

# PINSHAKERS

## Pinshakers Universal Shaker Motor Kit Installation

Please visit [www.pinshakers.com](http://www.pinshakers.com) for the latest installation guides and videos

For product support email us directly at [pinshakers@gmail.com](mailto:pinshakers@gmail.com)

### Standard Driver Board Vers 3.xx Sys 11 Installation – Updated 12/01/2022

#### Tools Required:

- Small Phillips Head Screwdriver
- Pen – (For adjusting the dip switches)
- 1/4" Nut Driver

#### Parts Required (included):

- ☐ Motor Harness
- ☐ Power Harness and Grounding Strap
- ☐ Wire Harness "A" and "B" Cable & Connector Adapters
- ☐ Motor Driver Board V3.xx
- ☐ Metal Board Mounting Backplate
- ☐ 4 x 1/2" Hex Head Wood Screws
- ☐ 4 x 1/2" Phillips Head Machine Screws (Installed on Backplate)
- ☐ Installation Manual
- ☐ Dip Switch Settings (download from [www.pinshakers.com](http://www.pinshakers.com))

**Unpack and inventory all the included components. Please let us know as soon as possible if you have any missing items.**

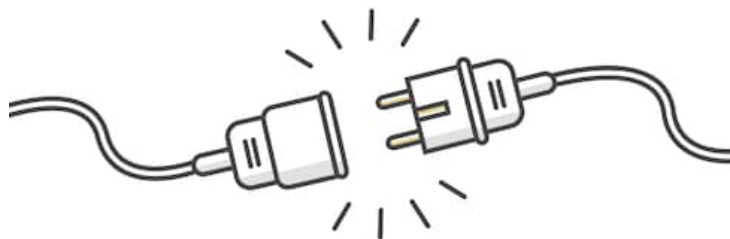
**Note:** Please hold onto this installation manual! In order to keep the price down on our kits we are only shipping one manual per household. You can still download our manuals from the website or watch the in-depth YouTube installation videos.

#### EXPECTATIONS OF USE

You agree to use our products in the manner described in the documentation provided. Any deviation from the provided documentation, or any custom modifications to our products, will likely cause damage to persons or property. You agree to only install our products in fully working and operating pinball machines. Any prior issues with grounding, loose connections, game resets, cold solder joints, hacked up circuit boards and other components, or any other pre-existing problems with your pinball machine will likely result in the damage of our product and/or your pinball machine. Other risks of installing our product in a machine that is not fully working is that of fire or bodily harm. 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!



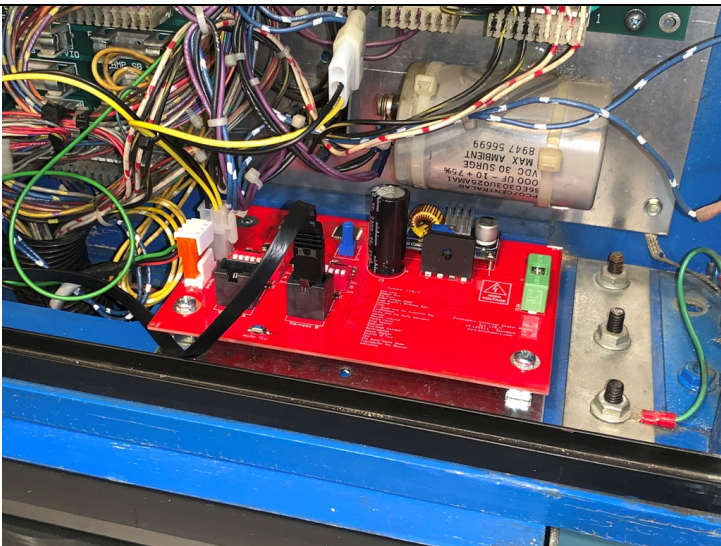
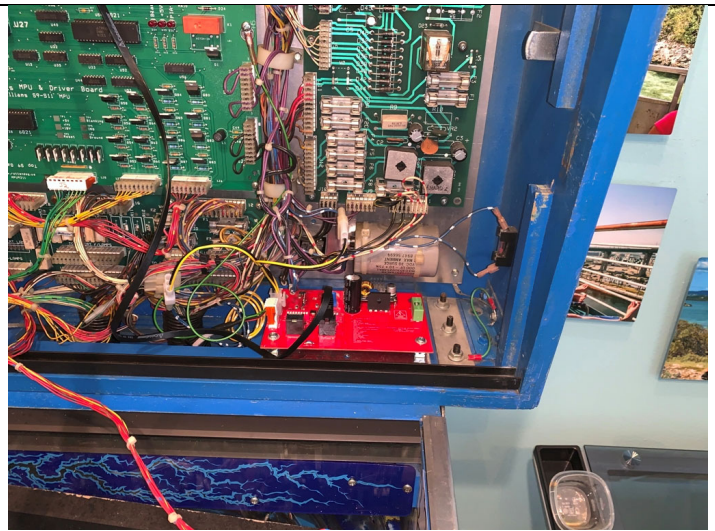
## On/Off Switch Is NOT Enough!

### Step 1: Motor Driver Metal Backplate Installation



**In this step you will be handling the metal backplate. Be careful as there might be some sharp edges on the sides or on the back of the plate.**

You received a metal Backplate with your kit that is used to mount the motor driver board. Find an open spot in the right side of the backbox to secure it with the 4 hex head wood screws in the hardware bag. The photo to the right shows an example of an open spot to mount the backplate and board. **It is OK if the plate is mounted over a grounding strap or grill.** Next mount the motor board on top of the backplate and tighten the 4 screws. Be careful not to tighten the screws too tightly otherwise you will damage the threads.



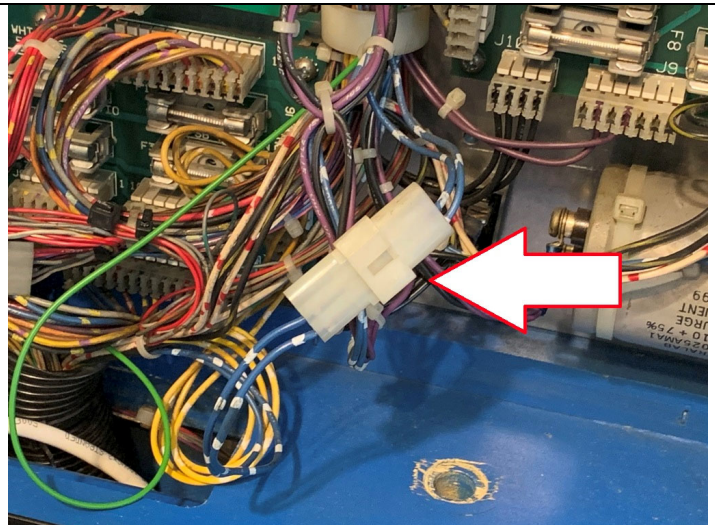
### Step 2: Motor Driver Board Installation

Connect the included Cat5 cables and motor harness to the board. The motor harness in Vers 3.15xx is now a DC barrel style connection at J6.

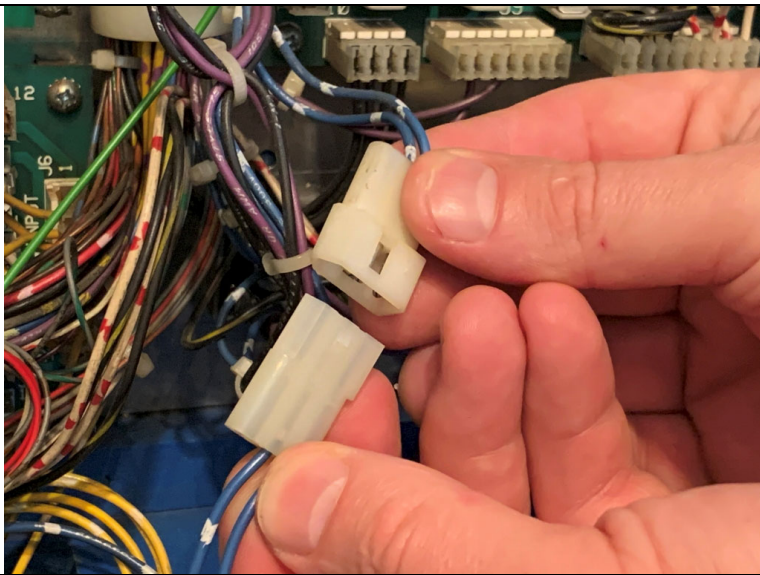
### Step 3: Power Harness Installation

Locate the connection in the backbox with the two wires that are blue with white stripes. The photo to the right shows this connector. This is the connection we are going to use to install the power harness.

**Do not use any other connection in the backbox other than the one pictured in this step. If you are unable to find a connection with the two blue/white wires.. then your machine is not compatible with this shaker kit.**





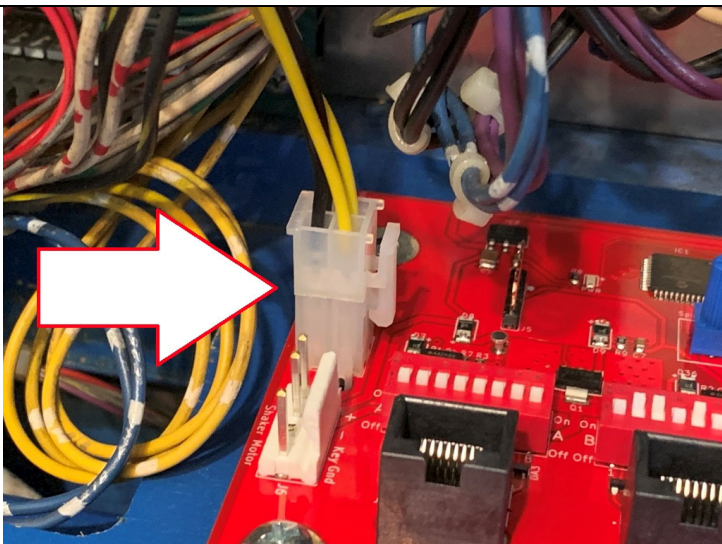
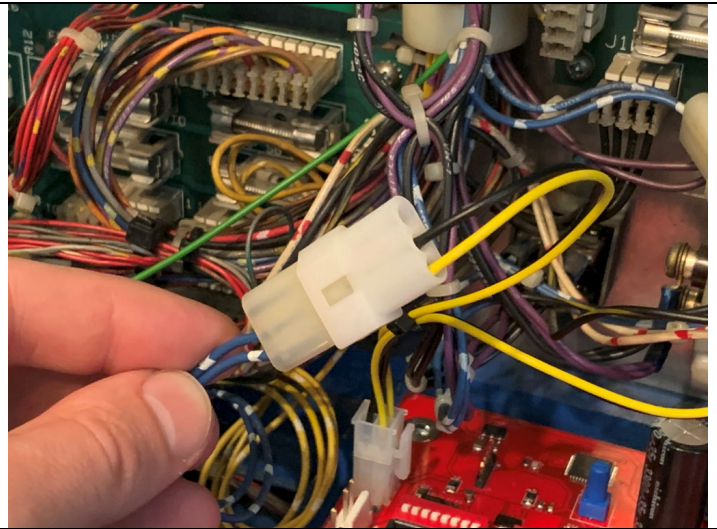


### Step 3a: Power Harness Installation

Separate the connection, notice there is a male and a female side to it.

### Step 3b: Power Harness Installation

Take the included power harness and connect both sides into the connection we separated in the previous step. The connections will only go in one way. The photo to the right shows what it will look like when the male end of the separated connector plugs into the female end of the included power harness. You will notice the included power harness is a “Y” style harness that will connect to both sides of the connector you separated in the previous step. Make sure there are no open connections.



### Step 3c: Power Harness Installation

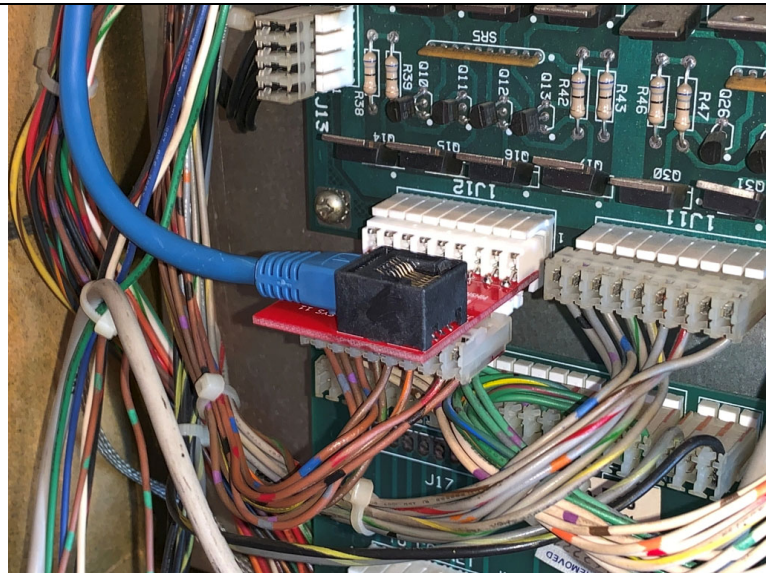
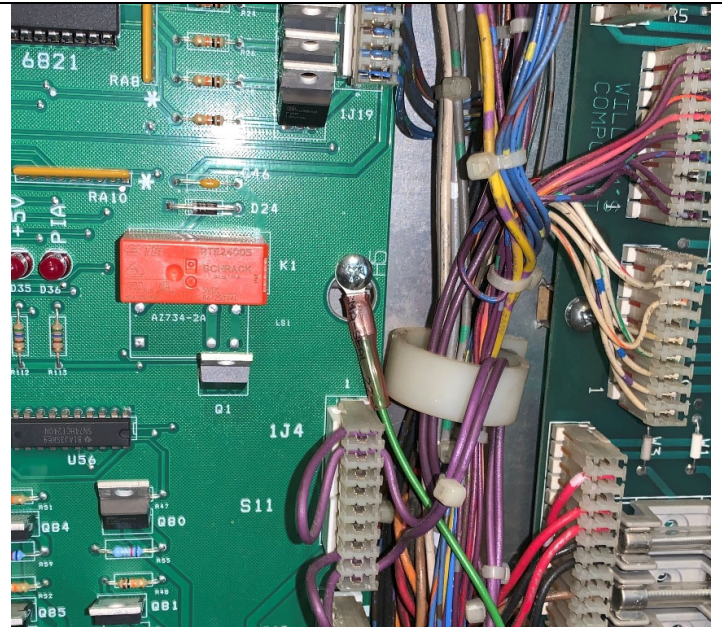
Plug in the power harness to the motor board at J3. The photo to the left shows where the connection is located for the power harness. J3 on vers 3.15xx is now in the middle of the board.



#### Step 4: Grounding Strap

Attach one side of the included green grounding strap to a secure and reliable grounding source in the backbox, and the other side to one of the 4 mounting screws on the motor board. The photo to the right shows an example of a location used on the MPU.

Installing this kit in a machine where something is not properly grounded will result in the damage to your shaker motor driver board, the shaker motor, and possibly even your pinball machine circuit boards. **DO NOT SKIP THIS STEP!**

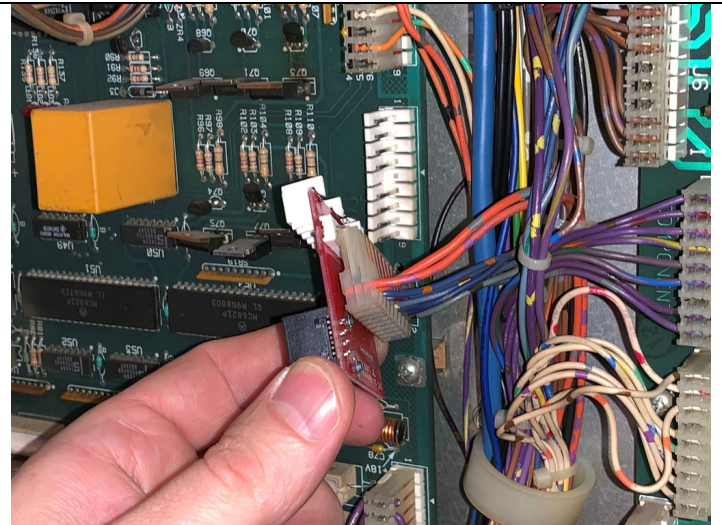


#### Step 5: Harness Adapter Installation

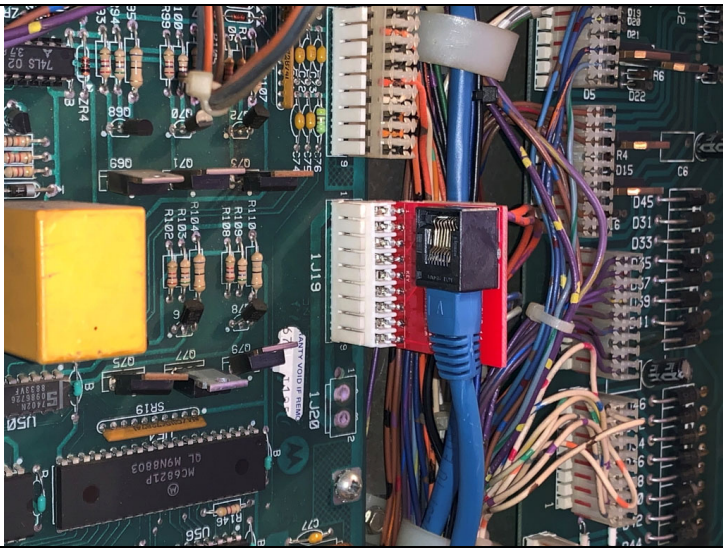
Locate the harness adapter connector on the MPU. The Cat5 adapter will have the connection printed on it for which harness you are installing as well as what connector to use on the MPU. A photo to the left is a side view of the “A” adapter at 1J12.

#### Step 5a: Harness Adapter Installation

Disconnect the connector from the MPU you will be using and plug it into the bottom of the Cat5 adapter. The photo the right shows an example of how it will connect to the bottom of the adapter.



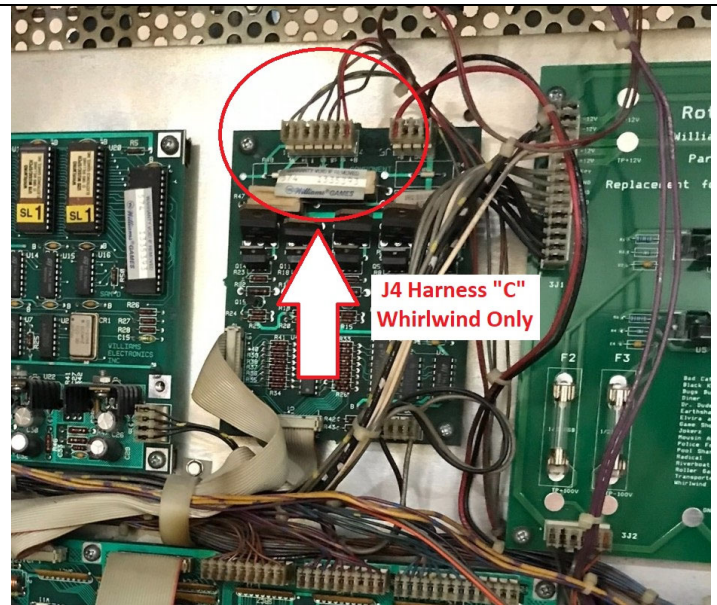




### Step 5b: Harness Adapter Installation

Connect the adapter into the spot on the MPU you removed the original connector from. Connect the Cat5 cable to the adapter. The photo to the left shows an example of everything connected for Harness "B" 1J19.

**\*\*\*Whirlwind Only\*\*\*** - Whirlwind has a special additional circuit board called a **"Sound Overlay Solenoid Board"**. It is located to the left of the power supply. Harnes "A" for a Whirlwind will connect to J4 on the Sound Overlay Solenoid Board instead of 1J12 on the CPU. The adapter board will have two open pins off to the side of the J4 connection, that is ok as long as it is lined up with the key position.



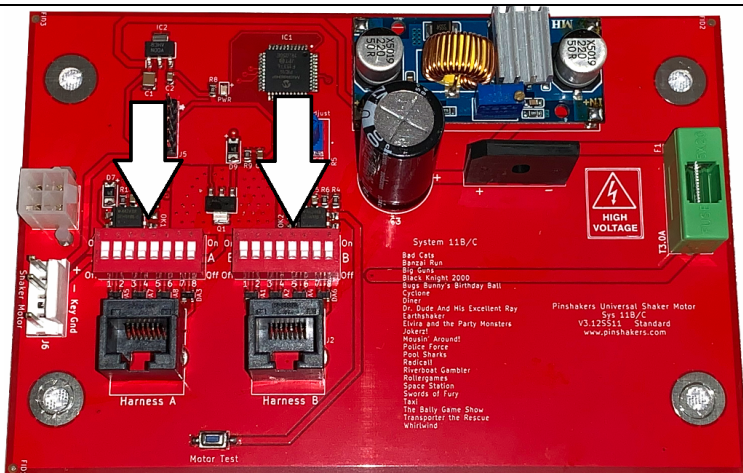
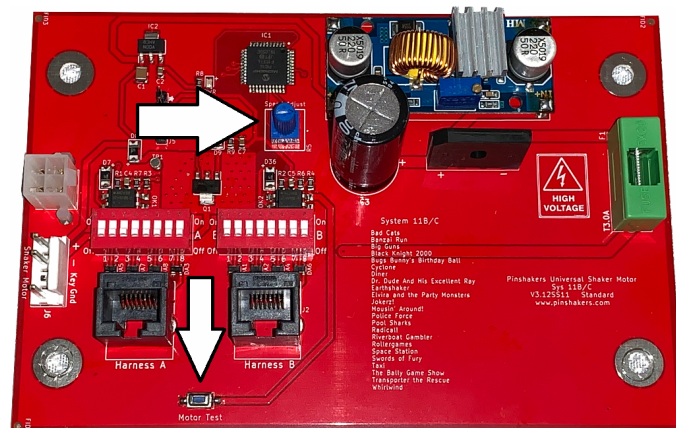
**Step 6: Motor Harness Installation** Now run the motor harness down into the cabinet. Use the wire wraps like the ones shown to the left to neatly secure the wires. Connect the motor harness to the shaker motor, and leave all slack in the lines in the back of the cabinet at the base of these wire wraps. That way when you go to fold the backbox down, the slack will be used and nothing will get caught and ripped out.

## Step 7: Power On & Test

**In this step you will be working with the motor board while it is powered on. Make sure you do not touch any of the components in the high voltage section by accident as it may result in a serious injury or shock.**



Power the machine on and look for the led on the motor driver board. It should flash 5 times during it's power-on routine. 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. You can also use this test button to fine tune the intensity of the shaker using the speed adjust knob as shown to the right to provide the perfect amount of shake you desire.



**Step 8: 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. Do not mix up the dip switches on the motor driver board with the dip switches that may be on your MPU. The one on your MPU is used for setting the country settings only. You may turn on any dip switch on the motor driver board that does not have the “Not Used” or “Do Not Use” label on the dip switch chart. You can choose to have more than one switch turned on at a time. Have fun with it and try to make it so that it feels as if this kit was always meant to be installed from the factory.

Congratulations, you have successfully installed the motor driver board, shaker motor, wiring harness, and power supply! If you have any questions or problems please do not hesitate to reach out to us for help.