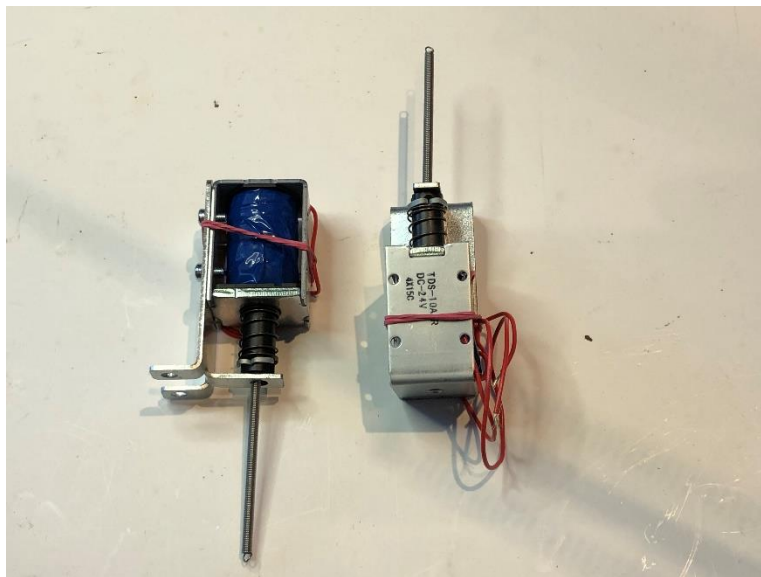




it's a whole new game!

Revised ballgate kit Installation Guide

(only the part below the playfield)



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 ball gates make sure the game is **TURNED OFF!**

Package Contents:

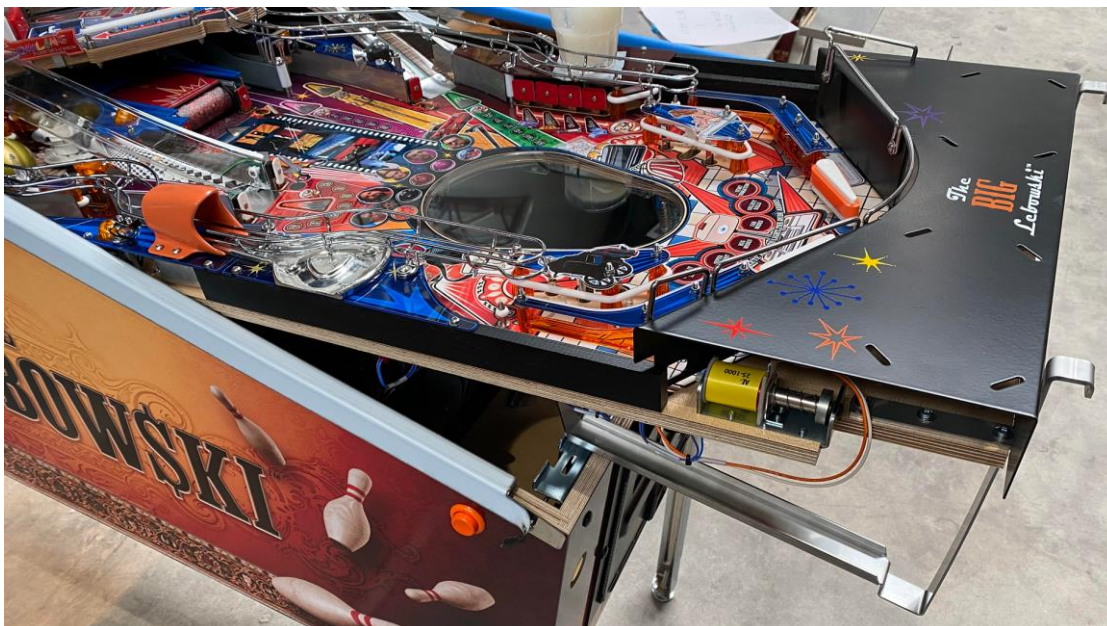
- 1 or 2 ball gates (left and right are the same)

Needed are some soldering skills, shrinking sleeve, Torx drivers

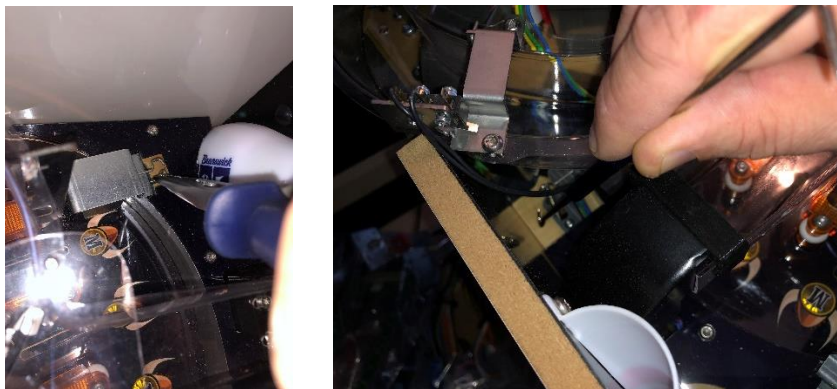
Installation

Step 1 – Remove the springs from the ball gate(s)

- 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:

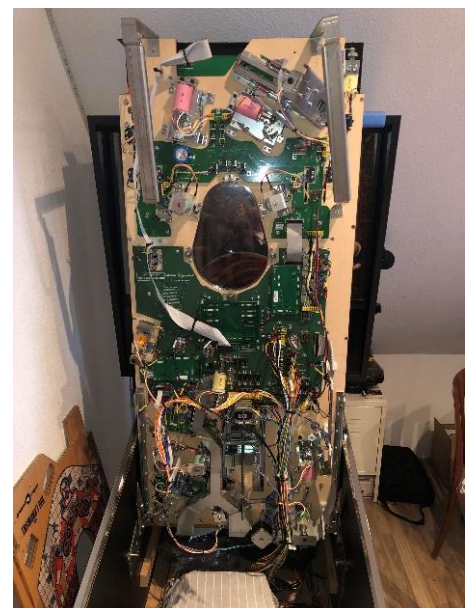


- Now you will have an easier access to the ball gates. You find tone in the top left corner and one to the right just below the upper playfield. Use a long nose pliers or a long pin with a curved end to de-attach the springs from the ball gate. The one on the right might require some fiddling but it can be done



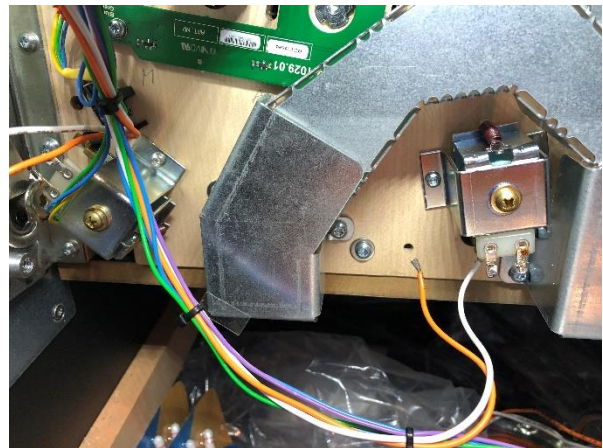
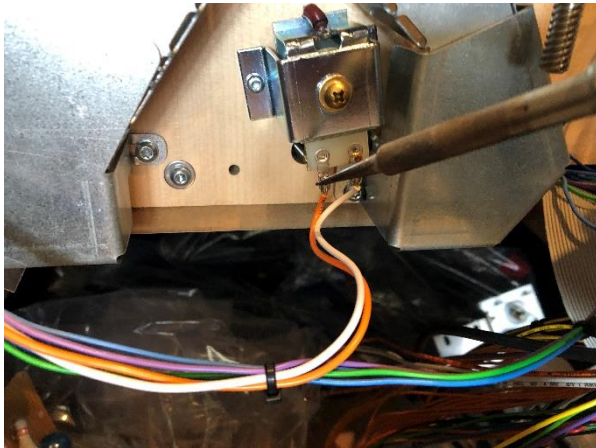
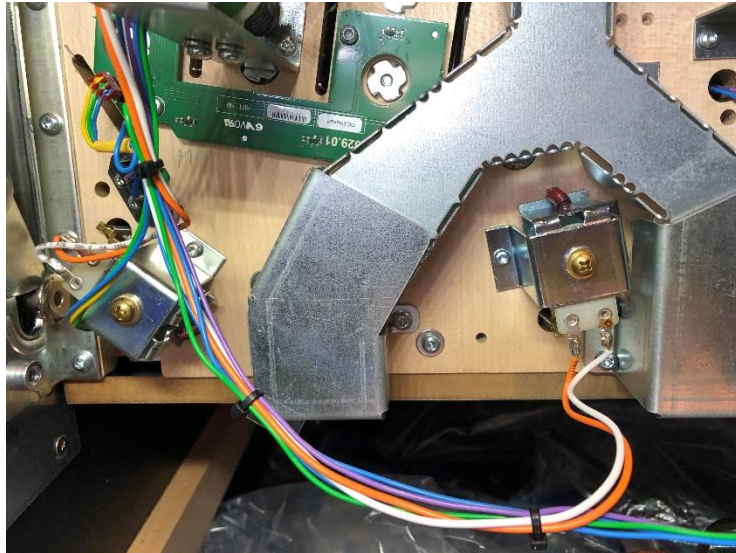
Step 2 – Raise the playfield

- 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.



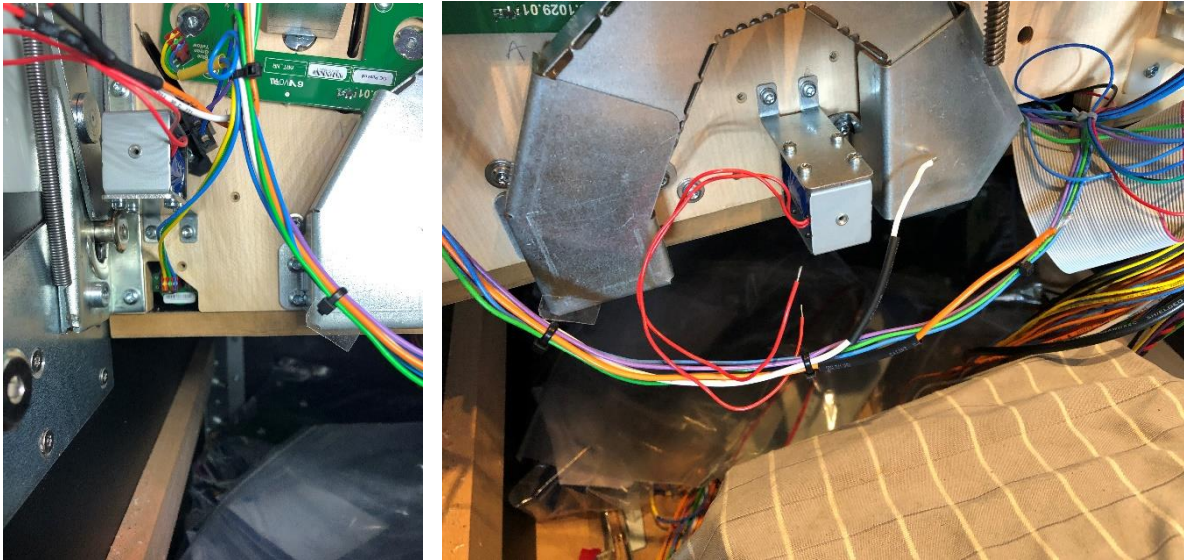
Step 3 – Remove the existing ball gates

- Identify the ball gates(s) you want to replace with the new type. You will find them at the bottom of the playfield
- De solder the existing wires (orange and white) from the coil-tabs
- Remove the 2 screws holding the ball gate, remove the ball gate and keep the screws. You will need them for the new ball gate(s)

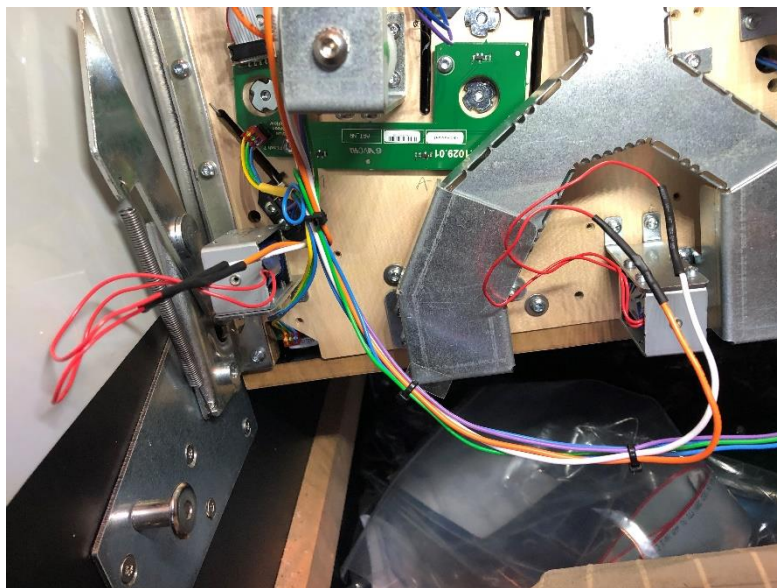


Step 4 – Install the new ball gates

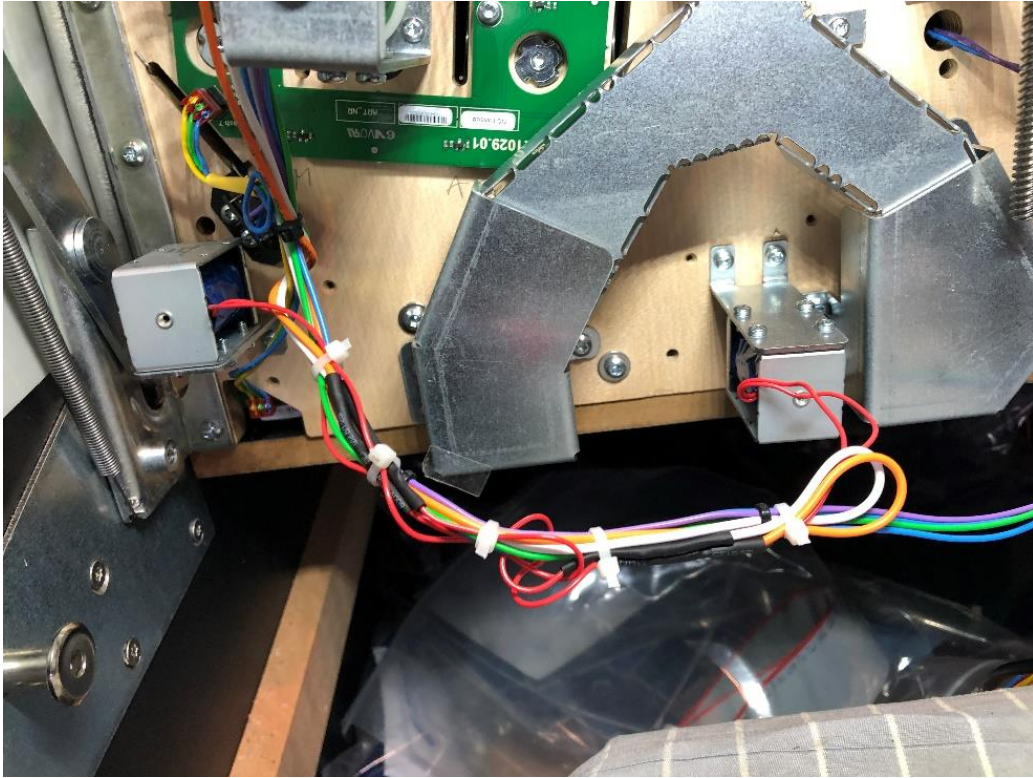
- Put the new ball gate in place and make sure the spring is more or less in the middle of the hole. Make sure the spring doesn't rub against the wood. Fix the ball gate with the 2 screws from the old ball gate
- Note: with the left ball gate make sure the wires exit from the right so they stay away as much as possible from the metal on the side of the playfield. With the right ball gate let the wires exit on the left so they stay away from the subway. If the wires are on the wrong side you can easily rotate the coil 180 degrees via removing the 4 screws holding the coil to the bracket and rotate it 180 degrees and fix the screws again

**Step 5 – Solder the existing wires to the coil wires**

- Slide some shrinking sleeve over one end of the original orange and white wire, solder them individually to the red wires (it doesn't matter which red wire you solder it to) of the new ball gate and position the shrinking sleeve over it and heat the sleeve.



- Place some tire wraps to make sure the wires cannot hit something



Step 6 – Attach the springs to the ball gates

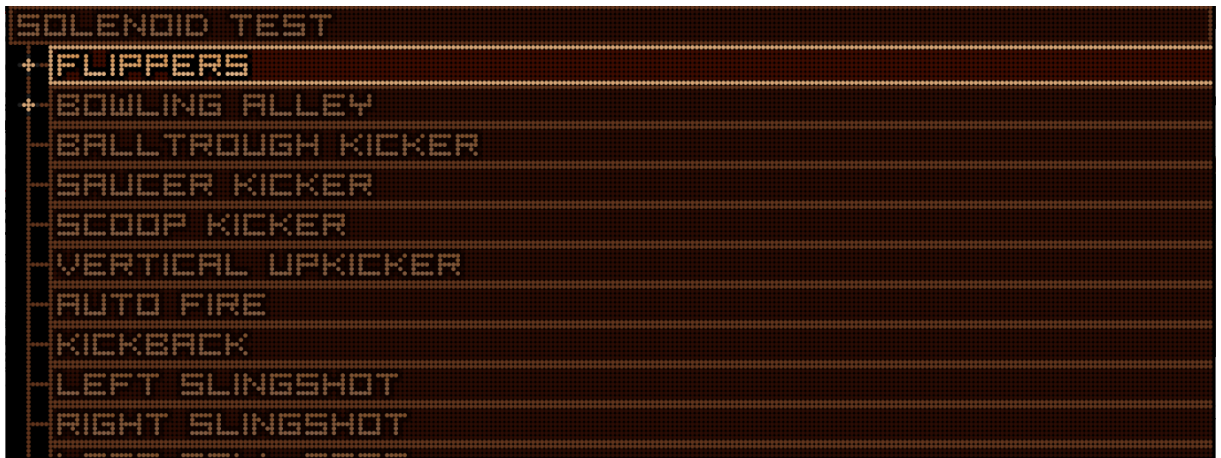
- Set the playfield horizontal again.
- Attach the springs to the ballgate in same way as you removed them
- Slide the playfield in normal position again

Step 7 – Test functionality of the ball gates

- Open the coindoor and activate the testmenu and select Solenoid test

If you activate this test, it will show you first which coils (solenoids) are available for testing.

Important notice: the stepper motors are operated at 12VDC and coils are operated at 48VDC. With an open coin door, these voltages are disabled so the coils and stepper motors will NOT work. You have to pull the pin of the white interlock switch located on a bracket at the left side of the coin door to supply the desired voltage to the playfield and to be able to test the coils and stepper motors.



With the + - buttons, you can select the coil you want to test. Go down and select left and right ball gate and run a test via pushing Enter button when ball gate is selected

- Reinstall the 5 balls, play a test game and put back the glass

You are now all set to enjoy again your TBL