

# SA2 Warranty

## SA2 LIMITED WARRANTY (United States & Canada only) Invisible Aesthetic Speakers

SOUND ADVANCE SYSTEMS, Inc. (sometimes referred to as "Sound Advance" or "SAS" ); hereby warrants to each owner of the SA2 Loudspeakers during the term of this warranty, that:

1. If your SOUND ADVANCE SA2 loudspeakers are installed by a **Certified SA2 Dealer/installer**, recommended procedures, materials and techniques, the SA2 loudspeakers are covered by a FIFTEEN (15) year Limited Warranty, from the original date of purchase by the first buyer. This Warranty is transferable to a new owner of the dwelling containing such SA2 loudspeakers.

Should a SOUND ADVANCE SA2 loudspeaker fail during this 15-year warranty period. SOUND ADVANCE will replace it at no charge, and will pay for (a) the labor to remove the defective loudspeaker, (b) return shipping costs, (c) labor to re-install the loudspeaker, and (d) except as set forth the next paragraph, restoration of the wall or ceiling surface to a condition as close as reasonably possible to the original. If permanent artwork covers the loudspeaker, then SAS shall not be responsible for any damage to such artwork, and owner shall be responsible for restoring such artwork. If wall covering, such as wallpaper or leather or unique products, covers the loudspeaker, then SAS shall not be responsible for complete restoration, but SAS may issue a replacement or reimbursement allowance to the owner on a case-by-case basis.

2. If your SOUND ADVANCE SA2 loudspeakers are installed by a **Non-Certified SA2 Dealer/installer**, the SA2 loudspeakers are warranted to be free from defects in materials and workmanship for a period of ONE (1) year from the original date of purchase. During this warranty period, SAS will repair or replace (at its option) all such defects without charge for parts or labor, if returned prepaid to the proper SOUND ADVANCE Service facility, together with the original sales receipt or other proof of purchase. The units will be returned prepaid.

3. Should you require Warranty Service, please contact your Dealer/Installer. If further assistance is required, call SOUND ADVANCE SYSTEMS at 800-592-4644 (within U.S.) or 714-556-2378 8:00 A.M - 5:00 P.M. Pacific Time, or Fax at 714-556-5425.

For a detailed warranty disclosure please refer to the SA2 Limited Warranty, included with the loudspeaker.

SOUND ADVANCE SYSTEMS, INC. - 3202 S. Shannon St.. Santa Ana, CA 92704-6353



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## 1 NEW CONSTRUCTION

### 1.1 Installing the PBB4 enclosure in between 16-inch on-center wooden stud framing prior to dry wall.

1. Retrieve the enclosure, leaving the corrugated cover on until it is time to install the loudspeaker.

**Note:** If using a “Roto Zip” or drywall saw to remove the drywall at installation time remove the cardboard cover and save the insulation batt in a plastic bag for future use, to avoid damage to the tools.

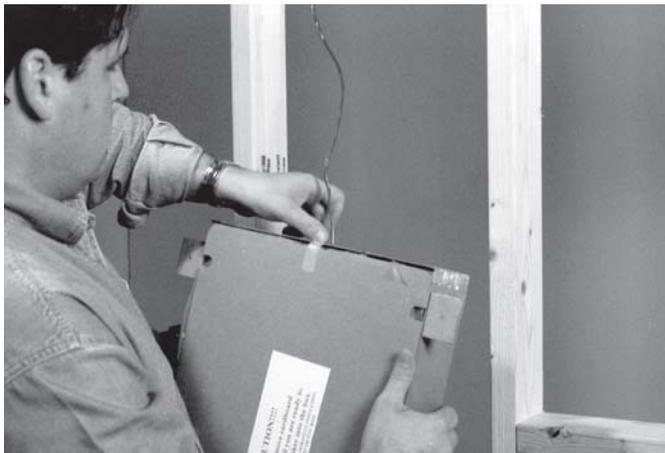
2. Using a screwdriver, bend the hood of the knockout towards the inside of the enclosure.



3. Pass the wire through the knockout hole, allowing approximately 18 inches of wire to go inside the enclosure.



4. Using proper termination (saddle clamp) secure the wire to the enclosure.



5. Now you are ready to install the enclosure into the framing and secure using the 1-inch drywall screws provided.



### 1.2 Installing the PBB4 enclosure between 16-inch on-center metal stud framing prior to dry wall.

1. Retrieve the enclosure, leaving the corrugated cover on until it is time to install the loudspeaker.

**Note:** If using a “Roto Zip” or drywall saw to remove the drywall at installation time remove the cardboard cover and save the insulation batt in a plastic bag for future use, to avoid damage to the tools.

2. Using a screwdriver, bend the hood of the knockout towards the inside of the enclosure. This is where the audio wire will be routed from within the wall.



3. Now you are ready to install the enclosure into the framing and secure it using the 1-inch drywall screws provided.



4. Retrieve the audio wire and pass it through the knock-out hole, allowing approximately 1-foot of wire to go inside the enclosure.



5. Using proper termination (saddle clamp) secure the wire to the enclosure.

**1.3 Installing the PBB6 enclosure into 24-inch on-center wooden Joist framing prior to dry wall.**

1. For the enclosure to fit properly you will need to build additional frame work between the existing 24-inch on-center framing, if the studs or joists are farther than 16 inches apart.
2. Place a 24-inch long wooden stud up to the area that will be framed out.



3. Using a carpenters square, square up the new stud or joist to the existing frame and secure it using 3-inch drywall screws.





4. Measure 16 inches from the center of the new stud or joist and make a mark where the second stud will be installed.



5. Using 3 inch drywall screws, secure the second stud or joist to the existing frame work.



6. Drill a routing hole in the stud and pass the audio wire through to where the enclosure will be mounted.



7. Retrieve the enclosure, leaving the corrugated cover on until it is time to install the loudspeaker.



**Note:** If using a “Roto Zip” or drywall saw to remove the drywall at installation time remove the cardboard cover and save the insulation batt in a plastic bag for future use, to avoid damage to the tools.

8. Using a screwdriver, bend the hood of the knockout towards the inside of enclosure. This is where the audio wire will be routed from within the wall.

**1.4 Installing the PBB6 enclosure between 24-inch on-center metal joist framing prior to drywall.**

1. For the enclosure to fit properly you will need to build additional frame work between the existing 24-inch on-center framing, if the studs or joists are farther than 16 inches apart.
2. Place a 24 inch wooden stud or joist up to the area that will need to be framed out, and make a mark on the open side of the metal stud or joist.



9. Using proper termination (saddle clamp) secure the wire to the enclosure.



10. Now you are ready to install the enclosure into the framing and secure it using the 1-inch drywall screws provided.



3. In order for the new frame work to fit into the open side of the metal stud, you will need to bend open the outside lip of the metal stud using a pair of pliers.



4. Using 2 inch drywall screws, secure the stud or joist to the existing frame work.



5. Measure 16 inches out from the center of the new stud or joist and make a mark where the second stud will be installed.



6. Once again use a pair of pliers to bend open the outside lip of the metal stud, so that the new stud will fit.



7. Positioned parallel to the previous one, secure the second stud or joist using 2 inch drywall screws,



8. Drill a routing hole in the stud and pass the audio wire through to where the enclosure will be mounted.



9. Retrieve the enclosure, leaving the corrugated cover on until it is time to install the loudspeaker.

**Note: If using a “Roto Zip” or drywall saw to remove the drywall at installation time remove the cardboard cover and save the insulation batt in a plastic bag for future use, to avoid damage to the tools.**

10. Using a screwdriver, bend the hood of the knockout towards the inside of the enclosure. This is where the audio wire will be routed from within the wall.



11. Retrieve the audio wire and pass it through the knock-out hole, allowing approximately 18 inches of wire to go inside of the enclosure.
12. Using proper termination (saddle clamp) secure the wire to the enclosure.



- 13P. Now you are ready to install the enclosure into the framing and secure it using the 1-inch drywall screws provided.

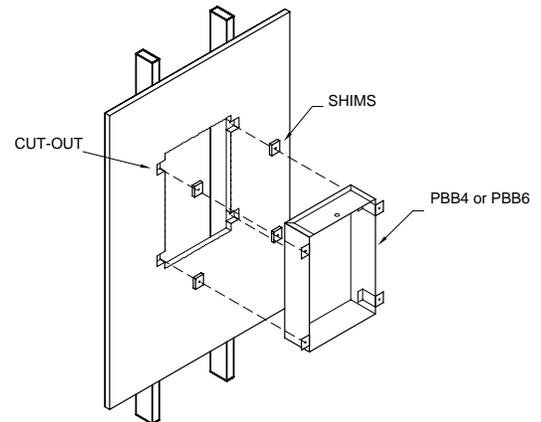


### 1.5 Installing the PBB4 or PBB6 to framing prior to installation of double layer gypsum wallboard

**NOTE:** The adjustment screws in both the PBB4/6 will accommodate a finish thickness of 1/2" through 5/8", these are typical GWB (gypsum wall board) wall and ceiling panels.

If the distance from the front of the PBB4/6 mount tabs to the final finish surface is greater than 5/8", shims made of wood or GWB scrap must be placed between the studs and the mounting tabs prior to securing it to the studs.

1. Install shims of appropriate thickness between the studs and mounting tabs of the PBB enclosure, prior to mounting the enclosure to the shim/stud assembly.



2. Retrieve the enclosure, using a screwdriver, remove the wiring knockout
3. Install a wire saddle clamp, pass the wire through the knockout hole, leaving 18" within the enclosure. Secure the wire saddle clamp.
4. Fasten the PBB4/6 to the shim/ stud assembly
5. If the PBB4/6 will be completely covered with GWB and will be removed at a later date using a Roto-Zip® or drywall saw at installation time, *you must:*

Tape the connection wire to the inside of the PBB4/6 to avoid damage from drywall tools.

Remove both the protective cardboard cover and insulation material from the back box and store in a plastic bag for future use.

## 2. EXISTING CONSTRUCTION

### 2.1 Installing the PBB4 between 16 inch on-center wooden stud framing after the installation of drywall.

1. Using a stud finder, determine the location of the stud framing behind the dry wall.



2. Cut out an access hole that is approximately 6 inches square.



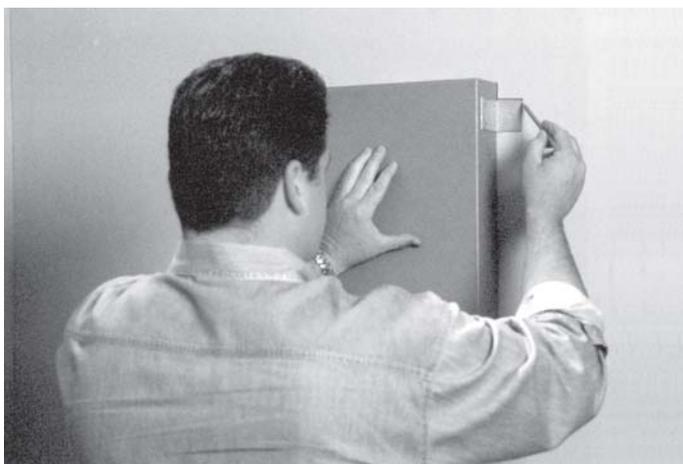
3. Reach inside the cavity and determine the locality of the left and right stud framing, also verify that a minimum of 22-inches of unobstructed vertical space is available.



4. Starting from the access hole, make a horizontal cut until you reach the stud.



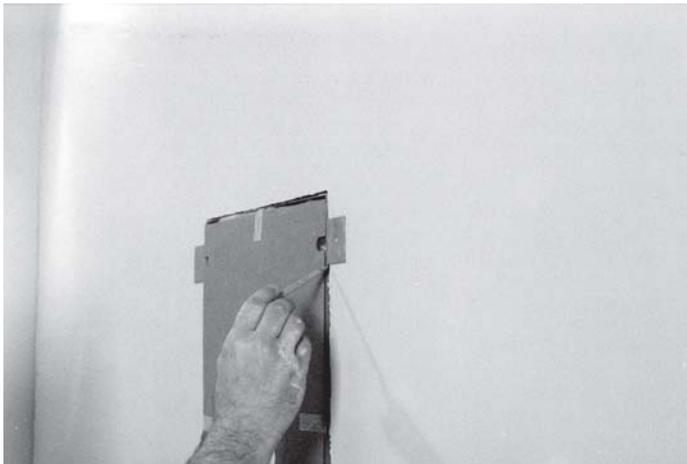
5. Retrieve the PBB with the opening towards the surface and place the left side up to where the saw line ended at the stud and trace the outline



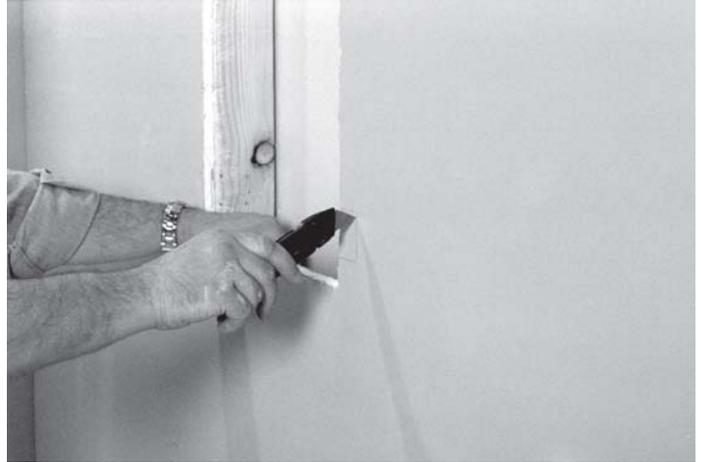
6. Once you have traced the outline, you are ready to cut out the opening and remove the piece of wallboard.



7. Retrieve the enclosure, leaving the corrugated cover on until it is time to install the loudspeaker.
8. Place the enclosure inside the cavity and trace the outline of the mounting tabs.



9. Use a utility knife to notch out the marked areas until the bare studs are exposed.



10. After you finish notching out the wallboard, reach in and retrieve the audio wire.
11. Using a screwdriver, bend the hood of the knockout towards the inside of the enclosure. This is where the audio wire will be routed from within the wall. Retrieve the audio wire and pass it through the knockout hole, allowing approximately 18 inches of wire to go inside the enclosure.



12. Using proper termination (saddle clamp) secure the wire to the enclosure.



13 Now you are ready to install the enclosure into the framing and secure it using the 1-inch drywall screws provided.



2. Cut out an access hole that is proximately 6 inches square.



**2.2 Installing the PBB4 enclosure between 16-inch on-center metal stud framing after the installation of drywall.**

1. Using a stud finder, determine the location of the stud framing behind the dry wall.



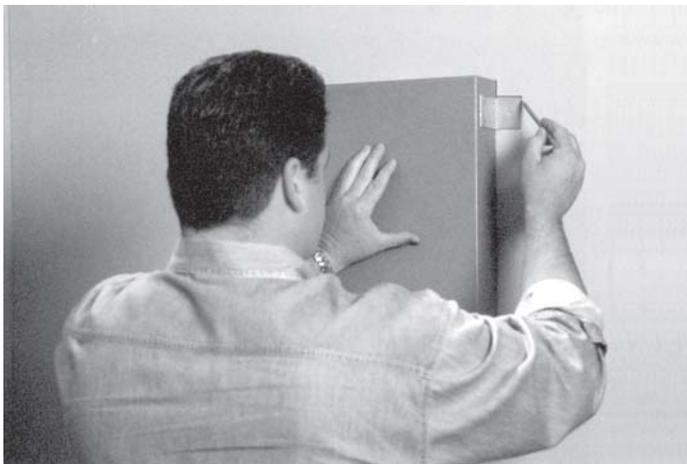
3. Reach inside the cavity and determine the locality of the left and right stud framing, also verify that a minimum of 22-inches of unobstructed vertical space is available.



4. Starting from the access hole, make a horizontal cut until you reach the stud.



5. Retrieve the PBB with the opening towards the surface and place the left side up to where the saw line ended at the stud and trace the outline



6. Once you have traced the outline, you are ready to cut out the opening.



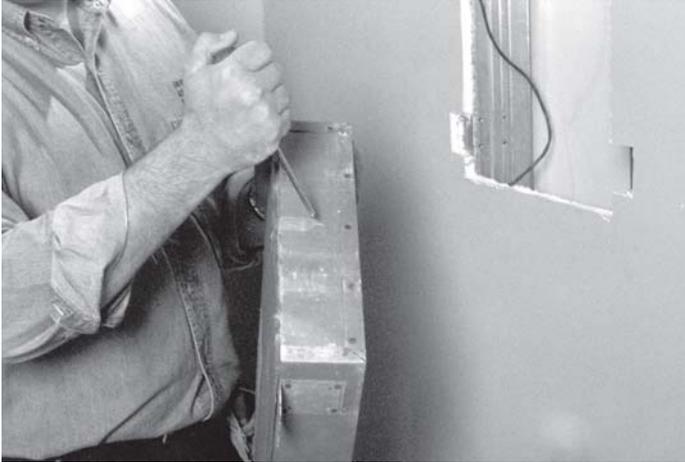
7. Retrieve the enclosure, leaving the corrugated cover on until it is time to install the loudspeaker.
8. Place the enclosure inside the cavity and trace the outline of the mounting tabs.



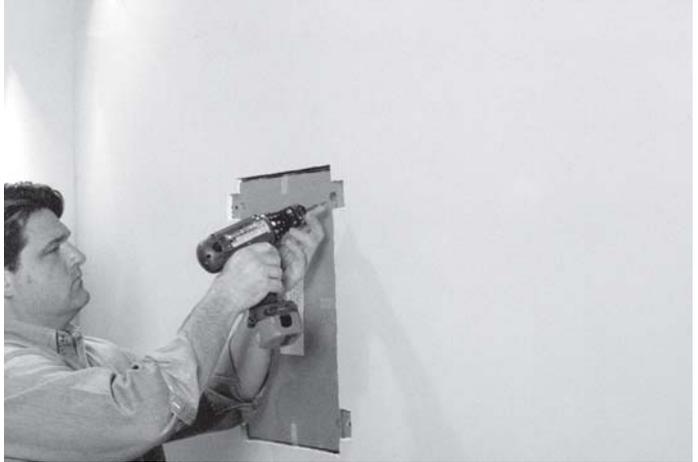
9. Use a utility knife to notch out the marked areas until the bare studs are exposed.



10. Using a screwdriver, bend the hood of the knockout towards the inside of the enclosure. This is where the audio wire will be routed from within the wall.



- 11 Retrieve the audio wire and pass it through the knockout, allowing approximately 18 inches of wire to go inside the enclosure.



**2.3 Installing the PBB6 between 24-inch on-center wooden Joist framing after the installation of drywall.**

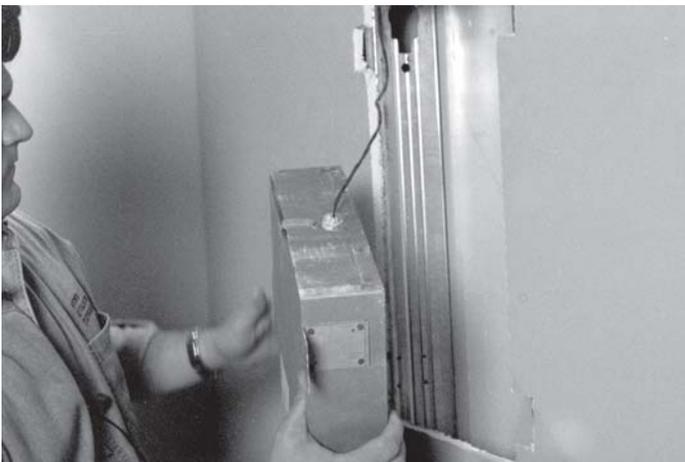
1. Using a stud finder, determine the location of the stud framing behind the dry wall.



12. Using proper termination (saddle clamp) secure the wire to the enclosure



2. Cut out an access hole that is approximately 6 inches square.



- 13 Now you are ready to install the enclosure into the framing and secure it using the 1-inch drywall screws provided.



3. Reach inside the cavity and determine the locality of the left and right stud framing, also verify that a minimum of 22-inches of unobstructed vertical space is available.



4. Starting from the access hole, make a horizontal cut until you reach the stud.



5. Retrieve the PBB with the opening towards the surface and place the left side up to where the saw line ended at the stud and trace the outline.

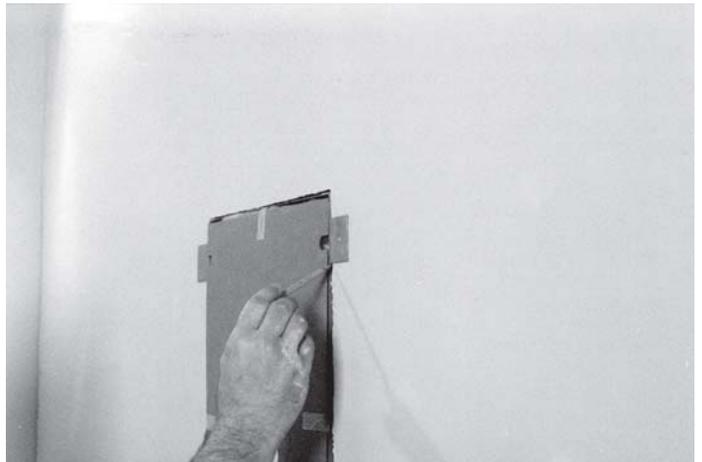


6. Once you have traced the outline, you are ready to cut out the opening and remove the piece of wall-board.



7. Retrieve the enclosure, leaving the corrugated cover on until it is time to install the loudspeaker.

8. Place the enclosure inside the cavity and trace the outline of the mounting tabs.



9. Using a drywall saw, notch out the two traced areas that have no stud or joist behind them.

10. Now, using a utility knife notch out the two remaining traced areas on the opposite side.



11 At the edge of the long side of the opening, where there is no stud or joist, install a 24 inch long wooden or metal stud (where required by code) behind the dry wall.

12. Use 3 inch drywall screws to screw through the dry wall and into the 2X4.



13. Reach in the opening and retrieve the audio wire.



14. Retrieve the enclosure, leaving the corrugated cover on until it is time to install the loudspeaker.

15 Using a screwdriver, bend the hood of the knock-out towards the inside of the enclosure. This is where the audio wire will be routed from within the wall. Retrieve the audio wire and pass it through the knockout hole, allowing approximately 18 inches of wire to go inside the enclosure.



16. Using proper termination (saddle clamp) secure the wire to the enclosure.



- 17 Now you are ready to install the enclosure into the framing and secure it using the 1-inch drywall screws provided.



## 2.4 Installing the PBB6 between 24-inch on-center metal Joist framing after the installation of drywall.

1. Using a stud finder, determine the location of the stud framing behind the dry wall.



2. Cut out an access hole that is approximately 6 inches square.



3. Reach inside the cavity and determine the locality of the left and right stud framing, also verify that a minimum of 22-inches of unobstructed vertical space is available.



4. Starting from the access hole, make a horizontal cut, until you have reach the stud.



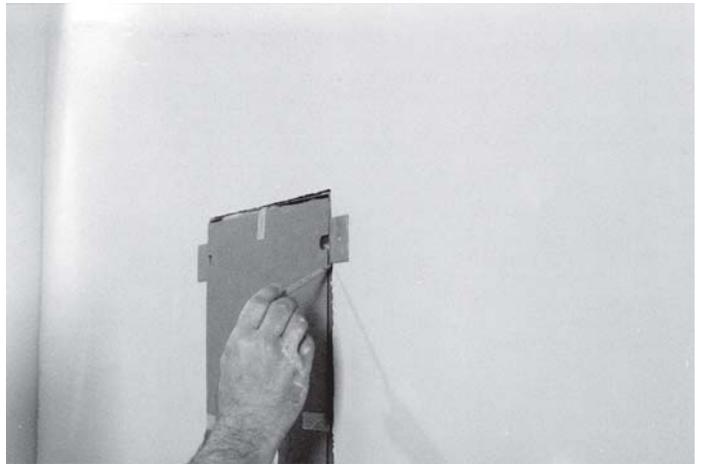
5. Retrieve the PBB with the opening towards the surface and place the left side up to where the saw line ended at the stud and trace the outline.



6. Once you have traced the outline, you are ready to cut out the opening and remove the piece of wall-board



7. Retrieve the enclosure, leaving the corrugated cover on until it is time to install the loudspeaker.
8. Place the enclosure inside the cavity and trace the outline of the mounting tabs



9. Using a drywall saw, notch out the two traced areas that have no stud or joist behind them.
- 10 Now, using a utility knife notch out the two remaining traced areas on the opposite side.



- 11 At the edge of the long side of opening, where there is no stud or joist, Install a 24 inch long wooden or metal stud (where required by code) behind the dry wall, Use 3" drywall screws to screw through the dry wall and into the 2X4.



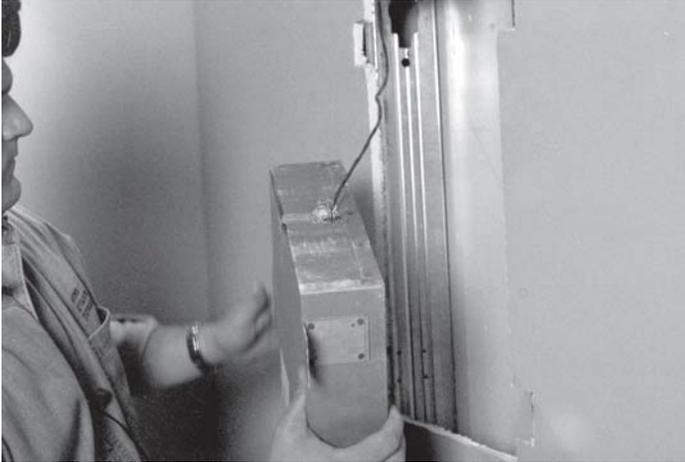
- 12 Reach in the opening and retrieve the audio wire.



- 13 Retrieve the enclosure, leaving the corrugated cover on until it is time to install the loudspeaker.
- 14 Using a screwdriver, bend the hood of the knockout towards the inside of the enclosure. This is where the audio wire will be routed from within the wall. Retrieve the audio wire and pass it through the knockout hole, allowing approximately 18 inches of wire to go inside the enclosure.



15. Using proper termination (saddle clamp) secure the wire to the enclosure.



16 Now you are ready to install the enclosure into the framing and secure it using the 1-inch drywall screws provided.



2. In order to get the saw blade into the lath and plaster, use a 1-1/4" wood drill bit and drill a hole in the wall between the left and right studs.



3. Using a reciprocating saw cut out an access hole approximately 6-inches square.

### 2.5 Installing the PBB4 or PBB6 into Existing Lath and Plaster walls.

1. Using a stud finder, determine the location of the stud framing behind the wall.

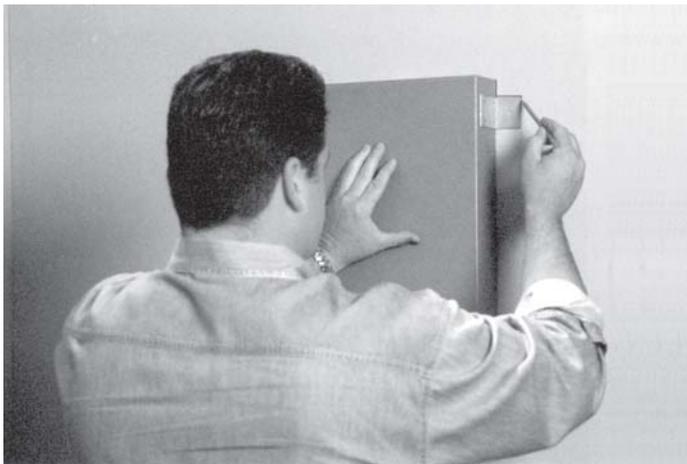
**Note: Use caution when using a reciprocating saw in old wood lath and plaster. Use a fine toothed blade and work slowly. In some cases a fine toothed blade in a circular saw will cause less vibrations and possible less damage to existing work.**



4. Reach inside the cavity and determine the locality of the left and right stud framing, also verify that a minimum of 22-inches of unobstructed vertical space is available.



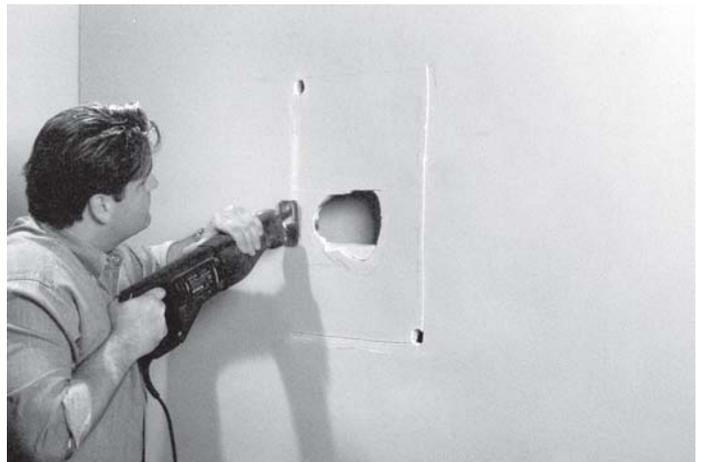
5. If the studs are farther than 16 inches apart, you will need to center the opening between the left and right studs.
6. Retrieve the PBB with the opening towards the surface and place the left side up to where the saw line ended at the stud and trace the outline.



7. In order to get the saw blade in the wall, you will need to drill holes in two of the diagonal corners on the traced border.



8. Using a reciprocating saw, begin to cut out the opening in the lath and plaster.



9. Once you have finished sawing, place the enclosure inside the cavity and then trace the outline of the mounting tabs



- 10 Use the reciprocating saw to notch out the traced areas.



- 11 At the edges on both long sides of the opening, install two 24 inch long wooden stud or metal stud(s) where required by local codes behind the lath and plaster. Use 3" drywall screws to screw through the lath and plaster and into the 2X4's.



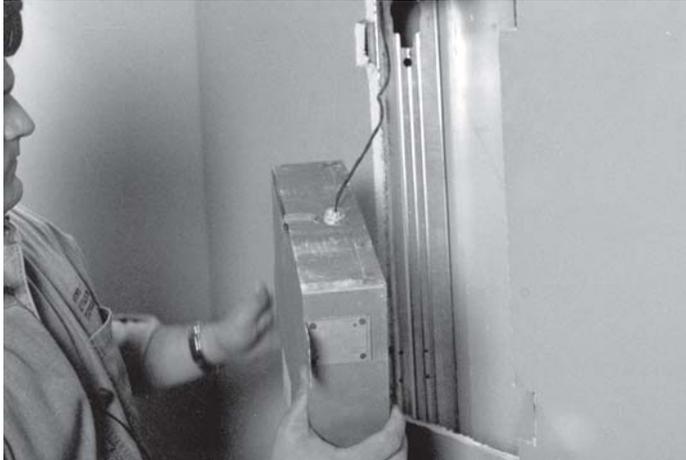
- 12 Reach up into the opening and retrieve the audio wire.



- 13 Retrieve the enclosure, leaving the corrugated cover on until it is time to install the loudspeaker.
14. Using a screwdriver, bend the hood of the knockout towards the inside of the enclosure. This is where the audio wire will be routed from within the wall. Retrieve

the audio wire and pass it through the knockout hole, allowing approximately 18 inches of wire to go inside the enclosure.

- Using proper termination (saddle clamp) secure the wire to the enclosure.

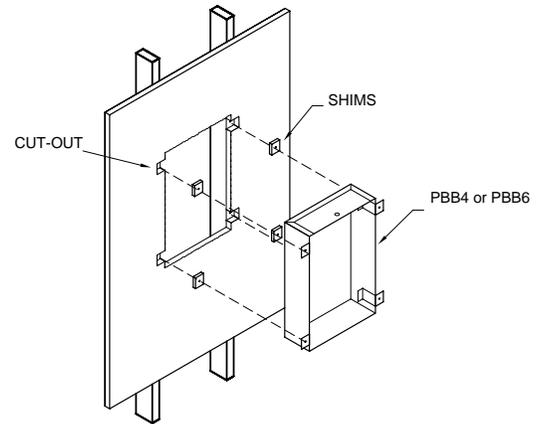


- Now you are ready to install the enclosure into the framing and secure it using the 1-inch drywall screws provided.



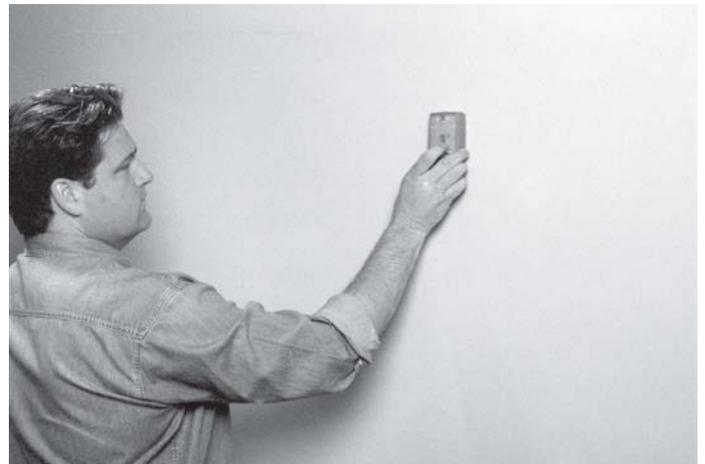
**NOTE:** The adjustment screws in both the PBB4/6 will accommodate a finish thickness of 1/2" through 5/8". If the distance from the front of the PBB4/6 mount tabs to the final finish surface is greater than 5/8", shims made of wood or GWB scrap must be placed between the studs or framing and the mounting tabs prior to securing it to the studs.

**NOTE:** If the retrofit will involve a plaster finish coat, read Section 4.1, Rev 960.068 Rev #2, page 33 of this manual to insure proper adjustment clearance for a final plaster veneer coat.



## 2.6 Installing the PBB6 into Suspended drywall ceilings.

- Use a stud finder to determine the location of the metal channels behind the dry wall.



- Cut out an access hole approximately 6-inch square.



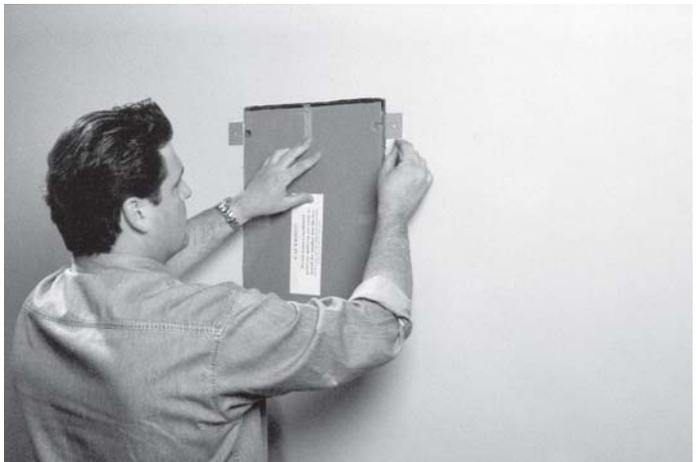
- Reach inside the cavity and determine the locality of the left and right suspended metal channels, and verify

that a minimum of 22-inches of unobstructed space is available in the long direction of the speaker.



4. If the metal channels are farther than 16 inches apart, you will need to center the opening hole so that it falls in the middle, between the channels. Retrieve the PBB with the opening towards the surface and place the left side up to where the saw line ended at the stud and trace the outline.

6. Retrieve the enclosure, leaving the corrugated cover on until it is time to install the loudspeaker.
7. Place the enclosure inside the cavity and trace the outline of the mounting tabs

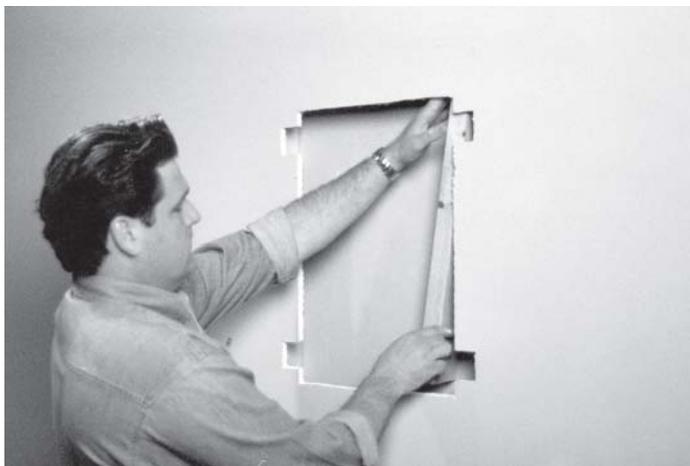


5. Once you have traced the outline, you are ready to cut out the opening.

8. Use a drywall saw to notch out the traced areas.



9. At the edges on booth long sides of opening, Install two 24 inch long wooden or metal stud (where required by code) behind the dry wall . Use 3" drywall screws to screw through the dry wall and into the 2X4s.

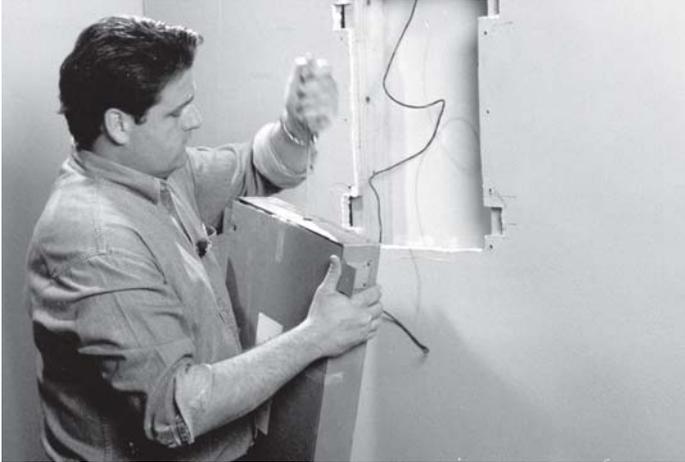


- 10 Reach into the opening and retrieve the audio wire.



- 11 Using a screwdriver, bend the hood of the knockout towards the inside of the enclosure. This is where the audio wire will be routed from within the wall.
12. Retrieve the audio wire and pass it through the knockout hole, allowing approximately 18 inches of wire to go inside the enclosure.





13. Using proper termination (saddle clamp) secure the wire to the enclosure.

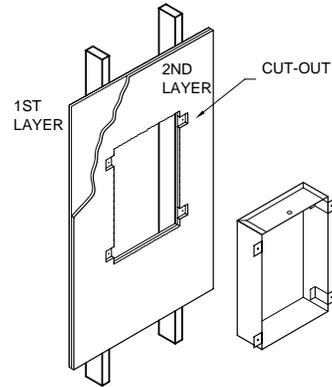


14. Now you are ready to install the enclosure into the framing and secure it using the 1-inch drywall screws provided.



## 2.7 Installing the PBB4 or PBB6 in existing double layer gypsum wallboard construction.

1. On the second, or outside layer of gypsum wallboard (GWB), determine the location of the loudspeaker installation by referring to steps 2.8.1 – 2.8.7.



2. Cut out and remove the traced areas *only* on the second or outside layer of GWB.

Install the PBB4/6 so that the mounting tabs rest on the first or inside layer of GWB.

**NOTE:** The adjustment screws in both the PBB4/6 will accommodate a finish thickness of 1/2" through 5/8". If the distance from the front of the PBB4/6 mount tabs to the final finish surface is greater than 5/8", shims made of wood or GWB scrap must be placed between the studs or framing and the mounting tabs prior to securing it to the studs.

## 3. INSTALLING THE LOUDSPEAKER

### 3.1 Installing the loudspeaker into PBB4 and PBB6 enclosures.

1. Using a utility knife, make a bevel cut and trim up the edges of the dry wall, this will keep the paper skin of the dry wall from rolling up when sanding.
2. Remove the corrugated cover from the enclosure and tuck in the fiberglass insulation behind each of the brackets located inside the enclosure.



3. Retrieve the rubber springs and note that they have been partially pre-cut by the factory to accommodate the different thickness of dry wall. You will need to tear off this piece if 1/4 or 1/2-inch dry wall is being used.



4. Install the rubber springs onto the four mounting brackets.



5. Before placing the metal washers on the Allen screws, use a rag to clean the threads so that the screws are free from any dirt. This procedure will make screws less likely to cross-thread.
6. Now strip the audio wires and connect them using 16 gage wire nuts or solder. Check for line for continuity with an audio signal from the source.

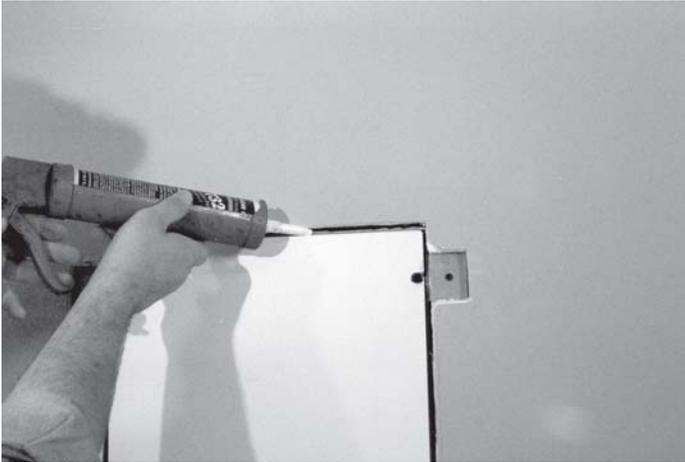


7. After you have connected the wires, place the loudspeaker into the enclosure and insert the Allen screw through the hole in the speaker assembly, through the spring rubber and into the threaded fastener in the PBB. Use the key wrench provided to tighten up the four Allen screws.



8. Tighten down the screws just enough to hold the speaker in the enclosure.
9. Check the gap between the inside lip of the enclosure and the loudspeaker, if the gap is greater than a 1/4 inch, fill the gap with silicone sealant. This procedure will keep the joint compound from forming inside the enclosure and possibly breaking loose causing rattles or buzzing to occur.

Take Care to insure that the RTV Silicone Sealant does NOT Get on the surface of the loudspeaker.



- 10 Cut out and remove any loose pieces of dry wall that you find.
- 11 Remove corrugated cover on the enclosure and adjust the four Allen screws so that the surface of the loudspeaker is flush with the dry wall.

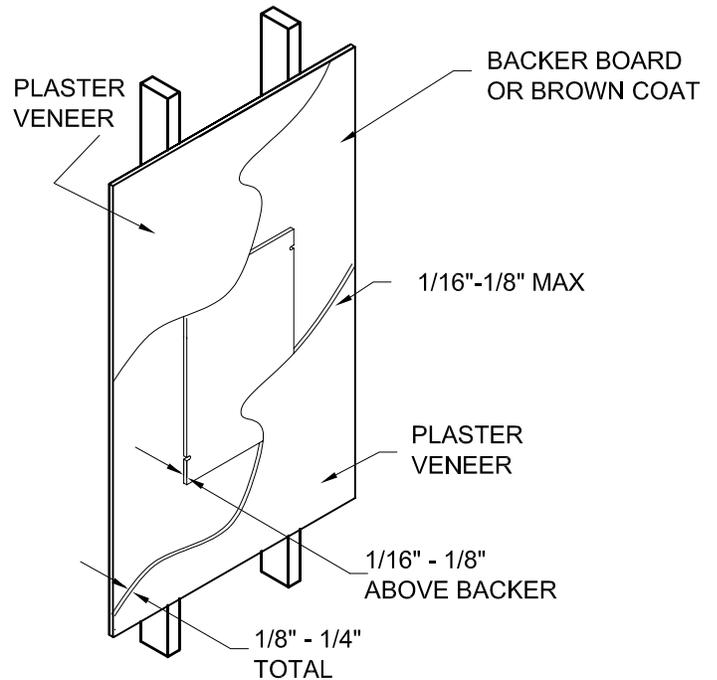


#### 4. FINISHING THE LOUDSPEAKER

##### 4.1 Finishing the Loudspeaker into Plaster Base or Treated Gypsum Wallboard with a 1/16" veneer plaster coat.

**NOTE:** If the final veneer plaster coat is thicker than 1/8".

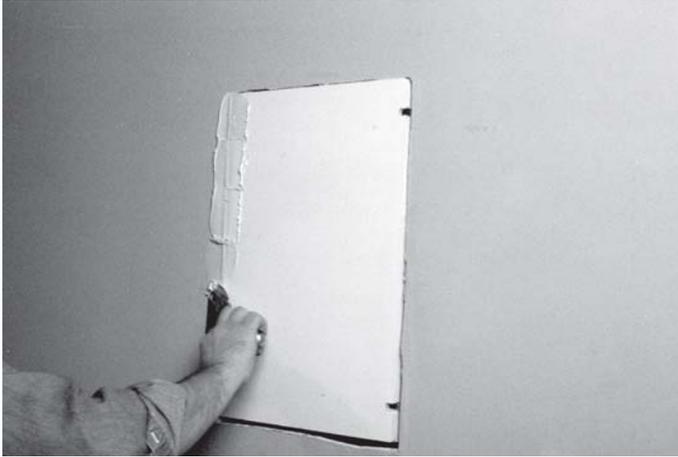
The face of the loudspeaker should be adjusted out past the surface of the unfinished plaster base or treated gypsum board . This adjustment should allow the loudspeaker to receive no more than 1/8" maximum of veneer plaster.



1. Adjust the four Allen head screws so that the face of the loudspeaker is flush to- or slightly above the unfinished surface of the plaster base or treated gypsum board- Refer to note directly above.



2. Using the supplied or recommended setting type joint compound fill the joint so that the compound is flush with the unfinished plaster base or treated gypsum board.



3. Using a drywall type sanding block with a 150 grit sanding screen, sand the joint compound or plaster until it is flush with the face of the loudspeaker.

5. Retrieve a sheet of vellum and hold it up to the wall, covering the face of the loudspeaker evenly. Make a pencil mark at each of the four corners of the overlay, this will give you a rough idea how far out you will need to spread the adhesive.



4. After you are finished sanding, go over the area lightly with a damp sponge and clean up any loose drywall dust.

6. Using a 2 inch paint brush, apply a coat of Adhesive Primer to the speaker surface and the surrounding area inside of the pencil marks. This procedure will keep the plaster from absorbing the entire amount of overlay adhesive causing the vellum to bubble or lift up from the plaster. The drying time can be accelerated by using a hair dryer at a safe distance of 2 ft. from the wall. Place your hand palm down just skimming the surface of the loudspeaker, if the dryer is too hot on your hand , it is too hot for the speaker.



7. After the adhesive primer has dried, use a 2 inch paint brush and apply a generous amount of overlay adhesive evenly within the pencil marks on the wall.



8. Using your hand apply the vellum overlay starting at the center of the loudspeaker, gently working your way out toward the edges. Use a 6-inch hard plastic squeegee or a taping knife and, once again, start at the center, moving out past the edges, utilizing a good amount of pressure.



9. With the first couple of passes, you will notice an excess of adhesive on your squeegee, leaving the adhesive on will help you glide over the vellum with ease and at the same time completely saturating the vellum with adhesive.

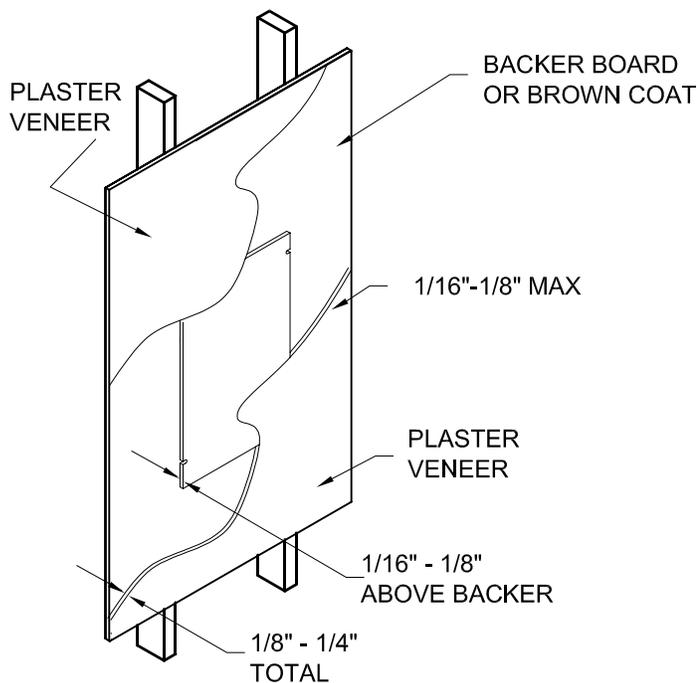


10. If the edges look like they are starting to come up, then simply peel up the paper and apply more adhesive.

11. Using a damp sponge, wipe the excess adhesive off loudspeaker surface and the surrounding area of the wall. Allow the vellum overlay to dry for a minimum of 2 hours. It is very important that the overlay is completely dry before proceeding to the next step. The drying time can be accelerated using a hair dryer at a safe distance of 2 feet from the wall. Place your hand palm down just skimming the surface of the loudspeaker, if the dryer is too hot on your hand, it is too hot for the speaker.



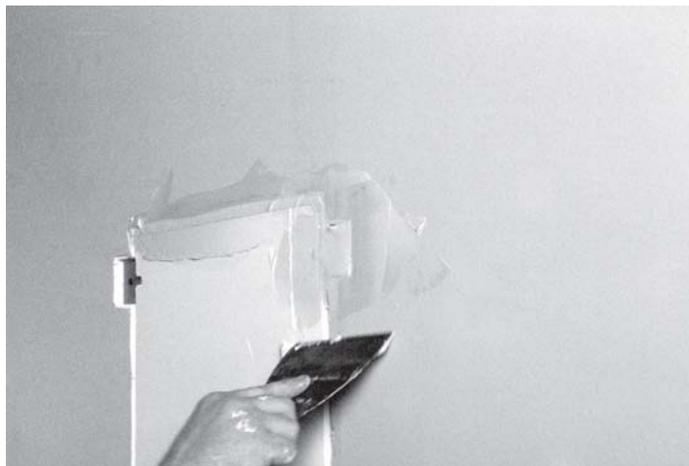
- Apply the final veneer plaster coat no more than 1/8" thick. The use of the SOUND ADVANCE Installation Compensation Circuit -ICC® is recommended for all plaster veneer situations.



#### 4.2 Finishing the loudspeaker into Standard Finished Drywall.

- For the first application to fill the joint, you will need to mix up the 2 bags of the joint compound with water. Using the measuring cups provided, measure 2 cups of water per 1 bag of joint compound. If the compound feels to thin or runny, simply add more compound to the mixture. It is best if the mixture for the first application is thicker, this will cut down the drying time and also keep the compound from falling or running out of the gap in the joint.

- Use a 6-inch drywall knife and begin to apply the joint compound to the joint between the speaker and the wall. After the joint has been filled, leave a high enough layer so that it can be sanded down flush with the loudspeaker and the wall. Allow a minimum drying time of 5 hours before sanding the compound.



- Using a drywall type sanding block with a 150 grit sanding screen, begin to sand the joint compound until it is flush to the face of the loudspeaker and wall.



- Using a paintbrush or a slightly damp sponge, clean the dust off the face of the loudspeaker and wall.



5. Retrieve a sheet of vellum and hold it up to the wall, covering the face of the loudspeaker evenly. Make a pencil mark at each of the four corners of the overlay, this will give you a rough idea as to how far out you will need to spread the adhesive.



6. Use a 2 inch paint brush and apply a generous amount of overlay adhesive evenly within the pencil marks on the wall.



7. Using your hand apply the vellum overlay starting at the center of the loudspeaker, gently working your way out toward the edges. Use a 6 -inch hard plastic squeegee or a taping knife and, once again, start at the center, moving out past the edges, utilizing a good amount of pressure.



8. Using a damp sponge, wipe the speaker surface and the surrounding area of the wall clean from any excess adhesive. Allow the vellum overlay to dry for a minimum of 2 hours. It is very important that the overlay is completely dry before proceeding to the next step, The drying time can be accelerated using a hair dryer at a safe distance of 2 feet from the wall. Place your hand palm down just skimming the surface of the loudspeaker, if the dryer is too hot on your hand , it is too hot for the speaker.
9. If there is a wrinkle in the overlay that will not roll down, wait until the vellum is completely dry and the wrinkle should shrink down and become smooth.
- 10 For this application you should need to mix up only one bag of joint compound. Like before, mix in two

measuring cups of water per one bag of joint compound. Apply the last coat of joint compound to the edges of the vellum and feather it out to the wall.



- 11 Once compound is dry, once more, lightly sand out until smooth.

## 5. REQUIRED TOOLS

### Tools needed to install the SA2 loudspeaker.

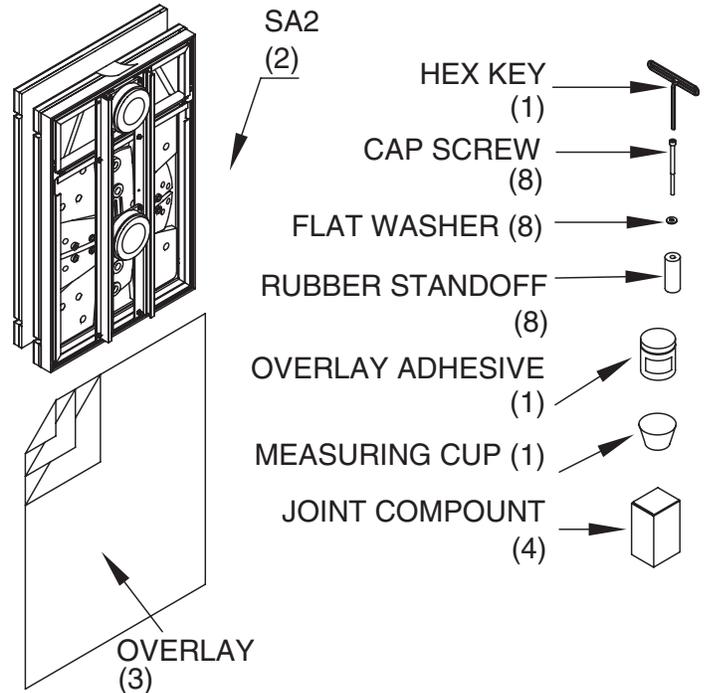
The following tools will be need to complete the installation of the SA2 loudspeaker for all the different applications shown in this video.

- Cordless drill
- Phillips head screw driver
- Pliers
- Tape measure
- Utility knife
- Hammer
- Wire stripers
- Stud finder
- Electrical tape
- 12 inch mixing tray
- Drywall sanding block
- 1 inch putty knife
- 6 inch taping knife
- Hard plastic squeegee
- 2 inch paint brush
- Carpenters square
- 16 Gage wire Nuts
- Soldering kit
- Drywall Sanding block
- 150 Grit sanding screen

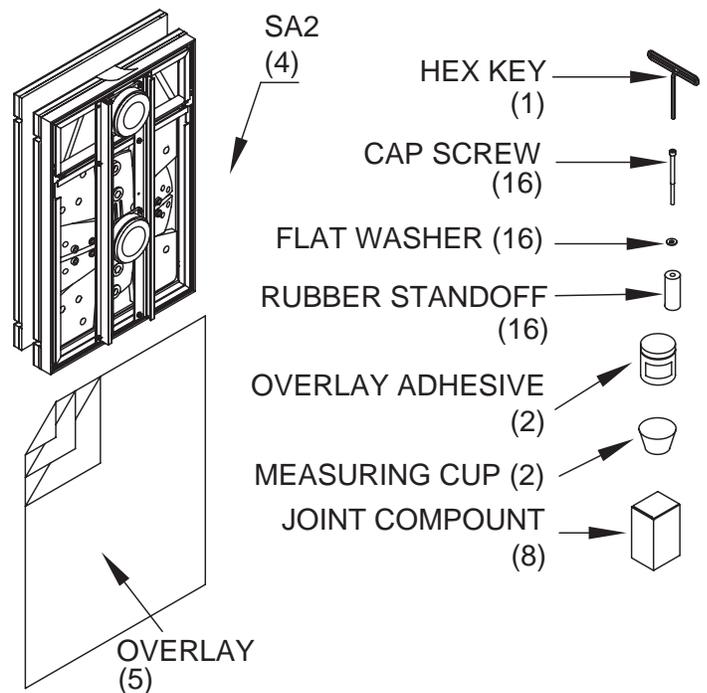
## 6. PRODUCTS CONTAINED IN THE SA2 PACKAGE.

### SA2 packages and their contents:

#### 2 Pack



#### 4 Pack



## APPENDIX

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### A. SETTING TYPE JOINT COMPOUND:

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#### Manufacturer

United States Gypsum Company - A subsidiary of  
USG Corporation

101 South Wacker Drive, Chicago, IL 60606-4385

**Note: The Joint Compound may contain any or all of the following: Plaster of Paris, Calcium carbonate, Perlite, Mica, Clay or Polyvinyl acetate.**

#### Product:

Light Weight Setting Type JC 45'

Setting Time: 30 to 80 minute dependent upon temperature and humidity

Working Time: 15 to 20 minutes

#### Proper Use and Preparation of the Setting Type Joint Compound

##### Mixing Procedures

Mix Ratio: 10 fl. oz. of water per lb. of powder.

1. Use clean water and equipment
2. Mix powder and water in proportions indicated above (Initial mix should be slightly thicker than the desired working consistency)
3. Mix until smooth
4. Let mix stand for approximately 1 minute (The lower the temperature, the longer the material must stand)
5. Remix for 1 minute while adding water to achieve desired working consistency

**CAUTION: Do not mix with other joint compounds in wet or dry form.**

**Do not re-temper mix.**

#### Application

1. Apply sufficient coats to level the surface; smooth before setting begins.
2. Wait until preceding coat is hard before applying an additional coat.

#### Joint Compound Cleanup

Clean tools and containers immediately after use and before material hardens.

#### WARNING NOTICE

**When mixed with water, this material hardens and then slowly becomes hot. DO NOT attempt to make a cast enclosing any part of the body using this material. Failure to follow these instructions may cause severe burns that may require surgical removal of affected tissue. When mixing or dry sanding, dust may cause irritation to the eyes, noise, throat or upper respiratory system. Long term breathing of large amounts of respirable mica may cause lung disease. While mixing or sanding, wear a NIOSH approved dust mask. Do not take internally. The use of safety glasses is STRONGLY recommended.**

**NOTE: Setting time may vary somewhat due to geographical variation in formulas. Setting cannot be altered by dilution with water.**

Product complies with ASTM C475

Emergency product safety information: 312/606-4542

Manufactured under on or more of the following U.S. Patents: RE 29,753- 4,454,267- 4,657,594- 4,686,253

### B. OVERLAY ADHESIVE

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#### Manufacturer

Custom Building Products

Seal Beach, CA

Product: Standard Duty Clear -Wallcovering Adhesive

Working Time: Five (5) minutes or less

#### Surface Preparation

**Surface must be dry, clean, smooth, free of grease, wax and other foreign matter.**

## Mixing

Stir adhesive thoroughly prior to application

## Application

1. Apply paste to the surface, not the overlay.
2. Apply an even coat to surface with a paste brush or short nap paint roller.
3. Allow paste to soak in thoroughly.
4. Apply overlay to wall, position and smooth.
5. Immediately remove excess adhesive with smoother and a damp sponge.

## Adhesive Cleanup

Clean tools with warm, soapy water before adhesive dries.

**NOTE: We do not recommend dilution with water. Keep from freezing. Close container after each use.**

**CAUTION :Keep out of reach of children Do not take internally**

## C. ADHESIVE PRIMER

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### Manufacturer

**Jasco Chemical Corp.**  
1008 Fuller Street  
Santa Ana, CA 92701  
(714) 547-6951

### Application

The Adhesive primer is intended to be used in situations where a skim coat of plaster is applied on the wall surface.

this application will seal the plaster surface and allow the Overlay Adhesive to bond.

1. Apply paste to the surface of the wall and the speaker.
2. Allow to dry for a minimum of two hours. the drying time can be accelerated using a hair dryer at a safe distance of 2 feet from the wall. Place your hand palm down just skimming the surface of the loudspeaker, if the dryer is too hot on your hand , it is too hot for the speaker.
3. Once the Adhesive primer is dry, apply the Overlay Adhesive following the instructions in this Installation Guide.



### SOUND ADVANCE SYSTEMS Inc.

3202 So. Shannon St., Santa Ana, CA 92704-6353  
(714)556-2378 (800)592-4644 FAX (714)556-5425  
WWW.SOUNDADVANCE.COM

**NOTES**

NOTES



**Invisible Aesthetic Loudspeaker  
for Flush Mounting in  
Walls or Ceilings**

**The SA2B**

**Recommended Applications:**

SOUND ADVANCE products provide outstanding performance and economic advantages when installed in environments with an ambient noise level at or below 75dBA, where the speakers can be placed in a wall or ceiling, at least 6 feet above the floor. When system design requirements indicate speaker to speaker distances of greater than 40.0 ft., please contact the factory for additional technical information on such applications. The recommended applications for the SA2B include:

- Background Music
- Foreground Music
- Speech Reinforcement
- Voice Paging
- Sound Masking
- Multi-channel audio/Surround Sound
- Teleconferencing
- Multi-Room Systems

**Recommended Installations:**

Flush Mounted into Walls or Ceilings

**Recommended Accessories:**

ICC™ Active electronic correction and response compensation processor

**Spacing:**

- 140° ±3dB
- Edge to edge layout (see polars)
- Use Sound Advance Quick Layout™ Software or Guaranteed Layout Service

**Protection:**

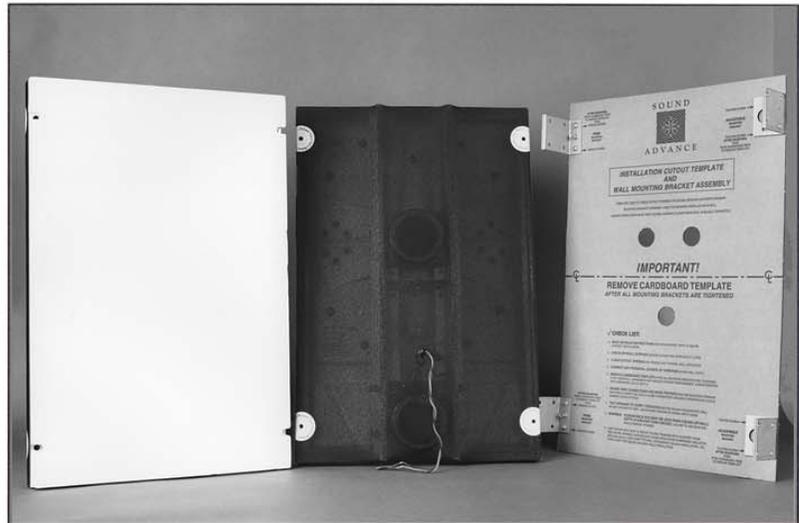
Two independent (Low and High Frequency) Self-Resetting Circuits.

**Recommended Environment:**

Indoor or Weather protected Outdoor

**On-Site Finish Options:**

- Finish with Latex Paint
- Cover with Wallpaper
- Cover with Light Fabric
- Cover with Selected Texture Coats



**A TRULY INVISIBLE, EXTENDED BANDWIDTH, WIDE DISPERSION LOUDSPEAKER SYSTEM.**

The SOUND ADVANCE SA2B is a two-way, full-range planar loudspeaker system designed for application in commercial and residential installations.

Its proprietary structural and engineering features make it possible to invisibly install in almost any standard wood/metal stud wall or ceiling, essentially becoming an integral part of the wall or ceiling surface.

Because of the SA2B's patented Planar Diaphragm Technology™, when properly installed in a wall or ceiling, the loudspeaker system will radiate in a smooth, even coverage hemispherical pattern with more than 140° of dispersion throughout its bandwidth.

The SOUND ADVANCE SA2B employs a flat rigid diaphragm, approximately one-half inch thick, that installs into a standard wall cavity replacing the equivalent surface area of gypsum board. The flat vellum overlay which is applied to the loudspeaker surface may be finished with water soluble materials such as latex paints, to match any color or decor requirement, using conventional brush-on, roller, or airless spray application systems. Additionally, the SA2B may be covered using wallpaper, light weight vinyl wall coverings and selected textured coatings. ( Please contact the factory before applying any textured coating to Sound Advance Systems products).

The SA2B's exclusive installation methods, including the use of matching surface treatments, uniquely allows the speaker to be made truly invisible. This capability allows the loudspeaker system to be placed wherever optimal acoustics dictate, eliminating any visual concerns.

The SA2B utilizes a mechanically derived crossover centered at 1 kHz with a 12 dB per octave slope for both low-frequency and high-frequency sections. Each loudspeaker contains two independent protection circuits (high-frequency and low-frequency) that automatically reset after an overload condition has been removed.

**Installation Note:**

Although not required for in-wall installations, our backbox model PBB4 is highly recommended to prevent noise bleed through to adjacent rooms. In a ceiling installation, the use of a backbox model PBB6 is required. Failure to use this backbox in a ceiling installation may void your warranty.

# SA2B

*Invisible In-Wall/Ceiling  
Aesthetic Loudspeaker*

## ARCHITECTS AND ENGINEERS SPECIFICATION:

The aesthetic SA2B loudspeaker shall be a two-way, full-range device, producing frequencies from 70Hz to 20 kHz. Total radiating surface shall be 294.0 sq. in. (1896.0 sq. cm.) and high frequency dispersion shall be 140° to at least 20 kHz in both horizontal and vertical planes.

The loudspeaker system shall have a sensitivity of 90 dB, 1W/1M, with a power rating of 60 watts RMS as per EIA standard RS-426-A. The loudspeaker shall have two independent self-resetting custom gel switch protection devices, for the high-frequency driver and the low-frequency driver.

The loudspeaker shall have an exterior frame constructed of extruded aluminum that is 21.0 in. (53.3 cm.) long by 14.0 in. (35.6 cm.) wide and 3.0 in. (7.6 cm.) in total unit depth - not including backbox. The loudspeaker shall fit into standard wall and ceiling construction and occupy an area of approximately 2.0 sq. ft. (0.19 sq. m.).

SOUND ADVANCE offers a range of backboxes to allow code/installation requirements to be met.

One (1) loudspeaker with normal mounting hardware shall weigh 7.7 lbs. (3.49 kg.).

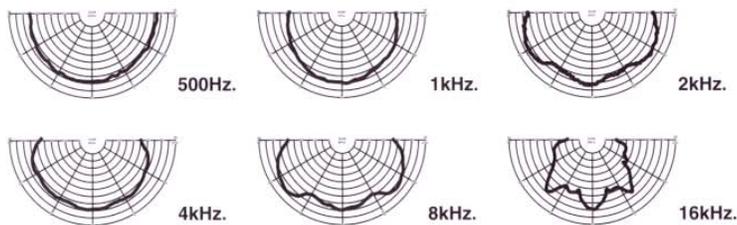
The loudspeaker shall be the **SOUND ADVANCE SYSTEMS SA2B** or equivalent.

## DATA GATHERING:

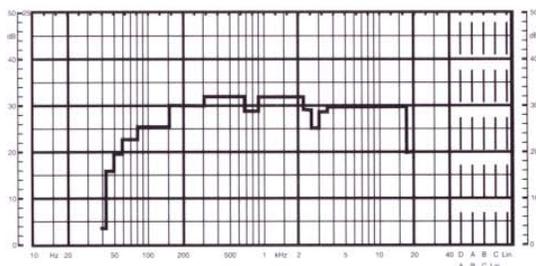
All polar data was gathered by Electroacoustic Technologies, Warner Springs, CA., using Bruel & Kjaer instrumentation. The data was measured in a 100 ft. outdoor circular pit using standard ground plane data techniques, and then digitized for plotting and presentation.

A full set of polar data taken at 1/3 octave points is available from SOUND ADVANCE SYSTEMS upon request. Frequency response measurements were taken with the loudspeaker in-wall and finished. Additional details on measurement hardware and methods can be found in Appendix A of the QL4-Quick Layout™ software manual.

### Polar Response



### On-Axis Frequency Response



SA2 May98

## SPECIFICATIONS:

**Frequency Response:**  
70 Hz - 20 kHz  $\pm$ 4dB (when properly Installed in-wall with overlay and backbox)

**Power Rating:**  
60 Watts RMS as per EIA Standard RS-426-A

**Pressure Sensitivity:**  
90 dB, 1W/1M

**Magnets:**  
Low and High-Frequency:  
Ceramic, 0.37 kg. (0.82 lbs.)

**System Impedance:**  
4 ohms nominal, 3.5 ohms minimum

**Voice Coil Diameter:**  
High-Frequency and Low-Frequency: 1.02 in. (2.6 cm.)

**Polar Dispersion:**  
See Polar charts

**Crossover Frequency:**  
1 kHz 12 dB/octave Mechanically derived

**Dimensions:**  
Length 21.0 in. (53.4 cm.) Width 14.0 in. (35 cm.) Depth 3.0 in. (7.6 cm.)  
Weight 7.7 lbs. (3.49 kg.)

**Factory Provided Finish:**  
Primed surface ready to receive vellum overlay (included).

**Environmental Specifications:**  
-40F to 140F (-40C to 60C) 0 to 100% humidity

**Termination:**  
12.0 in. (30.5 cm.) Pigtails (red/black twisted pair 16 AWG)

**Protection:**  
2 Independent self-resetting custom gel switches (Low and High Frequency)

**Shipping Weight:**  
28.0 lbs. (12.8 kg.) 2 Pack 52.0 lbs. (23.7 kg.) 4 Pack

**Packaging:**  
Two (2) to a carton (SA2B) and four (4) to a carton (SA2B-4), both shipped complete with finishing supplies and vellum overlays.

**Installation Hardware:**  
**PBB-4 - Four Inch Backbox**  
Length 21.25 in. (54.0 cm.), Width 14.25 in. (36.2 cm.), Depth 3.25 in. (8.3 cm.)  
Weight 8.4 lbs. (3.81 kg.)

**PBB-6 - Six Inch Backbox**  
Length 21.25 in. (54.0 cm.), Width 14.25 in. (36.2 cm.), Depth 5.25 in. (13.3 cm.)  
Weight 10.1 lbs. (4.58 kg.)

**SA2B-BKT - Mounting Bracket for use with Metal Studs**  
**Please Note:** SOUND ADVANCE offers 70.7V or 100V transformers as a factory installed option for the SA2B. Contact the factory for further information.

**Warranty:**  
SOUND ADVANCE SYSTEMS warrants the SA2B to be free of any defect in material or workmanship for a period of 7 years. Should a properly installed speaker fail, SOUND ADVANCE will replace the device at no charge, including shipping costs and labor for removal and reinstallation.

SOUND ADVANCE SYSTEMS is continually engaged in product improvement research. Therefore, changes may occur to existing products without notice, and current SOUND ADVANCE SYSTEMS products may differ in some respect from the published description, but will always equal or exceed the original design specifications unless otherwise stated.



SOUND ADVANCE SYSTEMS, Inc.  
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www.soundadvance.com

**Installation Compensation Circuit**

*The ICC™*

**RECOMMENDED APPLICATIONS:**

The ICC is designed to be used only with SOUND ADVANCE SA2B loudspeaker systems\*. SOUND ADVANCE strongly recommends the use of the ICC with all SA2B installations to achieve maximum performance from the loudspeakers and allow compensation for mounting location, wall/ceiling surface finish and room acoustics. The ICC is an accessory for the SA2B and is supplied separately. One unit may be used to drive multiple loudspeakers depending on installation type and room considerations.

ICC units may be linked together using the direct output of one unit connected to the inputs of another. Please contact the factory for application assistance.

**RECOMMENDED INSTALLATION**

The ICC is designed to be shelf- or rack-mounted on standard EIA spacing with other electronic components of the system (includes self-adhesive rubber feet). It uses 1/2 rack width of space, and a rack filler panel is available if only one ICC is used in a particular installation. Two units may be mounted side by side with the supplied rack mounting kit. It should be installed so as to permit proper connection in the signal chain as noted above.

\*SA2B Loudspeakers must be installed in accordance with the Installation Instructions supplied with the SA2B Loudspeakers.

**SA2B Accessories**

*Installation Compensation Circuit*



**ACTIVE ELECTRONIC COMPENSATION**

The SOUND ADVANCE SYSTEMS ICC (Installation Compensation Circuit) is a two channel, half rack width, active electronic correction circuit specifically designed to work with the SOUND ADVANCE SA2B in-wall loudspeaker system and its enclosures.

Because of the variety of finishing options available for SOUND ADVANCE's SA2B, the ICC was designed to provide a wide range of post-installation correction and response compensation for any variations in the SA2B's performance caused by surface finish and the specific type of installation location used.

The ICC is normally installed between the system pre-amplifier and the power amplifiers. It may also be inserted into the external processor loops available on some equipment. The ICC inputs and outputs are line level (-10dBV) unbalanced RCA female jacks.

An extensive set of controls allows the installer to precisely match and tailor the performance of SA2B systems to the specific room surface finish and acoustic conditions for each project. The ICC provides two inputs, and two sets of outputs (4 total), all gold plated. One pair of outputs is the ICC processed signal, the other is a direct signal, unprocessed by any ICC circuitry. These direct outputs are designed for use with powered subwoofers for the SA2B\* or other loudspeaker systems. (\*SOUND ADVANCE SYSTEMS does not supply subwoofer systems)

The ICC is a low voltage (9VAC), always-on device, with full safety agency ratings for worldwide use on its external power supply units. Designed to be rack- or shelf-mounted, the ICC is 1/2 rack width, and two units can be placed in a single rack space (1U), allowing for multiple speakers in multiple areas with minimal additional space.

**ARCHITECTS AND ENGINEERS SPECIFICATION:**

The ICC shall be a two channel electronic device designed to provide compensation circuitry for exclusive use with SOUND ADVANCE SA2B loudspeakers. The ICC shall provide two unbalanced input channels and 4 unbalanced output channels on female RCA connectors. It shall offer correction circuitry for Low Frequency response, High Frequency response, Mid-Bass response based on mounting cavity size, and output level. These controls shall be a combination of linear taper potentiometers and multi-position slide switches.

The ICC shall also provide Spatial Enhancement Circuitry for expansion of the stereo stage, and a Low Cut filter to remove unwanted information from the signals supplied on the processed outputs. This filter shall be operational at 90Hz and provide a slope of 12dB/octave.

The ICC shall use either a UL/CSA listed or TUV/CE approved external power supply weighing .53 lbs. (0.24 kg.) which shall provide 9VAC/500mA for 120VAC or 230VAC at either 50 or 60Hz, via a male 5.5mm AC plug. The ICC shall be housed in a 1/2 standard rack space chassis, with a powder-coated black finish, and incorporate gray push-buttons and soft-touch knobs for all rotary controls.

It shall be 9.50 in. (24.1 cm.) in width, 1.72 in. (4.37 cm.) in height, and 5.03 in. (12.78 cm.) in depth including all control and connections.

The unit shall be the **SOUND ADVANCE ICC** or equivalent.

