

CeeS installation manual

for Yamaha CS5

Introduction

This guide shows how to install the Tubbutec CeeS upgrade in a Yamaha CS5 synthesizer. It is a relatively easy install, but basic soldering and metal working skills are necessary. You will need to solder 20 castellated pins with 2.54mm pitch and 3 wires. You will also need to drill 6 holes in order to install the MIDI sockets.

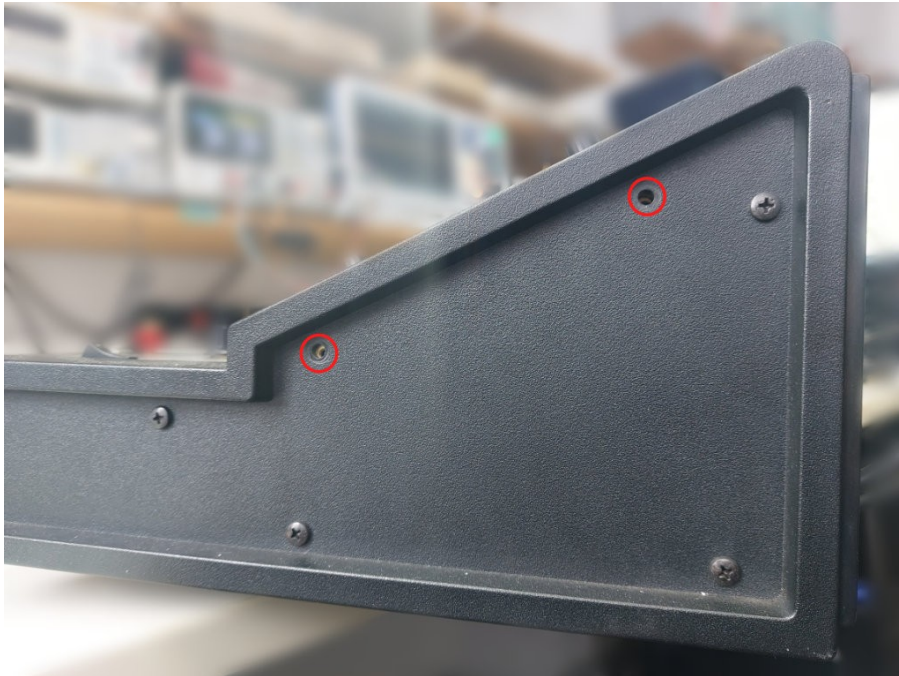
Tubbutec does not take any responsibility for damage caused by an improper installation.

Tools needed

- Screw driver
- Soldering iron
- Center punch
- Metal drill: 3.2mm – 3.5mm (1/8" should work fine)
- Stepping drill to create 14mm or 15mm (9/16" or 19/32") holes
- Cable ties

Opening the synth

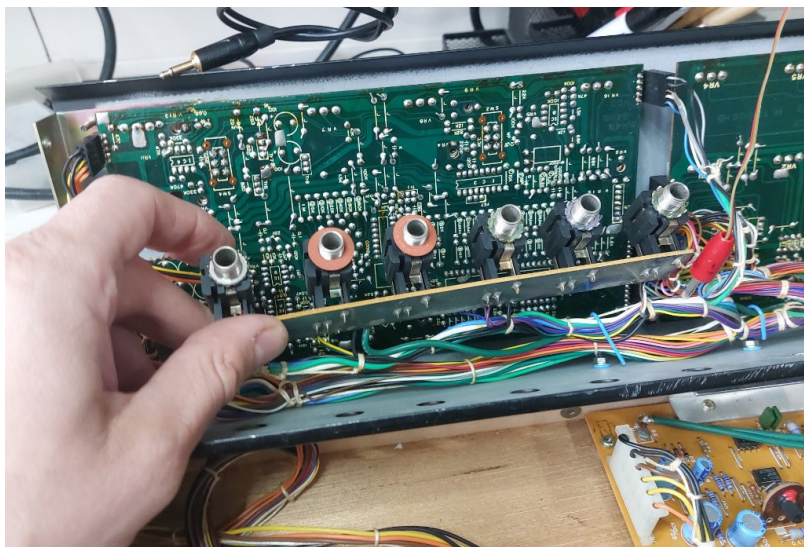
Remove the 4 screws on the side panels as shown. You will also need to remove the 4 bottom screws on the back of the CS10. You can remove the front panel of the CS10.



Remove these screws and the ones on the other side to open the front panel

Installing the CeeS board

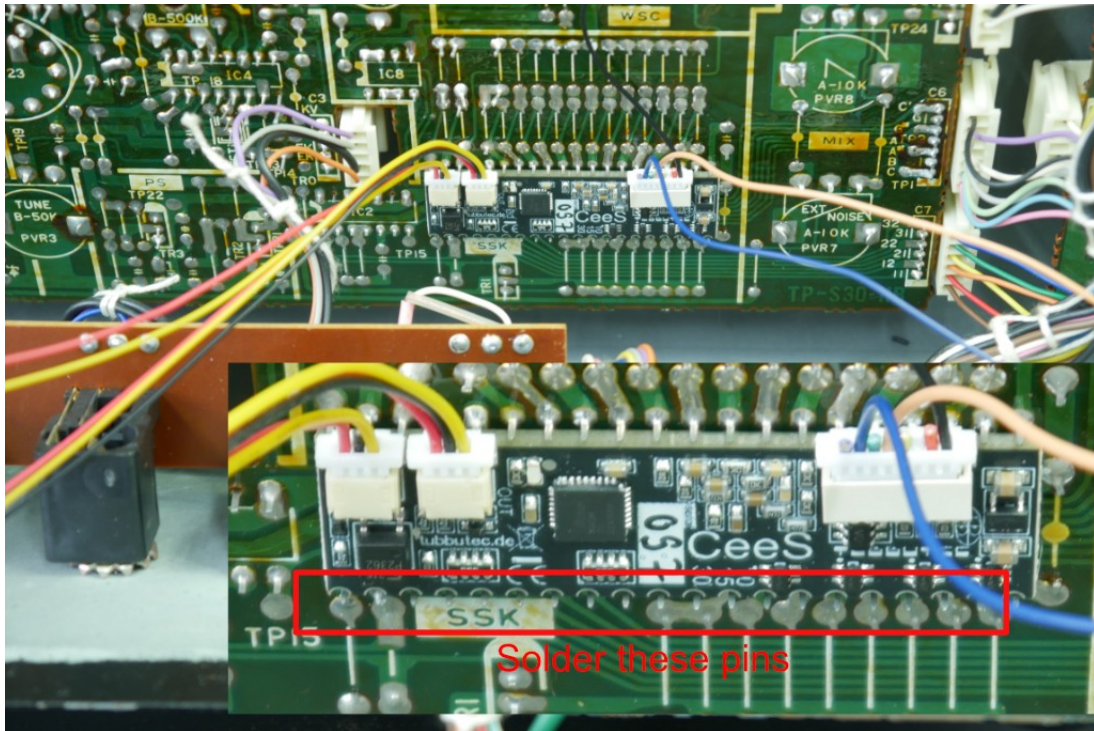
In order to access the panel board properly you might want to remove the jack board first. The installation is quite possible without this step though.



Removing the jack board helps accessing the panel board

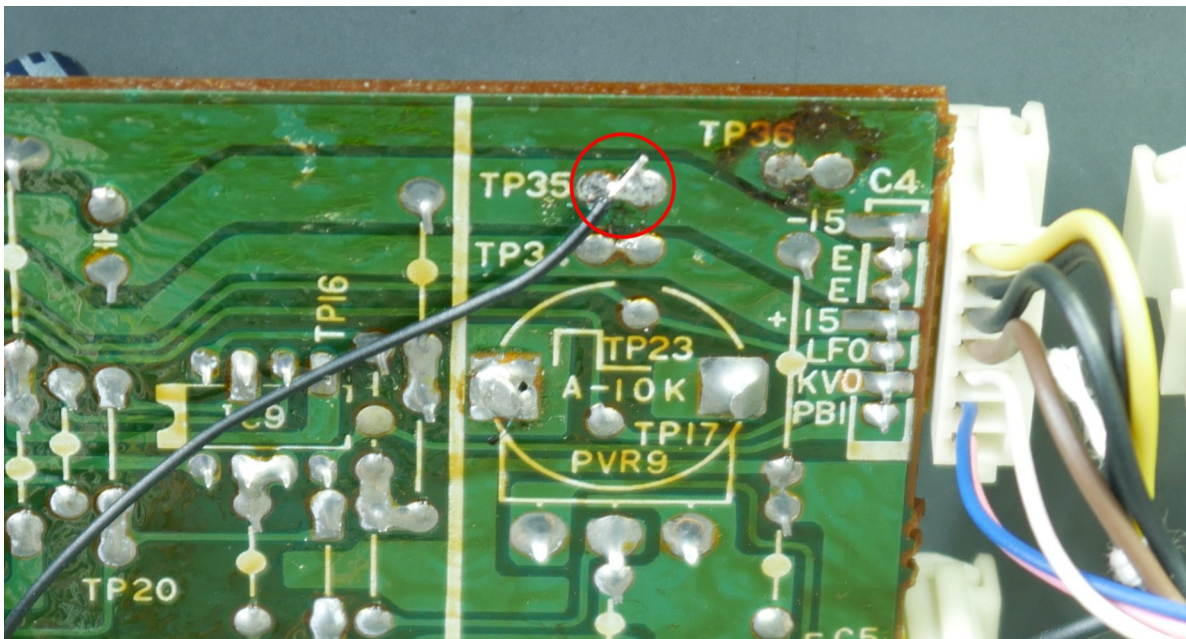
You can now place the CeeS board at the location shown and solder it in place with the 20 castellated pins. Note the correct orientation. It's good practice to test for shorts using a multimeter before continuing with the next step.

We managed to do this without removing the panel board from the synth. But if you are struggling, you can remove the nuts from the potentiometers and remove the board for easier access.



Placement of the CeeS board

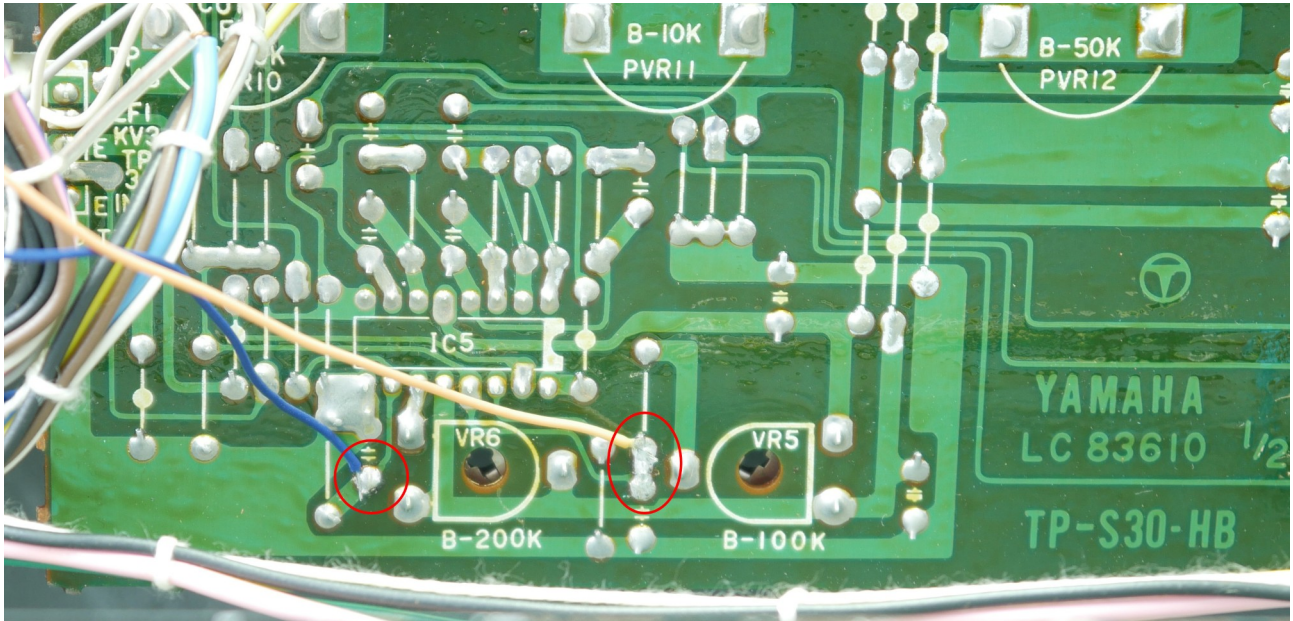
Next, plug in the 8 pin connector and solder the black GND wire as shown.



Soldering point of the GND wire

Soldering the filter wires

In order to get control of filter cutoff and resonance, two wires need to be soldered to the back of the filter board. Solder the blue and orange to the points shown in the picture below.



Installing the MIDI sockets

At a location of your choice, put the provided drill aid on the back of the CS5 and fix it with some tape.

The picture below shows a possible location. When deciding the location, just make sure there is space behind the panels for the sockets.

Next, use a center punch to mark the location of the holes. Drill the 4x 3.5mm holes and the 2x 15mm holes. For the 15mm holes you can use a stepping drill, a 15mm drill, or a punch and die system.

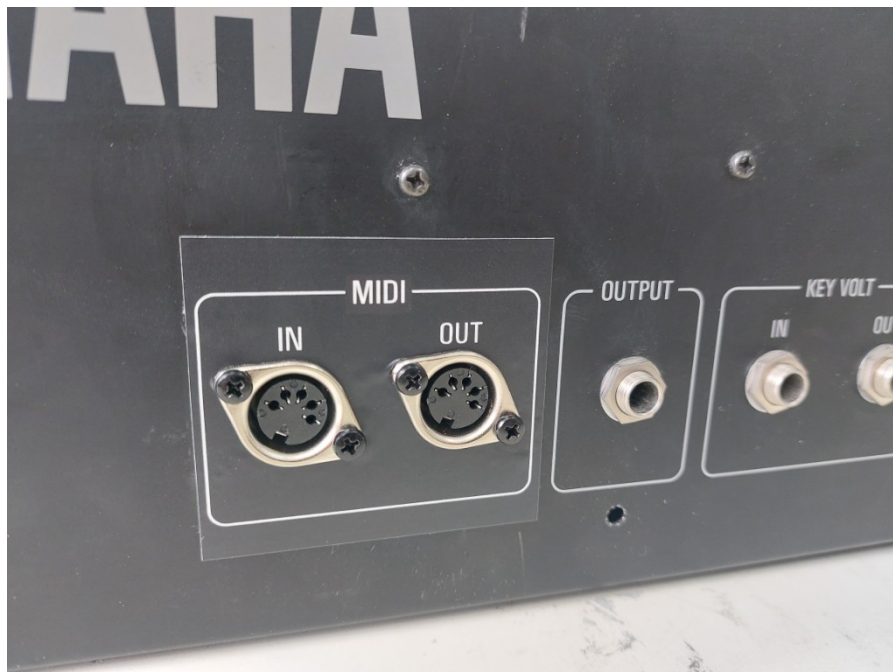
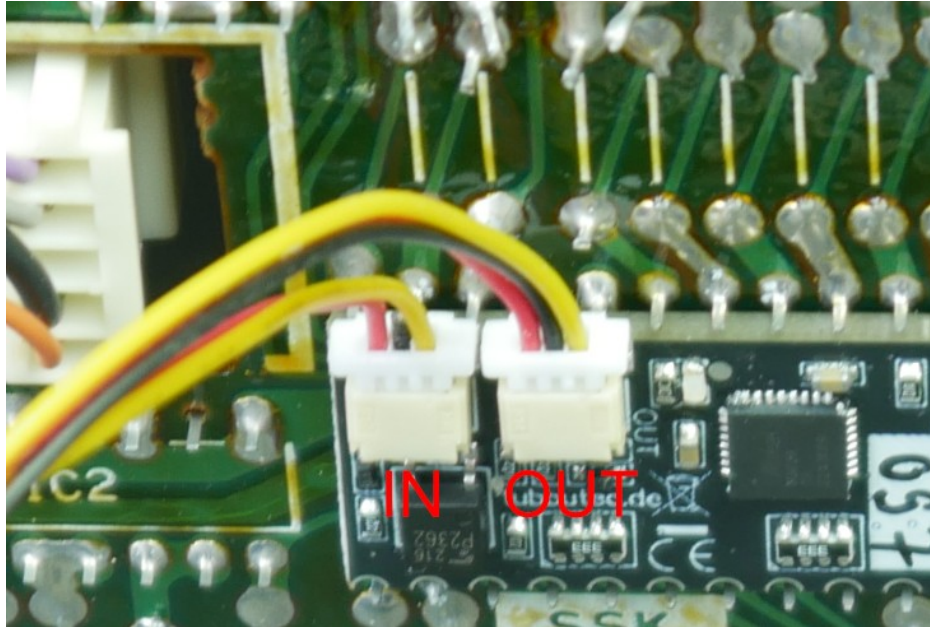


Someone else had installed a filter input here previously, hence the existing bigger hole. This is not an issue though, as it will get covered up. By an overlay sticker.



Carefully put the overlay sticker at the correct location.

Finally, mount the MIDI sockets with the bolts and nuts provided, and connect them to the CeeS board. The MIDI socket with two wires is the MIDI in socket, the one with three wires is MIDI out. **Make sure not to swap them.**



Testing

The CeeS boards are of course fully tested by us. However, it is advised to test all functions after installation to rule out any installation errors.

After the installation turn on the CS5. A small red LED on the CeeS board should light up and the synthesizer work normally.

MIDI input test

Connect a MIDI keyboard or computer to the MIDI-IN socket. When sending notes in the correct range on MIDI channel 1, the notes should play and the red LED blink whenever notes are received.

In order to test the filter control, we recommend sending the cutoff and resonance MIDI CC messages from a DAW or MIDI controller:

Filter cutoff: CC #16

Filter resonance: CC #18

MIDI output test

Connect a synthesizer or computer to the MIDI-out socket. Pressing keys on the CS5 keyboard should result in MIDI notes being sent.