PinWoofer™

4in Flat Ring Assembly and Installation Instructions

Take your time, follow the instructions, relax and enjoy yourself!

WARNINGS:
- Perform installation with your pinball machine turned off and unplugged from AC power.

4in Flat Ring Assembly

Method 1 - Speaker Panel Studs

Follow this method for a metal speaker panel with four studs.

The pattern dimensions of the studs will accomodiate the provided mounting ring slots.

A common metal speaker panel example is shown to the right (Stern Vault Edition Panel).
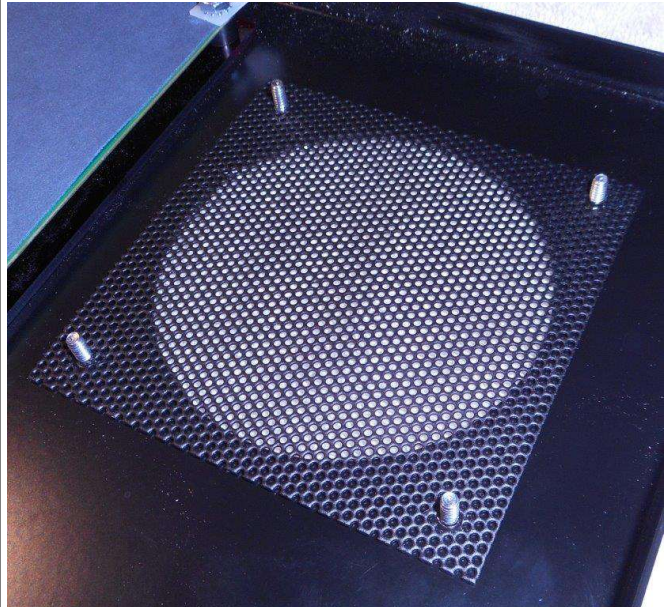
Method 1 (cont'd) - Speaker Panel Studs

In order to get the stack height correct and end up with a flush mounted speaker, please:

    i) Place the mounting ring on the studs.
    ii) Add a #6 washer to the base of each stud.
    iii) Add and tighten a #6-32 Female to Male Hex Spacer to each stud.
    iv) Place the speaker on the hex studs.
    v) Place a #6 flat washer on each hex stud, above the speaker tabs.
    iv) Place and tighten a #6-32 nylon locking nut on each hex stud.

The speaker tabs will be an exact fit (and may be tight) so try and keep the speaker level as you place it on the hex studs.

If the speaker tabs are tight, expose just enough thread beyond the tab to add a washer and get the nut started. Tightening the nut will force the tab downward toward the top of the hex spacer. You may hear "clicks" as the tab progresses down the hex stud during the nut tightening, this is OK.

Method 2 - Rings with Spacers

For a wood backbox mount (Stern Whitestar, early SAM, etc.), you can utilize the included nylon spacers so that the tweeter assembly is vertical as viewed from the front of the machine.

You'll use the #6-16 x 3/4" hex sheet metal screws.

Double check the speaker panel thickness so that the #6-16 x 3/4" hex sheet metal screws do not pierce the front of the speakers panel (the risk of this is very low, but best to check first).

Method 3 – Narrow Panel Mounting

On some titles, mounting the 4" ring requires the removal of two of the four tabs (or bending them out of the way). This method is usually needed for narrow metal speaker panels titles such as the early Data East.

The goals is to mount the speaker so it will rest interior to the panel after the speakers are installed, and so the speakers are flush with the mounting ring.

Please Wear Safety Glasses.

Bending the tabs out of the way is an easy option. However, if you choose to remove the tabs:

IMPORTANT: Note the orientation of the tweeter assembly with respect to the ring, and how that orientation will appear from the front of the speaker panel after installation. The tweeter (coaxial) assembly will likely be skewed to the left or right (that is, it will tilt inward or outward at a 45 degree angle). In order to end up with a symmetrical tweeter pattern as viewed from the front of the pin, choose the tabs to remove with this constraint in mind.

Method 3 (cont'd) – Narrow Panel Mounting

Having planned for the correct / symmetrical tweeter assembly orientation as viewed from the front of the speaker panel, choose your tabs to remove with care.

Cycle (rock up and down) the tab to remove, 10-15 times. The tab will weaken and break free. (You may also cut with tin snips.)

Repeat for opposite tab.

Method 3 (cont'd) – Narrow Panel Mounting

Pictured is the result you are going for, with only two tabs remaining.
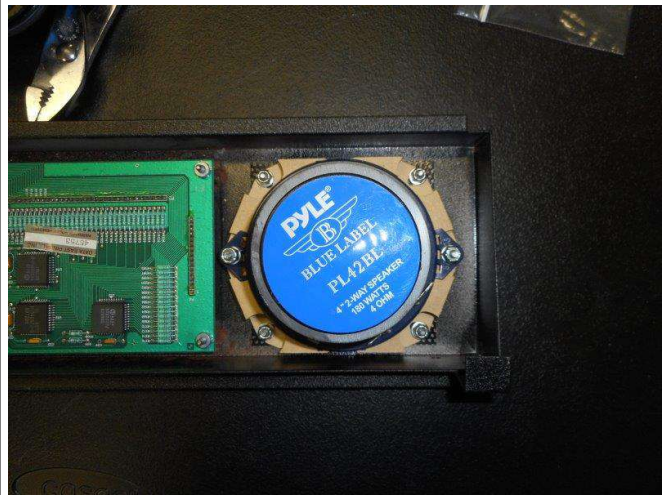
Method 3 (cont'd) – Narrow Panel Mounting

Mount the speaker to the ring using the supplied #8 washers and nuts.

4) Narrow Speaker Panel – Top View

Mount the speaker / ring assembly to the speaker panel using the supplied #6 washers and nuts.

An Early Data East Panel is shown for reference to the right.

Our Sincerest Thanks for Choosing PinWoofer!