Pinshakers Universal Shaker Motor Kit Installation

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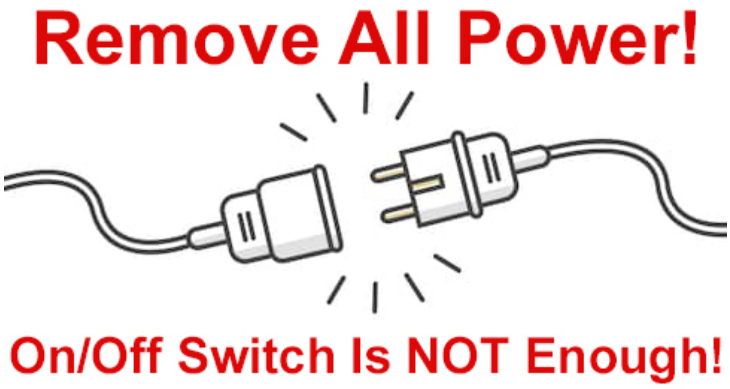
Standard Driver Board Vers 3.xx Data East Installation – Updated 10/29/2020

Tools Required:	Parts Required (included):
-#2 Phillips Head Screwdriver -1/4" Nut Driver 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.	☐ Motor Harness ☐ 12vdc 5A Power Supply ☐ Power Supply Cable ☐ Transformer Voltage Adapter ☐ 2 Photoresistor Cables ☐ Motor Driver Board V3.xx ☐ Metal Board Mounting Backplate ☐ Installation Manual Unpack and inventory all the included components. Please let us know as soon as possible if you have any missing items.

EXPECTATIONS OF USE

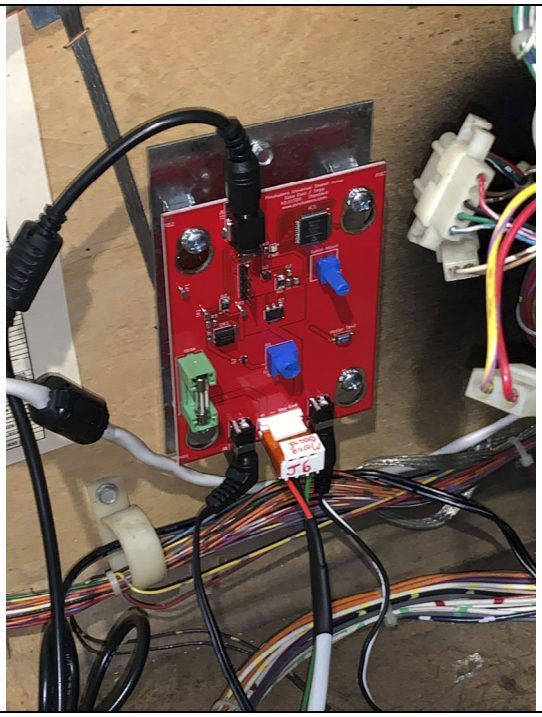
You agree to use our products in the manner described in the documentation provided. Any deviation from the provided documentation, or any custom modifications to our products, will likely cause damage to persons or property. You agree to only install our products in fully working and operating pinball 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.



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 inside of the cabinet to secure it 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.

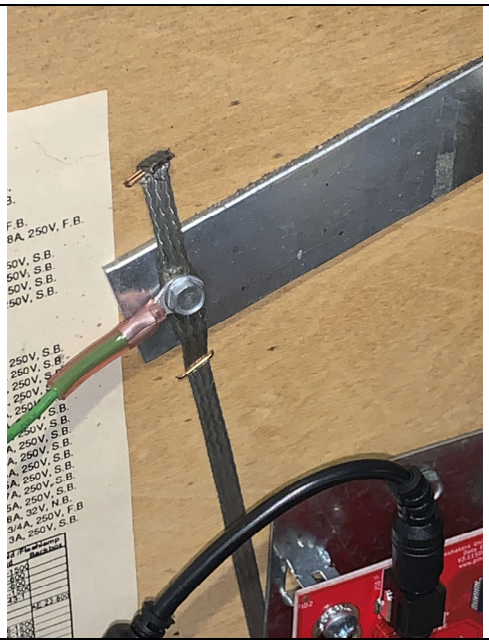


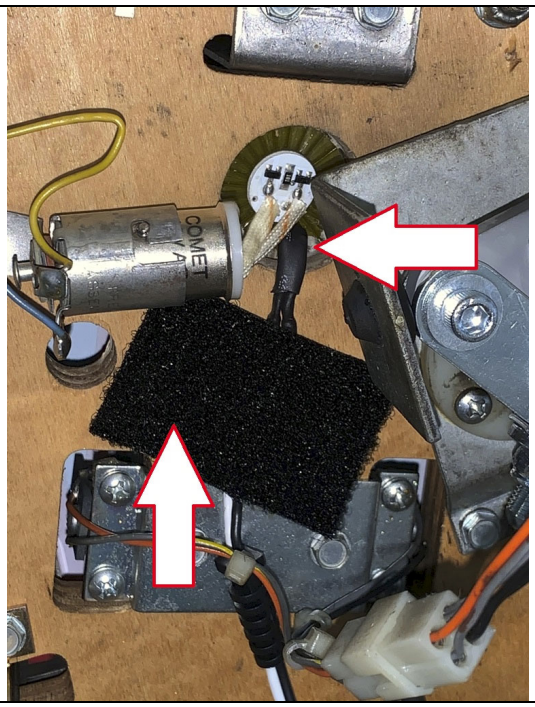
Step 2: Motor Driver Board Installation

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 photoresistor cables and 12vdc power supply extension cable to the board.

Connect the motor harness cable to the motor board and connect the other end to the shaker motor.

Step 3: Grounding Strap Find a reliable grounding strap and connect the grounding cable that is on the motor harness. 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!

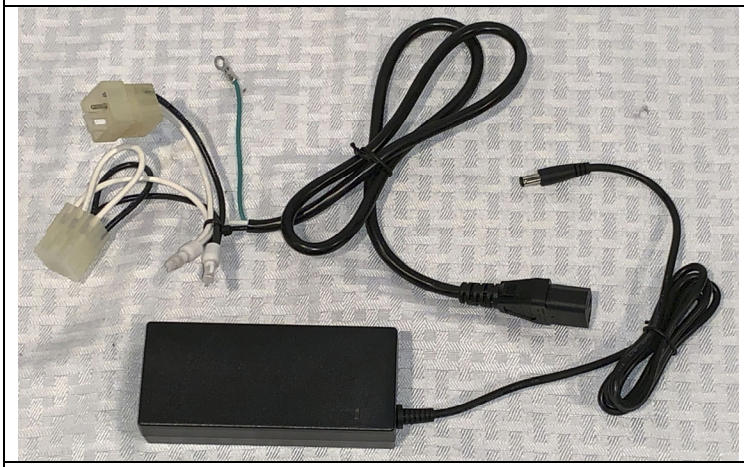




Step 4: Photoresistor Cable Installation
Locate the two photoresistor cables that you connected to the motor board. At the end there will be a photoresistor that is encased in heat shrink tubing and bent at a 90deg angle. You can use any lamp or flasher as a trigger.

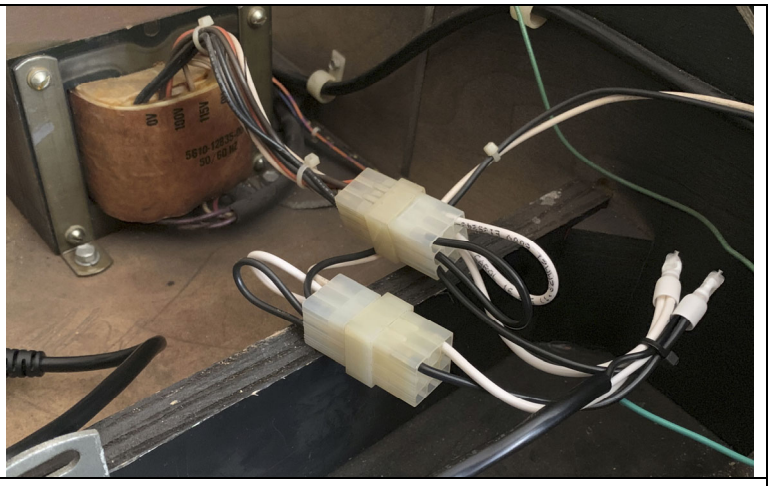
In the photo example to the left, we are using a flasher that is located under the playfield to trigger the motor. For this example we ran the cable up to the playfield to the flasher insert. We took a piece of black 3m velcro tape (included) and secured the photoresistor so that it is pointed into the insert.

Once you have secured the photoresistor, secure the cable using the included zip ties and make sure there is enough slack so that the playfield can be raised and lowered without the cable pulling out.



Step 5: Power Supply Installation
Data East machines have a 9pin transformer voltage connector. You should have received our power supply adapter as pictured to the left. It will come pre-jumpered for the voltage your machine is running with.

Step 5a: Separate the 9pin jumper connector from the connector coming out of the transformer. There is a small tab you will have to lift up on one of the side in order to separate the two connectors. Insert the pre-jumpered end of the included adapter into the transformer connector. Then insert the connector coming from your power box into the other side of the included adapter. When you are all finished, the connection should look like the photo to the right.



Step 5b: 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. Find a good grounding point to connect the grounding wire coming off of the power supply cable.

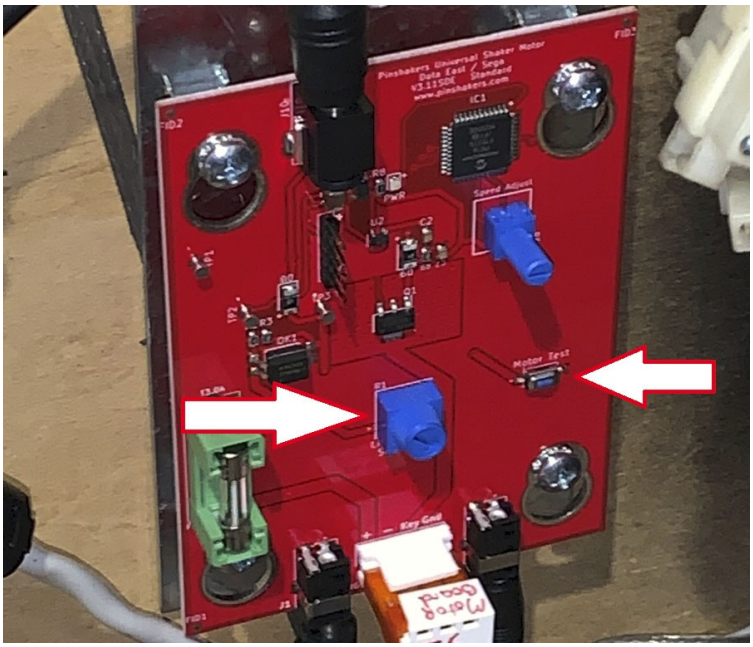
Step 6: Power On & Adjustments

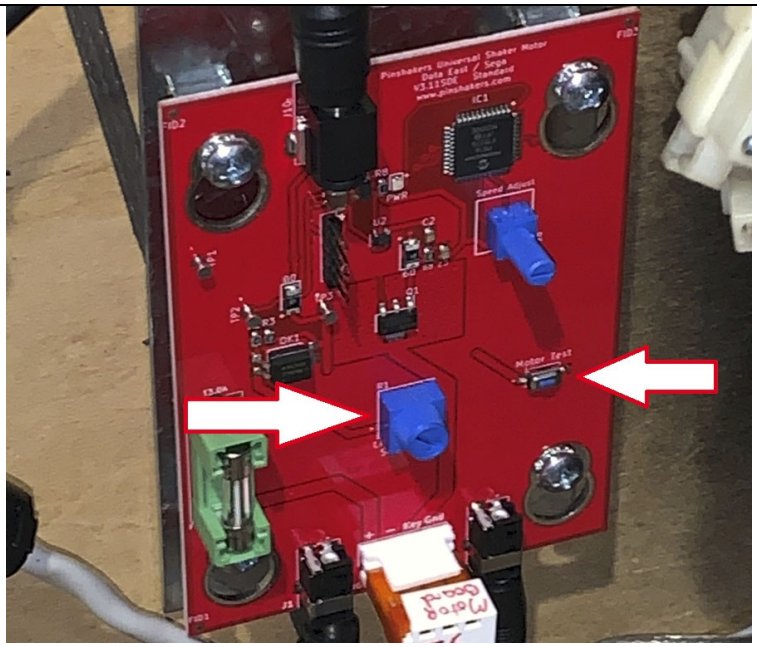
You will see two blue adjustment knobs. One is labeled "Speed Adjust" and is what controls the intensity of the shaker motor. The other is labeled "Light Sensor Sensitivity" and is what we will use to adjust for the brightness of the lamp(s) you have your photoresistors connected to. Rotate the light sensor knob fully counter-clockwise.

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.

You do not have to use both photoresistor connections, if you only want a single lamp or flasher to activate the motor that is fine. Simply disconnect the photoresistor cable you are not using.

If you do plan to use both photoresistor connections, you will need to disconnect one of them for the following step.





Step 6a

Choose one of the photoresistor connections you want to work with and unplug the other one. Rotate the light sensor knob fully counter-clockwise if you haven't already. Press the motor test button. The motor should **NOT** shake. Slowly rotate the light sensor knob clockwise in small increments and stop and press the motor test button. As soon as the motor shakes once after pressing the motor test button stop moving the light sensor knob.

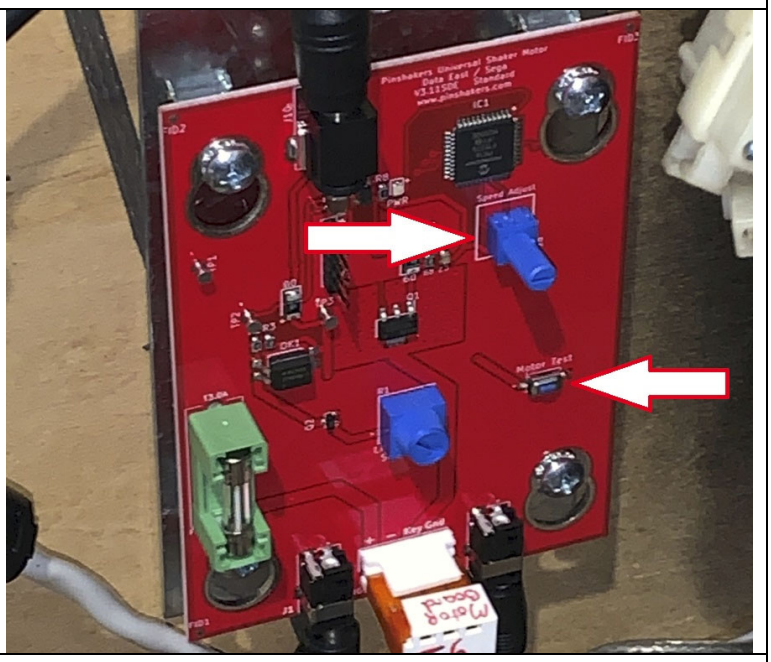
Note: If the motor starts shaking by itself, slowly move the light sensor clockwise until it stops. Then press the motor test button again and the motor should shake only once.

Run a test to activate the lamp or flasher you are working with, it should activate the motor. If it does not, then repeat this step from the beginning and make smaller adjustments of the light sensor knob each time.

Once you have the light sensor adjusted so that it only activates the motor once when the lamp or flasher is activated, you can proceed to connecting the other photoresistor connection. With the light source for both connections turned off, press the motor test button and the motor should activate. Then run a test to activate the second lamp or flasher and the motor should activate. If it does not, repeat this step from the beginning but this time use the second photoresistor connection as your primary to make the adjustments. When finished, both connections should work as expected.

Step 7: Shake Intensity Adjustment

In this final step we will adjust the intensity of the motor to get the exact feel we want out of it. Locate the blue knob labeled "Speed Adjust". Press the motor test button to activate the motor. Rotate the motor speed knob clockwise and counter-clockwise after each motor test button activation until you get to the point you are happy with the intensity of the motor.



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.