

# OSR2

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# Overview



The **Open-source Stroker Robot, 2-axis** (OSR2) is a **Multi-Axis Stroker Robot** (MAxSR) designed to hold and move a standard [Fleshlight](#) or similar toy with 2-4 degrees of freedom.

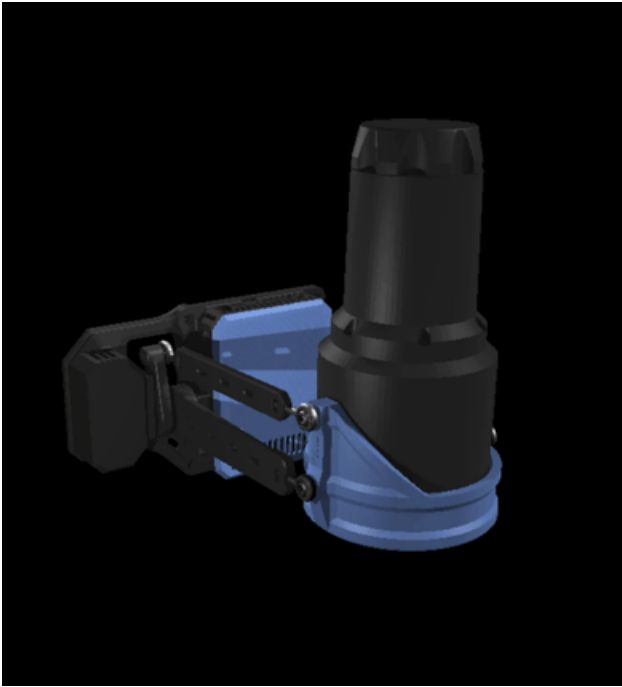
It is constructed from a combination of 3D printed plastic and commercial off-the-shelf components and is designed to be home built, modifiable, and user-repairable.

The base model can move up and down while rolling left and right. Additional modules can be added to allow for pitch and twist (an OSR2 with a pitch module added is typically referred to as an OSR2+).

The operation of the OSR2 is managed through an open-source protocol known as [T-Code](#). This protocol is designed to interpret and transmit commands to the device's microcontroller, typically either a Romeo BLE Mini or an [ESP32](#). The microcontroller is responsible for processing the received commands and determining the correct control angles for the servos to position the receiver.

The OSR2 mounts to a standard VESA 100mm hole pattern using 4x M4 bolts, which allows for an enormous range of mounting options; the most common being commercial display and monitor stands. [Other options](#) include custom 3D printable desk and chair clamps.

## Additional Capabilities



The device incorporates a component known as the receiver, designed to hold a standard Fleshlight. This receiver can be enhanced with a twisting mechanism, commonly known as the "T-wist." This addition introduces a fourth axis of motion, enabling the OSR2 to rotate the mounted toy around its vertical axis.

The most advanced version, the OSR2+ with T-wist, boasts a range of movements including vertical motion, orbiting around a central point, and twisting along its vertical axis. This configuration results in a combination of one axis of movement and three axes of rotation, offering diverse motion patterns.

Additionally, the OSR2 can be fitted with a "T-valve" accessory to regulate the dynamic suction within a standard Fleshlight's casing. This feature is controlled by a servo mechanism that automatically adjusts the air gap at the top of the Fleshlight case, enhancing the user experience.

There are also [adapters available](#) for soft, sleeveless toys such as [Onaholes](#), as well as add-ons for lube or vibration.

## Assembly

Detailed assembly instructions are available through the Patreon of the original designer, [TempestMAx](#).

A full [Bill of Materials](#) is also available.

## Cost

The total cost for the hardware components of the project typically ranges from **\$150** to **\$450 USD**. This variance in price is primarily influenced by the selection of servos, the type of controller board used, and the source of purchase.

In the context of [3D printing requirements](#), assuming the availability of a 3D printer, a single roll of the preferred filament type is generally adequate for the project.

For individuals without access to a 3D printer, numerous online services offer the convenience of printing and delivering custom designs directly to the consumer.

For beginners who do not possess any tools, the essential toolkit should include a soldering iron, a crimping tool, pliers, wire cutters, and Allen wrenches suitable for M3 and M4 screws. The cumulative cost for these basic tools is estimated to be between **\$50** to **\$100 USD**.

# Bill of Materials

If you want to know exactly which parts to order and where to order them from, the following link goes to a Google Sheet that sources parts for the OSR2 and OSR2+. There are columns for China, USA, and Other Country sources.

See the "OSR2+ Tab". This Google Sheet is still in progress.

[Bill of Materials for OSR2+](#)

# Mounts

Mounts for the OSR2 and OSR2+.