

Acoustat Speakers Troubleshooting Guide
(Repairs not Modifications)
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My various repairs and experiments have proven to my satisfaction that it is critical that the Acoustat speakers first be made to *function* (not necessarily appear) as closely as possible to when they left the factory – which makes a huge difference – and THEN modifications can be most gainfully performed / added.

This does not mean undo such improvements as Medallion transformers or a C-Mod. Other mods should be considered on a case by case basis. Get the speakers working fully and then you will be able to properly evaluate what a change does for the sound, for better or worse.

I have tried to include the most common problems, and a few uncommon problems.

Repairs: Categories of Symptoms

1, 2. LOOSE BASS, and /or Slapping Sound

3.A. BUZZING sound

3.B. RATTLING sound

4. A PANEL HAS WEAKER OUTPUT

5. WEAK SPEAKER (ALL PANELS)

5-B. SOUND SLIGHTLY WEAK, one speaker, all panels

6. DEAD SPEAKER

7. ARCING SPEAKER

8. HIGH PITCHED WHINE OR T-T-T-T- SOUND OR HISSING (not loud), continuous

9. WEAK BASS OR WEAK HIGHS (one speaker)

SPECIAL CASES:

10. Mild Popping or Static / Hissing in first few minutes after plugging in (but not visible arcing)

11. Speakers don't play or have greatly reduced volume when humidity is high

12. Weaker in Midrange

KEY:

[x] = I did not have this problem. I invite your experience if you have fixed this problem successfully.

[***] made a big difference in the sound quality

[****] made an even bigger difference in the sound quality

Posts mentioned are found and linked to in this thread: [Acoustat Answer Man is here](#)

Format is:

Symptom, Possible Cause, Fix

Next Possible Cause, Fix

Always unplug and discharge before repairing.

All work on panels requires grill sock / cloth off.

Tips:

Swap speaker Left – Right connections to make sure problem is not elsewhere in the system. (If the problem transfers to the other speaker it is in the system.)

You can swap interfaces to see if the problem stays with the speaker or transfers with the interface.

Some details vary among different models.

HV = High Voltage (the diaphragm bias voltage)

1. [***] Symptoms: **LOOSE BASS**. Possible **Fast Slapping Sound** on loud bass.

[x] Possible Cause of Slapping Sound: Driving them too hard. Reduce the volume.

Possible Cause: **Loose Felt**.

To check: pull gently at both ends of each piece.

The felt creates air pockets that resist compression and thus optimally dampen the bass, like a woofer or mid in a sealed box speaker. When felt is glued tight the sound tightens up / cleans up the bass and mids. It still has plenty of bass.

I had a few felts that were unglued at one end, but I had to cut through glue on the other end with a very sharp knife.

FIX: Re-glue loose felt pieces one at a time from each panel. Take off, then “dry run” exactly where you are going to put it. You want to *fully* cover as many squares as possible, don’t leave unnecessary gaps. On mine they exactly went to the edges of the grid squares. I moved a couple felts a bit more up or down to cover squares continuously.

Glue is 3M number 77. Read spray can directions!

Tight fitting mask recommended. Spray thoroughly (in outdoors or open garage) with glue.

Let dry about 2 minutes, more if it is cold out, possibly less if it’s hot out.

Apply carefully, then press every inch of it in place.

See also: [Page 115](#)

2. [x] Symptom: **LOOSE BASS STILL THERE** even after loose felt is fixed. Possible “snare drum” sound. Maybe Mids less than very clear. Possibly slapping sound. (I did not have this problem.)

Possible Cause: **Loose Diaphragm**

1. Look thoroughly for wrinkles.

2. Possible test (this may be too subjective to judge it accurately): Gently push in the center of the panel. You could use a cotton swab (Q-tip) with the end cut off, to get between the wires. Diaphragm may be slightly loose: it should be under some tension. Test a few spots. FIX: Look up Acoustat hair dryer fix in this thread. Post [1,990](#), [1,338](#), [#9](#). A hot air gun works for sure but you have to NOT melt the plastic – keep it *moving*! Uncertain: The hot air hitting the panel should not be too hot for your fingers, according to what I have read, so as not to melt the diaphragm. I would start with using this last restriction.

3. BUZZING SOUND OR RATTLING SOUND

3-A. [x] Symptom: **BUZZING** sound. (Sounds like a large bee?)

Possible Cause: **Loose stator wires.**

Use Styrene glue, or superglue, possibly plastic model cement glue, or possibly epoxy.

Some techniques follow:

"john65b
2015-07-31 2:54 pm
#1,374

FIX:

“See if stator wires have come loose in that area – if so, get some superglue and re-glue onto the plastic grid using a looped paperclip to hold the wire in place... I had that happen a few times....”

Note: just a drop or two of glue.

"Disco-Pete
2020-04-01 11:28 pm
#2,383

' malthuse said:

I have a pair of model 3s. Once in a while I can hear a buzzing in one speaker. It's very slight but definitely there. Are there any suggestions on how to diagnose? '

“It is most likely a loose stator wire with a number of broken glue points in a row. You can track it down by pulling down the sock and carefully checking the glue points on the louvers. When you find them, carefully put a dab of model glue on each one. Keep the speaker upright to prevent glue from dropping accidentally on the mylar.”

I suggest you practice getting one drop of glue exactly where you want it, before applying any glue to speaker. Possibly with a toothpick.

This Author: I fixed one loose wire by tying it to the grid with dental floss. I fished the end out with pointed tweezers or VERY skinny needle nose pliers (1/16"). Be gentle.

If I glue it later I will remove the floss.

Note: the paperclip and glue per john65b above is probably easier.

3-B. [x] **RATTLING** sound: could be **something caught between stator wires and diaphragm.**

FIX:

Try vacuuming.

Try compressed air (not TOO strong) or a blower.

If sound still there, study the panels, by ear and by eye. Pull the item out with 1/16" tips needle nose pliers or /tweezer pliers /thin tweezers.

Possible Cause: **Panel screws not snug**. Should be "gently tight" – as it is easy to crack the panels.

4. Symptoms: A PANEL HAS WEAKER OUTPUT compared to other panels.

This can be obvious or not. On some I only noticed a difference when I put my ear near each panel.

I repaired it per my post "Acoustat Repair of HV Bias Panel Connection.pdf" referenced below in this section.

Possible Cause: **Disconnected or loose wire**. This can be *inside* a heat shrink tubing or soldered connector. This can also cause a dead panel, depending on which wire and the situation.

FIX: Find and repair.

[****] Possible Cause: **HV wire connection at the panel diaphragm is poor** or not conducting: HV connection also reads open or has high resistance, Over 100K ohms for my speakers. It may sound only a little weaker or much weaker.

FIX: This was previously not repairable. Now see my article in [Post 2,902](#), "Acoustat Repair of HV Bias Panel Connection.pdf" (This is tricky as I have had panels that played but read as open circuit. See why in the article.)

5. WEAK SPEAKER (ALL PANELS).

WARNING: if speaker volume is weak do NOT hit it with high volume (power) as you would risk damaging something, especially if the HV bias is low or not there, as in 4 above.

Possible Cause: **check** the items listed under "6. Dead Speaker."

Possible Cause: In the Interface, one or more **Panel Wire Connectors is oxidized or loose, or a Terminal for same is oxidized**.

FIX: Check screw or plug connections in interface to wires going to panels. (Discharge first.)

Tighten if applicable. Clean if oxidized or dull, you can use a deoxidizing contact cleaner such as DeoxIT D5. You may need to rub with a rag and the cleaner.

* WARNING: To avoid arcing, If using Deoxit or spray oxidation cleaner, do not allow over-spray to sit on circuit board etc. It could arc later. Suggest shield the board with a rag BEFORE spraying. Then wipe off any excess spray.

NO BIAS (high voltage) at panel (if problem not handled by above):

Very Weak Sound – Possible Cause: **HV diode or cap failed**, which results in no bias.

FIX: Replace all 5 caps and diodes. (Caps to end up vertical. Wires cut short enough not to arc over to next wire.) Take pictures to help with correct installation. Post [1,831](#) re parts. Digikey also sells such parts.

[x] Possible Cause: **HV fuse blown**. Determine why it blew, fix that, replace fuse. Rare.

[x] Possible Cause: **Oxidation in any fuse holder or on fuse end**. FIX: Use Contact cleaner such as Deoxit D5 and work it while wet: uninstall / install fuse several times.

[x] Possible Cause: End of **500 M-ohm resistor is unscrewed** somewhat. See post [1,556](#).
FIX: If you can't replace it: Remove, Deoxidize (make more shiny) all the threads, including the internal threads, possibly with fine steel wool or polishing compound if still dull, and re-screw, suggest with dielectric grease on threads to prevent oxidation. Re-install.
Or Replace. Digikey currently has Murata MHR0844SA507F70 2.5W in stock, Ohmites were out of stock when I checked.

[x] Possible Cause: **Bad External Power Supply**, some models. See posts [1,771](#), and [2,092](#) re wattage. Also [2971](#) and following posts.
FIX: replace

[x] Possible Cause: Could be as in "4. Panel dead or weaker output" but with ALL of that speaker's panels affected (unlikely).

5-B. SOUND SLIGHTLY WEAK, one speaker, all panels. I had to turn the balance knob only a degree or two towards the weak speaker to center a mono sound between the Left and Right speakers. So I estimated 1 dB weak. This assumes the speakers are equal distances from you, and angled the same.

Possible Cause: **HV diodes or caps are old**. (On mine, the other side had already been replaced, which is why there was a difference.)
FIX: replace as above.

Also: check your **connections**, unplug and plug in all cables again, etc. (with power off).

6. **DEAD SPEAKER**

FIX: First check the normal stuff (**Electronics and Wires**):

Possible Cause: Amp balance control turned to other channel.

Possible Cause: Try a different input to amp / preamp

Possible Cause: Speaker wire connection not connecting. Can be either end of wire. Check connections (turn off amp first!). Swap speaker wires to see if problem is in electronics or connection or speaker (turn off amp first!).

Possible Cause: Amp or Preamp etc. has problem.

Check the speaker:

[x] Possible Cause: **Blown (or missing) speaker Fuse (on back of interface)**.

FIX: Determine why it blew, fix that, replace fuse. Could be too much power was demanded.

Posts [2,250](#), [2,933](#)

Possible Cause: **Poor connection in interface**.

FIX: Check screwed or plugged in wire connections in interface going to panels. (Discharge first.)

Tighten if applicable. Clean if oxidized or dull, with a deoxidizing contact cleaner such as DeoxIT D5.

Possible Cause: **Disconnected or broken wire in interface.**

This can also apply to just one panel.

FIX: Find and repair.

7. ARCING SPEAKER (unplug and shut off immediately!) Mine had a bright white light at the bottom that grew rapidly as I watched. It may have made a modest crackling or static sound as well.. I thought the diaphragm was damaged but it was not. I did not plug it in again until I was sure I had found and fixed the problem. Fortunately it then did not repeat the "light show". If you hear quiet noise or suspect arcing but do not see arcing, then unplug, darken the room greatly, wait a few minutes for your eyes to adjust, then plug in and look well.

7-A. SOMETHING CONDUCTIVE has spilled or gotten between wires and diaphragm. Most likely at the bottom of the panels. It can be dried and still conduct. Examples: Gatorade, metal particles, possibly Coca-Cola or juice.

It may be held in place by dirt or sawdust, or in my speakers, cat fur. See, grill cloths have a practical purpose as well as appearance!

If arc not visible, locate area by ear, possibly use a hollow tube, like from a roll of paper towels or a plastic pipe, to narrow down the area when listening.

FIX: Unplug and discharge. **Pull out** cat fur or other solid material. I carefully used needle nose pliers with 1/16" tips.

Blow out particles.

Clean residues...

If something has spilled you may need to use a **spray cleaner** (unplug and discharge interface!), then rinse (unless you use something that evaporates, like ammonia in water, or Windex). Protect the wood frames!! Let it dry well before testing, like a day or two.

Warning: see article that is referenced in **4** above re possible effects of bathtub cleaning.

FIX: If severe residue, unsolder all panel wires from their connectors, pull wires through, take panels to bathtub and clean as above. Use mild soap or cleaner. Include the outside edges in the affected area. My *plastic* conducted electricity before cleaning! It was actually the dried residue coating the plastic that conducted.

Label or color code wires before reassembly.

On mine, all blues go together, as do all whites, and then all reds.

[AcoustatAnswerMan](#) [2016-05-12 1:20 am](#) Post [#1,560](#)

[kazap said:](#)

Has anyone tried this?

Is the bath water "dirty" from years of dust attracted to the charged membrane or is that the carbon based coating dissolving?

"Washing of Acoustat panels is *not* recommended. There is evidence that the conductive coating may be damaged, despite the fact that the coating is not a water-based compound.

"The only time I might suggest washing an Acoustat panel is if the panel is so dirty that it doesn't

work, even after blowing out with *gentle* compressed air. In which case, what do you have to lose?"

I suspect my speaker did not arc until after this occurred:

7-B. CARBON TRACK. High voltage plus conductive substance may form a black carbon track, which keeps conducting. I had one apparently due to 7-A above. It was on the bottom edge of a panel. I used a 1/8" Dremel rotary tool bit to carve out the carbon. Later I shortened and re-soldered the wire which had a carbon track in its insulation and put two or three layers of heat shrink tubing on it (which was overkill). Slide heat shrinks onto the wire *before* soldering. I made each successive piece a little longer.

The end of one stator wire is just cut and exposed and may also have been arcing on one panel. Isolate /cap as needed. I cut a little square of 1/32" thick plastic and tucked it in behind the wire end.

7-C. [x] DIAPHRAGM HOLE: if not physically poked though: has been penetrated by too much amplifier power, arcing and making a hole.

Make sure it is a hole, not just a spot missing its conductive compound.

Possible FIX 1: (Not tried as not needed by me.) If diaphragm hole under about 1/16" (1.5mm): A dab of Conductive Paste. Apply on the side *with* the conductive compound. Smooth it out. The challenge: Don't get or leave any on the wires.

Possible FIX 2: Especially if holes greater than about 1/16": (Not tried as not needed by me.) Silicone caulk. There may be a different caulk or glue with higher insulation resistance. Silicone sticks to almost anything.

Apply caulk on the side *without* the conductive compound. That's the back side on mine. Using toothpick or about 18 gauge solid core insulated wire bent at a right angle 1/8", get a tiny bit of caulk behind the wires, make a THIN layer over the hole. Do not leave blobs of caulk on the backside of the wires as the diaphragm will hit.

8. HIGH PITCHED WHINE OR T-T-T-T- SOUND OR HISSING (not loud), continuous:

Possible Cause: **high voltage "leak" due to something conductive in the panel.** I had one that was easy which was a small insect web and body in one grid square. I just vacuumed it.

FIX: Find and remove /clean. See **7-A**.

Possible Cause: **High voltage "leak"**. Speaker **not cleaned up well** enough from carbon paste repair item **4**.

FIX: Locate area by ear, possibly use a hollow tube, like from a roll of paper towels or a plastic pipe, to narrow down the area when listening. On mine the original conducting mess where the HV wire makes contact was cleaned fine, but there were traces of carbon paste nearby (see problem 4) not cleaned up quite well enough.

Note: this sound was made worse when I caught a panel wire between the panel and the wood frame, which warped the panel a little bit when screwed down.

9. [x] WEAK BASS OR WEAK HIGHS (one speaker):

Problem in applicable circuit, in low frequency section or high frequency section: **bad, loose or no connection, or bad part(s)**. Occasionally a bad transformer. Swap speaker Left – Right connections to make sure problem is not elsewhere in the system.
FIX: Study the schematic and Troubleshoot it.

SPECIAL CASES:

10. Low volume Popping, Static / Hissing in first few minutes after plugging in (but not visible arcing): This is **normal**. See posts [2,899](#) to 2,901.

If it continues see **3-B** Rattling sound Fixes, also **8**, and **7**.

11. [x] Speakers don't play or have greatly reduced volume when humidity is high, including rainy weather. This was reported by one member.

Possible Cause: **Something conductive** has spilled or gotten between or near wires and diaphragm.

Humidity increases the conductivity and thus gives a partial short circuit. Read #7 Arcing.

Possible Cause: **Frames absorb moisture**. Per monroet in post [1,548](#), he dried the frames and put urethane on them, two coats. However this is likely secondary to the Possible Cause above as no one else has reported this problem. See post [1,554](#).

12. [x] Weaker Mids

This was reported by one member: **.01 6KV caps** had lots of internal arcing damage points.

This seems to be uncommon.

FIX: Replace. See post [1,579](#).