



Control Contractor Series Bracket and Adapter Handbook Ver 2.0

Your JBL Control Contractor Series loudspeakers allow a number of possible configurations using brackets and adapters available from JBL and other sources. This handbook provides the information needed to apply the hardware correctly to the job and to install with mechanical integrity. Starting with the Invisiball™ system, additional hardware components allow the mounting of single or multiple units to walls, ceilings, or as a cluster module.

Part Number	Wall	Ceiling	Array	Description
MTC-23CM [-WH]	✓	☺	---	Single-Unit Ceiling Mount Adapter for Control 23
MTC-28/25CM [-WH]	✓	☺	---	Single-Unit Ceiling Mount Adapter for Control 25 or 28
MTC-25/23H	☺	✓	☺	Horizontal Array Bracket for Control 23 or 25 (1 to 2 units), can build cluster module with 3 brackets
MTC-28H	☺	✓	☺	Horizontal Array Bracket for Control 28 or 18 (1 to 2 units), can build cluster module with 3 brackets
MTC-23V	☺	✓	☺	Vertical Array Bracket for Control 23 (1 to 3 units)
MTC-25V	☺	✓	☺	Vertical Array Bracket for Control 25 (1 to 3 units)
MTC-28V	☺	✓	☺	Vertical Array Bracket for Control 28 or 18 (1 to 3 units)
MTC-SB2W	☺	---	---	Wall or Corner Mount Bracket for SB2 subwoofer
MTC-SB2C	---	☺	---	Ceiling Suspension Bracket for SB2 subwoofer

☺ Intended Application ✓ Secondary Application --- Do Not Use

Ceiling Mount Adapters	1
Horizontal Array Bracket Installation Instructions	3
Horizontal Array Bracket Cluster Module Assembly / Suspension Instructions	5
MTC-25/23H Mechanical Drawing	7
MTC-28H Mechanical Drawing.....	9
Vertical Array Bracket Assembly / Installation Instructions	11
MTC-23V Mechanical Drawing.....	13
MTC-25V Mechanical Drawing.....	14
MTC-28V Mechanical Drawing.....	15
MTC-SB2W Subwoofer Bracket Installation Instructions	16
MTC-SB2C Subwoofer Bracket Installation Instructions	18
MT-PC Weatherproof Panel Cover Instructions	20
Adapters for Lighting Trusses	22
Adapters for Threaded Rod and Pipe	23

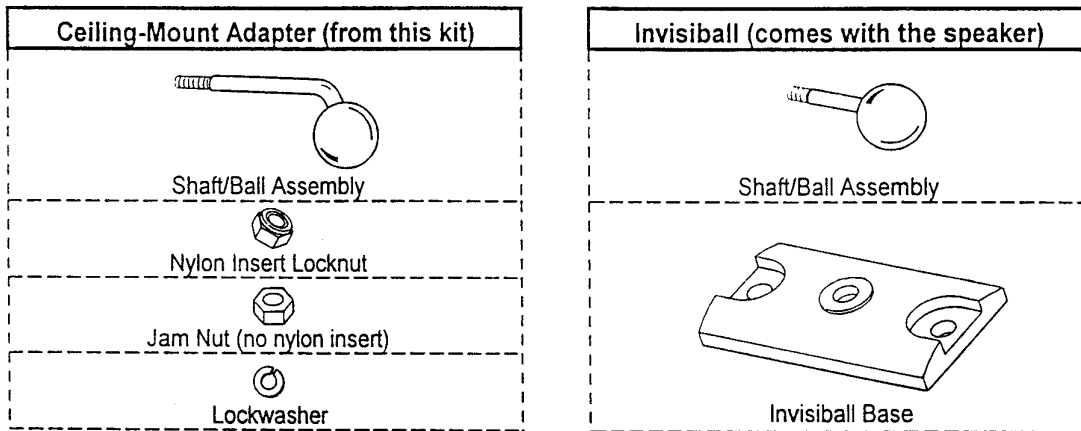
Ceiling Mount Adapters

MTC-23CM (for Control 23)

MTC-28/25CM (for Control 28 and Control 25)

Your JBL ceiling-mount adapter allows Control Contractor Series loudspeakers to be installed hanging down from a ceiling or beam. The adapter does not come with a base and requires the use of your existing Invisiball base (which comes with your loudspeaker).

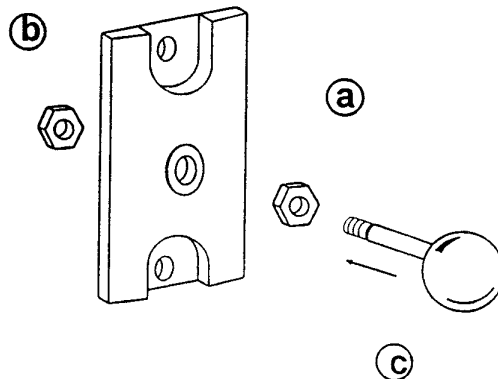
PARTS IDENTIFICATION: (MTC-23CM shown)



CHANGING OVER THE INVISIBALL™ BASE:

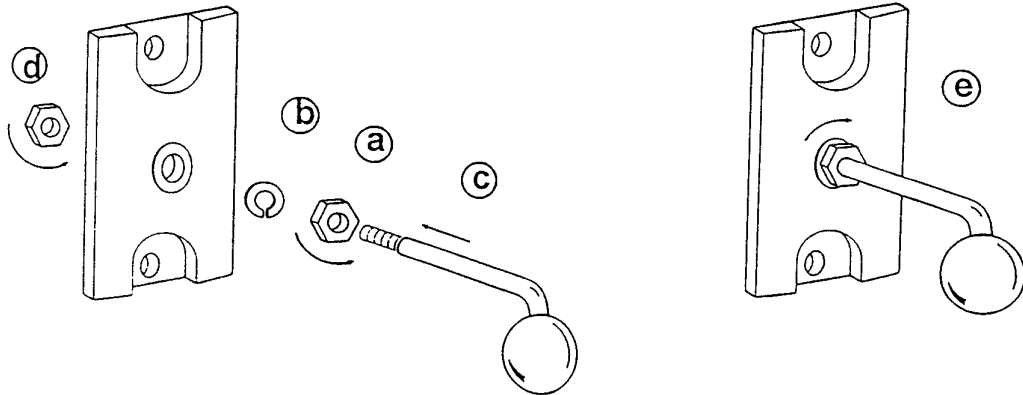
To remove the existing shaft/ball assembly from the base:

- Loosen the nut top of the base
- Remove the nylon insert locknut, which is on the bottom of the base
- Pull the shaft out of the base.



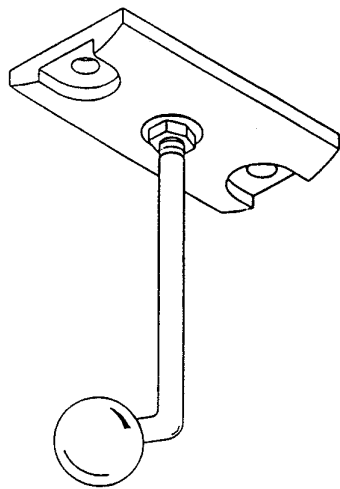
To install a new ceiling-mount shaft/ball assembly to the invisiball base:

- a) Thread the plain nut (the one without the nylon insert) onto the shaft, as far as it goes.
- b) Put the lockwasher onto the shaft.
- c) Insert the shaft into the base.
- d) Thread the new nylon insert locknut (enclosed) onto the shaft. Make sure it locks securely onto the shaft.
- e) Lower the jam nut back toward the base. Using a wrench, make sure this jam nut is secured down very tightly onto the base.

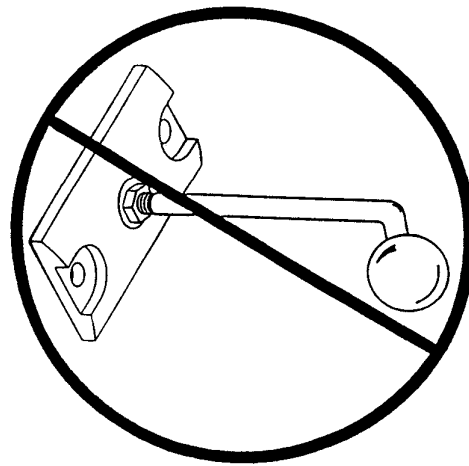


USING THE CEILING-MOUNT BRACKET:

These brackets are designed only for mounting Control Contractor loudspeakers down from a ceiling or beam - the shaft must hang vertically (up & down). It may not be capable of supporting a speaker when mounted horizontally.



CORRECT



INCORRECT

Horizontal Array Bracket Installation Instructions

Horizontal array brackets are used to mount two Control loudspeakers to a wall (Figure 1) or, when combined with two additional brackets, six loudspeakers may be attached then suspended from a ceiling or beam (Figures 2-4). In this example a single JBL model MTC-28H horizontal array bracket is used.

The loudspeaker's left and right side tapers allow two speakers to array in a horizontal arc pattern for a wide coverage in the horizontal plane. Aiming angles can be adjusted via the speaker's Invisiball™ adjustment system for flexibility in meeting coverage requirements.

Caution: this bracket should be installed by a qualified technician only.

Use the diagrams on the following pages to properly install this wall mounting and ceiling suspended bracket and loudspeakers. The following items are included in the MTC-28H kit:

- | | | | |
|----|--------------------------------|----|-------------------------|
| 1. | 1 pc. Mounting Bracket | 5. | 4 pcs. 10-24 x ½" screw |
| 2. | 8 pcs. Screws ¼"-20 x ¾" | 6. | 4 pcs. # 10 flat washer |
| 3. | 8 pcs. Flat washer (¼" inside) | 7. | 4 pcs. # 10 lock nut |
| 4. | 8 pcs. Locknut (¼"-20) | | |

Wall Mounting

Step 1.

Install The two Invisiballs onto the bracket (see figure 1) using the included screws (item #2).washers (item #3) and lock nuts (item #4). **Be sure that all screws and lock nuts are tightened for a Permanent Installation.**

Step 2.

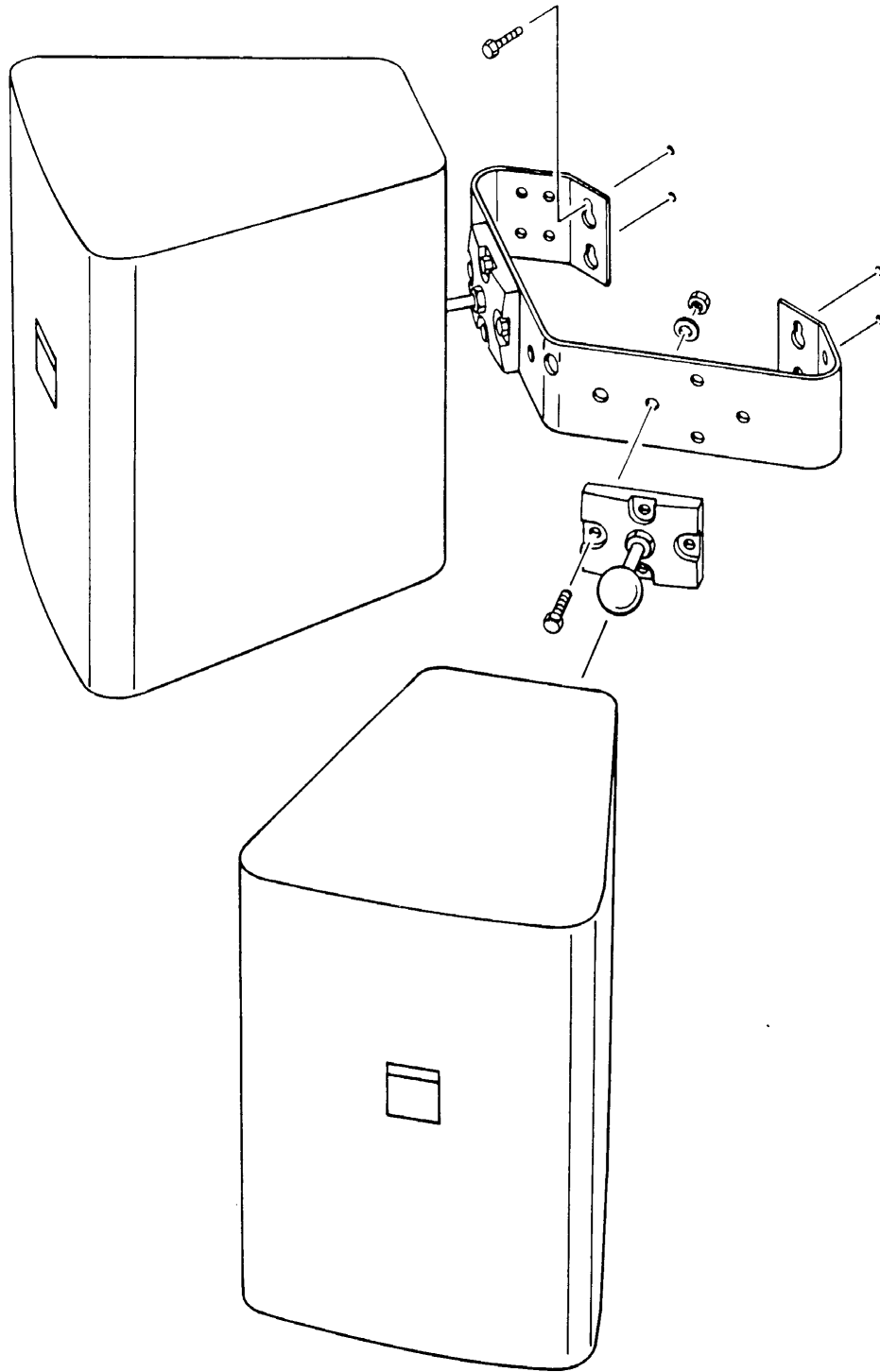
Secure the bracket assembly to the mounting surface.

Caution: Always be sure the mounting surface and the method of attaching the bracket to the mounting surface is structurally capable of supporting the weight of the speakers and the brackets with a 10:1 safety ratio. If you have any doubts of the capability, do not install this bracket.

Step 3.

Follow instructions included with the Control 28 loudspeakers for mounting the speakers onto the Invisiball™ mounting bases and for adjusting the aiming angles.

Figure 1



Important: Place washer over the screw in back of the bracket, then place the lock nut over the screw and tighten.

Horizontal Array Assembly / Suspension Instructions

A 360 degree Cluster Module Using Three Brackets

Three horizontal brackets can be assembled together to form a 360 degree cluster module. In this example, three MTC-28H brackets are assembled and used for mounting six Control 28 loudspeakers, however the instructions are similar for the assembly of the MTC-23H and MTC-25H brackets.

Step 1.

Install two Invisiball™ mounts onto each horizontal bracket (Figure 2) using included screws (item #2), flat washers (item #3) and lock nuts (item #4). Tighten the lock nuts for a permanent installation.

Step 2.

Connect three horizontal brackets as shown in figure 2 using the included screws (item #5), flat washers (items #6) and lock nuts (item #7). Tighten the lock nuts for a permanent installation. The final assembly should appear as in Figure 3.

Step 3.

Follow the instructions included with your Control Contractor loudspeakers for mounting the speakers onto the Invisiball™ mounting bases and for adjusting the aiming angles.

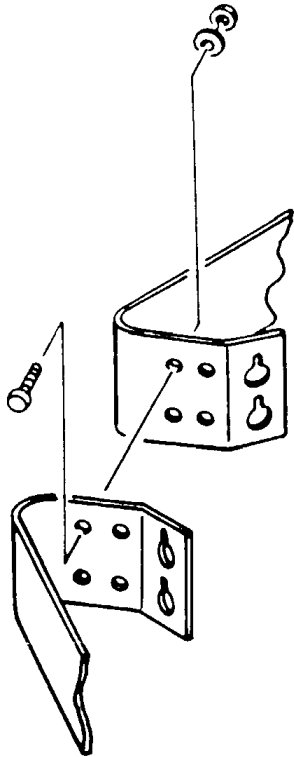
Step 4.

Suspend the bracket assembly only from the holes located in the center bend of each bracket (Figure 3). Consult the building codes in your area to determine the proper materials and procedures for suspending this bracket assembly.

Caution: Be sure the mounting points and the method of attaching the bracket assembly to the mounting points are structurally capable of supporting the weight of the speakers and the brackets with a 10:1 safety ratio. If you have any doubts of the capability, do not install this bracket. Consult with a licensed suspension expert. Failure to properly install this product could result In damage, injury or death.

Assembly / Suspension Instructions

Figure 2



Suspension Hole

Important: Place washer over screw in back of the bracket, then place the lock nut over the screw and tighten.

Figure 3

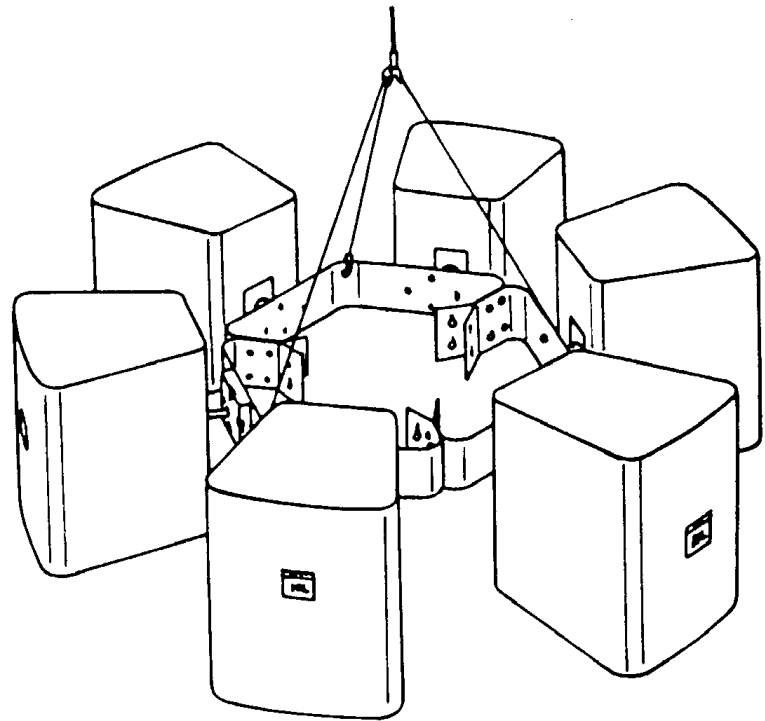
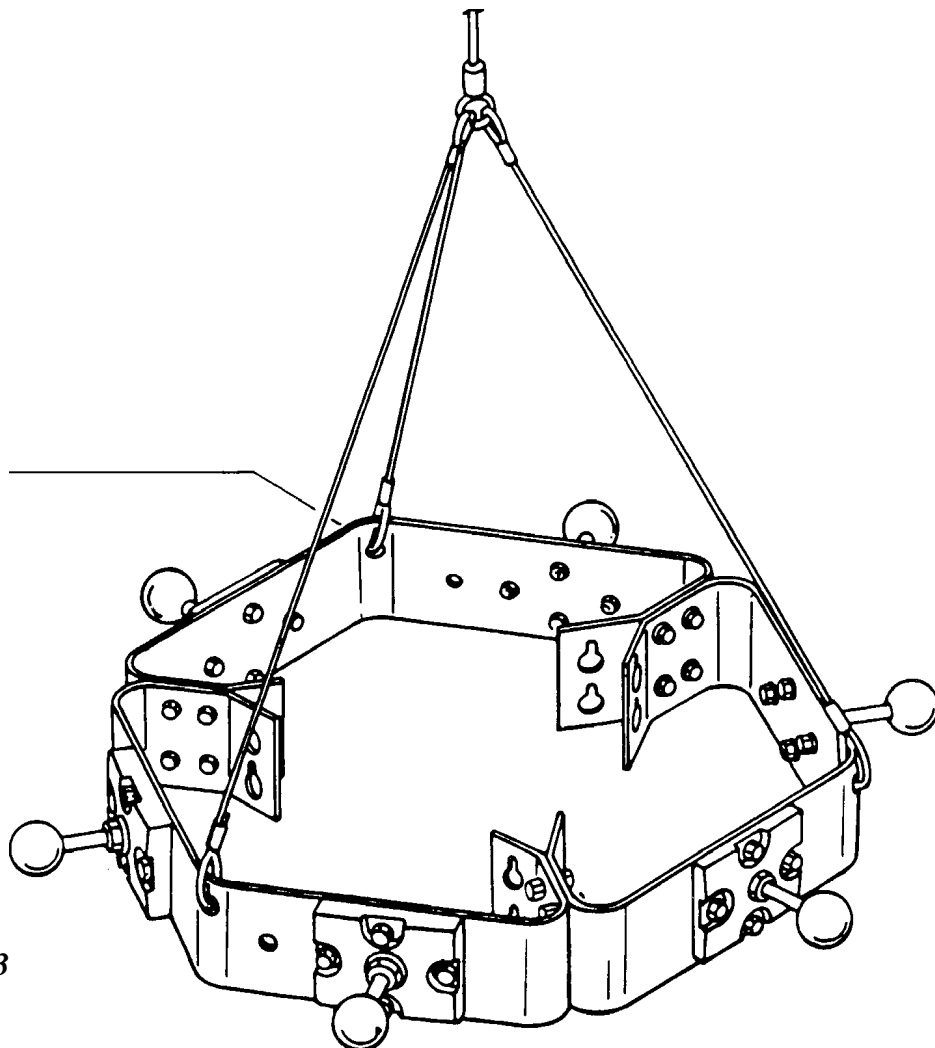
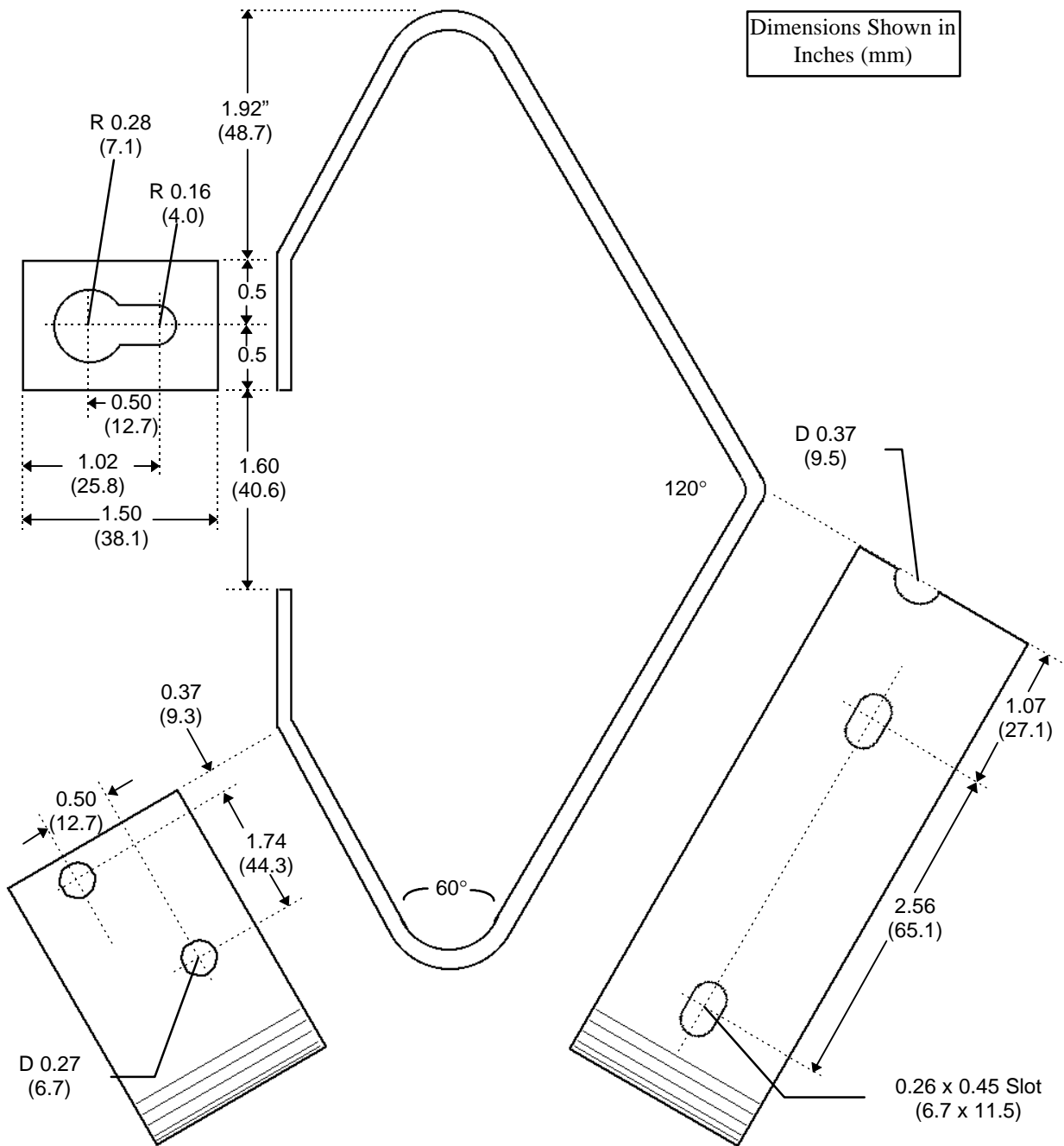
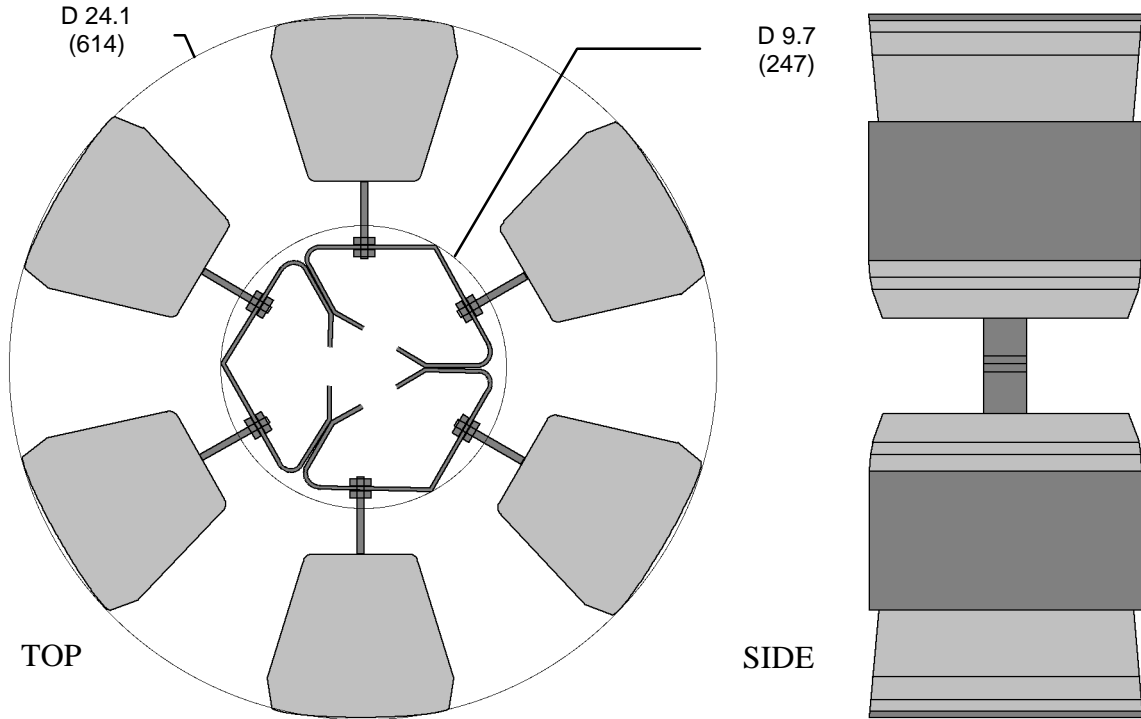


Figure 4

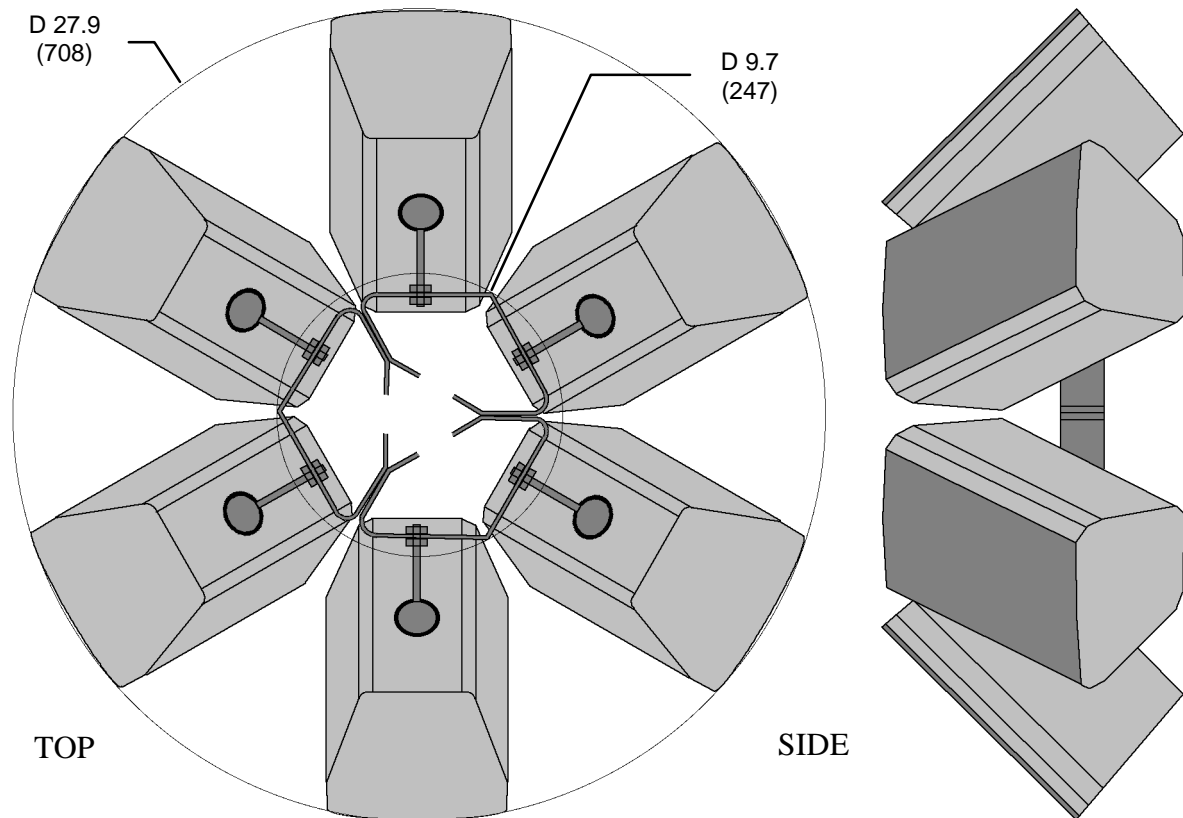
MTC-25/23H Control Contractor Horizontal Mounting Bracket For Control 25 or Control 23 Speakers



Cluster Module Dimensions 3 MTC-25/23H w/ 6 Control 25's



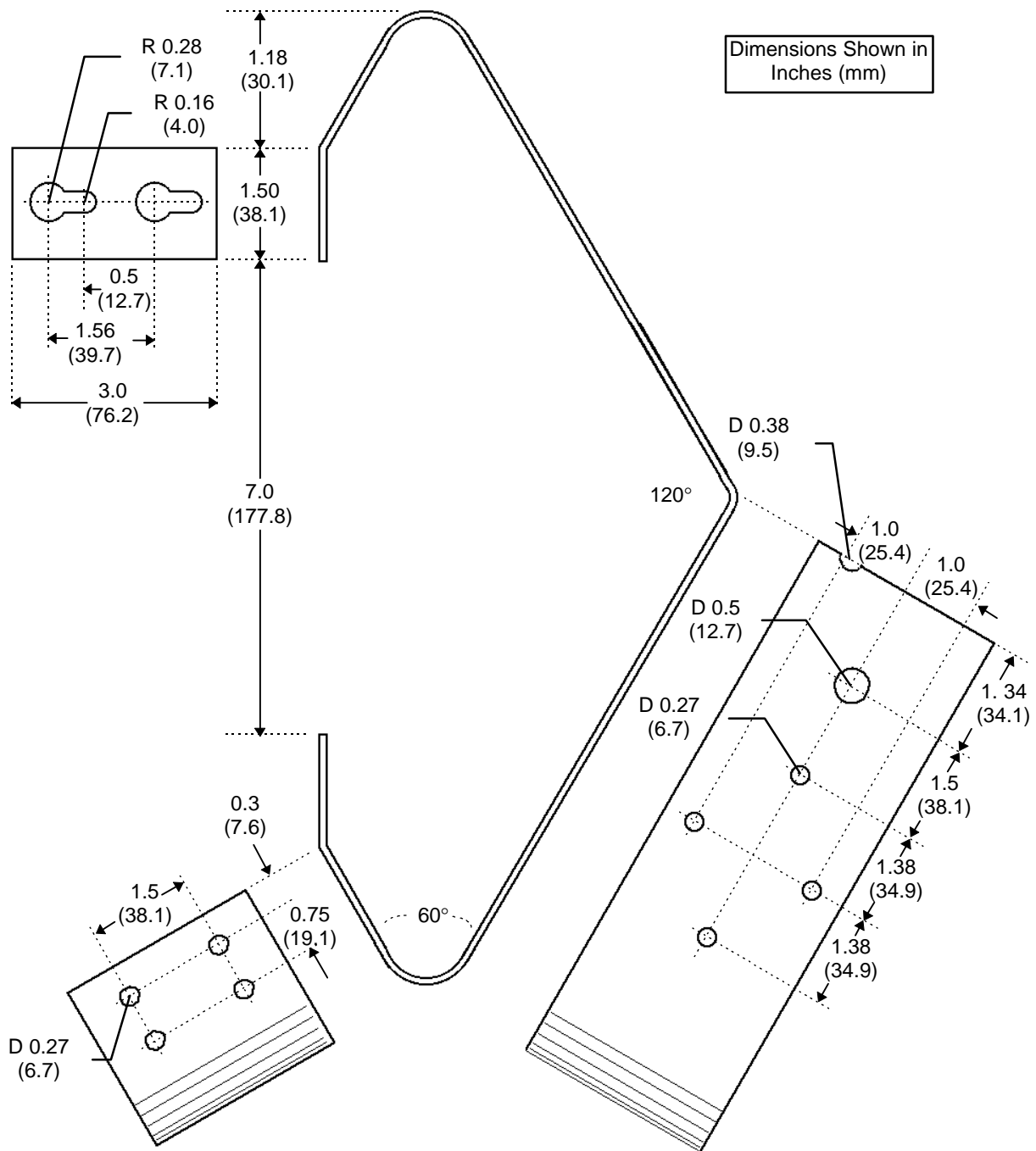
Speakers at 0 Degree Down Angle



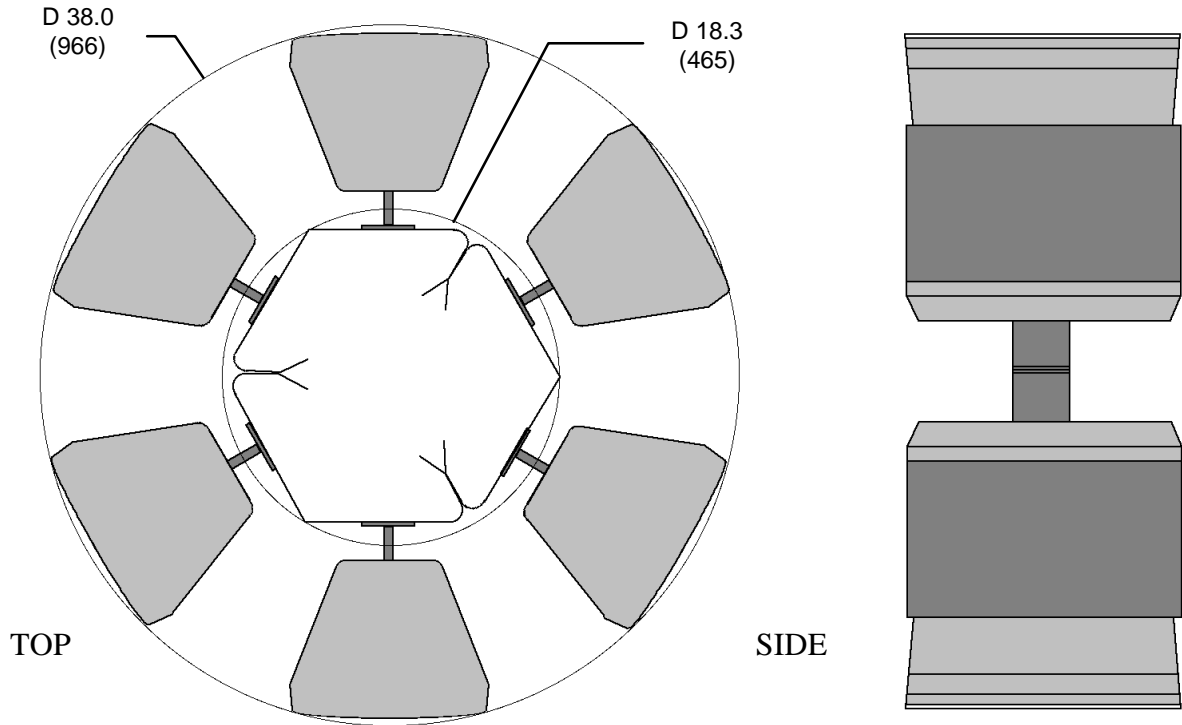
Speakers at 45 Degree Down Angle

Dimensions Shown in Inches (mm)

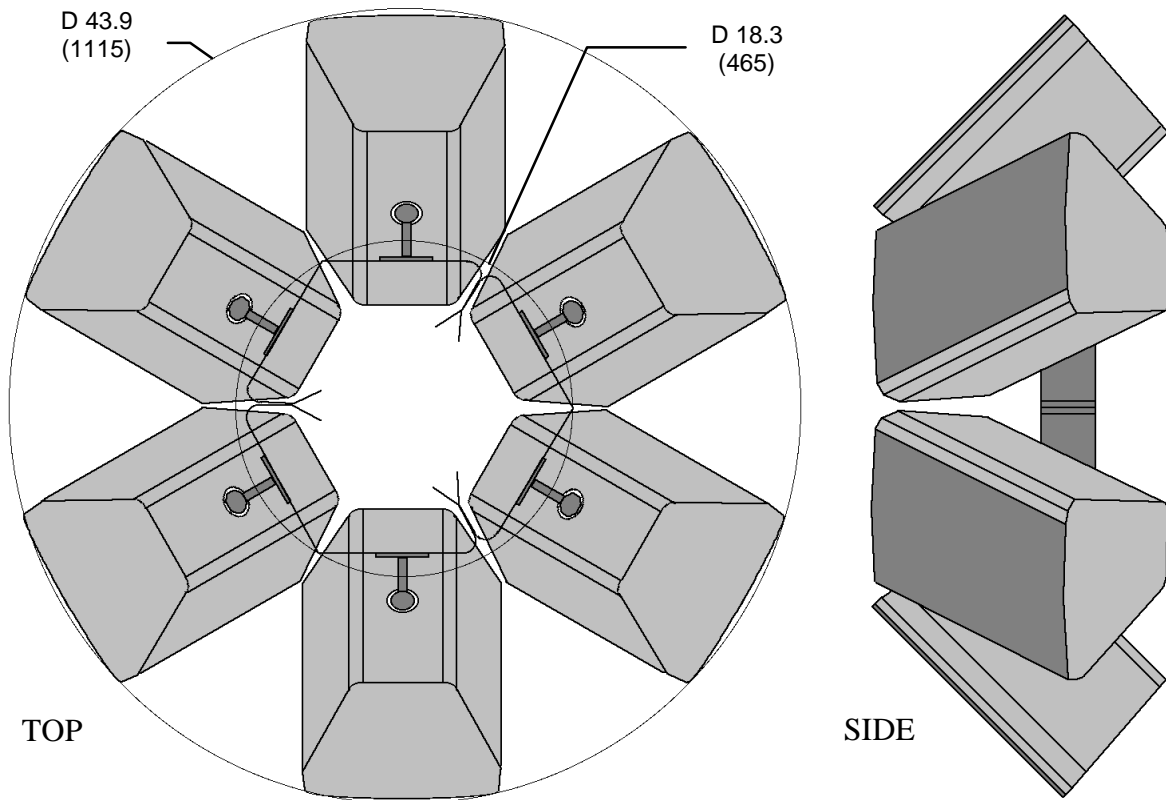
MTC-28H Control Contractor Horizontal Mounting Bracket For Control 28 Speakers



Cluster Module Dimensions, 3 MTC-28H w/ 6 Control 28's



Speaker at 0 Degree Down Angle



Speaker at 45 Degree Down Angle

Dimensions Shown in Inches (mm)

Vertical Array Bracket Assembly / Installation Guide

The JBL model MTC-23V is a vertical arraying bracket for holding up to three Control 23 loudspeakers. Installation is typical of the three vertical brackets models available. The loudspeaker's top and bottom tapers allow three speakers to array in a vertical arc pattern for a wide coverage in the vertical plane. Aiming angles can be adjusted via the speaker's Invisiball™ adjustment system for flexibility in meeting coverage requirements.

Caution: this bracket should be installed by a qualified technician only.

Use the diagrams on the following pages to properly install this wall mounting and ceiling suspended bracket and loudspeakers. The following items are included in MTC-23V kit:

- | | |
|-----------|------------------------|
| 1. 1 pc. | Mounting Bracket |
| 2. 6 pcs. | Screws (1/4-20 x 3/4") |
| 3. 6 pcs. | Flat washer (1/4") |
| 4. 6 pcs. | Lock nut (1/4-20) |

Step 1.

Install the three Invisiballs onto the bracket (see figures 5 and 6) using the included screws (item #2), washers (item #3) and lock nuts (item #4). **Be sure that all screws and lock nuts are tightened for a permanent installation.**

Step 2.

Secure the bracket assembly to the mounting surface.

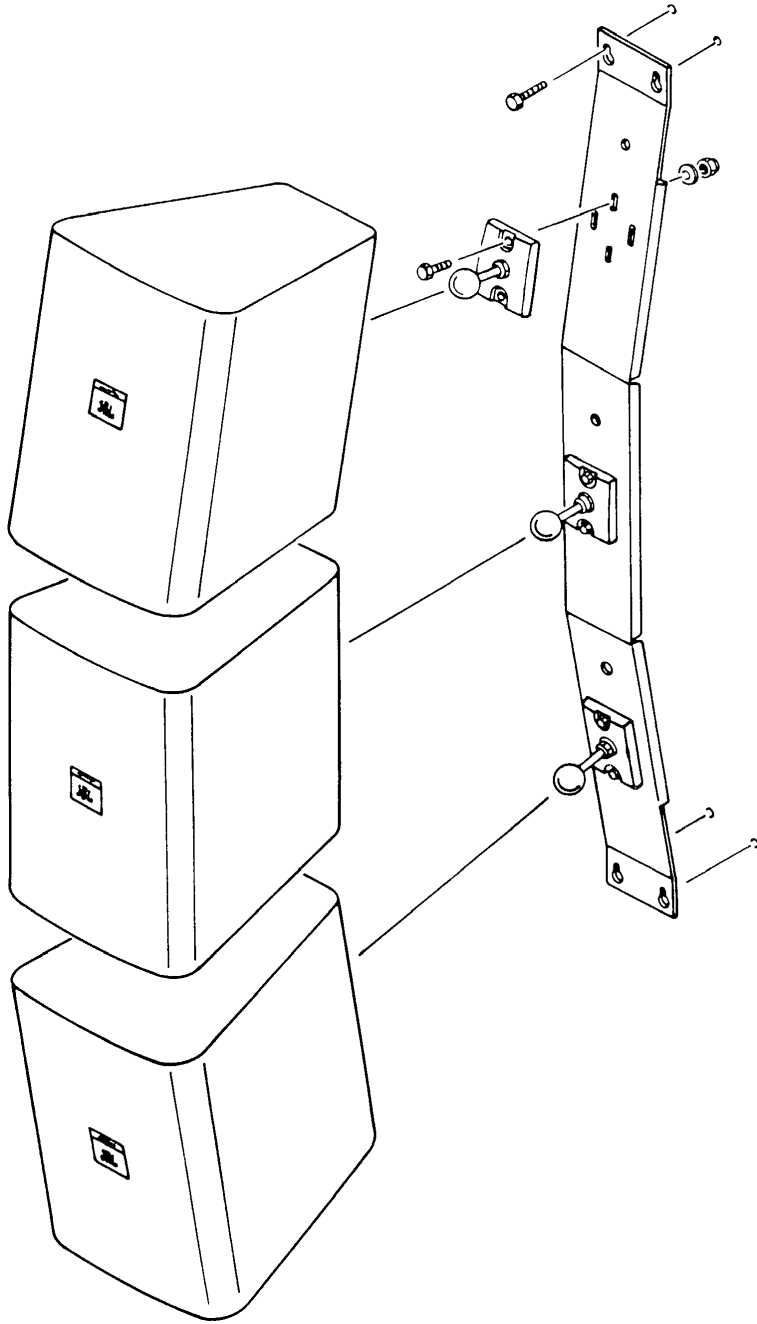
Caution: Always be sure the mounting surface and the method of attaching the bracket to the mounting surface is structurally capable of supporting the weight of the speakers and the brackets with a 10:1 safety ratio. If you have any doubts of the capability, do not install this bracket.

Step 3.

Follow the instructions included with your Control 23 loudspeakers for mounting the loudspeakers onto the Invisiball™ mounting bases and for adjusting the aiming angles.

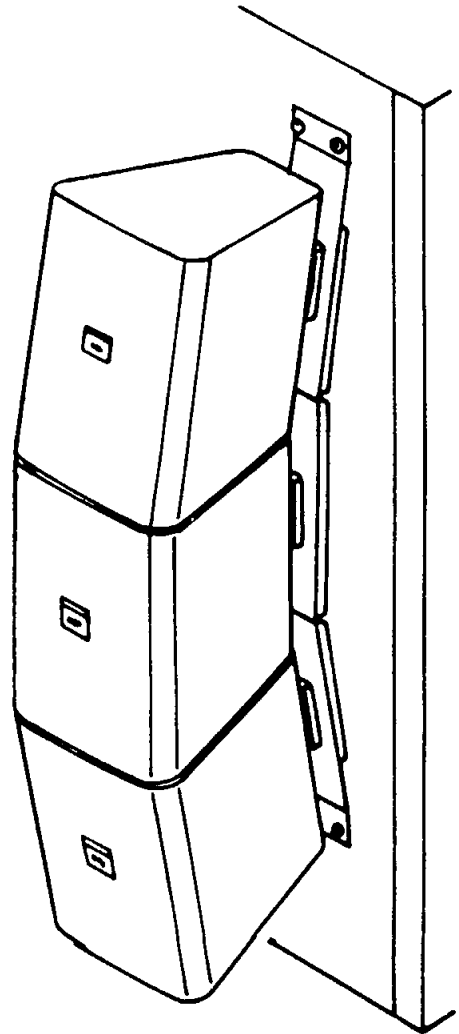
MTC-23V Installation Guide

Figure 5

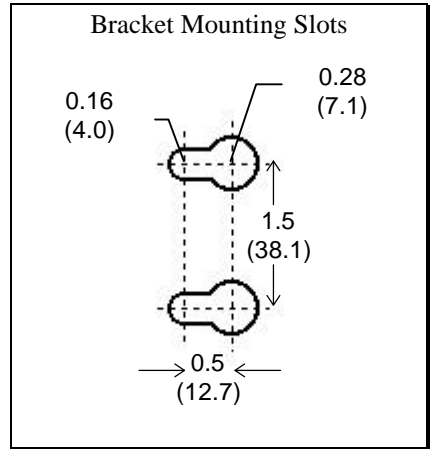
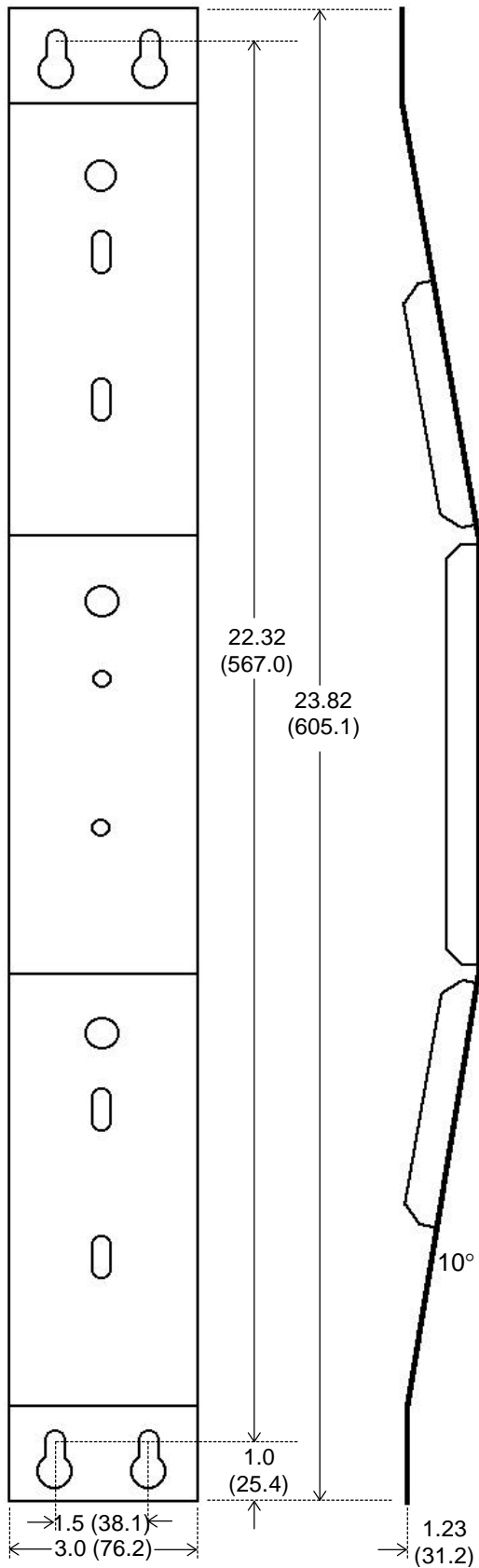


Important: Place washer over screw in back of the bracket, then place the lock nut over the screw and tighten.

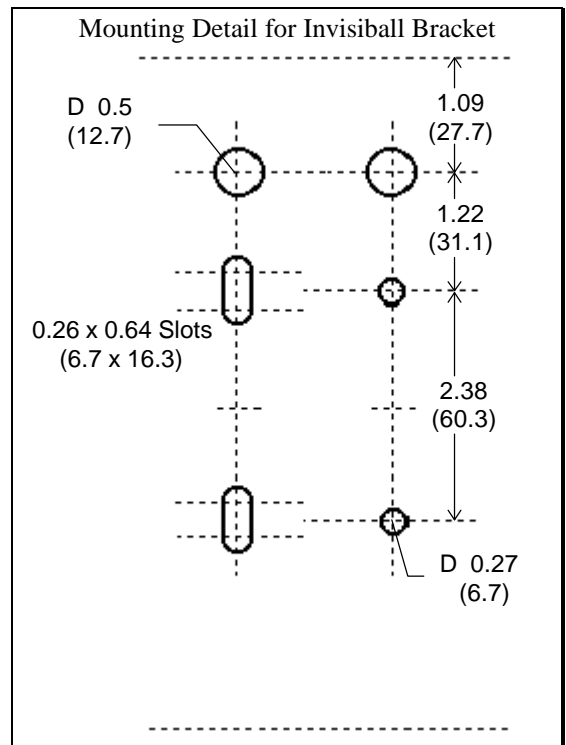
Figure 6



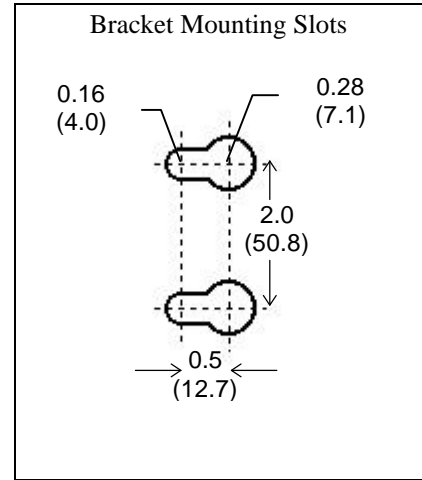
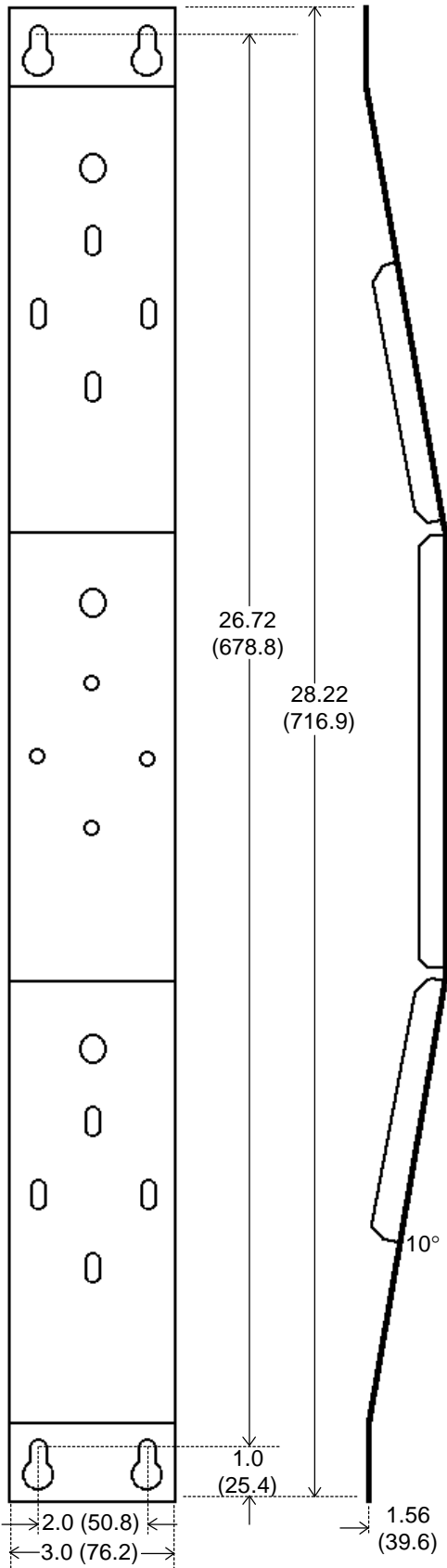
MTC-23V Control Contractor Vertical Mounting Bracket For Control 23 Speakers



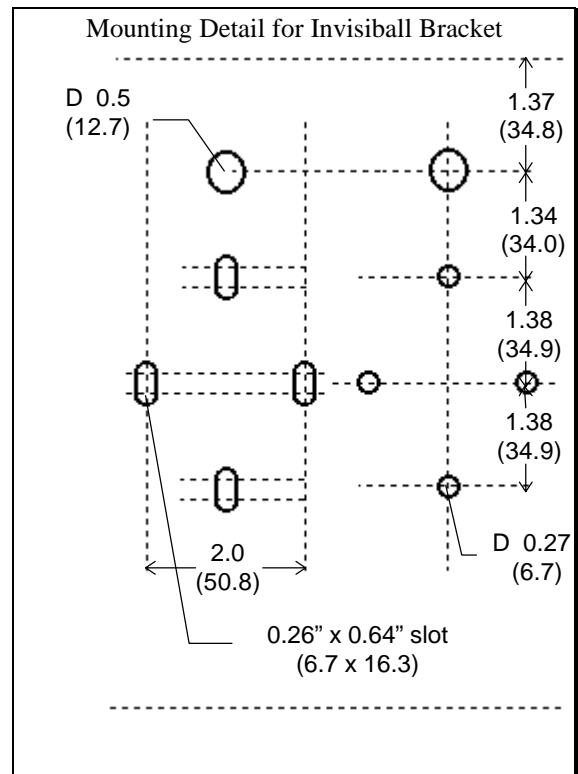
Dimensions Shown in
Inches (mm)



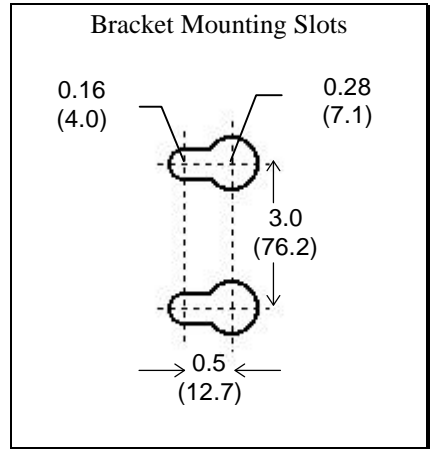
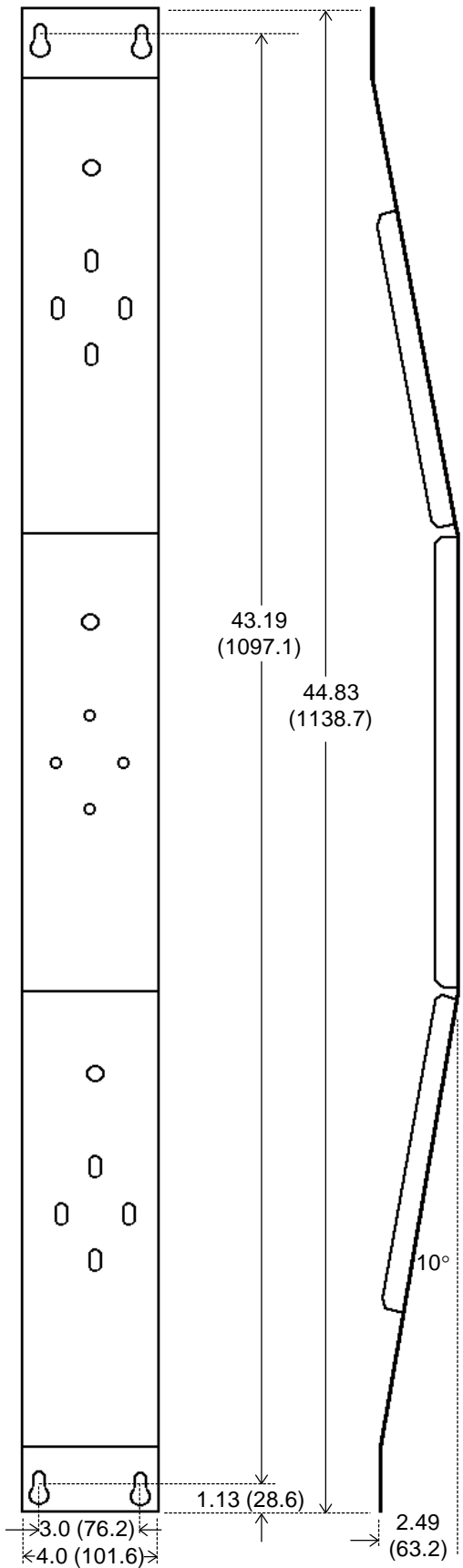
MTC-25V Control Contractor Vertical Mounting Bracket For Control 25 Speakers



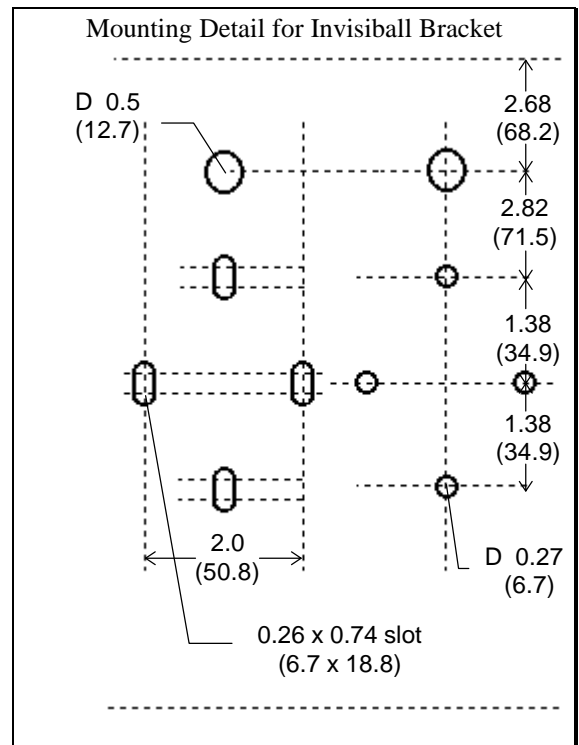
Dimensions Shown in
Inches (mm)



MTC-28V Control Contractor Vertical Mounting Bracket For Control 28 Speakers



Dimensions Shown in
Inches (mm)



MTC-SB2W Installation Instructions

The JBL MTC-SB2W is a bracket for installing the JBL Control SB2 Subwoofer onto a wall or into a corner. The bracket acts as an enclosed shelf upon which the SB2 sits. The bracket's outside lip and securing screws keep the subwoofer from sliding off or jumping out of the support.

Warning: This bracket is not intended to be used ANY other way.

Step 1: Install the bracket SAFELY to the building's structure. **IT IS THE RESPONSIBILITY OF THE INSTALLER TO DETERMINE THE STRENGTH OF THE BUILDING STRUCTURE AND TO ENSURE THE SAFETY OF THE BRACKET INSTALLATION TO THE BUILDING STRUCTURE!**

The bracket and Subwoofer **MUST** be oriented as shown in Figures 7 & 8.

Step 2: Remove the three (3) bottom screws on the front of the load-baffle of the Control SB-2 (see figure 9)

Step 3: Connect appropriate wires to Control SB2 terminal cup.

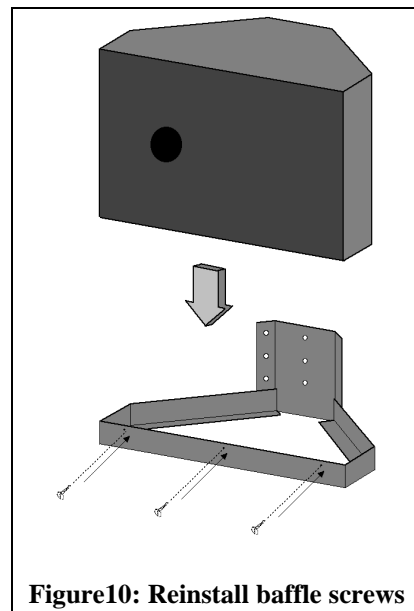
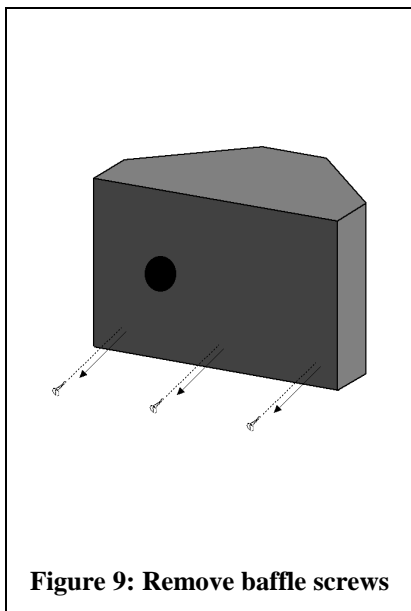
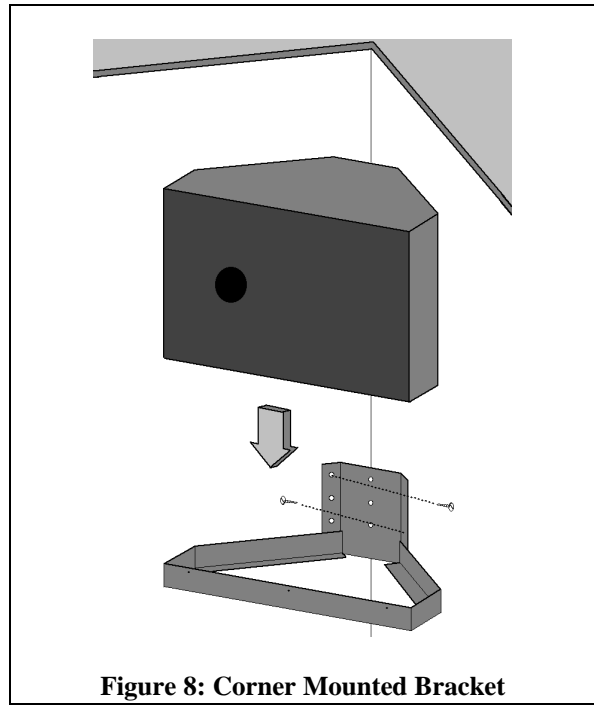
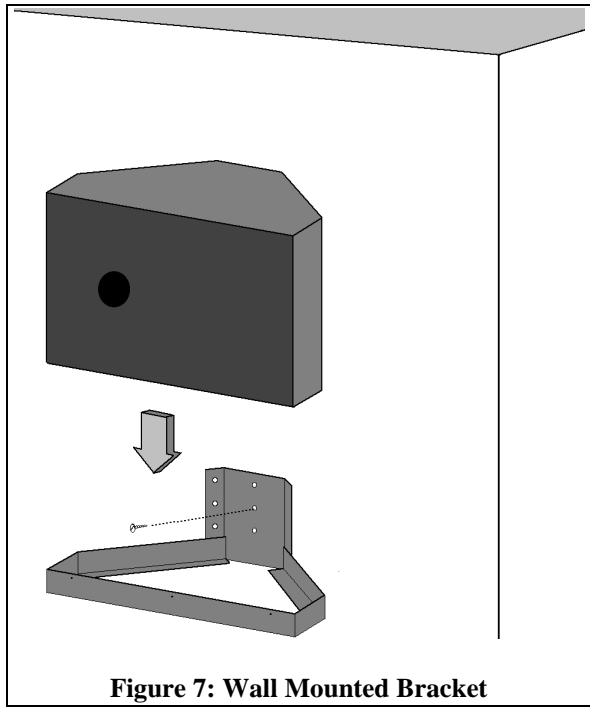
Step 4: Set the Control SB2 into the bracket frame.

Step 5: Secure the Control SB2 to the bracket by reinstalling the three (3) removed load-baffle screws through the holes in the front of the bracket. Secure the screws into the subwoofer. (see figure 10).

Step 6: Apply a secondary safety strap between a secondary building structure point and the subwoofer/bracket assembly as a backup support. The safety strap and all attachments must be capable of holding the product, keeping it from falling in case of catastrophic failure of the primary bracket mounting to the building structure.

Suggestions for Locating the Control SB-2 for Proper Output Sensitivity – The placement of the Control SB-2 can be used as a tool for adjusting the subwoofer output level to match those of the satellite speakers. Positioning the SB-2 close to the junction of 3 boundaries (ceiling/wall/wall junction or floor/wall/wall junction) yields maximum output sensitivity. Placement at the junction of 2 boundaries (wall/wall junction) reduces the subwoofer sensitivity by 3dB. Placement along a flat wall further reduces subwoofer sensitivity by another 3dB for better tonal balance with less efficient or high impedance satellite systems.

JBL Control Contractor MTC-SB2W Bracket For Control SB-2 Speakers





MTC-SB2C Installation Instructions

The JBL MTC-SB2C is a bracket for suspending the JBL Control SB2 Subwoofer. The bracket acts as an enclosed shelf upon which the SB2 sits. The SB2 is to be secured to the bracket and the bracket suspended securely from above.

Warning: This bracket is not intended to be used ANY other way.

The bracket and Subwoofer **MUST** be installed oriented as shown in Diagram 2.

Step 1: Remove the six (6) screws on the front of the load-baffle of the Control SB-2. Set the Control SB2 into the bracket frame and secure the Control SB2 to the bracket by reinstalling the six (6) removed load-baffle screws through the holes in the front of the bracket (see Diagram 1).

Step 2: Suspend the bracket by using all four (4) attachment ears via a load-rated suspension method, such as aircraft cable, load-rated chain or threaded rod.

IT IS THE RESPONSIBILITY OF THE INSTALLER TO DETERMINE THE STRENGTH OF THE BUILDING STRUCTURE AND TO ENSURE THE SAFETY OF THE BRACKET SUSPENSION FROM THE BUILDING STRUCTURE!

Step 3: Apply a secondary safety strap between a secondary building structure point and the subwoofer/bracket assembly as a backup support. The safety strap and all attachments must be capable of holding the product, keeping it from falling in case of catastrophic failure of the primary bracket mounting to the building structure.

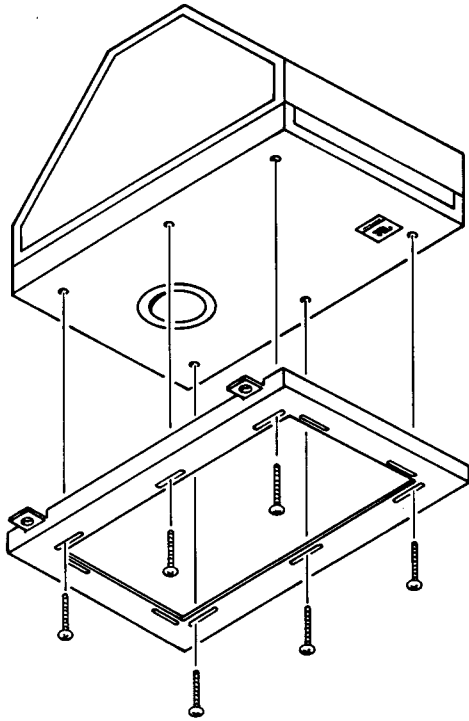


Figure 1

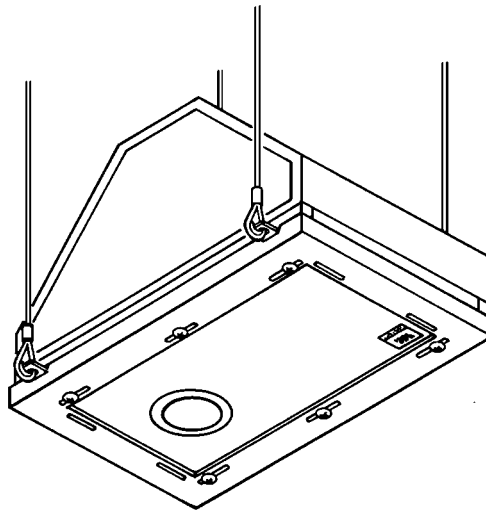


Figure 2



JBL Professional
8500 Balboa Boulevard, P.O. Box 2200
Northridge, California 91329 U.S.A.



MTC-PC

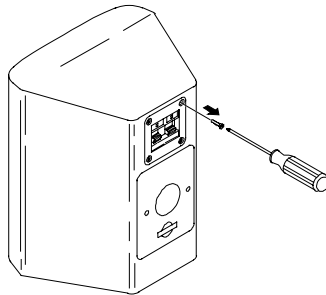
Panel Cover for Control Contractor and Control Series

The MTC-PC is a simple-to-use cover for the input terminal panel of many models of JBL Control Contractor and Control Series loudspeakers. The MTC-PC installs over the existing input cup, providing a sealed gland-fitting entrance to protect the input panel against incursion of water. The cover is black and is paintable.

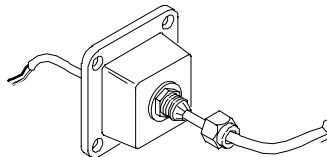
In order to seal correctly, the outside diameter of the cable MUST be between 3.0 mm (0.12 in) and 6.3 mm (0.25 in) and the cable must be jacketed with a round or near-round cross-sectional shape. Side-by-side “zip” type cables do NOT allow a proper seal.

Installation Instructions

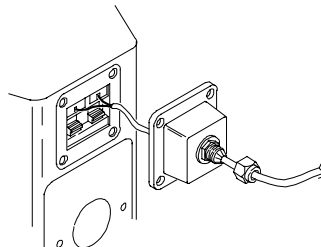
Step 1 – Remove the four (4) screws in the corners of the speaker’s existing terminal cup. DISCARD these four (4) screws.



Step 2 – Loosen the nut on the outside of the MTC-PC. Run the wire through the gland fitting, as shown. Do NOT tighten the nut on the outside of the MTC-PC yet.

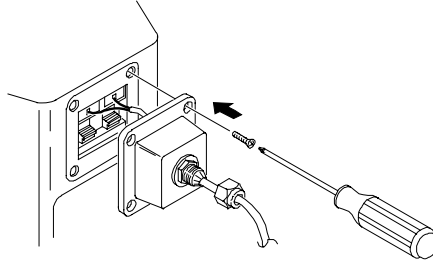


Step 3 – Connect the wire to the input terminals of the loudspeaker.

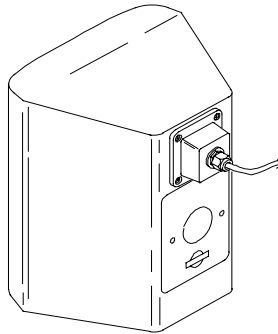


Step 4 – Remove the protective paper from the adhesive gasket surrounding the underside of the MTC-PC. Attach the MTC-PC through the existing screw holes, USING THE SCREWS PROVIDED WITH THE MTC-PC. It might be necessary, depending on the stiffness of the cable, to slide the cable through the gland fitting to avoid strain on the wire or connections inside the panel cover.

Note: The new screws provided with the MTC-PC are longer than the screws previously removed in Step 1. Use the new screws. DO NOT reuse the screws previously removed in Step 1.



Step 5 – Tighten the nut on the gland fitting to seal around the cable. The fitting forms a liquid-tight seal around most jacketed cables. If the fitting does not achieve a tight seal on a particular cable type, it might be necessary to use a different, rounder, cable type..



Caution:

The MTC-PC is intended solely to provide protection for the input connections of the loudspeaker. Do NOT suspend the loudspeaker by the MTC-PC fitting.

Model Compatibility – The MTC-PC fits JBL’s standard 2¼” x 2¼” (57 x 57 mm) input cups which includes the following models (at the time of this writing):

Control Contractor: Control 23, 23T, 25, 25T, 28, 28T, 18ST (including –WH versions)

The MTC-PC does NOT fit model Control 18S which uses a larger input connector cup due to the satellite output connectors.

Control Series: Control 1, 1AW, 1AW/70, & 5 (including –WH versions)



JBL Professional
8500 Balboa Blvd, P.O. Box 2200
Northridge, CA 91329 U.S.A.

H A Harman International Company

MTC-PC INSTR

Installing Control Contractor Speakers onto Lighting Trusses

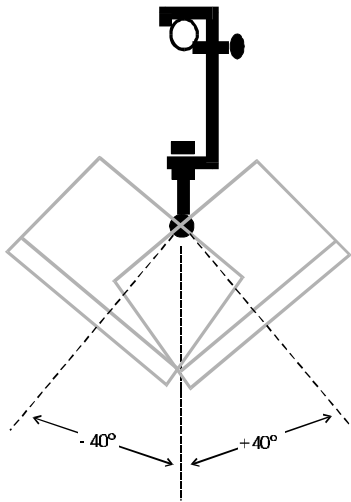
Control 23, Control 25 and Control 28 can be attached from lighting trusses and other round pipes by using a simple bent-metal “lantern clamp” available from Penn Fabrication.

Model:	M1882 – Light duty lantern clamp, black, 3mm steel.
Pipe Size:	1.5 inches (38mm) through 2.0 inches (51mm)
Purchase From:	Penn Fabrication distributor in US (CA, 805-529-4962), Canada (Winsor, Ontario: 519-737-9494), Australia (Melbourne: 6139-646-7222), Japan (Tokyo: 428-32-5690), Brazil (Sao Paulo: 55-0-11-530-6212), Germany (Hamburg: 040-75-34054), or from the Penn Fab main UK office: 3 Armstrong Rd, Washington District 2, Tyne & Wear, NE37 1LH (44-0191-416-1717).

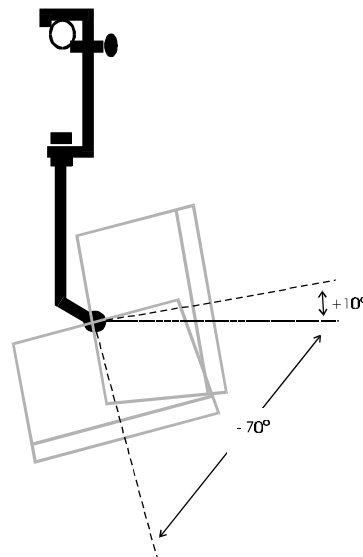
Using Standard Invisiball: Use when angling downward at $\pm 40^\circ$ from axis of lantern clamp. Remove Invisiball base by loosening jam nut and removing nylon nut. Reattach shaft through hole in lantern clamp, tightening nylon nut and securing with jam nut. Control 23 requires flatwashers on both sides of lantern clamp hole.

Using JBL Ceiling Mount Bracket (MTC-28/25CM): Use when adjustment near perpendicular to the axis of the lantern clamp is required. Attach CM shaft through hole in lantern clamp, tighten nylon nut and secure with jam nut. Control 23 requires flatwashers on both sides of lantern clamp hole.

Using Standard Invisiball



Using Optional “CM” Bracket



Note: Always install in accordance with local safety codes and safe installation practice.[Control 25 Shown]

Adapters for Threaded Rod and Pipe

Omnimount Systems makes a number of adapters useful for installing JBL Control Contractor speakers using threaded rod or threaded pipe. Omnimount makes the following adapters available from stock:

FOR CONTROL 25 and 28 (7/16"-20 Invisiball shaft)

50PA BLK	Coupling adapter, black, to ½" Threaded Plumbing Pipe
50TA BLK	Coupling adapter, black, to 7/16"-20 (fine) Threaded Rod
5000MA BLK	Coupling adapter, black, to Microphone Stand Adapter 5/8"-27

FOR CONTROL 23 (6mm dia. Invisiball shaft)

25TA 6mm BLK	Coupling adapter, black, to 6mm dia. (standard 1mm pitch) Threaded Rod
JNUT 6mm BLK	Black 6mm jam nut for 25TA 6mm BLK above
JBL 6mm CLNG CLIP BLK	Ceiling clip, black, for suspended ceiling T-channel, 2 piece system locks around channel

JBL does not stock these adapters. They are available directly from Omnimount Systems or from one of their distributors throughout the world. For more information or to order direct, contact:

Omnimount Systems
1501 W 17th Street
Tempe, AZ 85281
Phone: 602-829-8000
FAX 602-756-9000



A Harman International Company

CCBRKHNDK V2
09/99