

# Yamaha EX5R Battery Replacement Procedure

## Author

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## Purpose of Document

Like a lot of synthesizers, the EX5R uses **CR2032** Lithium Cells to backup the data memory.

These batteries tend to go for 20+ years without any problems; much longer than the typical life quoted in the user manual.

Recently my EX5R started showing the REPLACE BATTERY warning, so it was time for a replacement. Whilst I was undertaking this procedure, it took quite a while to find the battery! So, I decided to write a guide to help others.

## Disclaimer

Whilst I have taken care in preparing this guide, I cannot be held responsible for any damage that you could do to your machine or injury to yourself and/or others as a result of you following these notes; either on your own account or by any error or omission in this guide. You do this upgrade entirely at your own risk!

Please bear in mind that during a production run of any manufactured item, a manufacturer can make changes, and I can't guarantee that all EX5R machines are identical, as I only have the one. So, care is needed in checking that the steps advised are appropriate for your machine, as it might be different to mine.

## Pre-Requisites

First of all, make sure that you're comfortable with the concept of dismantling your beloved EX5R.

You will need the following tools to do this job:

- Posidrive screwdrivers, and a small flat blade screwdriver;
- An anti-static wrist strap is recommended;
- Optional Voltmeter (to check battery voltage before closing up, if you wish).

You need to ensure that you take anti-static precautions whilst the synth is open. If you don't have an anti-static wrist strap, then ensure that you regularly earth yourself on an earthed metal object, such as a radiator to prevent the buildup of any static charge.

## Electrical Safety

Do not undertake this task with the EX5R plugged into the mains. There is no need for this whilst doing the battery swap.

## Procedure

### Step 1 – Backup your Data

Removing the backup batteries whilst power is off may cause data loss, so ensure that all of your important user data (Voices, Performances, etc.) is backed up to disk before starting.

### Step 2 – Find a Good Work Area

You'll be working on this for a little while, so find somewhere comfortable and where there's plenty of light. My kitchen table was the best place for this in my house, using towels to avoid scratching the table.

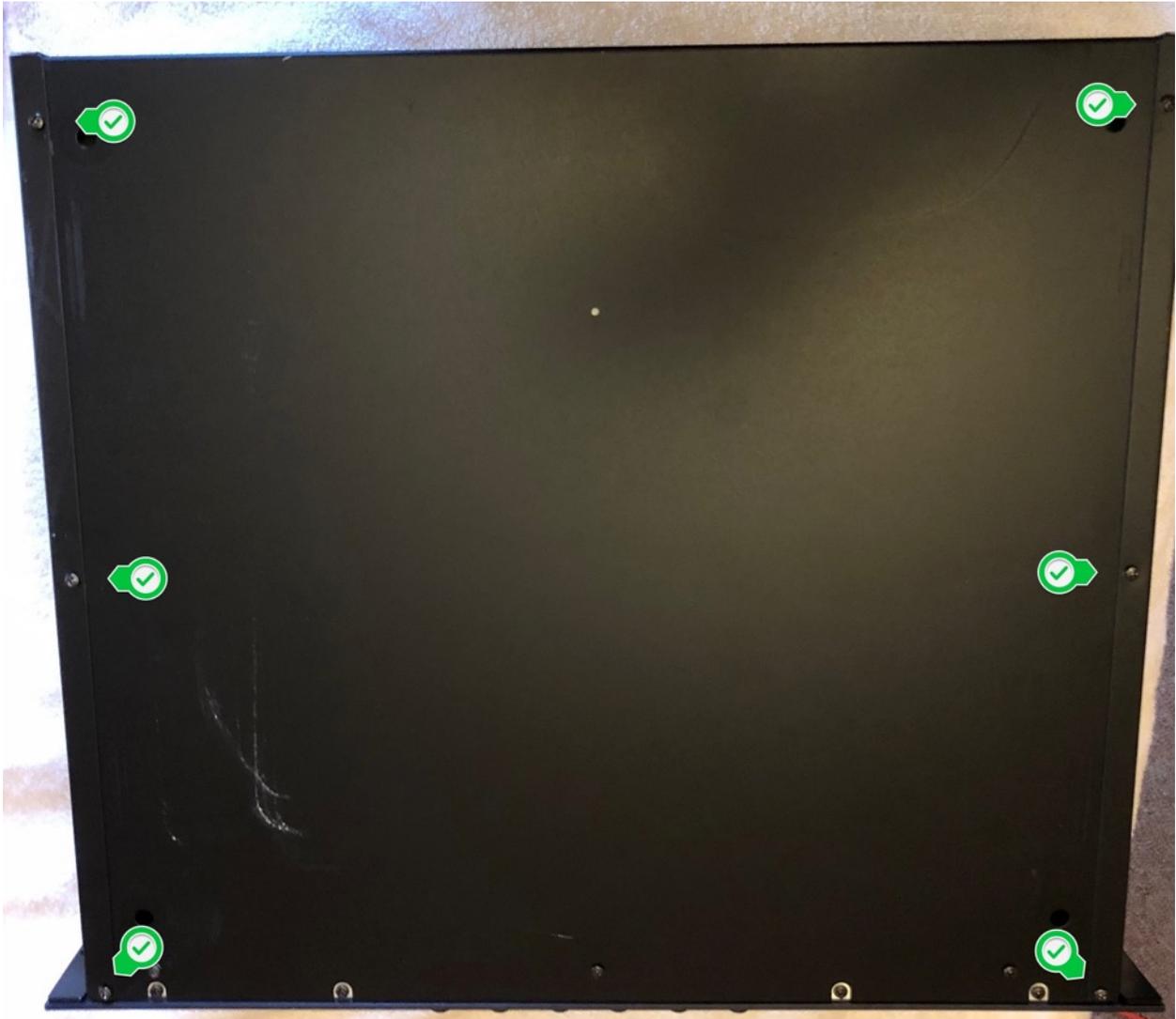
### Step 3 – Remove the Case Cover

The first big step is to undo all the screws that hold the case cover in place. Like any Yamaha, there are a lot of screws to undo! I would keep them in a bowl or small container once they are removed to avoid losing them. The following pictures show the screws that you need to remove.

First the top of the case cover. You do not need to remove the two screws right at the front.



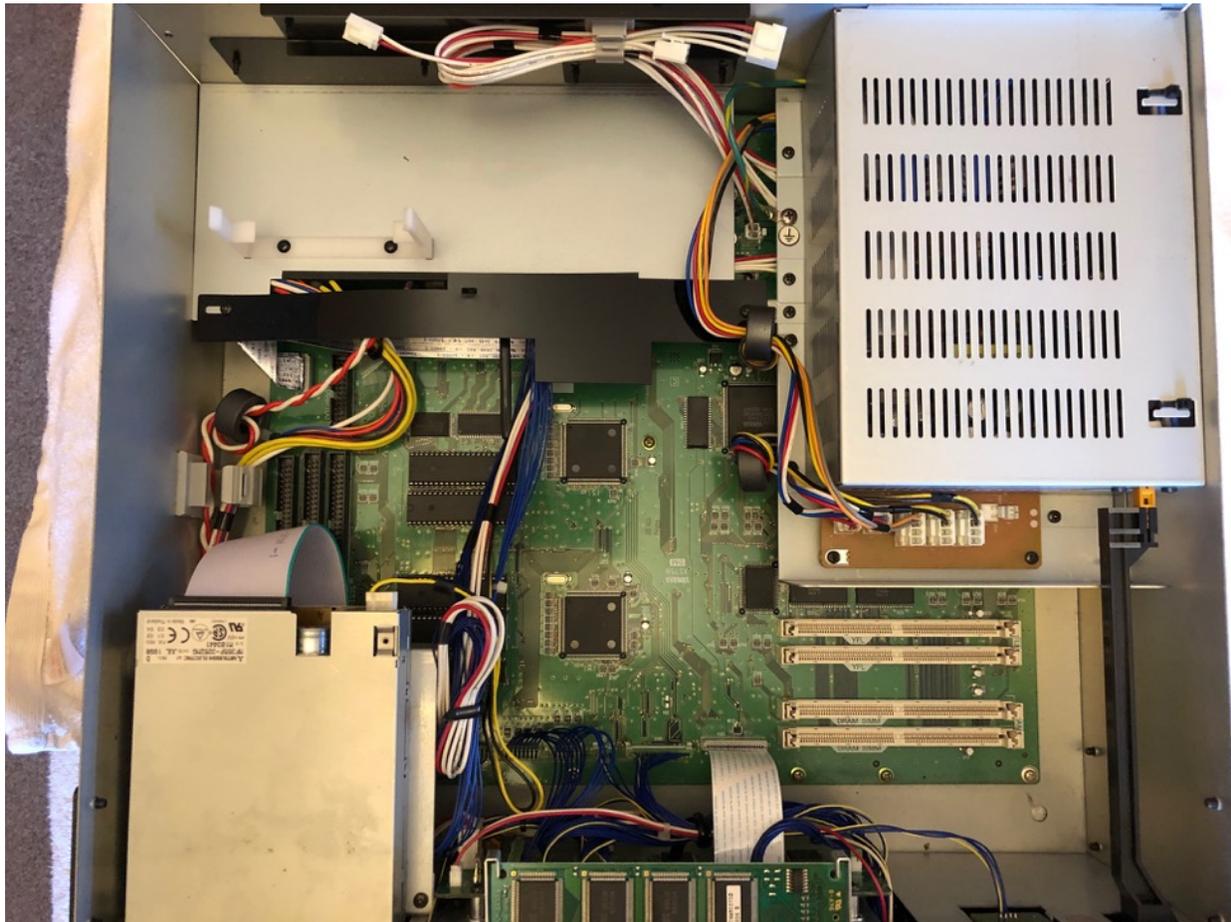
Then the underside of the case.



Finally, the rear of the case



Now you can remove the case, and you will have the following view. The front of the EX5R is towards the bottom of the picture.

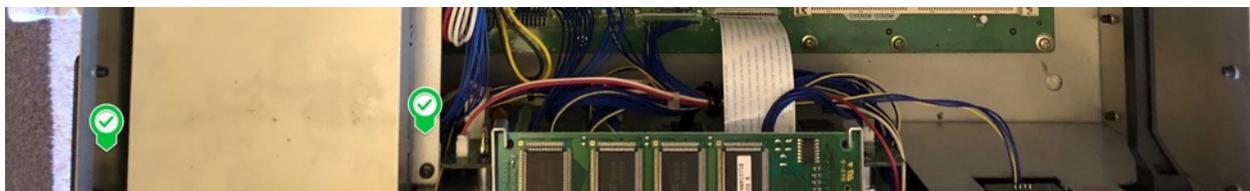


The battery is right under the floppy drive, which will need to be removed.

#### **Step 4 – Remove Floppy Drive and Support Bracket**

You need to remove four screws to loosen the floppy drive, which can be then moved to one side without having to unplug any leads. Note that these screws you are now undoing are self-tapping screws, and a different thread to all of the other ones, so keep them separate.

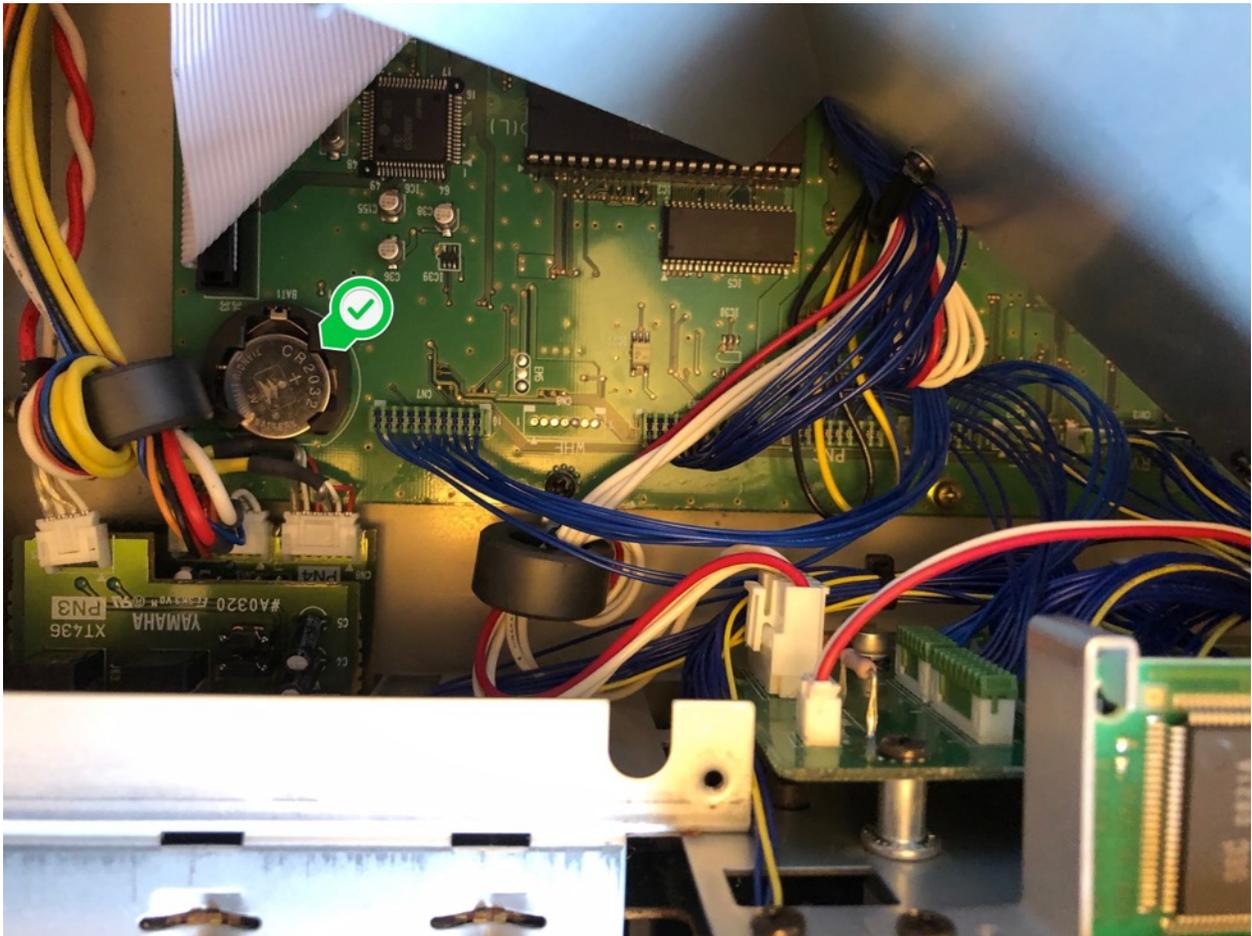
First remove the two screws inside the case at the front of the floppy drive



Now, remove the recessed screws on the outside left side of the case, securing the bracket.



The floppy drive and bracket can now carefully be moved to one side, and you can now finally get to the battery, which is right at the front left of the PCB. As mentioned, you don't actually have to unplug any leads whilst doing this.



Before removing the battery, ensure that the other one is ready. Some batteries now come with a self-adhesive warning sticker that needs removing first, so you want to remove that if present, otherwise the circuit will not be made!



The battery holder in my EX5R is spring loaded. To remove the battery, you need to gently push the battery towards the back of the of the EX5, and gently tilt it up as well as you do so, A small screwdriver is ideal for the task, and you can just about make mine out at the front of the shot, and where I was gently levering. You can see the spring at the top of the battery holder that you need to compress.



Now the old battery is removed, quickly insert the new battery, with the text CR2032 facing upwards. It should slide into place quite easily as you push it in from towards the front of the synth towards the back.

If you are quick, you may be able to do the replacement without losing the data contents of the synth's memory, but you cannot guarantee this (hence the importance of step 1!). I've always managed to do it without data loss!

If you have a volt meter, you can quickly check the new battery voltage to ensure it is fine, but this is not essential.

### **Step 5 – Putting it all Back Together**

Easier said than done, but you just need to reverse Steps 3 and 2, remembering in Step 3 that the screws on the floppy drive bracket are a different thread to the metric screws used on the case.

And that is it then. Your synth battery is probably good for another 20 years!

### **Conclusion**

It's as simple as that, and I hope that you find this guide useful!

### **Links**

The Yamaha UK forums provides a very good forum for all things Yamaha (and more:

<http://www.yamahaforums.co.uk/>

EX5Tech as a good resource for the EX5:

<http://www.ex5tech.uk/>

Finally, a bit of blatant self promotion(!):

My website for my Java based x.factory librarians, available for the EX5/EX5R and EX7, AN1x, FS1R, and Motif synthesizers and, of course, the SY77, TG77 and EX5R!

<http://www.xfactory-librarians.co.uk/>

My Pink Floyd Tribute Band, Welsh Floyd

<http://www.welshfloyd.co.uk/>

My Celtic/Ambient/Progressive project, Carreg Ddu

<http://www.carregddu.co.uk/>

And my progressive/classic rock influenced project, Echoes

<http://www.echoes-music.co.uk/>