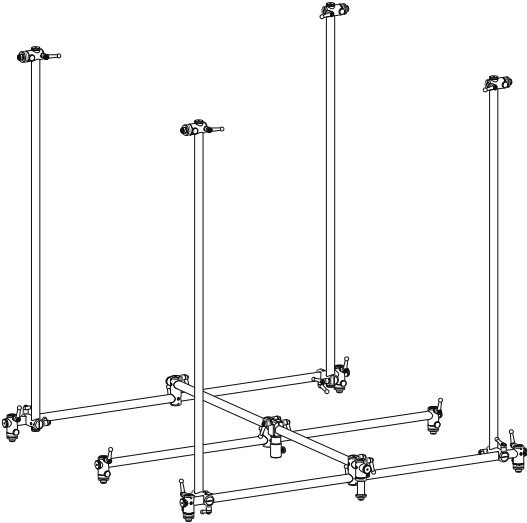
| | |
|---|---|
| **SB-Prism**  2L 1M x 2M Array. Holds 11 microphones. Note, order SB-3D with additional SB-SMA or SB-SMA-HD | |
| **SB-DT-HD** Decca Tree<br><br>Standard 3 microphone tree 2M x 1M | |
| **SB-BL** Blumlein<br><br>Holds standard large diaphragm microphones in a vertical Blumlein configuration. | |

| | |
|---|---|
| **SB-BLRA** Blumlein right angle<br><br>Holds RCA 44 type ribbon microphones in a vertical Blumlein configuration. |  |
| **SB-100** 1 meter AB bar<br><br>Straight 1 meter stereo bar. Can be extended to 2 meters. |  |
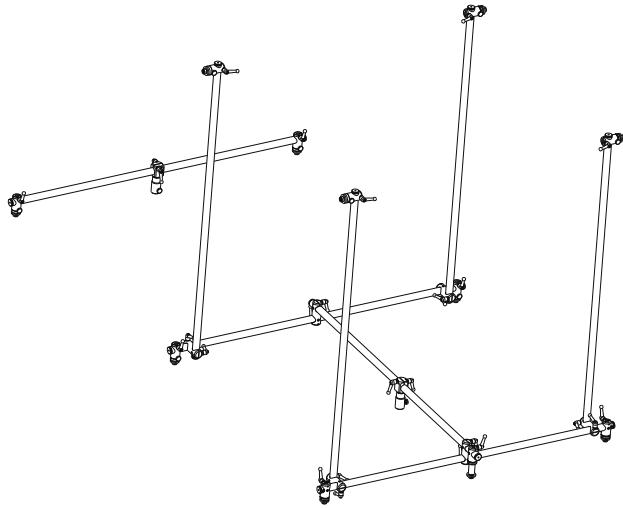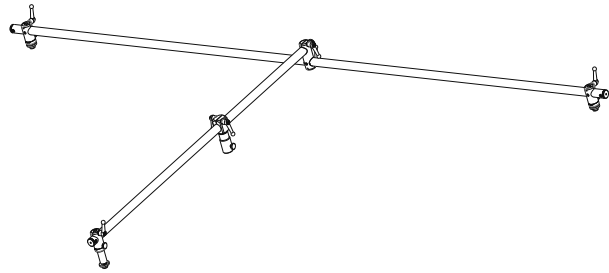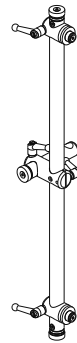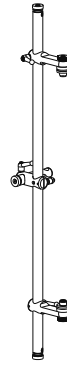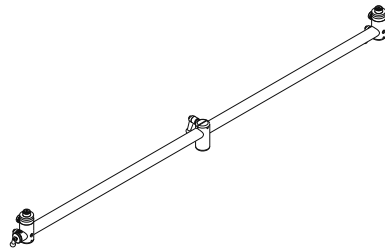
## *Spacebar Modular Components:*

| | |
|---|---|
| **SB-AMH** Adjustable Mic Holder<br><br>Mic holder with precision angle scale. 5 degree markings from +90 to -90 degrees. |  |

| | |
|---|---|
| **SB-AMHEX** Adjustable Mic Holder<br><br>Same as SB-AMH but with 1.5" (38mm) extension. Used to make mics on perpendicular bars have matching vertical positions. | |
| **SB-MH** Standard Mic Holder | |
| **SB-AMHRA** Adjustable Mic Holder, Right Angle | |
| **SB-HB** Hanging Bar | |

| | |
|---|---|
| **SB-TJ90** 90 Degree Tube Joiner<br><br>Allows any two 7/8" tubes to be joined at a 90 degree angle. | |
| **SB-SMA** Stand Mount Adapter<br><br>5/8"- 27 thread<br>Comes with 3/8-16 European style thread adapter. | |
| **SB-SMA-HD** Heav Duty Stand Mount Adapter<br><br>For 5/8" (16mm) "baby" pin and 1-1/8" (23mm) "junior" socket. Recommended for multichannel arrays and anytime a lighting stand is used instead of a microphone stand. | |
| **E407** 53cm bar<br><br>7/8" diameter,  LASER etched scale reads 25-0-25cm. | |
| **E414** tube end plug<br><br>Attaches to the end of any of the 7/8" tubes. Provides a threaded hole for attaching hooks for guide lines or an E414 24m thumb screw to provide a safety stop for microphone holders. | |

| | |
|---|---|
| **E418** Tube Joiner<br><br>Joins any two 7/8" tubes. Made from very strong 304 stainless steel. | |
| **E420** 105cm bar | |
| **E421** 80cm bar | |
| **E422** 90 degree stand mount | |
| **E405** 42mm thumb nut w/ #10-32 x 7/8" screw | |
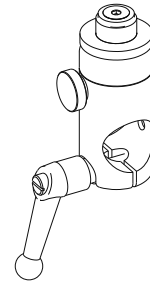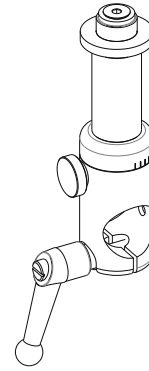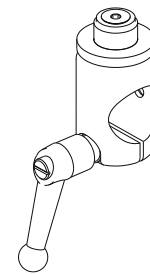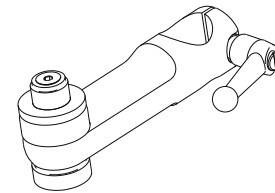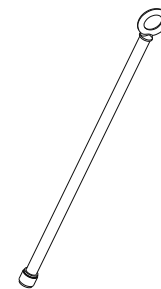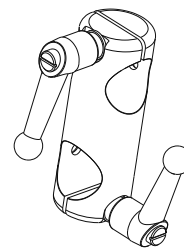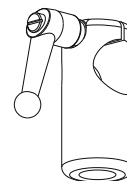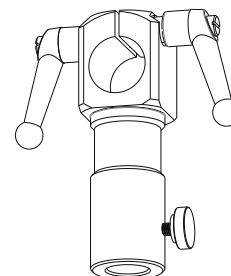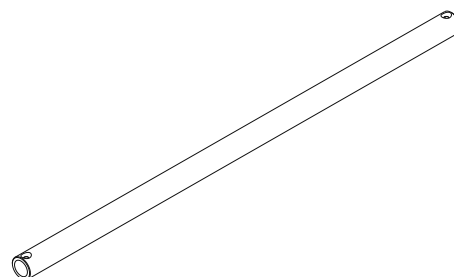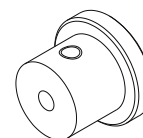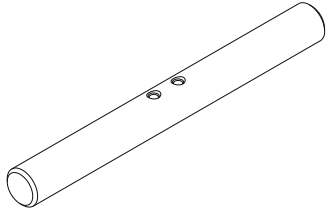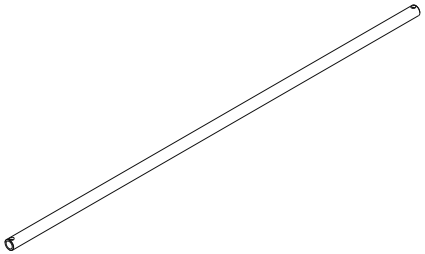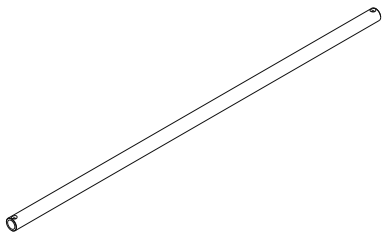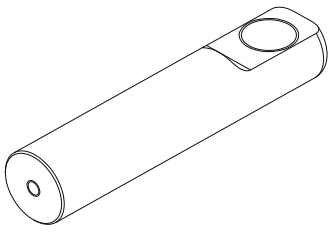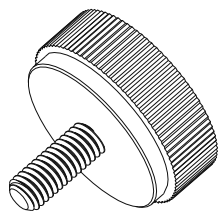
Note:  All components which feature microphone mounts come standard with 5/8-27 American

standard threads.  As well, all microphone mounts can be ordered with the European standard 3/8-16 British Standard Whitworth threads. These part numbers will have a - BSW suffix.

# *Spacebar Configurations Detail*

## Surround Tree

The SB-SUR system allows for mounting of 5 microphones. In its standard configuration three microphones can be mounted as a "front triplet" and two microphones can be mounted as a rear pair.  All microphone spacings can be precisely adjusted using the engraved centimeter scales on the bars. Also, all microphone angles of incidence can be precisely adjusted in 5 degree increments.

The front left and right microphone holder spacing can be adjusted from 6cm to 102cm if using the E420 105cm bar and 6cm to 50cm E407 53cm bar.

For surround microphone arrays using the SB-SUR system we highly recommend visiting http://www.mmad.info. This website was created by Michael Williams who has written much about multichannel microphone array design. It contains an interactive design decision sequence for tailoring your microphone configuration to your specific acoustic venue. The underlying theory for this design approach is contained in a series of AES papers written by Michael Williams.
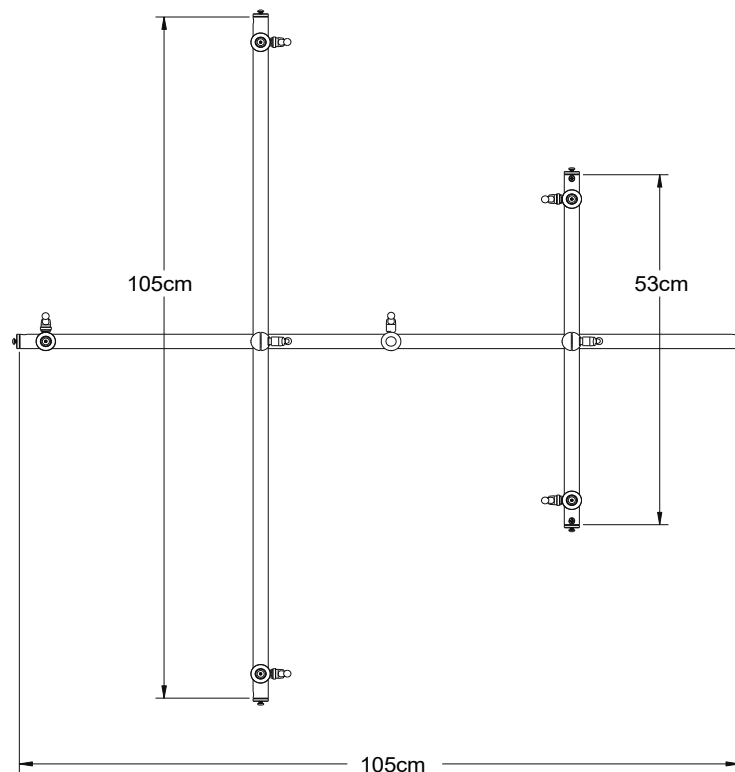


See the SB-SUR system exploded parts diagram for a list of included components.

## 2L 1 Meter Cube 11 Channel Array

The SB-3D11 immersive surround microphone array was developed by Grammy award winning Morten Lindberg from 2L. The array makes a 1 meter cube with a 7 channel array at the lower level and a 4 channel array at the upper level. Due to the size and weight of this array it comes with the SB-SMA-HD Stand Mount Adapter. The SB-SMA-HD can sit on a 5/8" (16mm) "baby" pin or a 1-1/8" (32mm) "junior" socket receiver.

Mounting this array using a 5/8-27 microphone mounting thread is not recommend.



TOP VIEW                                    FRONT VIEW
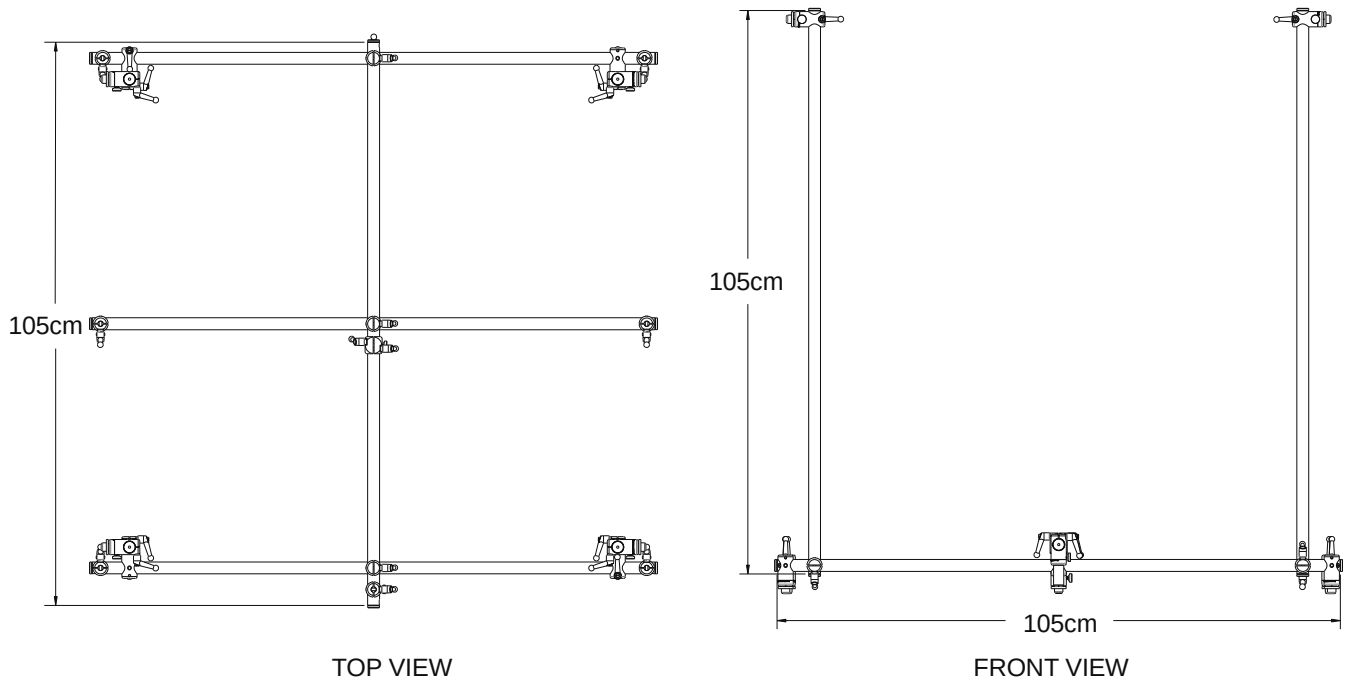
See the SB-3D11 system exploded parts diagram for a list of included components.

## 2L Prism 11CH Array

The SB-Prism array is 2L's evolution of the 1 Meter Cuba array above. The Prism configuration places the rear channels on a separate stand so that the array has the dimensions of 1M wide, 1M high, 2M deep. This system can be created from the SB-3D11 1 Meter Cube system by adding the SB-SMA or SB-SMA-HD stand mount adapter.

105cm

105cm

105cm
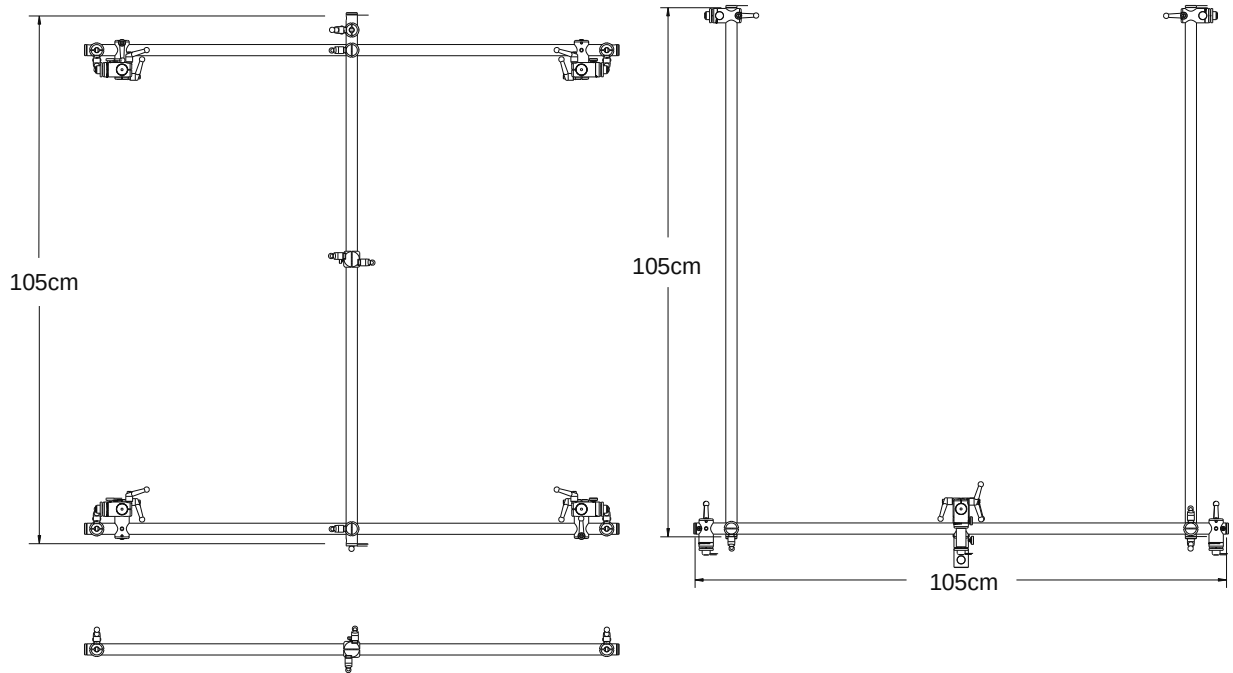
TOP VIEW                    FRONT VIEW

## Decca Tree

This classic microphone configuration was developed by Decca Records engineers in the 1950s. The Spacebar Decca Tree configuration provides a simple, precise, and easy to set up solution for this technique. The standard Spacebar Decca Tree comes with three E420 1 meter tubes, an SB-SMA 5/8"-27stand mount adapter and three SB-AMH adjustable mic holders. These are configured to provide a 2 meter spacing between left and right microphones and a center microphone 1 meter forward. Since the stand mount adapter can move front to back on the 1 meter tube it should be located at the balance point for maximum stability.
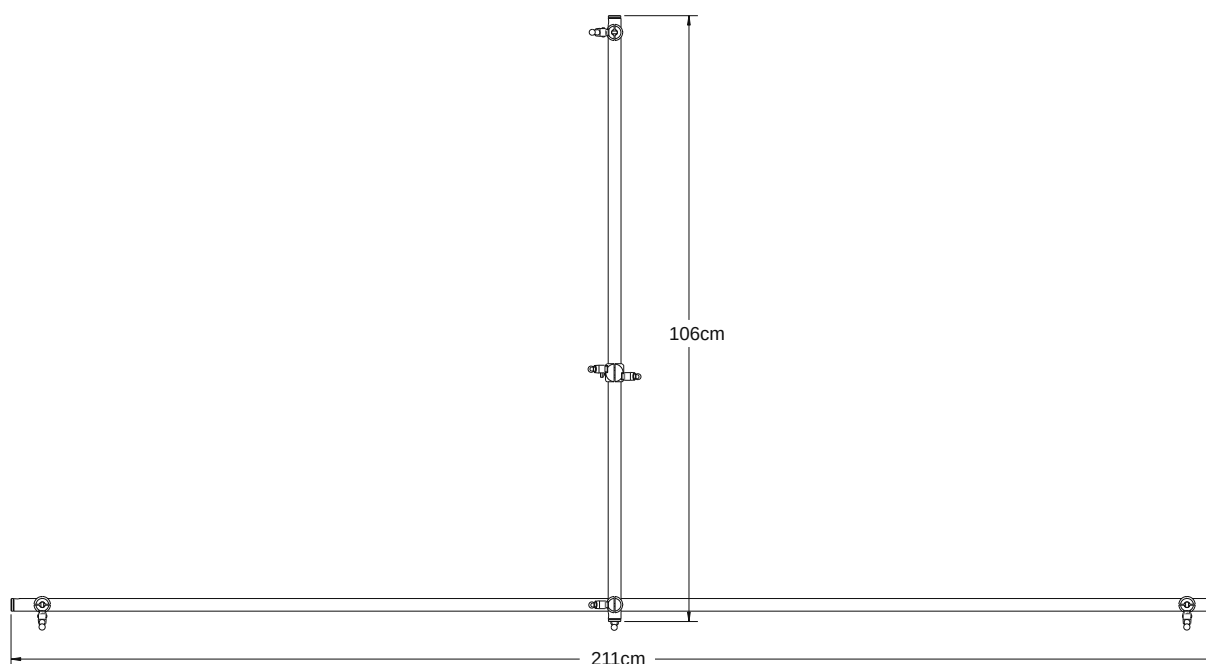


See the SB-DT system exploded parts diagram for a list of included components.

## Blumlein

The Blumlein stereo micing technique was pioneered by Alan Blumlein in the 1930s.  The Spacebar Blumlein configuration allows for holding two figure-8 microphones on the same vertical axis and at a precise 90 degree angle of incidence. Two types of mic holder are available depending on the microphones being used. For RCA 44 and RCA 77 type mics and their derivatives the SB-AMHRA holder should be used. Most other microphones can be

mounted with the SB-MH standard mic holder.

A unique feature of the Spacebar Blumlein configuration is that the whole vertical tube assembly can be rotated on a horizontal axis allowing the mics to be aimed up or down relative to the horizontal plane. This can be very useful when micing and ensemble from above on a tall stand.
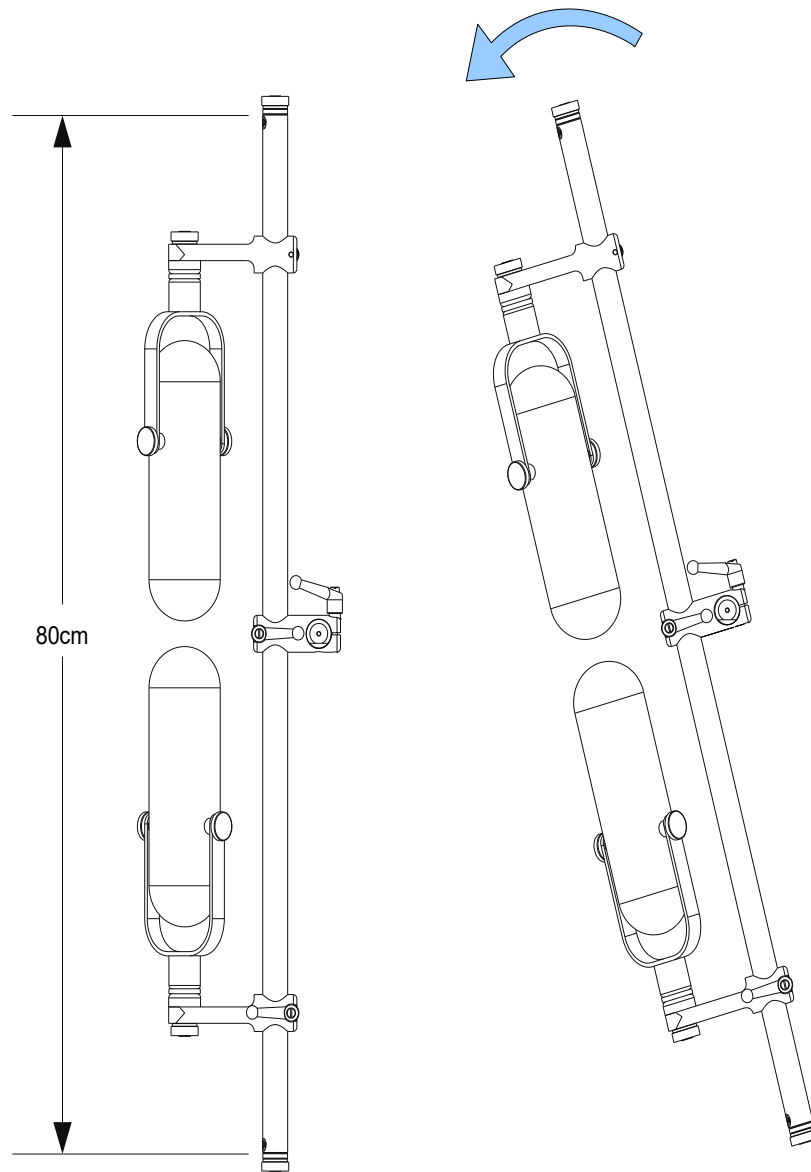


**B-BLRA Blumlein with SB-AMHRA right angle mic holders (shown with RCA 44 type mics)**

See the SB-BLRA system exploded parts diagram for a list of included components.
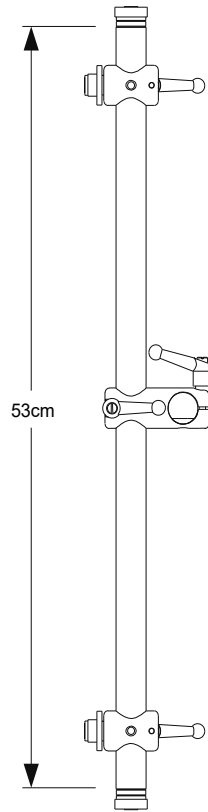
**SB-BL Blumlein with SB-MH standard mic holders**

See the SB-BL system exploded parts diagram for a list of included components.

## AB Stereo

The AB Stereo microphone technique typically uses two omni-directional microphones spaced apart by a distance. The SB-100 configuration is basically a 1M wide stereo bar. With the addition of another E420 tube and a E418 joiner tube, the SB-100 becomes an SB-200 2 meter stereo bar.
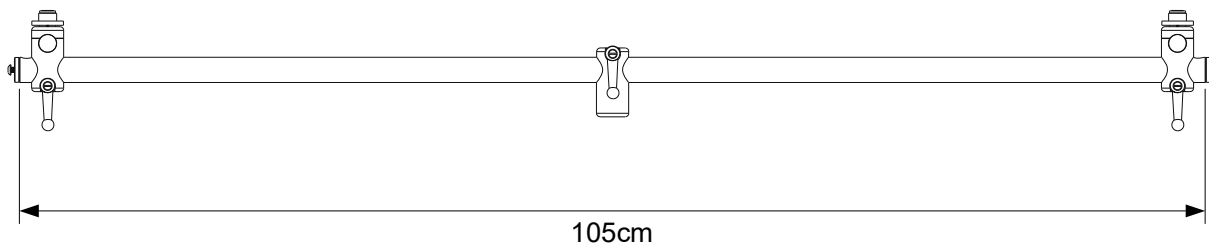


**SB-100**

See the SB-100 system exploded parts diagram for a list of included components.

## Hanging Arrays

For applications that require hanging a microphone array from a ceiling, the SB-HB hanging bar can be used. The SB-HB can be used with the SB-SUR surround tree, SB-DT Decca tree, and the SB-100 AB bar. The SB-HB has a 1 inch eye-bolt on one end and threads into the SB-SMA stand mount adapter at the other. The SB-HB can be ordered in two versions:

1. SB-HB-1M with a guide line yoke sized for 1 meter wide bars.

2. SB-HB-2M with a guide line yoke sized for 2 meter wide bars.

HANGING CABLE

GUIDE LINE YOKE

SB-HB HANGING BAR

VERTICAL ANGLE ADJUST
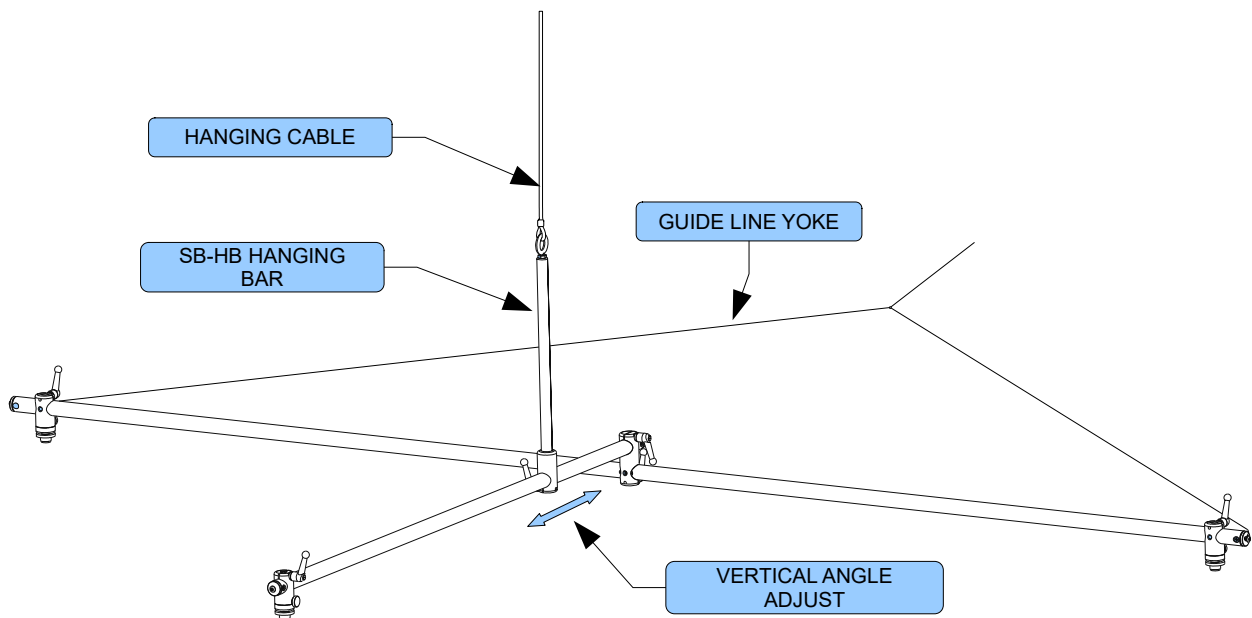
**Decca Tree with SB-HB Hanging Bar**

## *Setup Basics*

## SB-AMH/SB-MH

All of the modular microphone holder assemblies use adjustable clamping handles to tighten and loosen the holder from the tube it is mounted on. Turning the handle clockwise will tighten or "clamp" the holder in position on the tube. The clamping action is very secure and does not require extreme torque on the handle. As well, the final position of the handle can be adjusted

by pulling on the handle while rotating. This allows the handle to be adjusted so that it can be at a convenient angle for tightening or loosening.
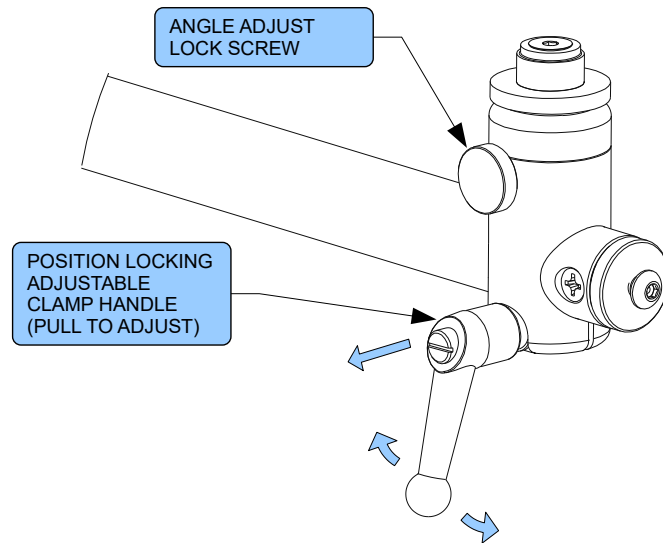


**SB-AMH Adjustable Mic Holder**

The angle of incidence of a mounted microphone can be precisely set by using the angle indicating protractor markings which are engraved on the front of the SB-AMH. The angle is indicated from +90 to -90 degrees in 5 degree increments. **The angle adjust thumb screw must be loosened before rotating the upper portion of the microphone holder.**
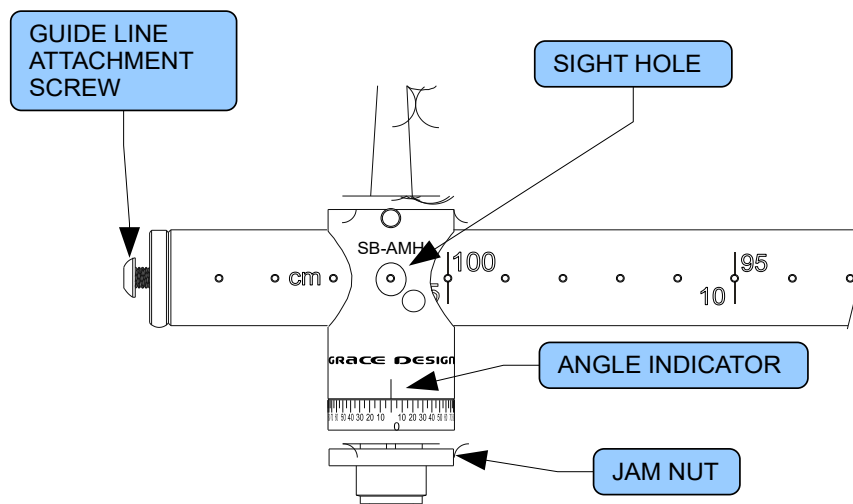


**SB-AMH Adjustable Mic Holder showing protractor markings and sight hole**

To calibrate the angle of incidence, follow these steps:

A) Loosen locking thumb screw and rotate mic holder so that 0 degrees is indicated. Then re-tighten the thumb screw.

B) Thread on the microphone clip and orient it so that it is perpendicular to the Spacebar tube.

C) Lock the microphone clip in place by tightening the jam nut against it.

D) Now the angle of the microphone can be precisely adjusted by loosening the thumb screw and rotating the microphone.

The location of the microphone holder can be precisely set by using the numeric scales engraved on the tubes. The SB-MH and SB-AMH feature a sight hole that allows microphone holder to be positioned on the centimeter indicator circles. The SB-TJ90 tube joiner also has sight holes allowing for proper centering of cross bars and measurement between cross bars and microphone holders. The scales on the various bars are indicated as follows:

• E420 indicated in centimeters and reads 0 to 105cm from left to right and 105 to 0cm right to left.

• E421 indicated in centimeters and reads 40-0-40cm.

• E407 indicated in centimeters and reads 25-0-25cm from the center.

## E418 Tube Joiner

The E418 tube joiner is used to connect any two of the 7/8" diameter tubes. Typically used for the 2 meter segment of the Decca Tree or for very wide stereo bars. To join two tubes simply slide the tube joiner bar into one of the tubes and secure with the 8-32 x 1/4" flat head screw. Next, slide the second tube over the joiner bar and secure with the other screw. See diagram below.



E418 TUBE JOINER

H402 8-32 x 1/4"
FLAT HEAD SCREWS
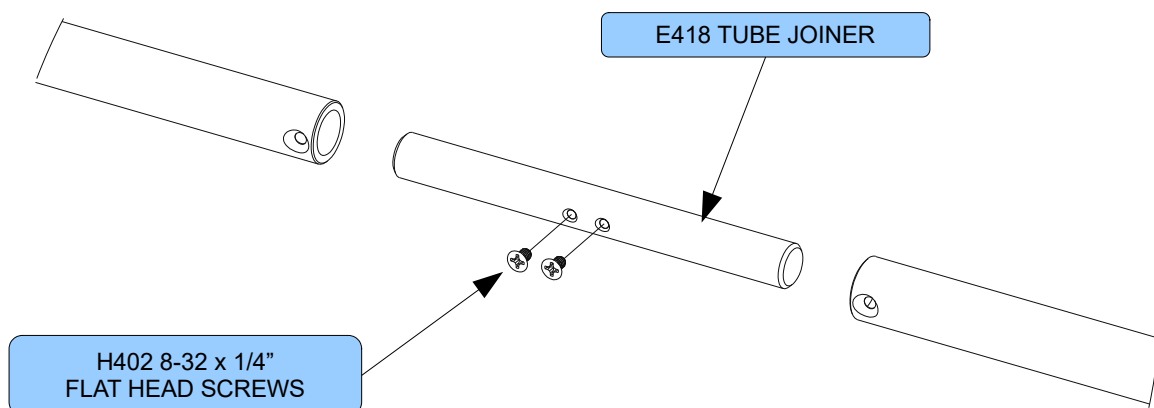
## **SB-HB** Hanging Bar

The SB-HB assembly threads into the SB-SMA stand mount adapter as shown below.
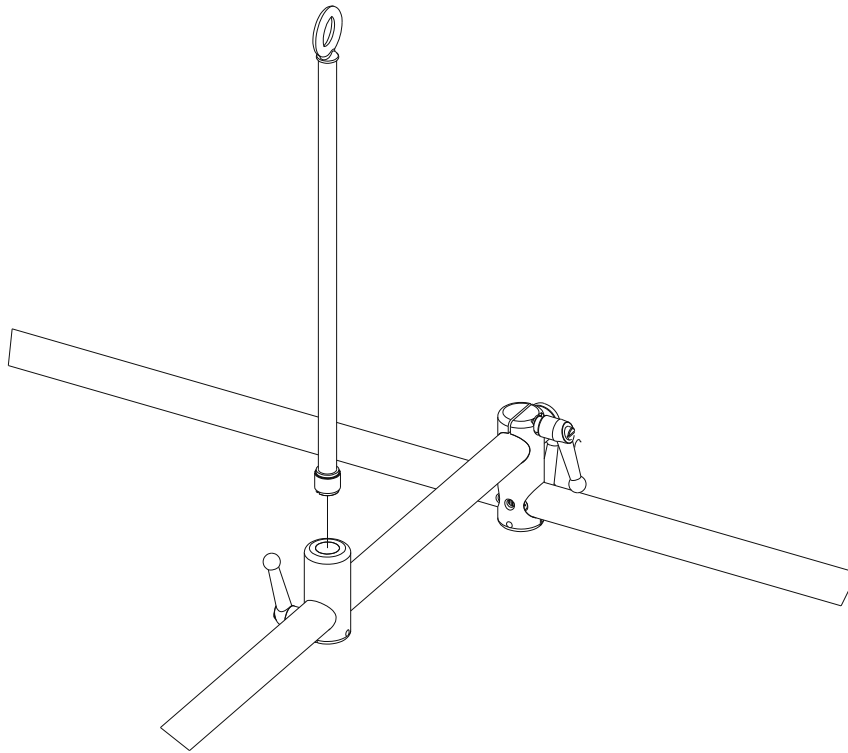
**SB-HB assembly**

When hanging the microphone array can be aligned to the sound source by attaching the supplied guide line yoke to the ends of the 7/8" tubes. With user supplied line the yoke can be tied to an appropriate anchor point in the venue. These yoke lines are adjustable so that the microphone array can be precisely aimed. Adjustments can be made by slipping the mono-filament line through the shrink tubing to shorten one side of the yoke while effectively lengthening the other.
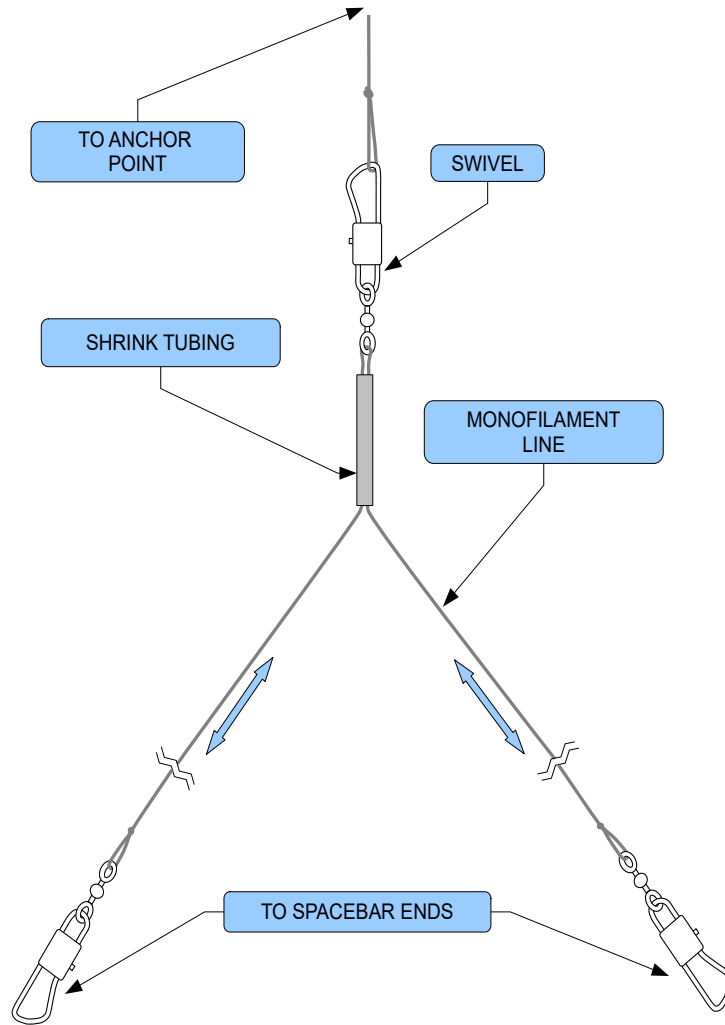
**Guide Line Yoke**

The ends of the yoke guide lines attach to the s-hooks on the ends of whatever bar is being used. The s-hooks (supplied with your Spacebar system) must be mounted to the end plugs of the tube with the supplied #10-32 x 1/2" button head cap screw. Use a 1/8" hex wrench. Do not tighten the screw so much that it binds the s-hook. The screw has a thread locking compound applied to its threads so it will not loosen after screw is installed.

H522 S-HOOK

H402 8-32 x 1/4"
FLAT HEAD SCREW

E414 END PLUG

H5434 10-32 x 1/2"
BUTTON HEAD
CAP SCREW
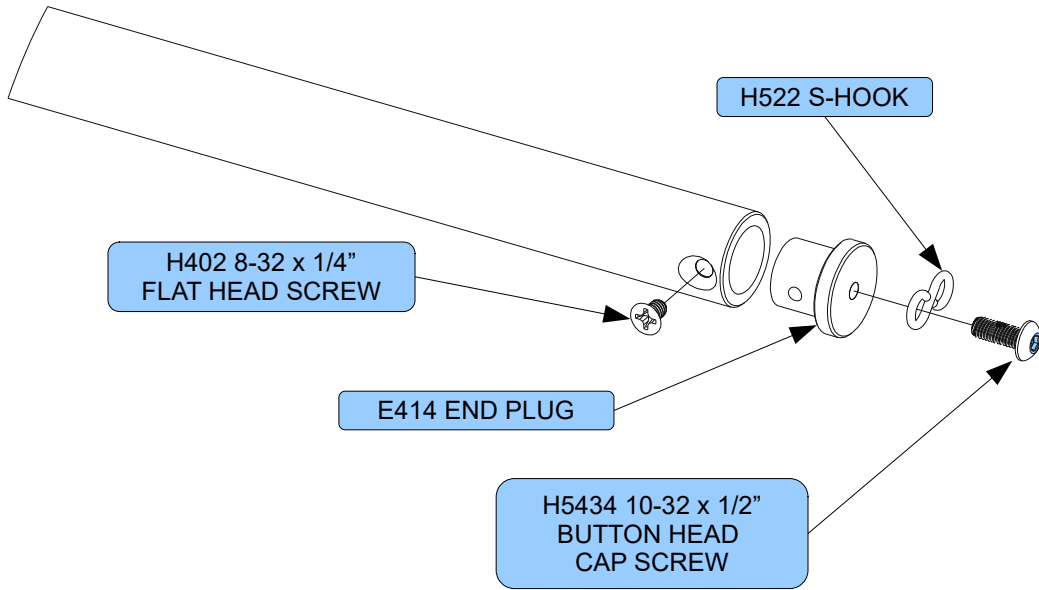
**Bar end s-hook installation**

#10-32 X 1/2"
BUTTON HEAD
CAP SCREW

SWIVEL

S-HOOK
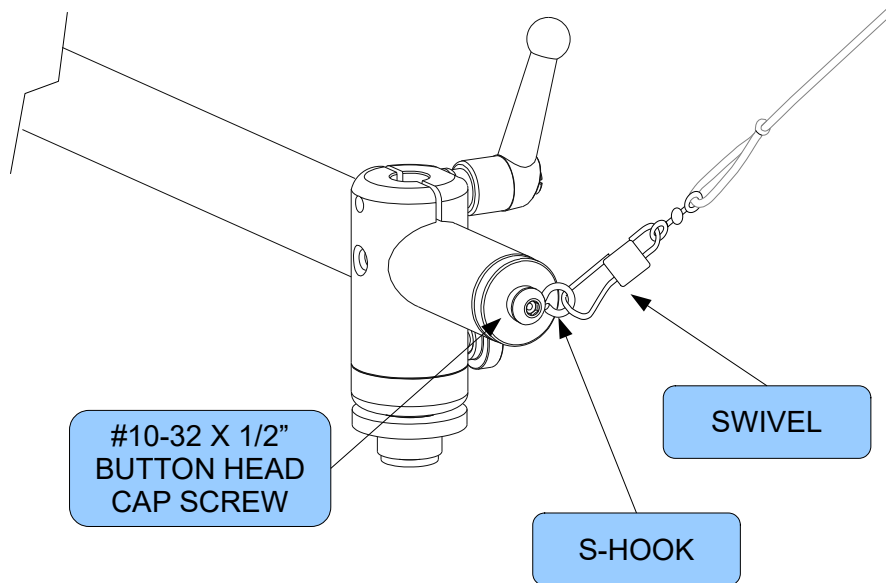
**guide line yoke attachment**

The vertical angle of the array can be adjusted by moving the stand mount adapter forward or rearward of the balance point.

# Exploded Parts Diagrams

## SB-AMH Adjustable Mic Holder

Apply Locktite 242

| ITEM NO. | Grace Part# | DESCRIPTION | QTY. |
|----------|-------------|-------------|------|
| 1 | E417 | Adjustable Mic Holder Top | 1 |
| 2 | H459 | 1/4-20 Flat Washer Bronze | 1 |
| 3 | H432 | 10-32 x 1/4" SK CP SS | 1 |
| 4 | H510 | Knob Black 5/8" | 1 |
| 5 | H514 | 5/8-27 Threaded Boss | 1 |
| 6 | H520 | Round Pin 1/16" x .3" | 2 |
| 7 | H446 | 10-32 x 3/4" Flat Socket Head Cap Screw | 1 |
| 8 | H447 | 10-32 x 3/16" Cup Point Set Screw | 1 |
| 9 | H512 | Adjustable Handle 10-32 x .78" stud | 1 |
| 10 | H448 | 10-32 x 3/8" Socket Low Head Cap Screw | 1 |
| 11 | H515 | 5/8-27 24mm Nut | 1 |
| 12 | E412 | Adjustable Mic Holder Tube Clamp | 1 |
| 13 | H445 | #10 Wave washer crescent | 1 |

Apply Grease

Apply Grease

## SB-AMHEX Adjustable Mic Holder 1.5" Extended



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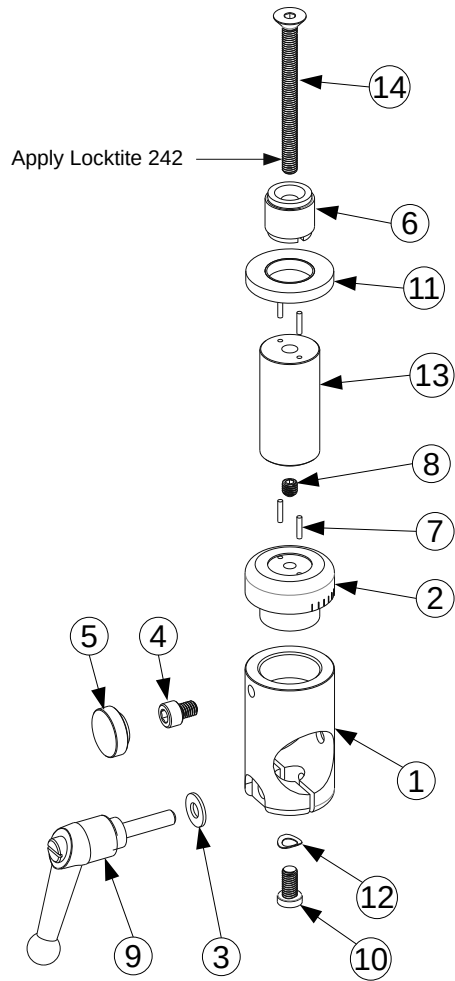
| ITEM NO. | Grace Part # | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | E412 | Adjustable Mic Holder Tube Clamp | 1 |
| 2 | E417 | Adjustable Mic Holder Top | 1 |
| 3 | H459 | 1/4-20 Flat Washer Bronze | 1 |
| 4 | H432 | 10-32 x 1/4" SK CP SS | 1 |
| 5 | H510 | Knob Black 5/8" | 1 |
| 6 | H514 | 5/8-27 Threaded Boss | 1 |
| 7 | H520 | Round Pin 1/16" x .3" | 4 |
| 8 | H447 | 10-32 x 3/16" Cup Point Set Screw | 1 |
| 9 | H512 | Adjustable Handle 10-32 x .78" stud | 1 |
| 10 | H448 | 10-32 x 3/8" Socket Low Head Cap Screw | 1 |
| 11 | H515 | 5/8-27 24mm Nut | 1 |
| 12 | H445 | #10 Wave washer | 1 |
| 13 | E424 | Mic Holder Extension | 1 |
| 14 | H439 | 10-32 x 2-1/4" Flat Head Socket Screw | 1 |

**SB-MH** Standard Mic Holder

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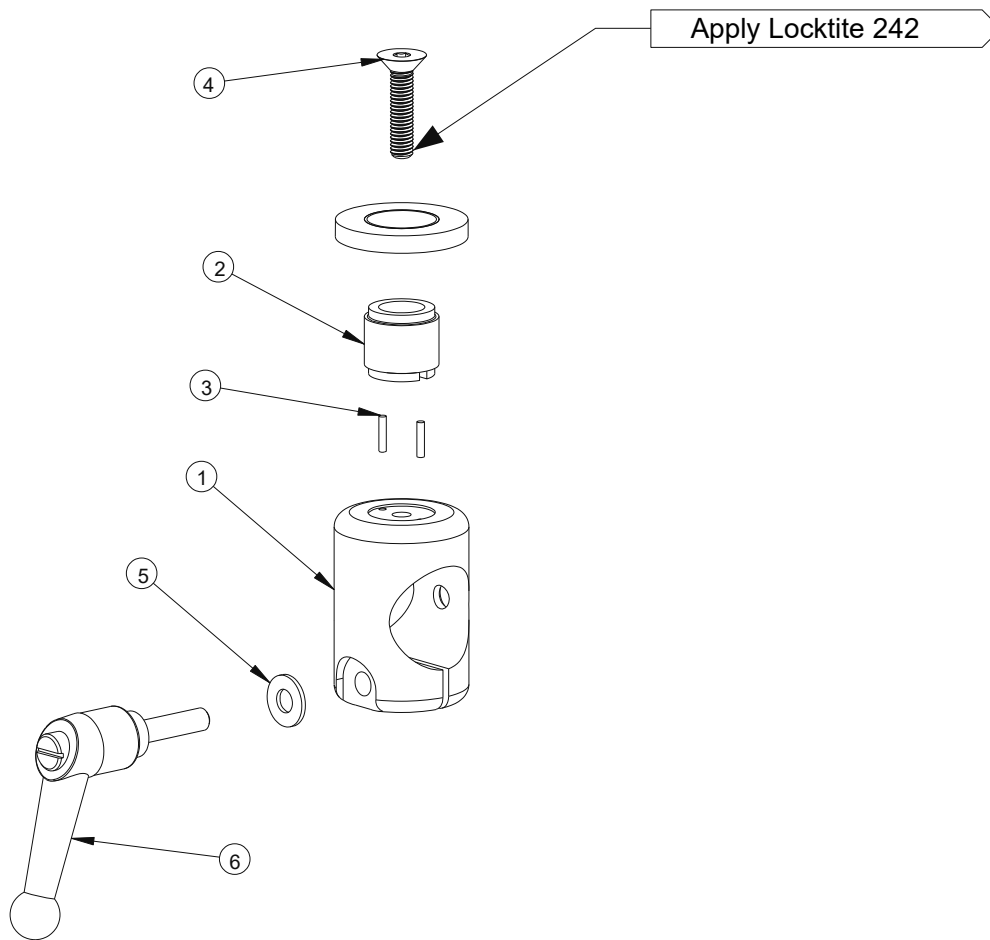
| ITEM NO. | Grace Part# | DESCRIPTION | QTY. | |
|---|---|---|---|---|
| 1 | E408 | Mic Holder 7/8" Tube Clamp | 1 | |
| 2 | H514 | 5/8-27 Threaded Boss | 1 | |
| 3 | H520 | Round Pin 1/16" x .3" | 2 | |
| 4 | H436 | 10-32 x 7/8" FL SC SS | 1 | |
| 5 | H459 | 1/4-20 Flat Washer Bronze | 1 | |
| 6 | H512 | Adjustable Handle 10-32 x .78" stud | 1 | |
| 7 | H515 | 5/8-27 24mm Nut | 1 | |

**SB-TJ90** 90 Degree Tube Joiner
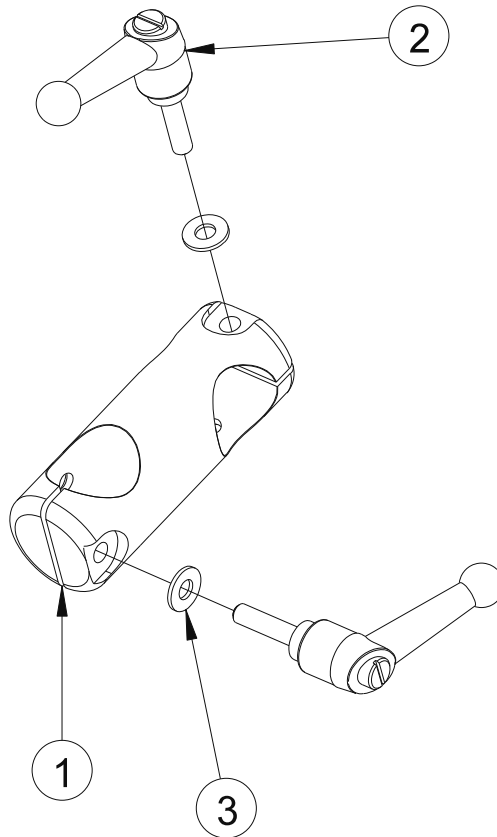
| ITEM NO. | Grace Part# | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | E415 | 90 Degree Tube Joiner | 1 |
| 2 | H512 | Adjustable Handle 10-32 x .78" stud | 2 |
| 3 | H459 | 1/4-20 Flat Washer Bronze | 2 |

## **SB-AMHRA** Adjustabe Mic Holder, Right Angle

| ITEM NO. | Grace Part # | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | E413 | Mic Holder Right Angle 3/4" Tube Clamp | 1 |
| 2 | E405 | 24mm Nut 10-32 Thread | 1 |
| 3 | H520 | Round Pin 1/16" x .3" | 2 |
| 4 | H514 | 5/8-27 Threaded Boss | 1 |
| 5 | H512 | Adjustable Handle 10-32 x .78" stud | 1 |
| 6 | H459 | 1/4-20 Flat Washer Bronze | 1 |
| 7 | E417 | Adjustable Mic Holder Top | 1 |
| 8 | H436 | 10-32 x 7/8" FL SC SS | 2 |
| 9 | H515 | 5/8-27 24mm Nut | 1 |

Apply Locktite 242
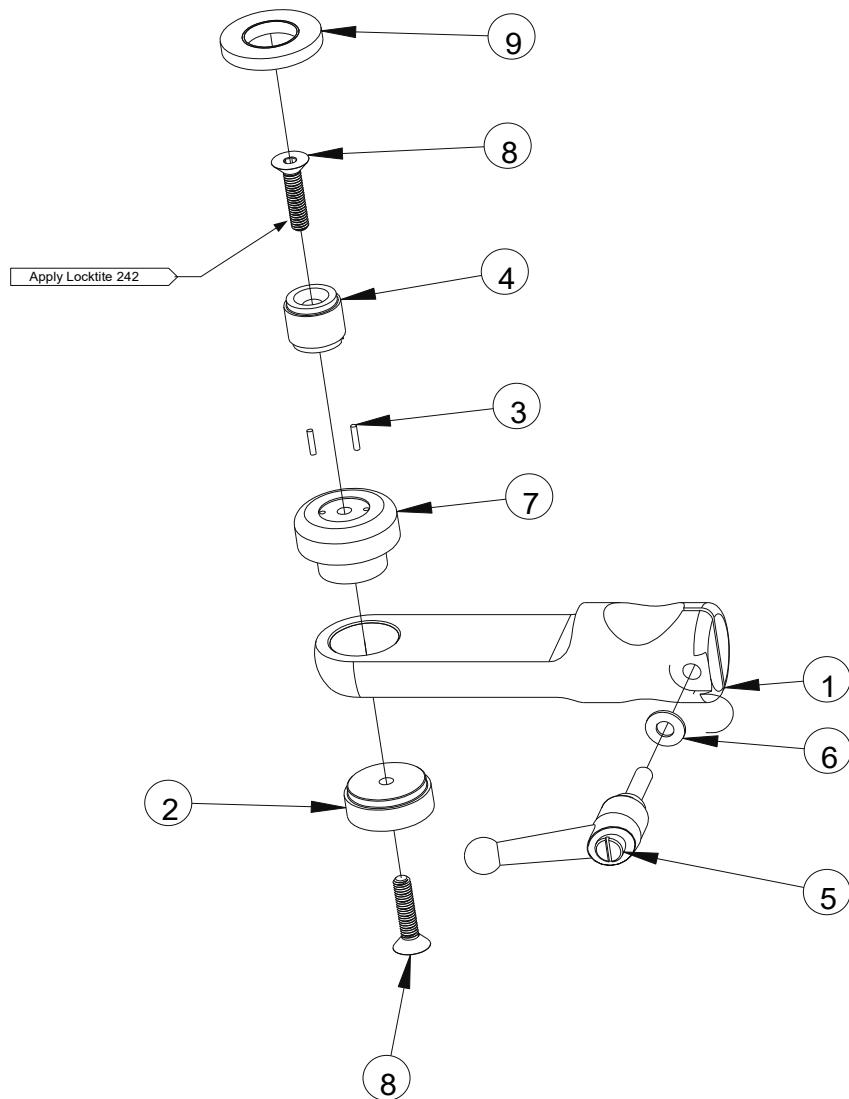
**SB-SMA** Stand Mount Adapter with 5/8"- 27 threads
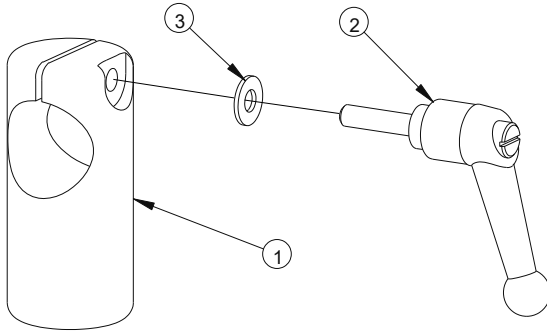
| ITEM NO. | Grace Part # | DESCRIPTION | QTY. | |
|---|---|---|---|---|
| 1 | E416 | Stand Mount 5/8-27 Threads 7/8" Tube Clamp | 1 | |
| 2 | H512 | Adjustable Handle 10-32 x .78" stud | 1 | |
| 3 | H459 | 1/4-20 Flat Washer Bronze | 1 | |

**SB-SMA-HD** Heavy Duty Stand Mount Adapter
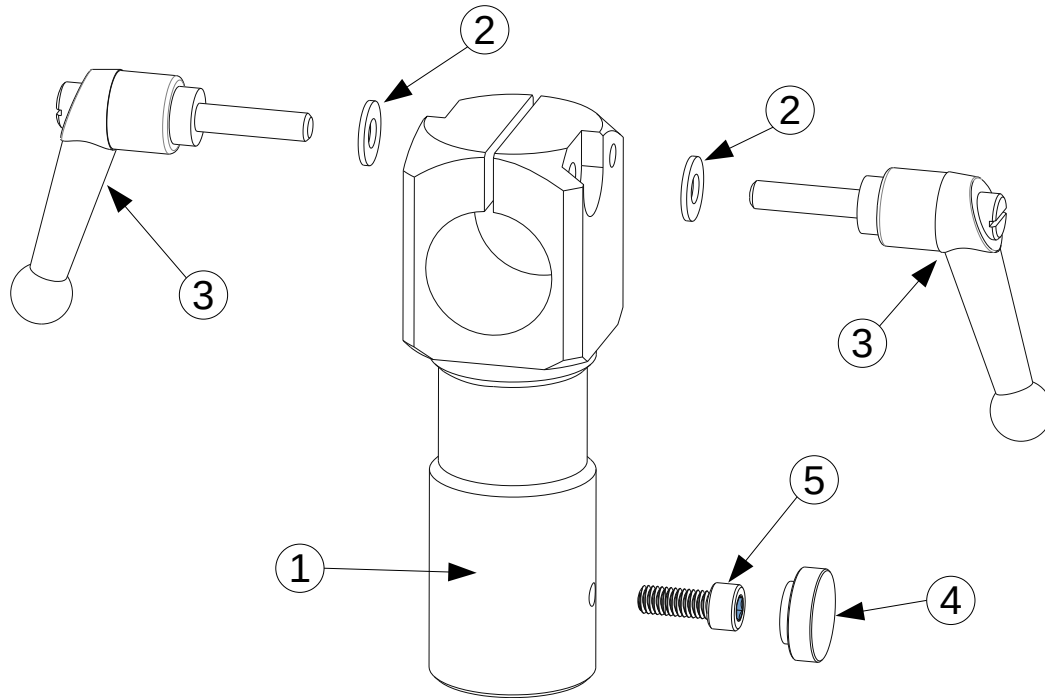
| ITEM NO. | Grace Part # | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | E441 | Stand Mount HD | 1 |
| 2 | H459 | 1/4-20 Flat Washer Bronze | 2 |
| 3 | H512 | Adjustable Handle 10-32 x .78" stud | 2 |
| 4 | H510 | Knob Black 5/8" | 1 |
| 5 | H443 | 10-32 x 1/2" Socket Head Cap Screw | 1 |

## SB-SUR Surround Tree
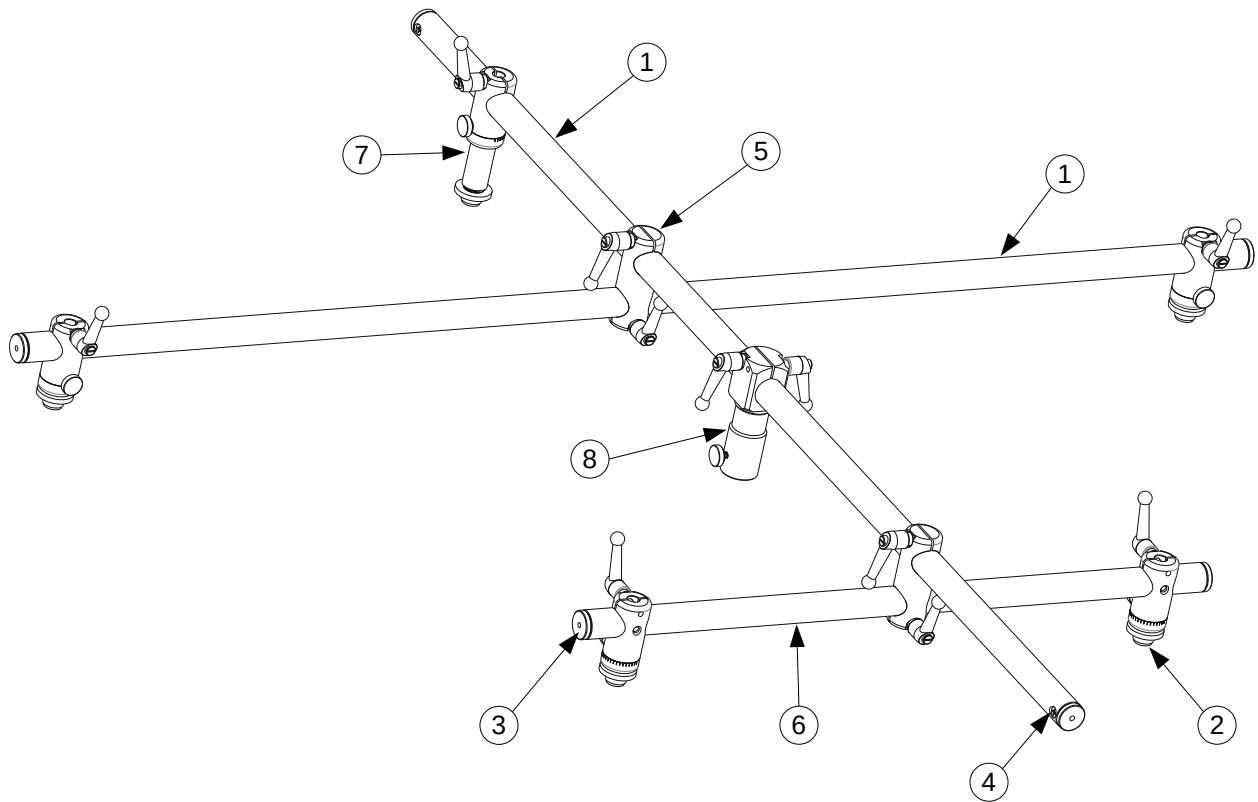


| ITEM NO. | Grace Part # | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | E420 | 105 cm x .875" OD Tube | 2 |
| 2 | SB-AMH | Adjustable Microphone Holder, Tube Mount | 4 |
| 3 | E414 | End Plug for 0.626" ID tube | 6 |
| 4 | H402 | 8-32 x 1/4" Flat Head Machine Screw | 6 |
| 5 | SB-TJ90 | 90 Degree Tube Joiner | 2 |
| 6 | E407 | Tube 53cm x .875"OD x .625" ID | 1 |
| 7 | SB-AMHEX | Adjustable Microphone Holder, Extended | 1 |
| 8 | SB-SMA-HD | HD Stand Mount Adapter | 1 |

**SB-3D11** 1M Cube 11 Channel Array
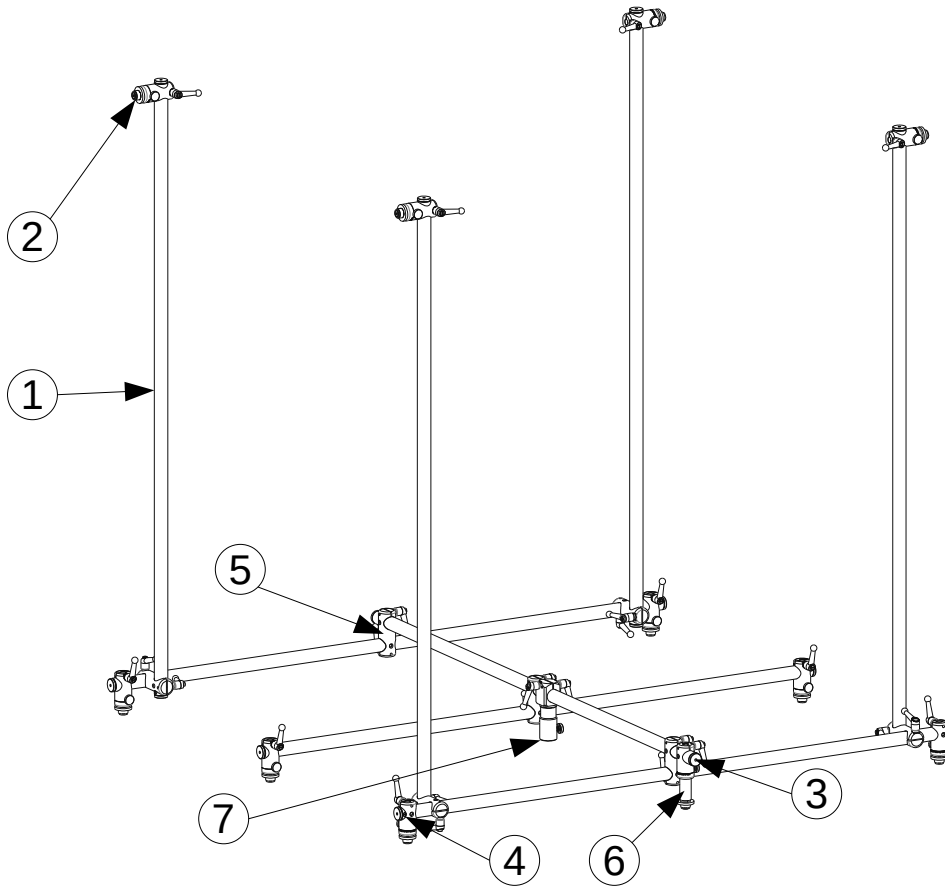


| ITEM NO. | Grace Part # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | E420 | 105 cm x .875" OD Tube | 8 |
| 2 | SB-AMH | Adjustable Microphone Holder, Tube Mount | 10 |
| 3 | E414 | End Plug for 0.626" ID tube | 16 |
| 4 | H402 | 8-32 x 1/4" Flat Head Machine Screw | 16 |
| 5 | SB-TJ90 | 90 Degree Tube Joiner | 7 |
| 6 | SB-AMHEX | Adjustable Microphone Holder, Tube Mount, 1.5" Extended | 1 |
| 7 | SB-SMA-HD | Stand Mount Adapter, Heavy Duty | 1 |

Note: For 2L Prism Array add SB-SMA or SB-SMA-HD stand adaptor.

## **SB-DT** Decca Tree
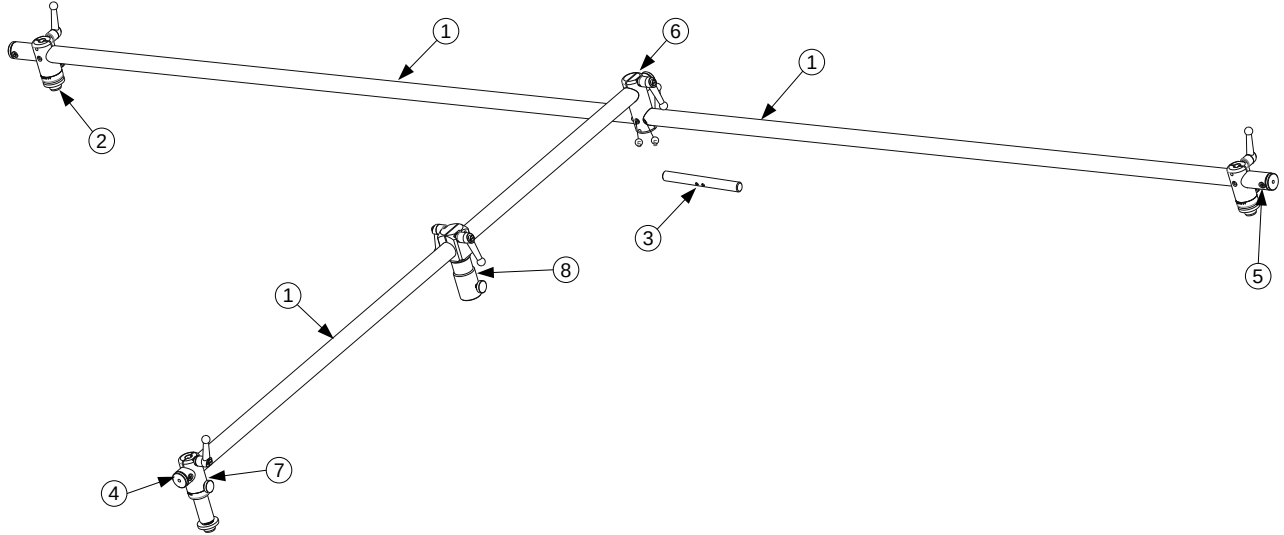


| ITEM NO. | Grace Part # | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | E420 | 105 cm x .875" OD Tube | 3 |
| 2 | SB-AMH | Adjustable Microphone Holder, Tube Mount | 2 |
| 3 | E418 | Joiner Bar, .625 OD x 6" | 1 |
| 4 | E414 | End Plug for 0.626" ID tube | 4 |
| 5 | H402 | 8-32 x 1/4" Flat Head Machine Screw | 6 |
| 6 | SB-TJ90 | 90 Degree Tube Joiner | 1 |
| 7 | SB-AMHEX | Adjustable Microphone Holder, Extended | 1 |
| 8 | SB-SMA-HD | HD Stand Mount Adapter | 1 |

## **SB-BL** Blumlein
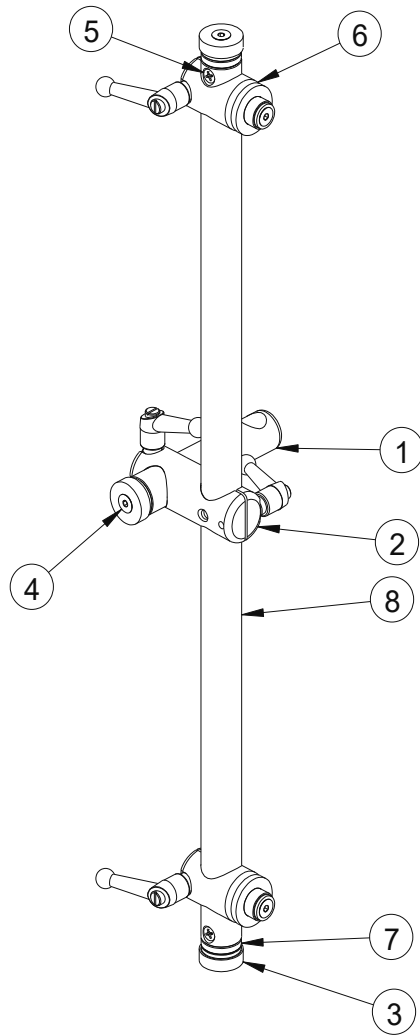


| ITEM NO. | Grace Part # | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | E422 | Stand Mount Right Angle | 1 |
| 2 | SB-TJ90 | 90 Degree Tube Joiner | 1 |
| 3 | E405 | 24mm Nut 10-32 Thread | 3 |
| 4 | H436 | 10-32 x 7/8" FL SC SS | 3 |
| 5 | H402 | 8-32 x 1/4" Flat Head Machine Screw | 2 |
| 6 | SB-MH | Mic Holder | 2 |
| 7 | E414 | End Plug for 0.626" ID tube | 2 |
| 8 | E407 | Tube 53cm x .875"OD x .625" ID | 1 |

## **SB-BLRA** Blumlein Right Angle
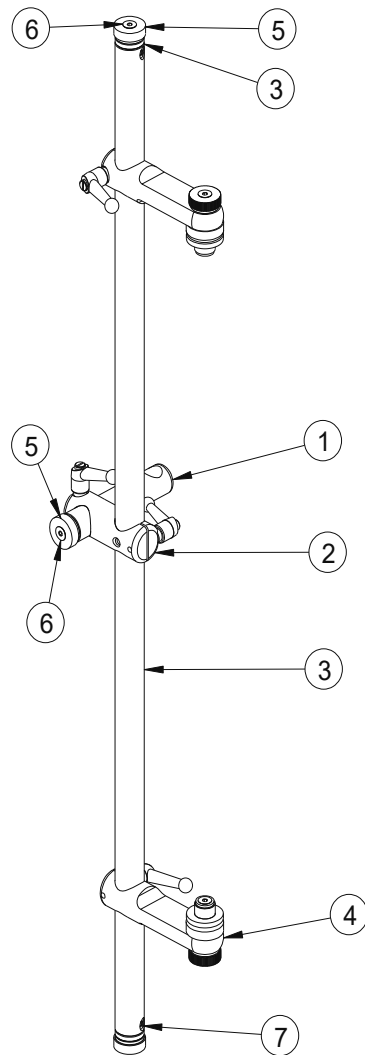


| ITEM NO. | Grace Part # | DESCRIPTION | QTY. |
|----------|--------------|-------------|------|
| 1 | E422 | Stand Mount Right Angle | 1 |
| 2 | SB-TJ90 | 90 Degree Tube Joiner | 1 |
| 3 | E421 | 80 cm x .875" OD Tube | 1 |
| 4 | SB-AMHRA | Adjustable Mic Holder, Right Angle | 2 |
| 5 | E405 | 24mm Nut 10-32 Thread | 3 |
| 6 | H436 | 10-32 x 7/8" FL SC SS | 3 |
| 7 | H402 | 8-32 x 1/4" Flat Head Machine Screw | 2 |
| 8 | E414 | End Plug for 0.626" ID tube | 2 |

**SB-100** 1 Meter AB bar
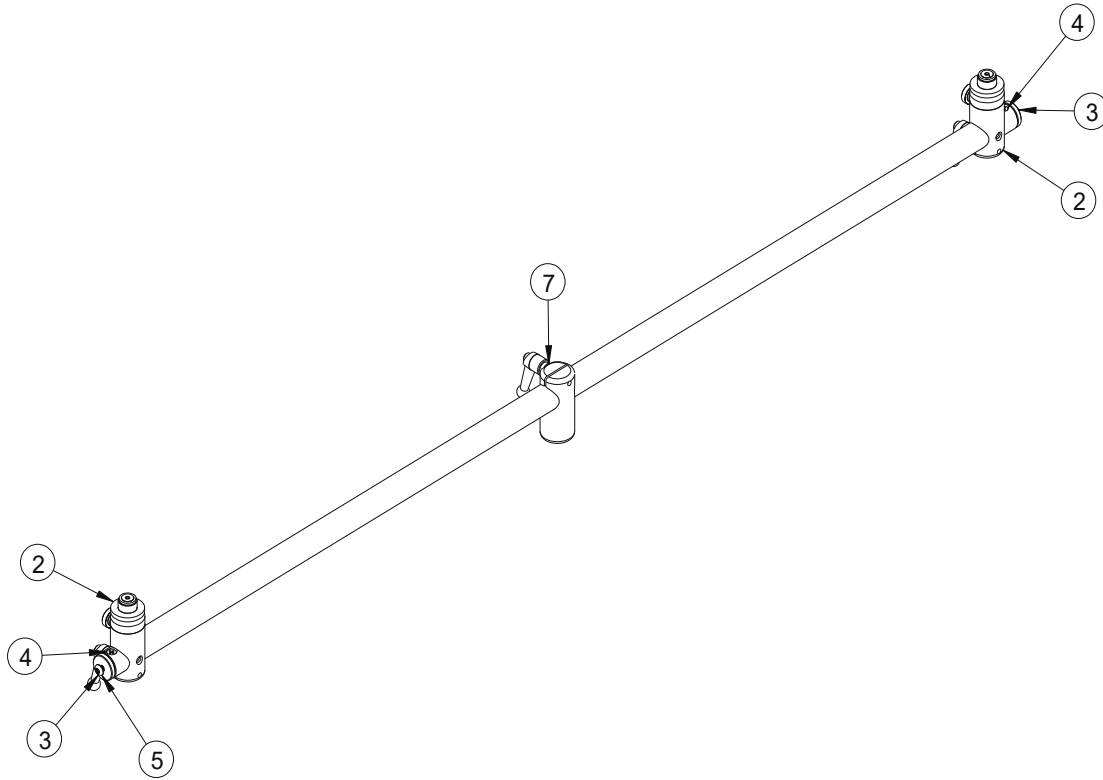


| ITEM NO. | Grace Part | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | E420 | 105 cm x .875" OD Tube | 1 |
| 2 | SB-AMH | Adjustable Microphone Holder | 2 |
| 3 | E414 | End Plug for 0.626" ID tube | 2 |
| 4 | H402 | 8-32 x 1/4" Flat Head Machine Screw | 2 |
| 5 | H434 | 10-32 x 1/2" Button Head Cap Screw | 2 |
| 6 | E423 | Cable Clip for 7/8" tube | 4 |
| 7 | SB-SMA | Stand Mount Adapter | 1 |
|  |  |  |  |

# **SB-HB** Hanging Bar

Apply Loctite 242

Apply Loctite 242
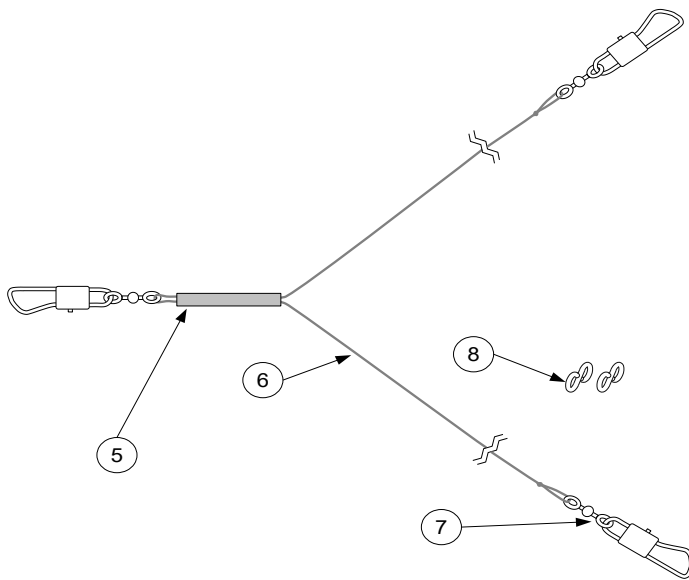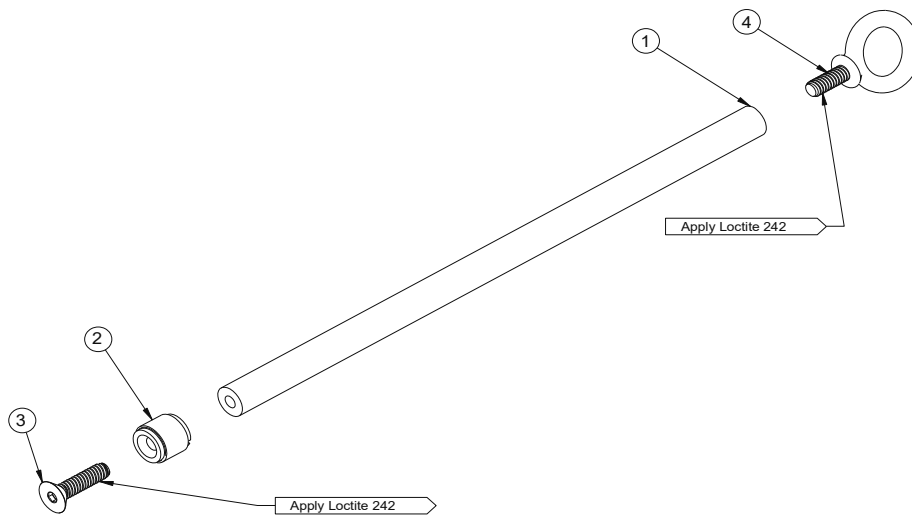
| ITEM NO. | PartNo | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | E428 | Hanging Bar | 1 |
| 2 | H521 | 5/8-27 Threaded Boss (modified H514) | 1 |
| 3 | H496 | 1/4-20 X 1 Flat Head Socket St  Zn 82 Degree | 1 |
| 4 | H495 | Eye bolt 1/4-20 X 1" Cut to 5/8" | 1 |
| 5 | W500 | 1/16" DIA Shrink tubing, Black | 1" |
| 6 | H524 | Monofilament line .016" DIA  for 1 meter bar | 78" |
| 6 | H524 | Monofilament line .016" DIA  for 2 meter bar | 140" |
| 7 | H523 | #10 Barrel Swivel with safety hook | 3 |
| 8 | H522 | S-Hook, closed, 13/64" Dia, 5/64" Wire | |

## *Revision history*

| Rev. | Description | Date | Initials |
|------|-------------|------|----------|
| A | Initial release | 10/07/09 | MBG |
| B | Added SB-HB parts diagram and bill of materials. | 12/07/09 | MBG |
| B | Fixed SB-BLRA bill of materials to show item number column. Also fixed bom to show proper tube (80cm E421) | 12/07/09 | MBG |
| B | Corrected monofilament line yoke drawing to show proper swivel attachment. | 12/07/09 | MBG |
| B | Changed references to mic cable clips to Velcro cable ties | 05/06/10 | EDG |
| C | Added coversheet | 08/11/10 | EDG |
| D | Added SB-3D11, SB-AMHEX, SB-SMA-HD | 1/25/2022 | MBG |
| E | Update SB-SUR with SB-AMHEX and SB-SMA-HD | 4/25/2023 | MBG |
| E | Update SB-DT with SB-AMHEX and SB-SMA-HD | 4/25/2023 | MBG |
| E | Added SB-Prism | 4/25/2023 | MBG |