

Quick Start Guide

Setting up your OSR2+ or SR6, and getting the most out of it

Thank you for your support — I hope you enjoy your machine. This guide covers everything worth knowing before the first run: drivers, the connection sequence, sensible power settings, and how to look after it so it lasts.

Read **Part 3** before you switch anything on. The rest can wait until you have had a play.

⚠ THE SINGLE MOST IMPORTANT THING IN THIS GUIDE

Always connect USB-C and power the ESP32 before switching on the external power supply. The two are deliberately separate so the board has signal before the servos have power. Servos given power without a stable signal can jump to an unexpected position.

USB-C → Power In → Switch On

Reverse it on the way out: **Switch Off**, then unplug USB and power.

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Part 1 Install the USB driver

Once per PC. Five minutes.

Your machine talks to your computer through a **CP210x** chip, and Windows needs a driver for it. Get the **CP210x USB to UART Bridge VCP Drivers** from Silicon Labs — search **CP210x VCP** at [silabs.com](https://www.silabs.com).

Pick **CP210x Windows Drivers with Serial Enumerator** rather than the plain version. It gives your device a stable COM port number that does not change between plug-ins, which saves a lot of confusion later.

STEP-BY-STEP, WITH SCREENSHOTS

The **Firmware Flashing Guide** walks through this driver install click by click, with pictures of every screen. If you would rather follow along than find your own way, start there and come back here at Part 2.

Part 2 Set up the COM port

Two settings in Device Manager that prevent most stutter.

Plug the unit in, open **Device Manager**, and find your device under Ports (COM & LPT). Note the COM number, then open its properties and:

1. Set the **baud rate to 115200** under Port Settings.
2. Under Power Management, **untick “Allow the computer to turn off this device to save power”**.

Use a decent cable

This matters more than you would expect. Plenty of USB cables are charge-only and do not carry data properly, and many ports — front-panel ports on desktops especially — are unreliable. A plain USB 2.0 data cable in a rear port is perfect. Reliable cable and port means stable data and power, and far less jitter or dropout.

Part 3 Connect and power up, in order

The one habit worth forming.

USB-C → Power In → Switch On

Signal first, then power. On shutdown, switch off at the supply before you unplug anything. Doing it in this order every time is the single easiest way to avoid a servo jumping unexpectedly.

If you are connecting over WiFi rather than USB, the **WiFi Setup Guide** covers joining the machine to your network. The power sequence is the same either way.

Part 4 Power and servo guidelines

Where the noise, heat and wear actually come from.

Servo type	Coreless, high-voltage
Rated range	4 V – 8.4 V @ 10 A max
Recommended	3.5 V – 6 V for everyday use

Higher voltage buys torque and speed, and costs noise, heat and wear. Too low is not kind either — around 2 V the servos work hard for very little and wear just the same. Added load raises noise but can help stabilise the motors.

- Avoid leaving the machine powered on and idle for long stretches. It stresses internal components, the potentiometers most of all.
- If you use an extension lead, use one good-quality lead and no more. Daisy-chaining invites voltage fluctuation.
- On long or strenuous sessions, take breaks and let the motors cool. This does more for longevity than anything else in this guide.
- If heat builds quickly, add a speed limiter in your software to reduce the current draw.

Part 5 Player settings

Two minutes that noticeably improve how it feels.

MultiFunPlayer and **XTPlayer** are both excellent. Whichever you use, set **Update Type** to **330 Hz Constant** — it smooths motion and supports a higher bitrate of movement data.

Beyond that, both projects document their settings well on their GitHub pages. Time spent on speed limits, range limiters and interpolation is repaid immediately; these are the settings that separate a machine that works from one that feels right.

Part 6 Looking after it

Printed parts, precision components, sensible handling.

- **Store it in a neutral position.** Power off, support the receiver, loosen the mount, and set it down carefully.
- **Handle it gently.** The structure is printed, and while it is built to take normal use it is not built to be dropped or wrenched.
- **Check the bolts occasionally.** If one is loose, tighten it gently by hand. Light thread locker is applied at build; you can reapply it yourself if you prefer.
- **Do not over-tighten** the desk mount or the screws on the machine. Excess pressure will crack a printed part far sooner than use will.
- **Expect it to improve.** Servos quieten as they break in, and the Twist unit's printed gears start tight and loosen with use — running better and more quietly as they do.

IF SOMETHING IS NOT RIGHT

Every machine is bench-tested and run in before it is packed, but these are precision assemblies with moving parts and things can occasionally behave unexpectedly. If yours does, get in touch with your order details and a photo or short video — that usually tells me straight away what has happened.

Most problems are solved with a replacement part in the post. Everything on the machine is designed to be swapped by its owner, and if the fault is mine then getting it right is on me. Full details are on the returns page.

Setup help, firmware questions and advice on sourcing parts do not expire. They are available for as long as you own the machine, including units bought years ago.

Feedback is genuinely welcome — reviews, criticism, and requests all shape what gets built next. Almost every improvement in the current machines started with an owner telling me what annoyed them about theirs.

Thank you again — and welcome to the future.

V E S P E R A