



it's a whole new game!

Mini PlayField (MPF) kit Installation Guide

Caution:

If you are not comfortable working on pinball hardware and/or high voltage electronics, please get professional support for this. In general: use your common sense. Don't experiment. Don't be a nihilist. Only skilled and trained people are allowed to open this system. The manufacturer accepts no responsibility for injuries caused by unauthorized operation. Keep long hair, fingers, jewelry, etc. away from turning parts of the system.

Before installing the MPF kit make sure the game is **TURNED OFF!**

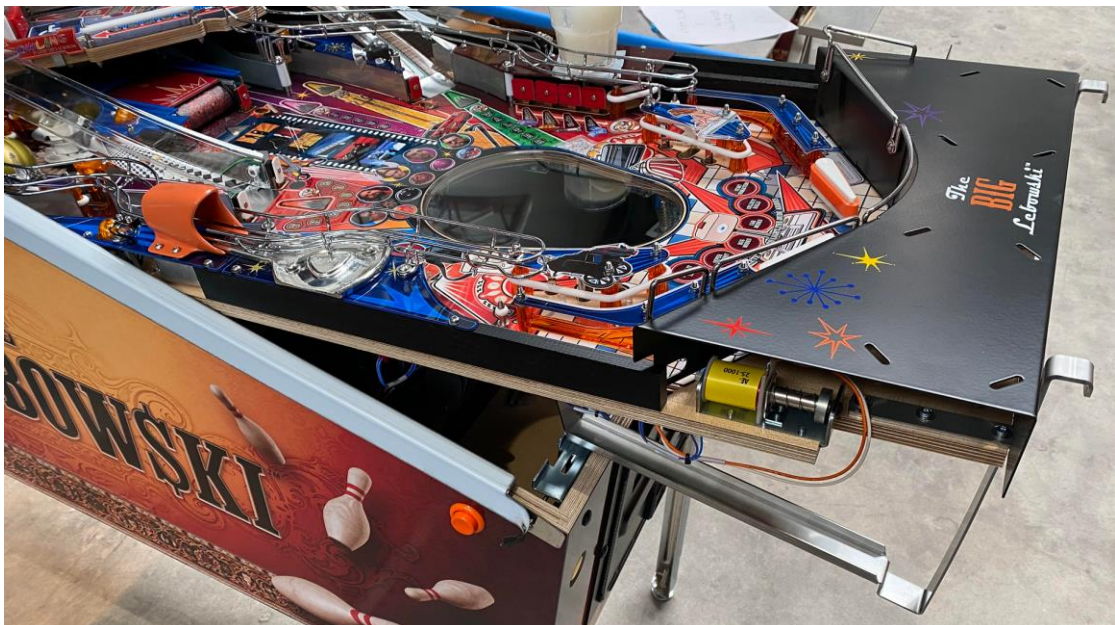
Package Contents:

- 1x steppermotor with cable harness
- 1x flatcable (spare)
- 1x new reinforced targets
- 1x new cardoor with decal
- 1x new pcb
- 10x 3,5 x 13 Screw Torx 20 (also for spare)
- 10x 3,5 x 9,5 Screw Torx 20 (also for spare)
- 1 x plastic holder for repositioning rug EOS switch
- 1x new flipperbushing (spare)
- 1x isolation ring

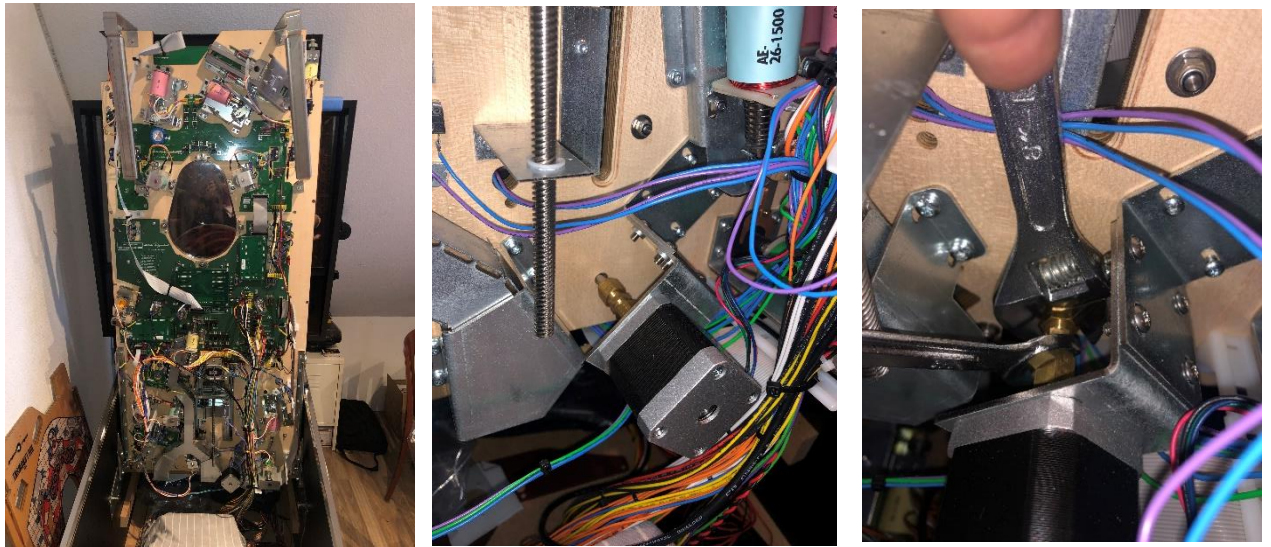
Installation

Step 1 – Remove steppermotor under the main playfield

- Carefully remove the lockdown bar and playfield glass.
- Remove all five balls from the Ball Trough!
- Lift the playfield a bit and pull the playfield a bit towards you as soon as the playfield support brackets are high enough to do so and rest the playfield onto the front of the cabinet on the playfield support brackets:

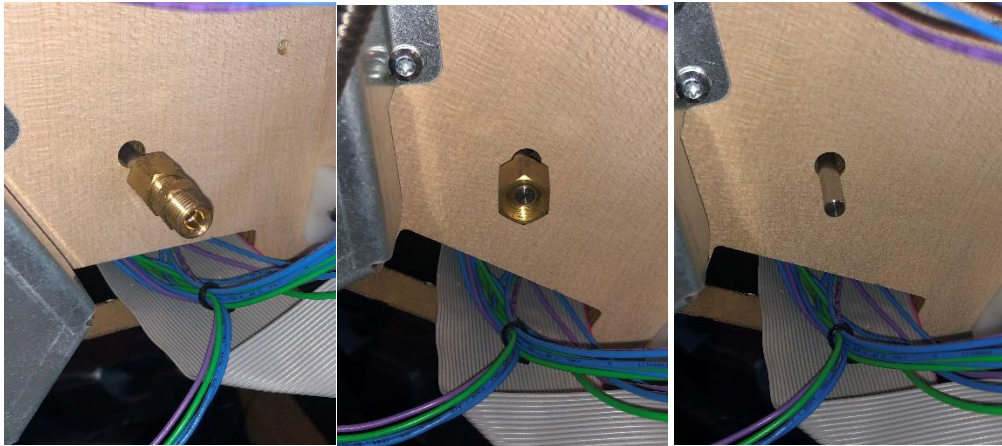


- Raise the playfield to vertical position. Let it carefully touch the top part of the backbox, this to avoid damage. You can put something in between like a cloth to reduce the chance of damage even further. Also we recommend to put something over the bowling alley to avoid screws falling into it.
- Once the stepper motor is removed the cardoor can freely move and might scratch your playfield. Thus we recommend to tape the door in place or put something on the playfield to avoid damage



- It is the stepper motor at the right bottom of the playfield which has to be removed. This will be replaced with a stepper motor just below the MPF. This stepper motor is fixed with 4 screws to the playfield and the ax of the stepper motor is clamped to the ax of the door (this is the brass construction seen on the picture). Set 2 wrenches on each side of the coupling nut and loosen it. This frees the stepper motor from the door axis and makes it possible to remove it
- Free the cabling of the stepper motor going to the big PCB. This requires cutting some tirewraps. Unplug the connector from the main PCB.
- Remove the 4 screws holding the stepper motor assy to the playfield. Remove the assy and put it aside. No longer needed.

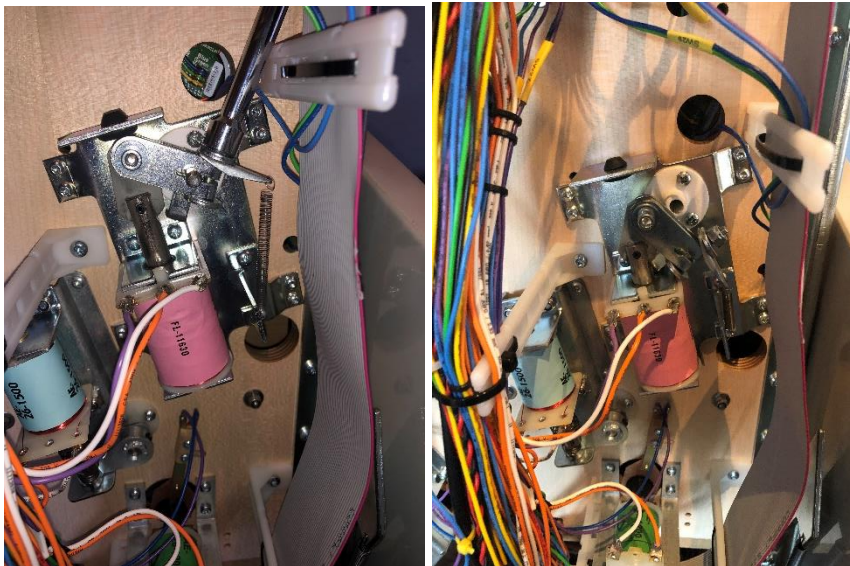
- Loosen the 2nd part of the coupling nut and take out the middle part.



- Now a last part is on the axis held by a round ring. The ring has to be removed, this might take some force. As its no longer needed you use a Dremel to get it off if it's too fixed. Once removed the total axis is free and does fit through the hole in the playfield.

Step 2 – Remove upper flipper from under the main playfield

Next step is to remove the upper flipper. This is connected to the coil below the playfield. Loosen the screw holding the axis of this flipper and remove the flipper

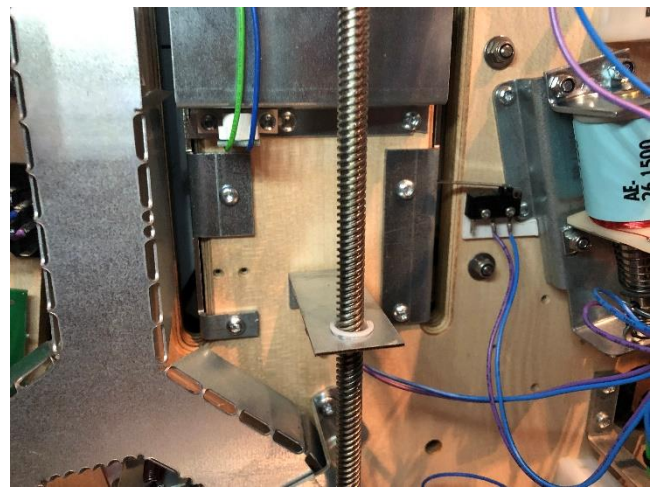
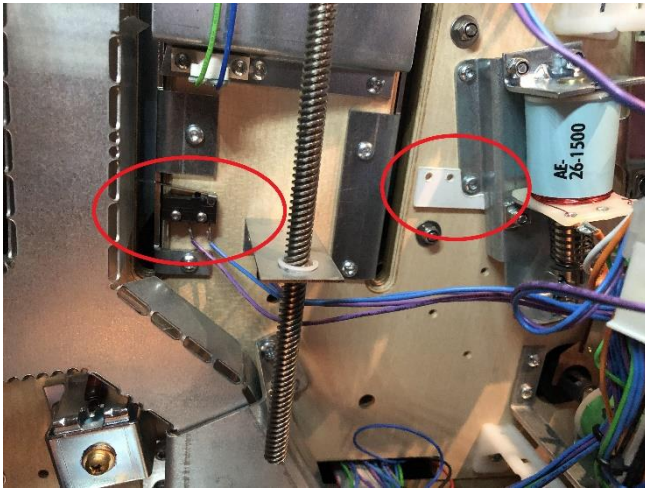


- Disconnect the connector going to the opto's of the MPF



Step 3 – Relocate the EOS switch of the rugtoy

- Next step is to relocate the EOS switch of the rugtoy. If you don't do this the rugtoy will hit at the end the stepper motor under the MPF.
- Locate the EOS switch as seen in below picture
- Place the delivered switchholder in the position as shown on the picture, unscrew the switch and mount the switch in the new position



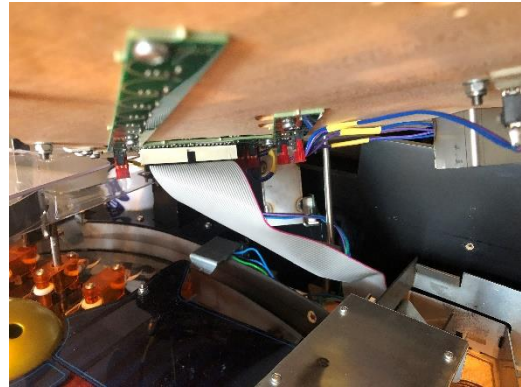
- After this is done set the playfield horizontal again.

Step 4 – Remove the MPF

- Remove the roof by loosen the two Allen screws
- Disconnect the cable going to the roof
- Remove the 4 screws holding the Right ramp at the entrance and end and put ramp aside. It can remain in the flipper
- Loosen the wireform to make it easier to remove the MPF
- Remove the 3 screws accessible from the top plus the 1 in the backboard



- Carefully lift the MPF and disconnect the flatcable going to the PCB.
- Remove the MPF and put it on your worktable

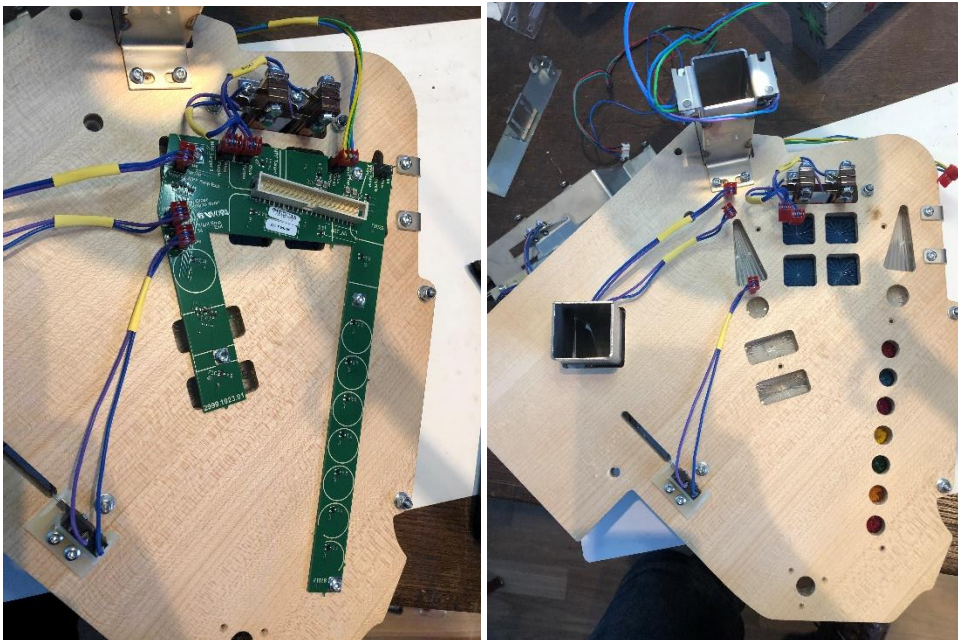


Step 5 – Removing the door with car

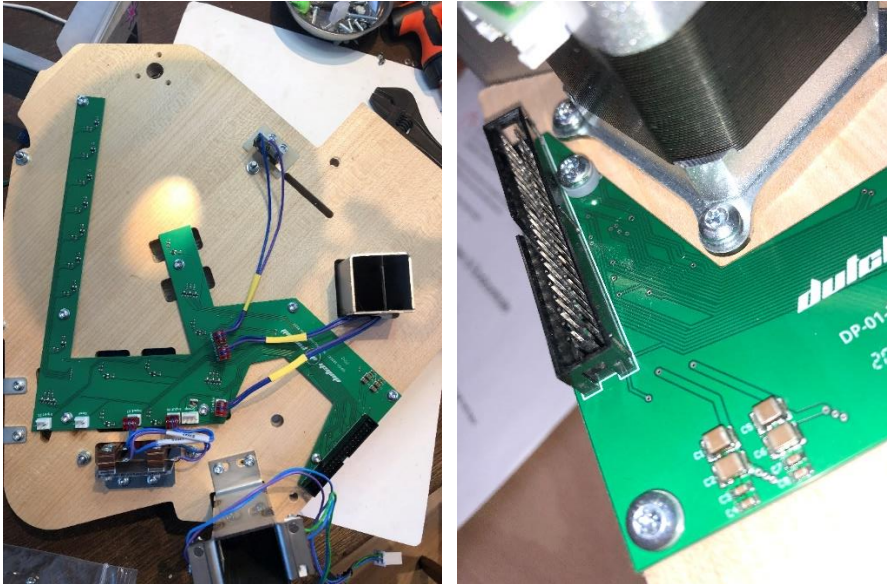
- Remove the wall which is fixed with 4 screws
- Remove the loopramp which is held with 4 screws and unplug the connector from the PCB at the bottom
- Remove the inner metal ramp held by 5 screws
- Now the door with the car can be removed

Step 6 – Installing PCB & stepper motor

- Disconnect connectors from the PCB
- Remove PCB held with 5 screws 3,5x9,5

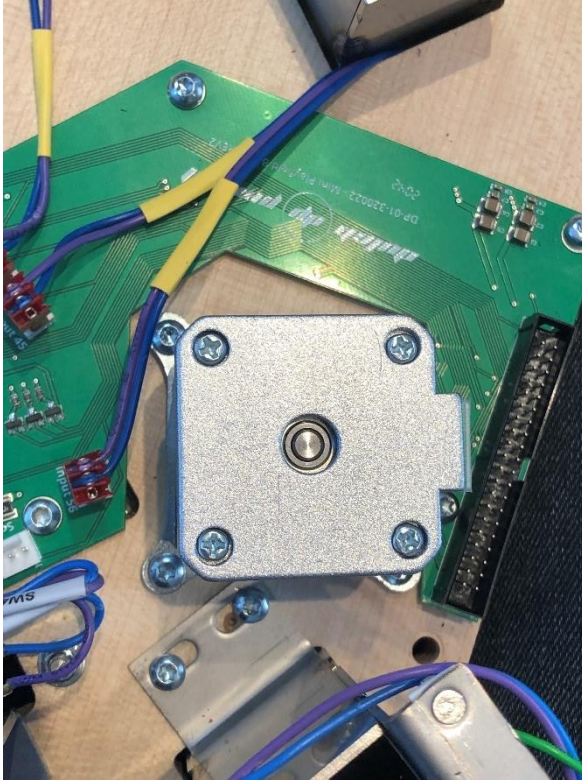


- Install new PCB. Use the 3,5x9,5 screws. The screw direct to the flatcable needs an isolation ring as per picture



- Optional but highly recommended is to install the new reinforced targets. Just unscrew the old ones by unscrewing the 4 screws and remount the new one with 2 screws 3,5x13. The targets connect to 46 and 47. All cabling is labeled and on the PCB you will see the corresponding numbering and description. Make sure the targets are properly aligned and not stuck with the posts on the left and right side or at the front against the wood.
- Plug in all connectors. They have labels corresponding with marking on the PCB. Don't forget to reconnect the cable for the lights in the roof!!

- Mount the stepper motor with the axis through the bushing with connectorplug facing backwards as shown on the picture. Use 4 pcs 3,5x13 screws



Step 7 – Installing car

- Remove the car from the old door and transfer it to the new door. Make sure it is tightly pressed against the door and screw properly tightened. A dot of locktite on the 2 screws is recommended.
- Put the door on the axis. Please do note the axis has a flat part which should align with the flat part in the door hole. If you look closely you will see this. Slide the door over the axis and secure it with the M4 screw. Make sure the door is properly aligned horizontally and doesn't touch the playfield! While adjusting the door it is recommended to put a piece of plastic under it to avoid scratches.

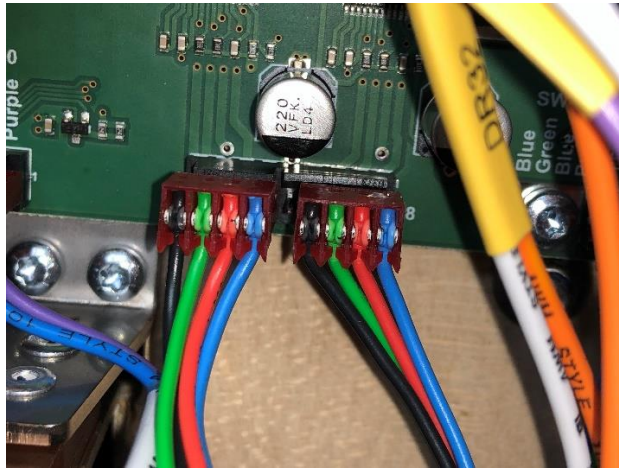


Step 8 – Built up MPF further

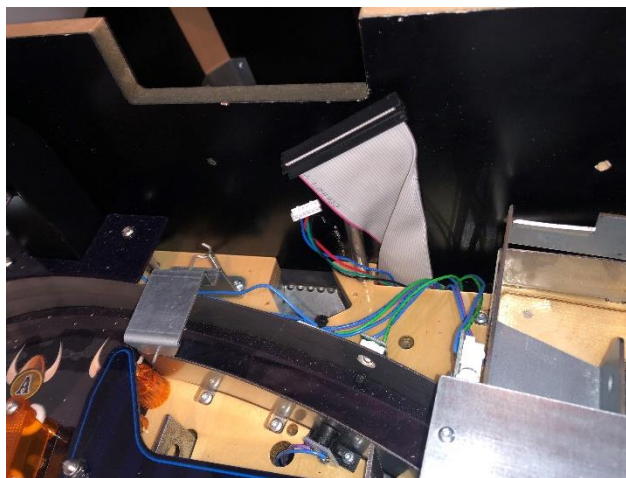
- Place inner metal ramp back
- Check by hand if the door still runs smoothly and touches nothing
- Place the loopramp back. Mount the screws as far as possible to the right in the enlarged hole in the inner ramp. This avoids as much as possible the cardoor touching it
- Check by hand if the door still runs smoothly and touches nothing
- Place the walls back
- Guide the rooflight cable between the loopramp and MPF

Step 9 – Install MPF

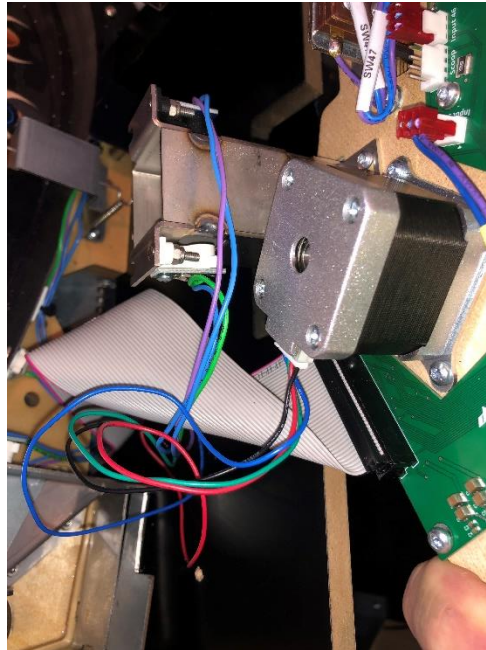
- Set playfield in upright position. Plug the new steppermotor cable to the Middle Mother board. Remark: this is a 4pin plug where the header is 5pin. You should align it fully to the right so a spare pin is left on the left side



- Guide the other end of the cable through the same hole as the flatcable
- Place playfield horizontal again. You should see now the flatcable and steppermotor cable coming through the hole.



- Take the MPF and place the MPF mounting screw which is under the loopramp already in place in the hole. Once the MPF is in place it will otherwise be impossible to get this screw in place. Hold MPF slightly vertically above the place where it's going to be installed and guide the cable coming from the opto's of the scoop through the same hole as the flatcable. Plug now the plug of the stepper motor cable in place in the stepper motor and do the same with the flatcable in the PCB. Put MPF in place on his mounting rests and make sure no cable is de-attached and comes in a place where it can obstruct the ball.

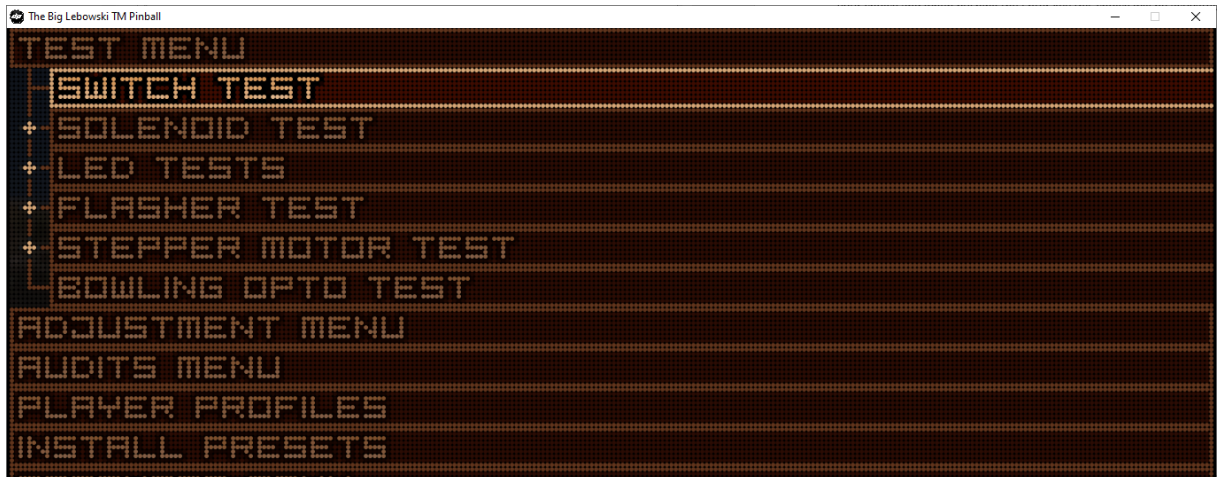


- Tighten the screw below the loopramp so it is fastened and will not move when playfield is raised again vertically
- Now raise the playfield vertically and connect the optocable
- Set the playfield horizontal again
- Connect the roof to the roof powercable

Step 10 – Test functionality

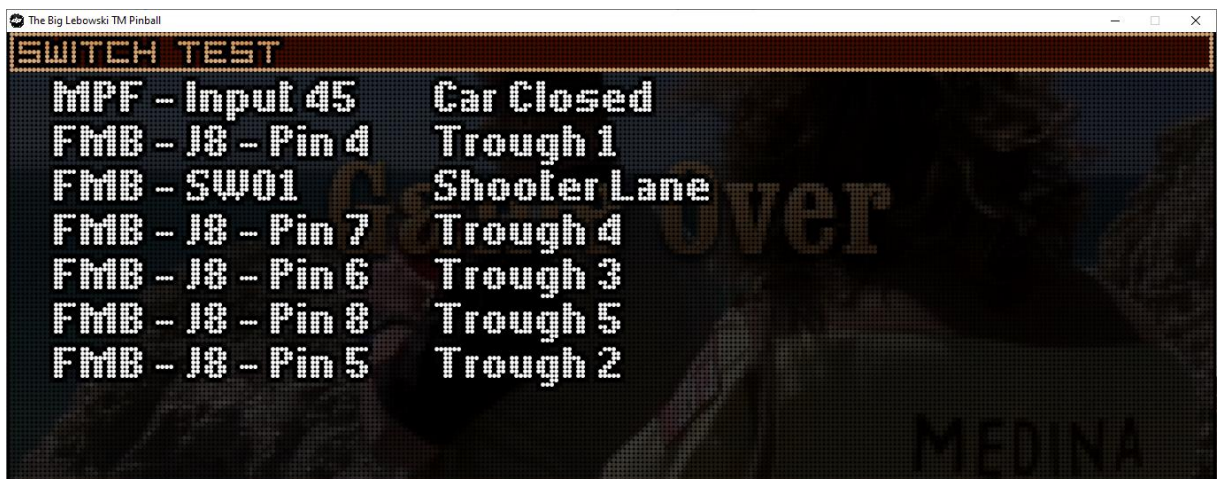
- Now time to test if all connections are in place prior to placing all screws back in place. This to make sure no cable has come loose. So boot the TBL and go into the testmenu

In this menu, you can carry out any test you desire to check if something is working properly.



Switch test

If you activate this test, it will display all switches which are active at that moment.



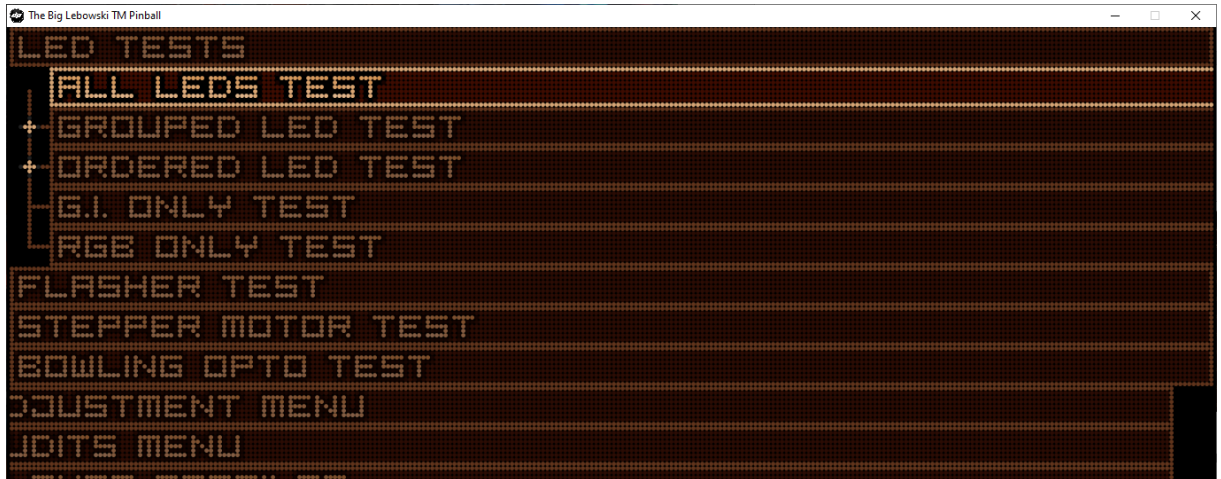
If you have doubts about a certain switch, you can check the correct working here. Push the switches on the MPF (parking targets, loop ramp, ramp made, closed door) and see if this switch pops up on the display here. Also, a sound can be heard when a switch is activated and you can also see if there are no switches active when they should not be.

LED tests

If you select LED test, you can check the proper working of all LED's and if the multi-color LEDs are displaying all colors correctly.

All LEDs test

The easiest and most straight forward test is the All LEDs Test.



All LEDs will light up. The multi-color LEDs will cycle through different colors. You can select the following test patterns, which all speak for themselves.

Stepper motor test

The TBL has three stepper motors:

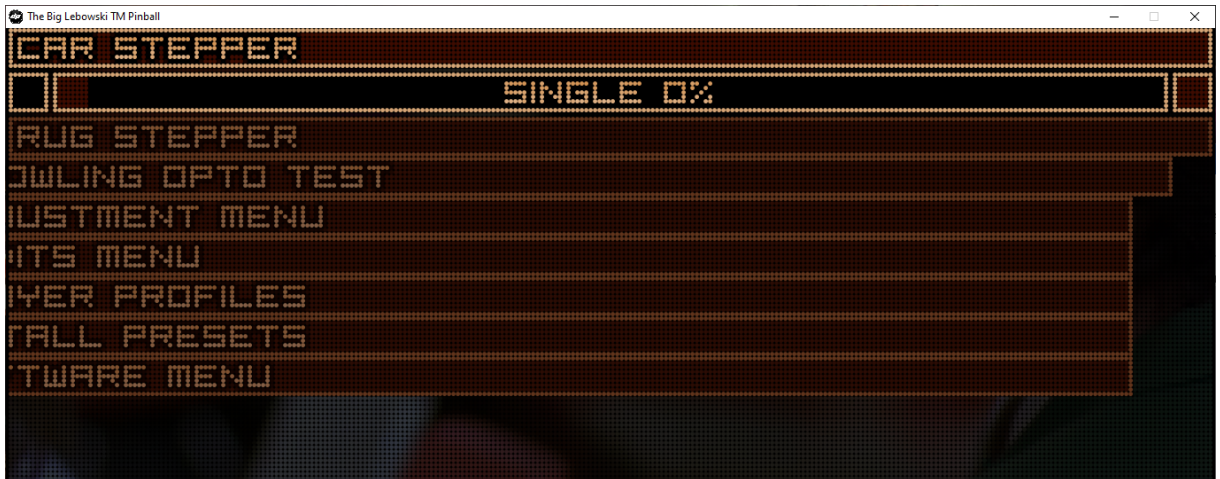
- In the Bowling alley below the playfield, which moves the ball launcher left and right.
- On the MPF, you will find a moving door behind which the car is placed. This Car Door is moved by a stepper motor.
- The rug on the playfield is also controlled by a stepper motor.

Remember that for the stepper motors to work in the Test Menu, the switch which enables power supply to the 12 & 48 VDC circuits must be enabled!



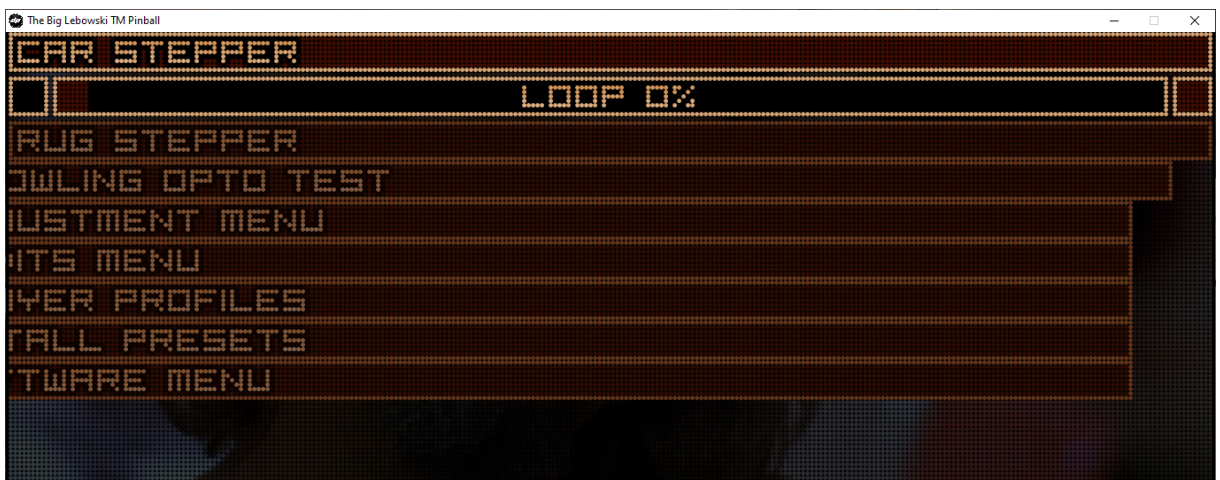
Select the stepper motor you want to test. In this case, we take the Car Stepper.

If you select it, you will get the following



In this mode, the door will move only once. Pushing + will open it, pushing – will close it.

However, if you push Enter it will go to the looping mode.



In this mode, the motor will run continuously. If you suspect any intermittent problem, this can be useful to diagnose it or to adjust a switch. Cardoor should go open and close smoothly. If the cardoor stutters against the parking targets you will need to adjust the parking targets, if it stutters when closed, you will have to adjust the switch there.

Step 11 – Wrap up

- If everything is tested OK you can turn your TBL off
- Place all screws in place which secure the MPF (don't forget the one coming from the backboard on the backside)
- Reinstall the roof
- Reinstall the wireform and right ramp (when installing the right ramp put some thin plastic or cloth under the rampflap to avoid it making scratches on the playfield)
- Place playfield vertical again and install the upper flipper. Make sure its properly aligned and has some free space to move in vertical direction.
- Place playfield horizontal again, install glass and lockbar.

You are now all set to turn on the game and enjoy again your TBL