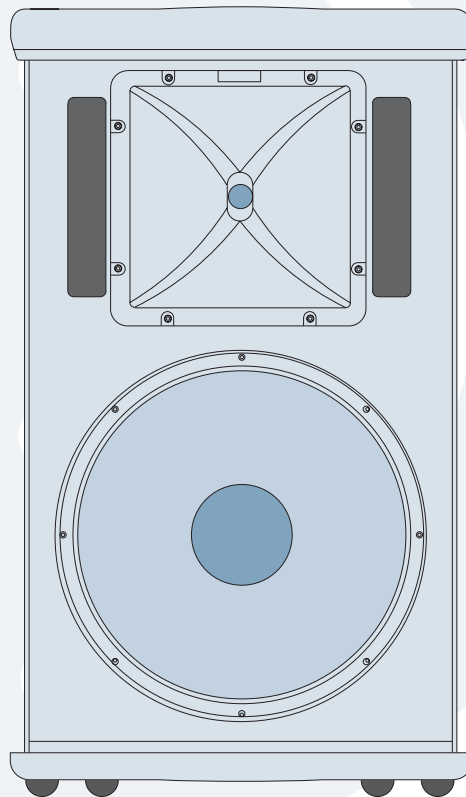




SA1521z REPAIR MANUAL



The LOUD Technologies Family of Brands





These instructions are intended to help restore any ailing SA1521z Active Loudspeaker back to factory working conditions. They show how to remove and replace the drivers and the amplifier assembly.

Please contact Mackie Tech Support (1-800-898-3211) to receive a Service Request Number and Order Number for parts needed for this restoration. They will also help you determine the nature of the problem and what parts will repair the unit.

Tools needed:

NOTE: not all tools listed below will be needed for your repair

- Phillips head screwdriver.
- 3mm and 4mm allen wrench.
- 10mm open end wrench OR 13/32 inch socket.
- Solid workbench.
- Non-carpeted work area due to static electricity. If available, an ESD mat (Electro-static discharge) is optimal.

Parts needed:

NOTE: not all parts listed below will be needed for your repair

- | | | |
|-------------------------|-------------------|-------------|
| • Led PCB Assembly | Part #0007334 | pages 3-4 |
| • 15" Woofer | Part #0013918 | pages 5-6 |
| • High Frequency Driver | Part #0013925 | pages 7-9 |
| • Diaphragm | Part #coming soon | page 10 |
| • Amplifier Assembly | Part #0013838-00 | pages 11-13 |

Safety Warnings:

- Make sure that you turn off the unit and disconnect the power cord (and all other cords) before you begin these procedures.
- Always use safety glasses!
- Please try NOT to touch any of the pcb circuitry, capacitors, resistors, etc.
- Take care to read and follow these instructions. It may help to read the instructions prior to the repair to get an idea of what it entails.
- Before beginning the repair, touch metal to discharge any lingering internal static electricity.

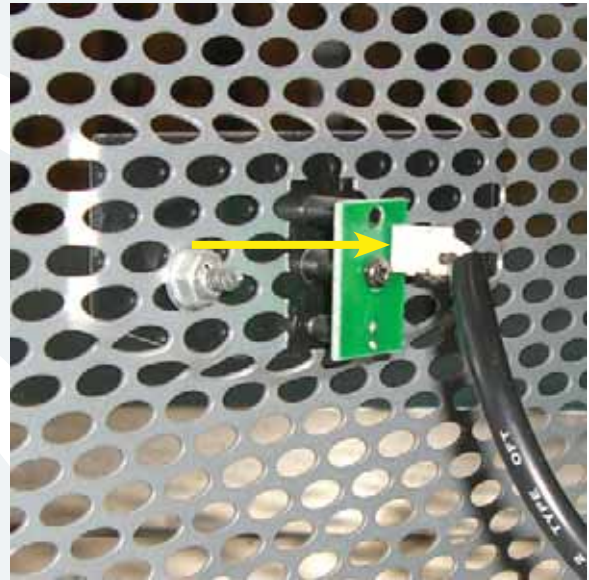




Led PCB replacement:



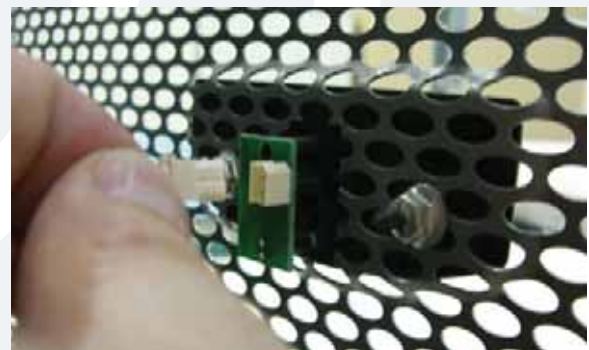
1 Three screws need to be removed from each side of the grill using the phillips head screwdriver (six screws in all).



3 Carefully begin to remove the grill. Do not fully remove the grill as the cable is still firmly attached to the led PCB assembly.



2 Keep the six screws in a safe place.



4 Carefully remove the cable attached to the led PCB assembly.





Led PCB replacement continued:



- 5** Use the phillips head screwdriver to remove one screw near the center of the led PCB assembly.



- 6** Carefully remove the led PCB assembly from the back side of the grill.

- 7** The hard part is done, the rest is easy! Place the new led PCB assembly (part #0007334) where the old one was. Follow the same steps as above, but backwards 6 to 1. Power up the SA1521z and the led should light up. Congratulations, you just replaced an led PCB assembly...now go play some shows!



Woofer replacement:

- 1 Follow steps 1-4 of the led PCB replacement instructions, as the grill will need to be removed in order to access the woofer.



- 2 Eight screws and washers need to be removed from the woofer using the 4mm allen wrench.



- 3 Keep the eight screws and flat washers in a safe place.



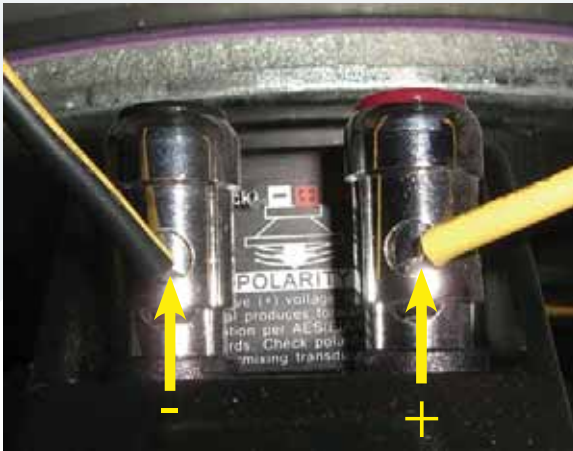
- 4 Carefully begin to remove the woofer. This woofer has a tendency to want to "pop out," so please be sure to hold the woofer in place with your free hand while removing the screws with the other hand.



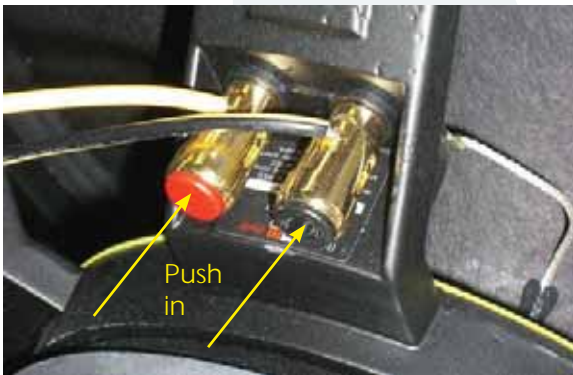
Caution: The woofer is approximately 18 pounds with the weight unevenly distributed.



Woofer replacement continued:



- 5** The positive (solid yellow) and negative (yellow and black) cables are still attached to the woofer terminals.



- 6** Remove the cables from their terminals simply by pushing down on the terminal and pulling out the cable.



- 7** This is what it looks like with the grill and woofer removed. Place the new woofer (part #0013918) where the old one was. Follow the same steps as above, but backwards 6 to 1, making sure to keep the led PCB assembly cable in front of the woofer. Power up the SA1521z and the new woofer should now be pumping out glorious lows. Awesome, you just replaced a 15" woofer!



High Frequency Driver replacement:

1 Follow steps 1-4 of the led PCB replacement instructions, as the grill will need to be removed in order to access the high frequency driver.



Four screws for the top and bottom of the horn assembly (#'s 1-4)



Four screws for the sides of the horn assembly (#'s 5-8)

2 Eight screws and washers need to be removed from the horn using the phillips head screwdriver.

3 Keep the eight screws and flat washers in a safe place. Note: There are two different screws that connect the horn assembly to the cabinet.



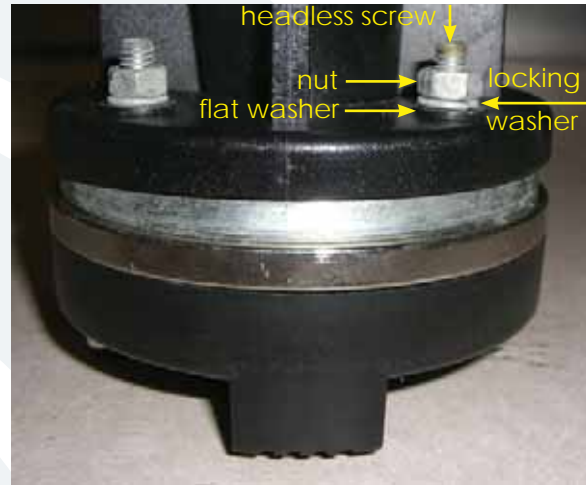


High Frequency Driver replacement continued:

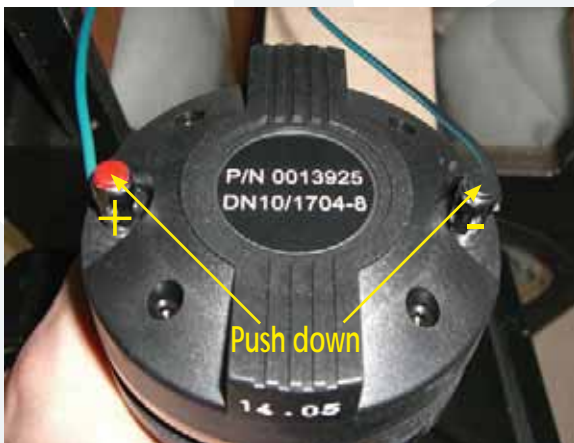


4 Carefully begin to remove the entire horn assembly (with the high frequency driver still attached). A flat head screwdriver may help in horn removal if it is sticking to the cabinet.

Caution: The horn weighs about 5 pounds, and the weight is not evenly distributed.



6 Four nuts and eight washers may be removed from the driver using the 10mm open end wrench OR the 13/32 inch socket. Turn counter-clockwise to loosen and remove, clockwise to tighten. The other pair is in the same place on the other side of the horn assembly. Notice that the flat washer is on the bottom, followed by the locking washer, and finally the nut. Once they are removed, the four headless screws need to be liberated. Pliers may aid in the headless screw liberation.



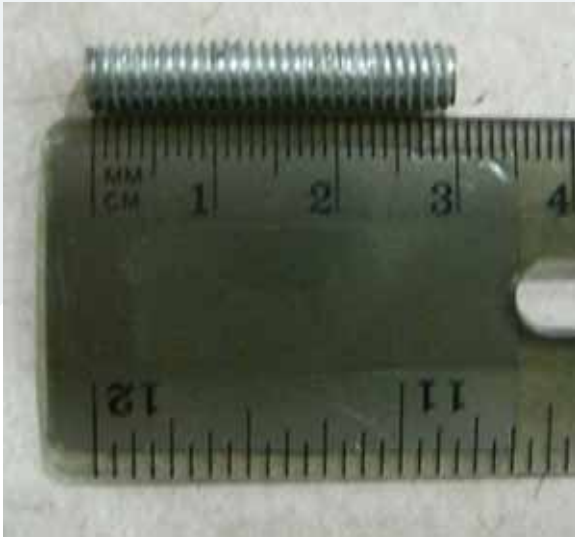
5 The positive (solid blue) and negative (blue and black) cables are still attached to the high frequency driver terminals. Remove the cables from their terminals simply by pushing down on the terminal and pulling out the cable.



7 Keep the four nuts, four flat washers, and four locking washers in a safe place.



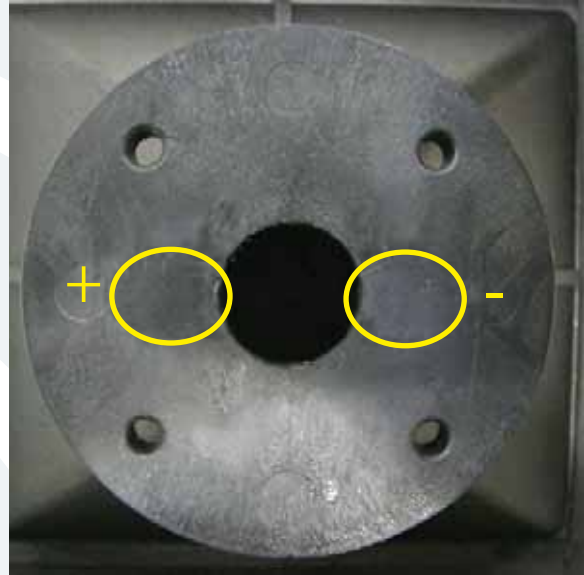
High Frequency Driver replacement continued:



8 Keep the four headless screws in a safe place, as well.



9 The high frequency driver should easily lift right off of the horn assembly. Holding down the horn assembly with one hand while lifting up on the driver with the other hand may help.



10 This is a straight down shot of the horn assembly. There are two somewhat oval-shaped indentations next to where the terminal markings are, as shown above. This is how the new frequency driver needs to line up. Follow the same steps as above, but backwards 9 to 1. Power up the SA1521z and the new driver should now be pumping out those highs again. Fantastic, you just replaced a high frequency driver!

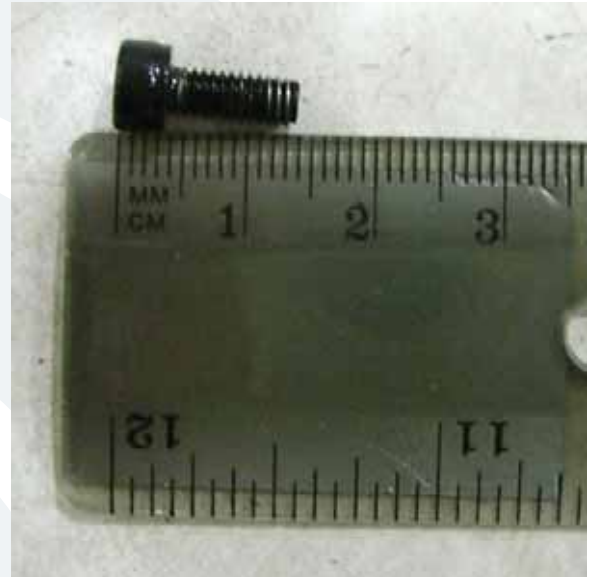


Diaphragm replacement:

- 1 At the present time (November 2006), diaphragms are not currently available, so you will have to replace the complete driver following the previous section (pages 7-9). If you have received a diaphragm, please follow the steps below.
- 2 Follow steps 1-5 of the high frequency driver replacement instructions, as the horn will need to be removed in order to access the diaphragm.



- 3 The horn is shown above with the high frequency driver circled. Four screws need to be removed from the driver using the 3mm allen wrench.



- 4 Keep the four screws in a safe place.



- 5 The diaphragm and plate adapter are easily removed from the horn assembly. They may not be broken down any further. Place the new diaphragm (part # coming soon) and plate assembly where the old one was. Follow the same steps as above, but backwards 4 to 1. Power up the SA1521z and the new diaphragm should now be pumping out those highs again. Sweet, you just replaced a diaphragm!

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Amplifier Assembly replacement:



- 1** Fourteen screws need to be removed from the amplifier assembly using the phillips head screwdriver. The amplifier assembly is capped by two cover plates (part #33901380) outlined above.



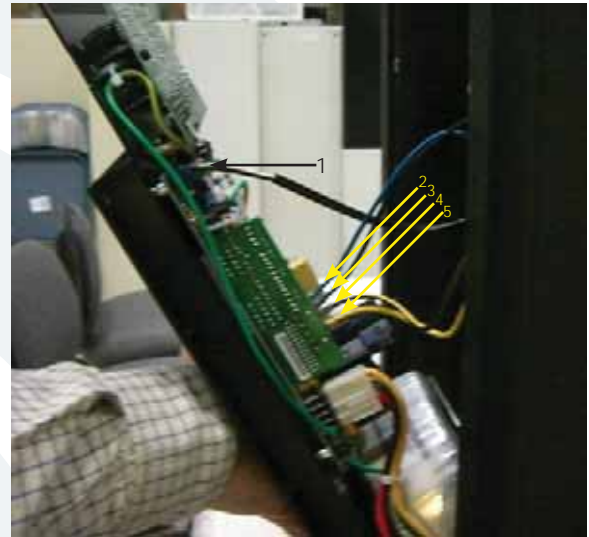
- 2** Keep the 14 screws in a safe place.




- 3** The covers may be worked loose by wedging a flat head screwdriver in between the cabinet and the cover, as well as the amplifier assembly and cover. Make sure to get around the entire cover plate in order to be able to remove them.

Amplifier assembly replacement continued:

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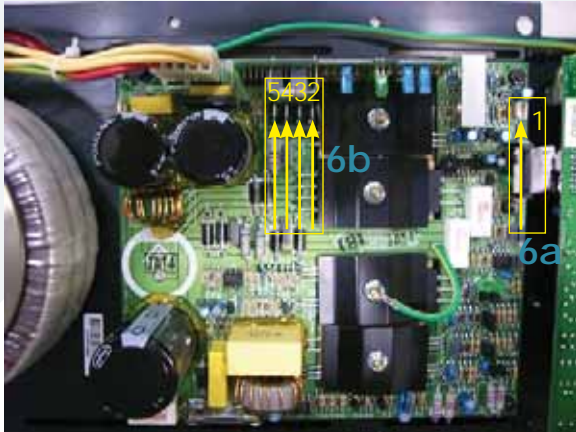
- 5** The amplifier assembly is now ready to be separated from the cabinet. Do not completely take the amplifier assembly off yet, as five cables need to be removed first (as shown above): (1) led PCB cable, (2) solid blue, (3) blue and black, (4) yellow and black, and (5) solid yellow. Do not force cable removal or connection, although needle-nose pliers may aid in loosening the crimped cables.

 **Caution:** The amplifier assembly is approximately 18 pounds, so please make sure to grasp it firmly.

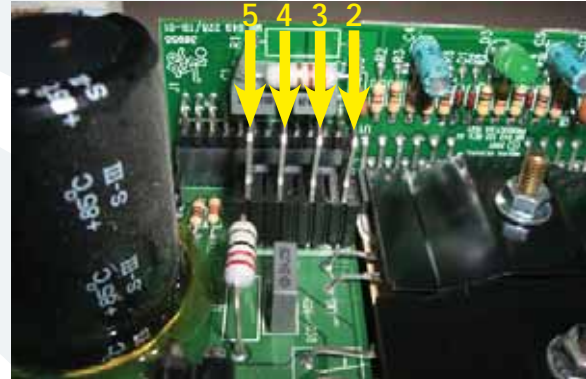
- 4** Once the two cover plates are removed, two more screws need to be taken out in order to separate the amplifier assembly from the cabinet. Keep the two screws in a safe place.

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Amplifier assembly replacement continued:



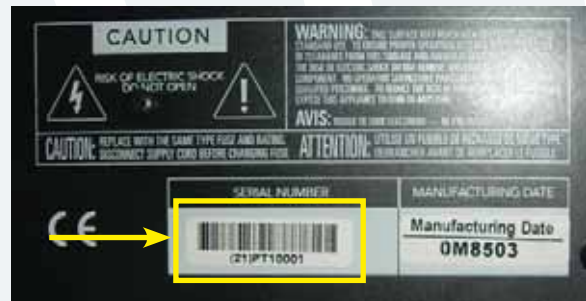
6 This is what it looks like with the cables removed from the amplifier assembly: (1) led PCB cable, (2) solid blue, (3) blue and black, (4) yellow and black, and (5) solid yellow. Make sure the cables are reconnected to the same terminals they were removed from (but on the new amplifier assembly). See steps 6a and 6b below for closeups of the photograph above.



6b Now for the closeups of the woofer and high frequency driver terminals.



6a A closeup of the led PCB cable connector is shown above. The black wire of the cable is closest to the edge of the amplifier assembly. The cable only fits in one way.



7 Place the new amplifier assembly (part #0013838-00) where the old one was. Follow the same steps as above, but backwards 6 to 1. Remove the serial number from the faulty amplifier assembly (as shown in picture above) and place on the new amplifier assembly. Power up the SA1521z and relish in the fact that you just replaced an amplifier assembly. Hats off to you for a job well done!

8 Important: The faulty amplifier assembly must be returned to LOUD Technologies. The address should be on the return shipping label that was provided with the new amplifier assembly. If not, the return address is at the top of this page. Also, please write the order number and service request number (ex: 1046256-1203935) in big, black, bold numbers on the outside of the box. This helps expedite the return.

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