

PINSHAKERS

Pinshakers Universal Shaker Motor Kit Installation

Standard Vers 3.xx Stern S.A.M. / Whitestar Installation – Updated 03/13/2021

Please visit www.pinshakers.com for the latest installation guides and videos

EXPECTATIONS OF USE

You agree to use our products in the manner described in the documentation provided. Any deviation from the provided documentation will likely cause damage to persons or property. You agree to only install our products in fully working and operating pinball machines. Pinshakers will in no way be held responsible or liable for any damage that results in the use of this kit; either to any person, your pinball machine, or structure in which the pinball machine is operated.



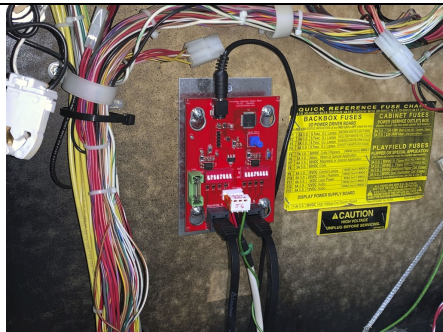
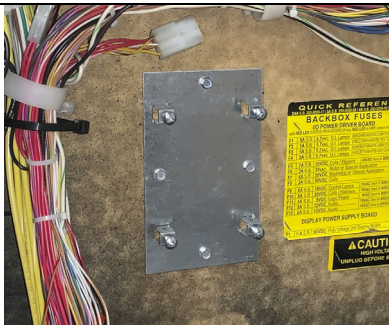
Remove All Power!



On/Off Switch Is NOT Enough!

Parts Required (included):

- ☐ Installation Manual
- ☐ Shaker Motor
- ☐ Shaker Motor Shield
- ☐ Motor Harness
- ☐ 12vdc 5A Power Supply
- ☐ Power Supply Cable with “Y” Connection Splitter
- ☐ Wire Harness “A” and “B” Cable & Connector Adapters
- ☐ Motor Driver Board V3.xx
- ☐ Metal Board Mounting Backplate
- ☐ Metal Drill Guide
- ☐ 4 x 1/2” Wood Screws
- ☐ 4 x 1/2” Machine Screws (Installed on Backplate)
- ☐ 2 x Shaker Motor Shield Screws
- ☐ 4 x Tee Nuts
- ☐ 4 x 3/4” x 5/16” Nut Drive Screws
- ☐ Dip Switch Settings (download from www.pinshakers.com)



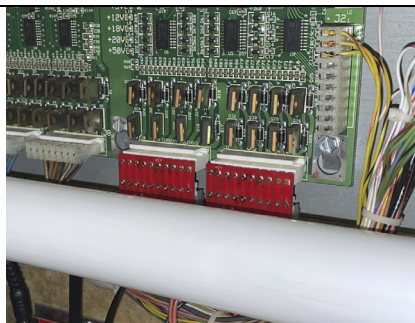
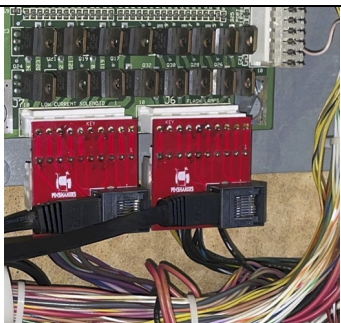
Step 1: Motor Driver Backplate Install

Find an open spot in the backbox to secure the backplate with the 4 hex head wood screws in the hardware bag. It is OK if the plate is mounted over a grounding strap or grill. Whitestar machines may require the plate to be installed on one of the sides inside the backbox.

The backplate has sharp edges, use extreme caution.

Step 2: Motor Driver Board Installation

Mount the motor board on the metal backplate. Be careful not to tighten the screws too tightly otherwise you will damage the threads. Connect the included Cat5 cables to the board.



Step 3: Harness Adapter Installation

Locate the power driver board connector for the type of machine you have. Printed on each Cat5 adapter is the harness identifier as well as the Jxxx connection on the power driver board. If you have a fluorescent lamp you will need to remove it at this time. Unplug the connector on the power driver board and connect it to the bottom of the Cat5 adapter. Then connect the adapter back into the power driver board.

Step 3a: Harness Adapter Installation

Replace the lamp if you removed it. The photo above shows the adapters installed with the lamp in place.



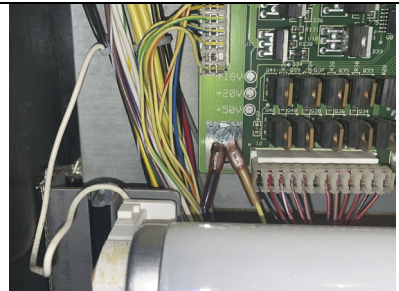
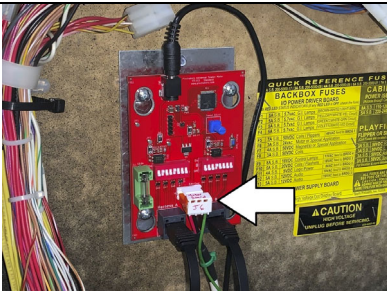
Step 4: Power Supply Installation

Find the 2 position molex connection leading to the backbox lamp. It is usually on the left side of the backbox coming up from the back of the cabinet. Disconnect the molex connection and connect the included power supply cable “Y” adapter into it.

There is a grounding strap coming off of this connection that you will connect in step 5a.

Step 4a: Power Supply Installation

Connect the power supply cable to the power supply. Make sure you connect it securely and that it isn't loose when you wiggle it. Connect the 12vdc barrel plug into the motor board. You can place the power supply in the backbox as shown above or run it down into the back of the cabinet in step 5b.



Step 5: Motor Harness Installation

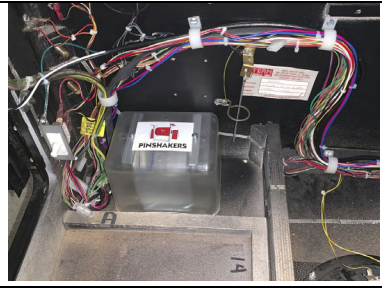
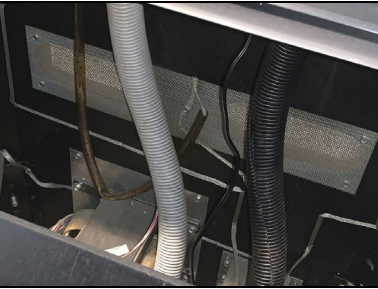
Connect the motor harness into the motor board as shown in the photo above.

Step 5a: Motor Harness Installation

There is a grounding strap coming off of that connection. Find a reliable grounding location and connect this strap along with the one from the power supply cable “Y” adapter to it. Above is an example of these straps connected to the bottom left side of the power driver board.

Installing this kit in a machine where something is not properly grounded will result in damage to components.

DO NOT SKIP THIS STEP!



Step 5b: Motor Harness Installation

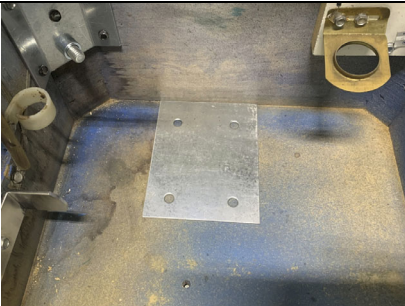
Now run the motor harness down into the front of the cabinet and leave all slack in the lines in the back of the cabinet at the base of these wire wraps. Use the wire wraps like the ones shown above to secure the wires. That way when you go to fold the backbox down, the slack will be used and nothing will get caught and ripped out.

If you want you can do the same with the power supply, again make sure there is plenty of slack in the lines to fold the backbox down in the future.

Step 6: Shaker Motor Installation

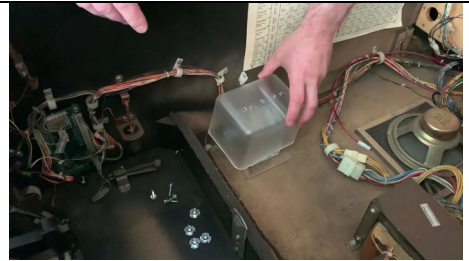
Choose where you would like to install your shaker motor. We have discovered you get the best results by installing the motor as close to the side and front of the cabinet as possible. The photo above shows the best location for the shaker motor. It is a tight fit and you may need to move some of the wire harnesses out of the way during installation.

Some of the photos in this step were taken in different machines, but the general guidelines still apply.



Step 6a: Shaker Motor Installation

Included is a metal drill guide with 4 pre-drilled holes that you will use to drill the 1/4" holes in the cabinet. Place the drill guide against the side wall in the spot you believe you want the motor to be mounted.



Step 6b: Shaker Motor Installation

Place the motor on top of the drill guide and line up the mounting holes for the motor with the pre-drilled holes on the drill guide. Place the motor shield on top of the motor to make sure you have plenty of clearance from any wires, switches, solenoids etc.



Step 6c: Shaker Motor Installation

Tape the drill guide in place so that it will not move.

Step 6d: Shaker Motor Installation

Drill your 4 holes with a 1/4" drill bit. It is VERY important to keep your drill completely perpendicular to the bottom of the cabinet. If you make your drill holes at any kind of an angle, then the tee nuts will not fit properly and your motor will not install securely. Take your time and be patient, you only get one shot at this!

When you are done drilling the holes remove the drill guide and tape and vacuum up all of the sawdust.

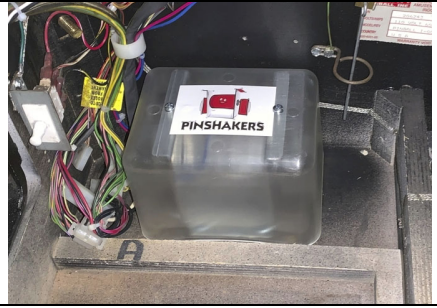


Step 6e: Shaker Motor Installation

Once you get all 4 screws drilled, go underneath and hammer in the 4 tee nuts. Use a 1/2" deep socket to help so you don't smash your fingers. Hammer the tee nuts as far in the cabinet as they will go. If they do not go all the way in they will finish flush when you screw in the hex screws in the next step.

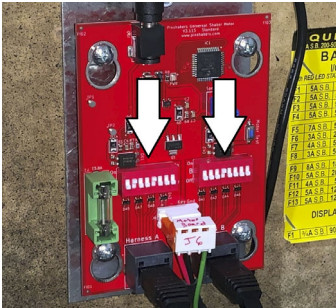
Step 6f: Shaker Motor Installation

Use a drill, 5/16" socket, and an extension to drill in the screws and compress the tee nuts the rest of the way flush with the cabinet. Reach under with one hand and hold the tee nuts from falling out during this step. It is best not to tighten down any of the screws all the way until all 4 are installed.



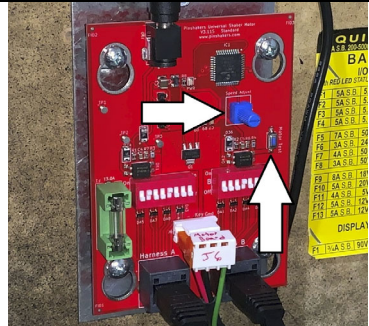
Here is an example of properly installed tee nuts. See how they rest flush with the wood. If your tee nut falls out while you are trying to screw them in, that means you probably did not hammer them in far enough. Make sure you take a pair of pliers and straighten out the prongs before you try to re-install it.

Step 6g: Shaker Motor Installation
Install the shaker motor plastic shield with the two small shield screws and plug in the motor to the motor harness.



Step 7: Trigger Selections

Feel free to change the dip switch settings with a pen or other like device on the motor driver board for the desired inputs that you want to drive the shaker motor. Do this while the machine is powered down. You can choose to have more than one switch turned on at a time.



Step 8: Power On & Test

Power the machine on and look for the led on the motor driver board. It should flash 5 times, once it is steady green it is ready for action. Press the test button and the motor should shake. If it doesn't, then go back through the above steps to make sure you didn't miss a connection somewhere.

This is also a good time for you to adjust the intensity of the shaker motor to your desired amount. Use the speed adjust knob to adjust the intensity and then press the motor test button to see how strong it will be.

Congratulations, you have successfully installed your new Pinshakers shaker motor kit! If you have any questions or problems please do not hesitate to reach out to us for help.

For product support email us directly at pinshakers@gmail.com.

