



SWTR1 and SWTR-1HE Instructions

**For Williams WPC-89 Systems
1989 Thru 10/1993 (single output audio board)**

Please read thru these instructions once before starting.

1. Take the Sub-Woofer off of the adapter and spacer plate.
2. Open the pinball machine; tilt the playfield out of your way. Carefully remove the speaker leads by pulling and wiggling the spade lug. Avoid pulling the wire. UN-screw the speaker nuts and remove the speaker. Leave the grille in place and any ground strap that may be looped by a screw.
3. Put the adapter plate over the speaker studs in the cabinet and secure with the original speaker's nuts and washers. Snug the nuts down using a nut driver or socket wrench or pliers. Do not over tighten to the point of breaking a stud or cracking the spacer.
4. Carefully align the sub-woofer over the mounting holes on the adapter and secure with the screws supplied. Face the control toward the coin door. Do not over tighten and distort the speaker frame.
5. Open the upper backbox by removing the backglass and swing open the light panel. Lift out the upper speaker assembly and lay it face down on the side rails. Use a towel under the assembly to keep it from sliding or getting marred. (You may have to lower the playfield to open the backbox.)
6. Unplug the speaker wires that run from the sound card to the base cabinet and backbox speakers. There are two 4-pin headers side by side. Unplug both. Un-screw the left and right backbox speakers along with the capacitor clip and lug fasteners. You may remove just the speakers by clipping them from the wires, or remove everything including the wiring but it is quite a bit of work to get them out of the harness.
7. Mount the new 5-inch speaker on the left using the original screws, and face the terminals toward the top edge of the speaker panel. The coaxial tweeter unit may touch the metal grille. Snug the screws but do not over tighten. Route the long heavy black and red wires into the base cabinet and the lighter gauge wires to the other side of the backbox speaker plate. Connect the heavy gauge wire pair with the connector on it onto the right most set of 4-pin headers on the sound card. (Red wire to the right) (Either set will actually work if one is damaged or something)
8. UN-screw the 4-inch speaker and plastic bezel from the adapter plate. Mount the adapter to the speaker panel with the original speaker mounting screws and the set of holes that match the old tweeter pattern. Screw the speaker and bezel back onto the adapter with the 4 Phillips head screws supplied. Face the terminals toward the top edge of the speaker panel. Carefully connect the new wiring harness leads from the left speaker to the right speaker terminals. The wire with the black stripe is negative and the all red wire is positive (+). Plug the positive lug onto the positive terminal on the right that is also marked with a red dot. Route the wires as desired.
9. Connect the speaker wires put into the base cabinet onto the empty board terminals on the right end of the network board on the Sub-Woofer. The red wire goes on the Plus (+) terminal. DO NOT connect the wires to the speaker terminals directly.
10. Close up the base cabinet and re-assemble the backbox. Adjust the volume of the speakers to suit using the control on the Sub-Woofer in the base cabinet and your master volume control. The control on the Sub-Woofer will adjust the frequency. As it is rotated you will hear the frequency shift in both the backbox speakers and the sub-woofer. As the frequency is raised, the backbox speakers will seem louder. Adjust the master volume control along with the frequency control to your preference. Full bass frequencies will come from all the speakers in the kit to give you the most powerful sound.

Enjoy!

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If you have a suggestion for improvement we'd like to know.

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