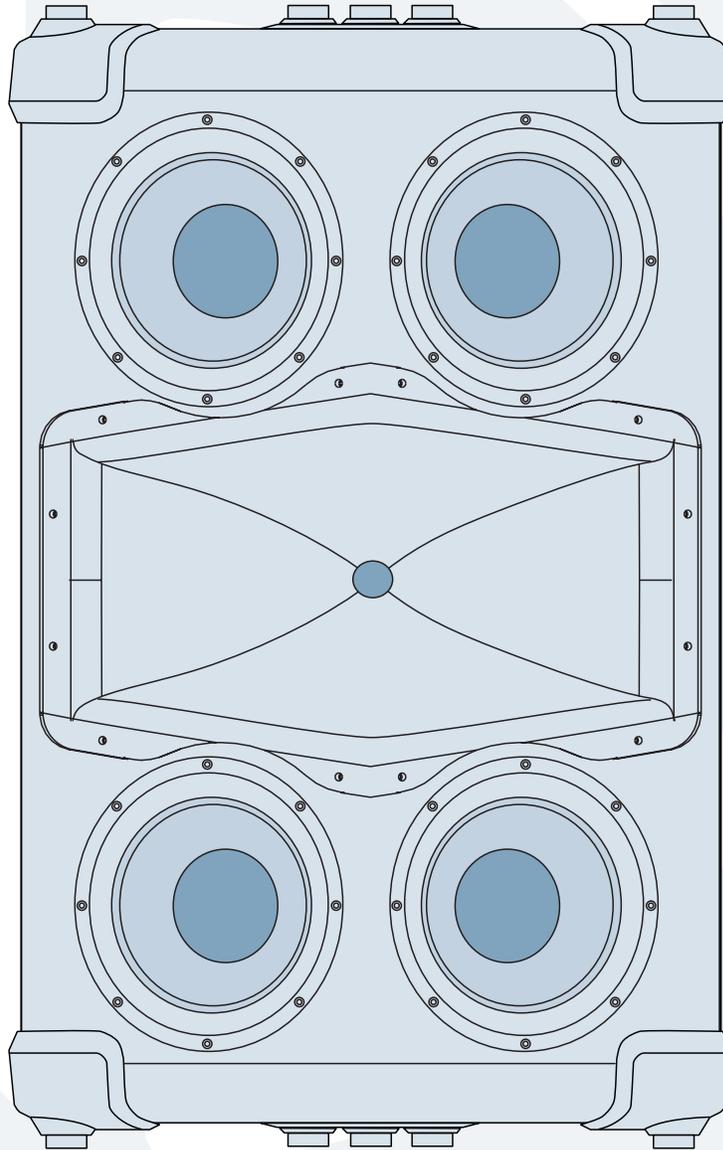




# S408 REPAIR MANUAL





These instructions are intended to help restore any ailing S408 Passive Loudspeaker back to factory working conditions. They show how to remove and replace the drivers.

Please contact Mackie Technical 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 allen wrench.
- 8mm combination wrench.
- Solid workbench.

## Parts needed:

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

- |                            |                   |             |
|----------------------------|-------------------|-------------|
| • 8" Woofer (Top Left)     | Part #0011806     | pages 3-4   |
| • 8" Woofer (Top Right)    | Part #0011806     | pages 5-6   |
| • 8" Woofer (Bottom Left)  | Part #0011806     | pages 7-8   |
| • 8" Woofer (Bottom Right) | Part #0011806     | pages 9-10  |
| • High Frequency Driver    | Part #0008093     | pages 11-13 |
| • Diaphragm                | Part #coming soon | pages 14-15 |
| • Input Assembly           | Part #0012048     | pages 16-18 |

## Safety Warnings:

- Make sure that you disconnect all 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.





# Top left woofer replacement:



**1** Six screws need to be removed from each side of the front of the grill (twelve screws total) using the phillips head screwdriver. This grill has a tendency to want to “pop” off, so please be sure to hold it in place with one hand or arm while removing the screws with your free hand. In addition to the grill, the screws also hold the decorative trim. The trim should be removed, too. Keep the twelve screws in a safe place.

**2** Eight screws need to be removed from the woofer using the phillips head screwdriver. Once the screws are removed, the woofer may be loosened by prying a flat head screwdriver in between the cabinet and the woofer; a good place to start is in the notches located just above the horn assembly and below the woofer (as pointed out by the arrows in the picture above). Also note the “tinsel dressing teardrops” (circled above) which are facing down. The woofer should be placed back the same way. It is for visual consistency. More importantly, the cables from the printed circuit board to the woofer terminals are quite short; it probably would not work otherwise. The eight screws should be kept in a safe place.



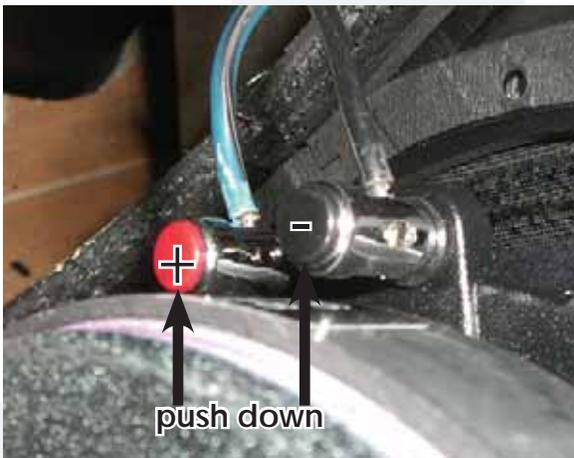


Top left woofer replacement continued:



**3** Carefully begin to remove the woofer.

**!** **Caution:** The woofer is approximately 8 pounds with the weight unevenly distributed.



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

**5** The picture above shows what the S408 looks like with the grill and top left woofer removed. Place the new woofer (part #0011806) where the old one was. Follow the same steps as above, but backwards 4 to 1. Power up the S408 and the new woofer should now be pumping out glorious lows. Awesome, you just replaced an 8" woofer!

**\*** If you find it too difficult to connect the cables to the woofer terminals due to the short length of the cables, there is an easier (albeit lengthier) way to connect them. Instead of reconnecting the cables to their terminals, just attach the woofer to the cabinet as normal. Follow steps 1-5 on how to remove the horn assembly (pages 11-12) as this is an easier way to access the woofer terminals without having to work under such tight circumstances!





# Top right woofer replacement:



**1** Six screws need to be removed from each side of the front of the grill (twelve screws total) using the phillips head screwdriver. This grill has a tendency to want to “pop” off, so please be sure to hold it in place with one hand or arm while removing the screws with your free hand. In addition to the grill, the screws also hold the decorative trim. The trim should be removed, too. Keep the twelve screws in a safe place.



**2** Eight screws need to be removed from the woofer using the phillips head screwdriver. Once the screws are removed, the woofer may be loosened by prying a flat head screwdriver in between the cabinet and the woofer; a good place to start is in the notches located just above the horn assembly and below the woofer (as pointed out by the arrows in the picture above). Also note the “tinsel dressing teardrops” (circled above) which are facing down. The woofer should be placed back the same way. It is for visual consistency. More importantly, the cables from the printed circuit board to the woofer terminals are quite short; it probably would not work otherwise. The eight screws should be kept in a safe place.





Top right woofer replacement continued:

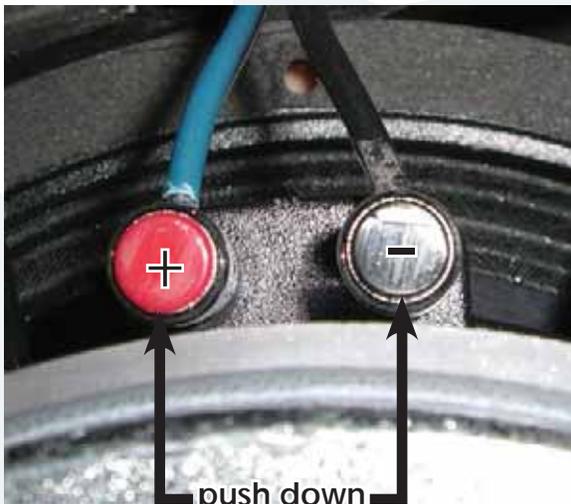


**3** Carefully begin to remove the woofer.

**!** **Caution:** The woofer is approximately 8 pounds with the weight unevenly distributed.



**5** The picture above shows what the S408 looks like with the grill and top right woofer removed. Place the new woofer (part #0011806) where the old one was. Follow the same steps as above, but backwards 4 to 1. Power up the S408 and the new woofer should now be pumping out glorious lows. Awesome, you just replaced an 8" woofer!



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

**\*** If you find it too difficult to connect the cables to the woofer terminals due to the short length of the cables, there is an easier (albeit lengthier) way to connect them. Instead of reconnecting the cables to their terminals, just attach the woofer to the cabinet as normal. Follow steps 1-5 on how to remove the horn assembly (pages 11-12) as this is an easier way to access the woofer terminals without having to work under such tight circumstances!





# Bottom left woofer replacement:



**1** Six screws need to be removed from each side of the front of the grill (twelve screws total) using the phillips head screwdriver. This grill has a tendency to want to “pop” off, so please be sure to hold it in place with one hand or arm while removing the screws with your free hand. In addition to the grill, the screws also hold the decorative trim. The trim should be removed, too. Keep the twelve screws in a safe place.

**2** Eight screws need to be removed from the woofer using the phillips head screwdriver. Once the screws are removed, the woofer may be loosened by prying a flat head screwdriver in between the cabinet and the woofer; a good place to start is in the notches located just below the horn assembly and above the woofer (as pointed out by the arrows in the picture above). Also note the “tinsel dressing teardrops” (circled above) which are facing upwards. The woofer should be placed back the same way. It is for visual consistency. More importantly, the cables from the printed circuit board to the woofer terminals are quite short; it probably would not work otherwise. The eight screws should be kept in a safe place.





Bottom left woofer replacement continued:

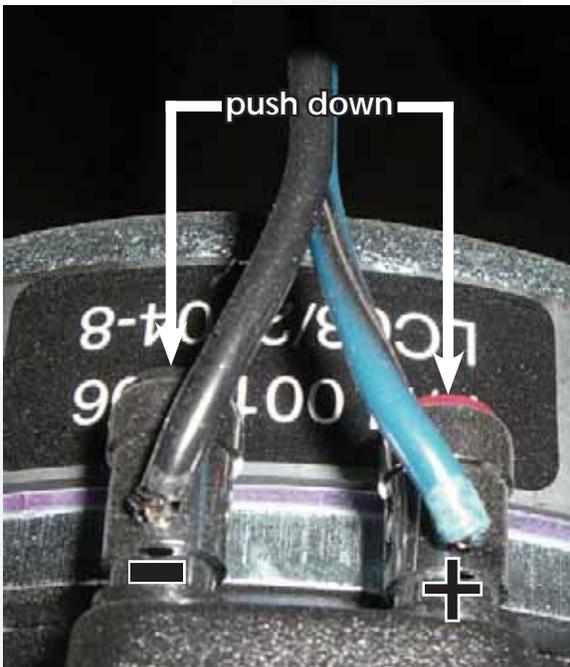


**3** Carefully begin to remove the woofer.

**!** **Caution:** The woofer is approximately 8 pounds with the weight unevenly distributed.



**5** The picture above shows what the S408 looks like with the grill and bottom left woofer removed. Place the new woofer (part #0011806) where the old one was. Follow the same steps as above, but backwards 4 to 1. Power up the S408 and the new woofer should now be pumping out glorious lows. Awesome, you just replaced an 8" woofer!



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

**\*** If you find it too difficult to connect the cables to the woofer terminals due to the short length of the cables, there is an easier (albeit lengthier) way to connect them. Instead of reconnecting the cables to their terminals, just attach the woofer to the cabinet as normal. Follow steps 1-5 on how to remove the horn assembly (pages 11-12) as this is an easier way to access the woofer terminals without having to work under such tight circumstances!





# Bottom right woofer replacement:



**1** Six screws need to be removed from each side of the front of the grill (twelve screws total) using the phillips head screwdriver. This grill has a tendency to want to “pop” off, so please be sure to hold it in place with one hand or arm while removing the screws with your free hand. In addition to the grill, the screws also hold the decorative trim. The trim should be removed, too. Keep the twelve screws in a safe place.

**2** Eight screws need to be removed from the woofer using the phillips head screwdriver. Once the screws are removed, the woofer may be loosened by prying a flat head screwdriver in between the cabinet and the woofer; a good place to start is in the notches located just below the horn assembly and above the woofer (as pointed out by the arrows in the picture above). Also note the “tinsel dressing teardrops” (circled above) which are facing upwards. The woofer should be placed back the same way. It is for visual consistency. More importantly, the cables from the printed circuit board to the woofer terminals are quite short; it probably would not work otherwise. The eight screws should be kept in a safe place.



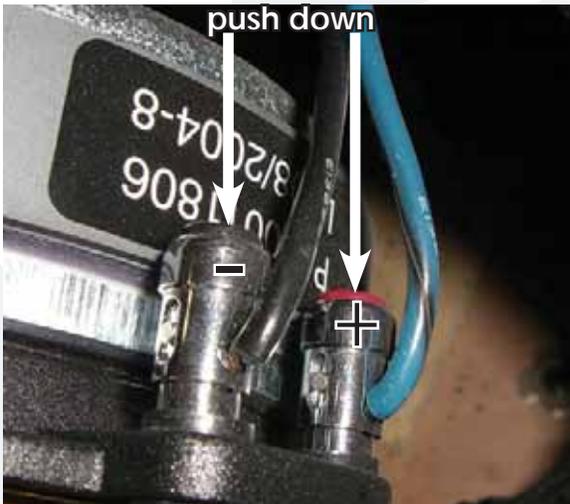


Bottom right woofer replacement continued:



**3** Carefully begin to remove the woofer.

**Caution:** The woofer is approximately 8 pounds with the weight unevenly distributed.



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

**5** The picture above shows what the S408 looks like with the grill and bottom right woofer removed. Place the new woofer (part #0011806) where the old one was. Follow the same steps as above, but backwards 4 to 1. Power up the S408 and the new woofer should now be pumping out glorious lows. Awesome, you just replaced an 8" woofer!

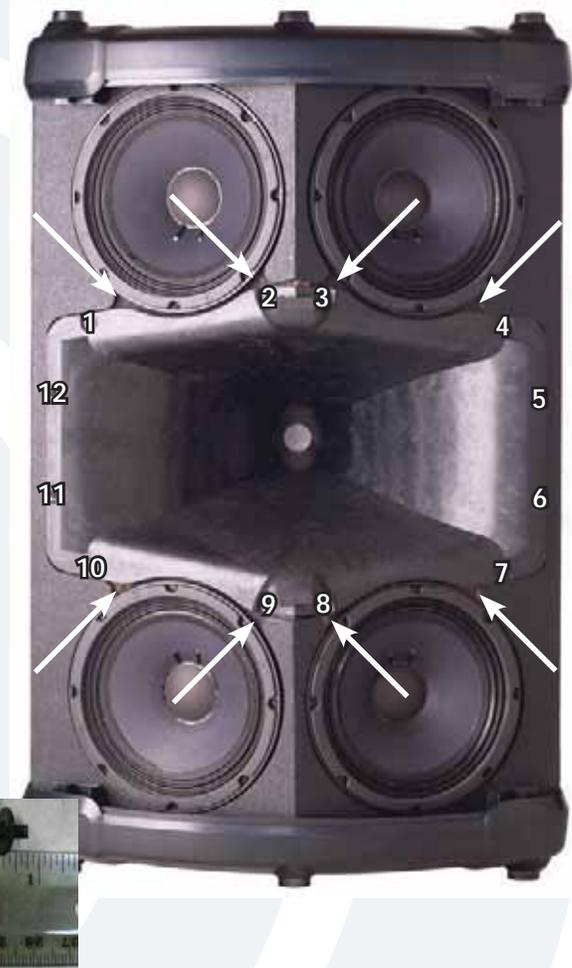
**\*** If you find it too difficult to connect the cables to the woofer terminals due to the short length of the cables, there is an easier (albeit lengthier) way to connect them. Instead of reconnecting the cables to their terminals, just attach the woofer to the cabinet as normal. Follow steps 1-5 on how to remove the horn assembly (pages 11-12) as this is an easier way to access the woofer terminals without having to work under such tight circumstances!

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# High Frequency Driver replacement:



**1** Six screws need to be removed from each side of the front of the grill (twelve screws total) using the phillips head screwdriver. This grill has a tendency to want to “pop” off, so please be sure to hold it in place with one hand or arm while removing the screws with your free hand. In addition to the grill, the screws also hold the decorative trim. The trim should be removed, too. Keep the twelve screws in a safe place.

**2** Twelve screws and flat washers need to be removed from the horn assembly using the phillips head screwdriver. Once the screws are removed, the horn assembly may be loosened by prying a flat head screwdriver in between the cabinet and the horn assembly; there are a myriad of places to wedge the screwdriver (as pointed out by the arrows in the picture above). The twelve screws should be kept in a safe place.



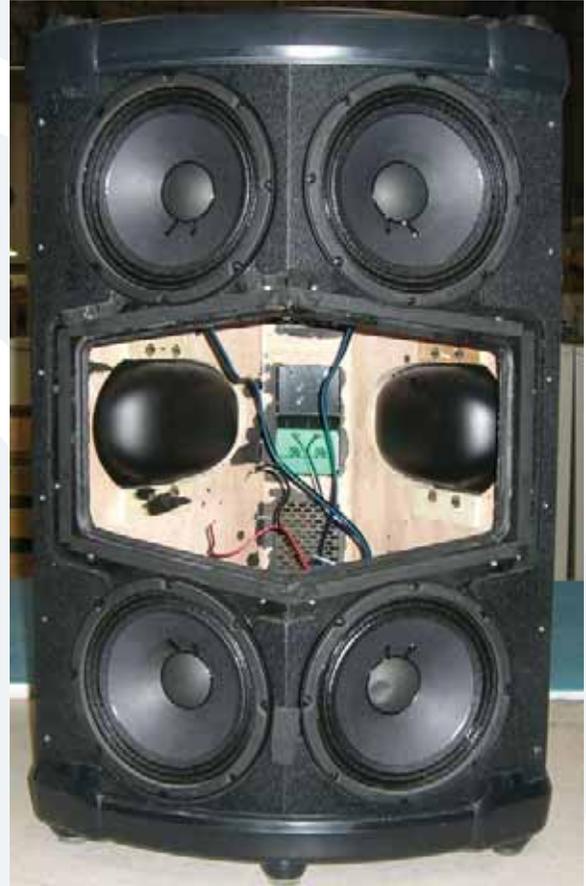


High Frequency Driver replacement continued:

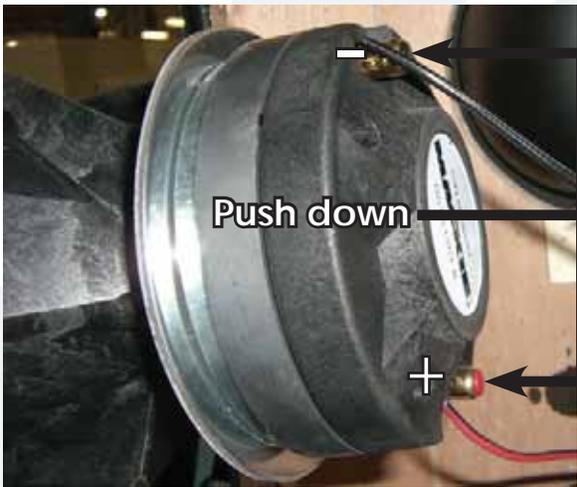


**3** Carefully begin to remove the entire horn assembly (with the high frequency driver still attached).

**Caution:** The horn weighs about 8 pounds, and the weight is unevenly distributed.



**5** This is what it looks like with the grill and horn assembly removed. See the next page for further instructions and additional pictures on how to remove and replace the high frequency driver.



**4** The positive (red and black) and negative (solid 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.





High Frequency Driver replacement continued:



6 Four bolts and eight washers may be removed from the driver using the 8mm combination wrench. Turn counter-clockwise to loosen and remove, clockwise to tighten. The other three are located around the horn assembly. Notice that the flat washer is on the bottom, followed by the locking washer, and finally the bolt.



8 The horn assembly should easily lift right off of the high frequency driver. Place the new high frequency driver (part #0008093) where the old one was. Follow the same steps as above, but backwards 8 to 1. Power up the S408 and the new driver should now be pumping out those highs again. Fantastic, you just replaced a high frequency driver!



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





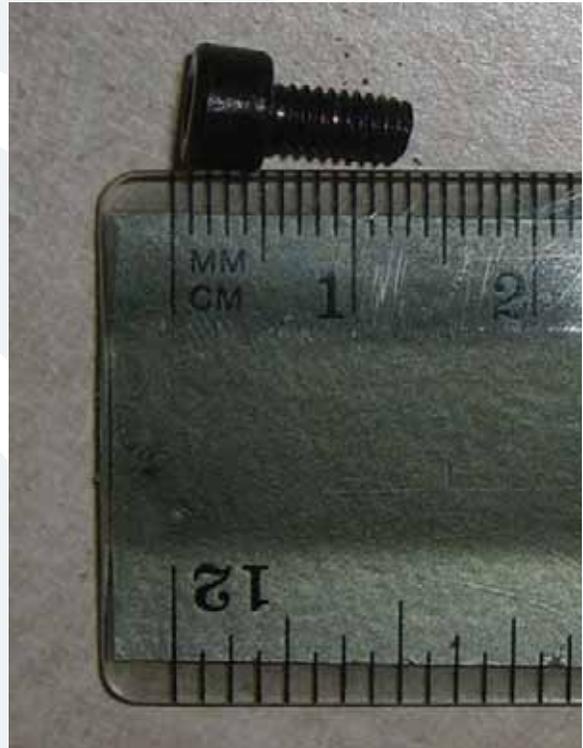
# Diaphragm replacement:

**1** At the present time (January 2007), diaphragms are not currently available, so you will have to replace the complete driver following the previous section (pages 11-13). 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 assembly 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. Notice the terminal locations in relation to the indents of the high frequency driver (circled above).

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Diaphragm replacement continued:



**7** This is what the plate adapter (left) and diaphragm (right) both look like. Place the new diaphragm (part # coming soon) where the old one was. Follow the same steps as above, but backwards 6 to 1. Power up the S408 and the new diaphragm should now be pumping out those highs again. Sweet, you just replaced a diaphragm!

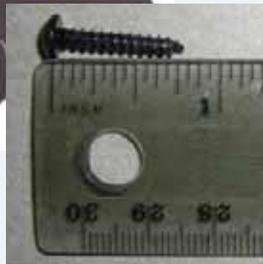


**6** This is what the plate adapter and diaphragm look like after they have been removed from the horn assembly. The diaphragm is separated from the plate adapter simply by pushing down on the terminals.





# Input assembly replacement:

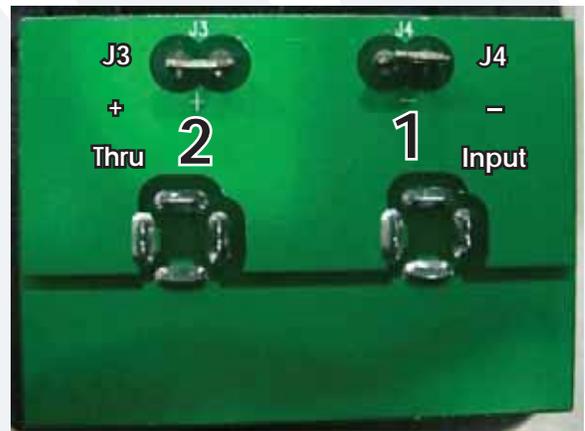
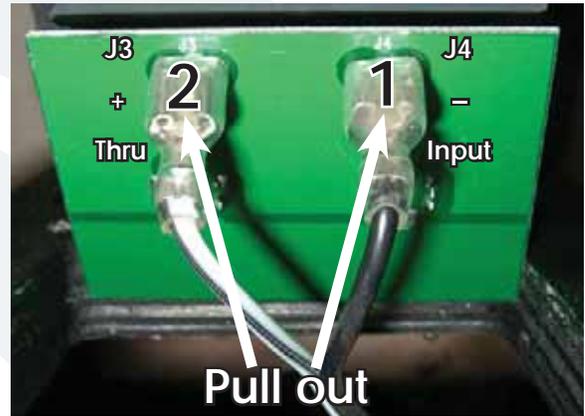


**1** Eight screws need to be removed from the input assembly (located on the rear of the cabinet) using the phillips head screwdriver. Once the screws are removed, the input assembly may be loosened by prying a flat head screwdriver in between it and the cabinet. Keep the eight screws in a safe place.



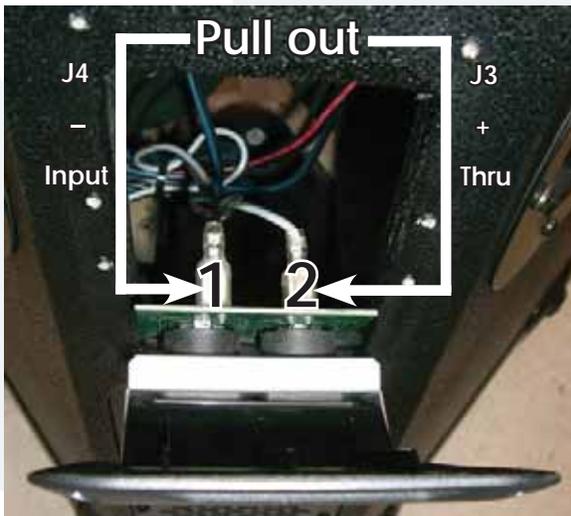


Input assembly replacement continued:



**2** Once loosened, the input assembly may be easily removed from the cabinet. Do not completely take the input assembly off yet, as two cables need to be removed first.

**3** Two cables need to be removed from the input assembly PCB (as shown on the left and above): (1) the solid black cable attaches to the negative terminal (connection J4). This is for the input jack, and (2) the grey and black cable attaches to the positive terminal (connection J3). This is for the thru jack. Do not force cable removal or connection, although needle-nose pliers may aid in loosening the crimped cables.



**Input assembly replacement continued:**

- 4** Place the new input assembly (part #0012048) where the old one was. Follow the same steps as above, but backwards 3 to 1. Remove the serial number from the faulty input assembly (as shown in the picture above) and place on the new input assembly. Power up the S408 and relish in the fact that you just replaced an input assembly. Hats off to you for a job well done!



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