

OSR2 Parts List

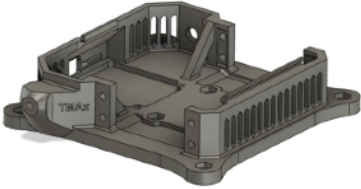
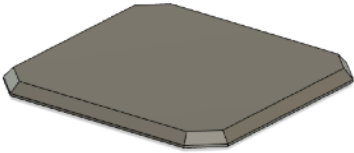
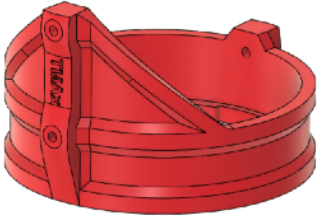
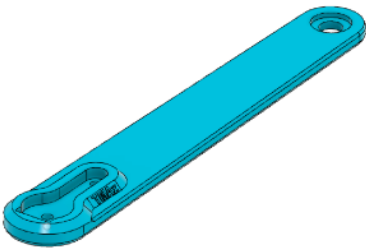
(BETA 2)

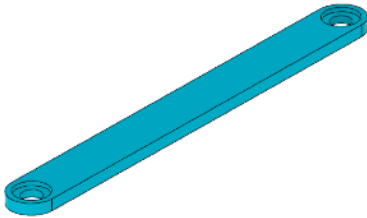
Tempest, 4-4-20,

A parts list for the Open-source Stroker Robot 2-Axis (OSR2).

3D printed parts

These are the structural parts of the OSR2 supplied in .STL format. You can print them yourself or order them from an online 3D printing service.

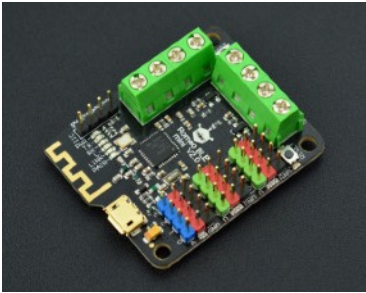


Part	Qty	Description
<p>OSR2 Base</p> 	1x	<p>The main enclosure for the electronics and servos.</p> <p>It is fitted with 8x mounting holes shaped to contain M4 nuts. These are configured to interface with a 100mm VESA mount, or an AMPS pattern mount.</p> <p><i>(Beta 2: M3 servo mounting bolts now screw directly into the plastic.)</i></p>
<p>OSR2 Lid</p> 	1x	<p>The cover that clips into place over the main enclosure.</p>
<p>OSR2 Receiver</p> 	1x	<p>The piece that is manipulated by the arms and holds your toy.</p> <p>It is currently configured to carry a full sized Flashlight.</p>
<p>OSR2 Arm</p> 	2x	<p>The main arms that are driven by the servos.</p> <p>They are designed to fit around Futaba 25T M3 metal servo horns.</p> <p><i>(Beta 2: Cut-out enlarged to accommodate some larger metal servo horns.)</i></p>







<p>OSR2 Support Arm</p> 	<p>1x</p>	<p>The third arm that keeps the receiver upright.</p>
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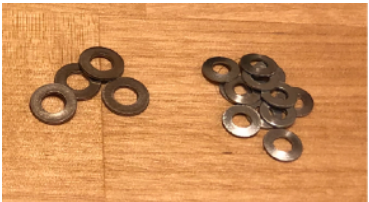

Off-the-shelf parts

These are the off-the-shelf components that you will need to assemble a working OSR2.

For the hardware parts such as bolts you might be able to find most or all of them from your local hardware store, but I have found ebay to be the most reliable source for this sort of thing.

	Part	Qty	Description
	<p>Romeo BLE Mini</p>	<p>1x</p>	<p>An Arduino based microcontroller that can read incoming T-Code commands and interpret them.</p> <p>The OSR2 is designed around the Romeo BLE mini. This is because it is compact and offers a plug-and-play capability.</p>
	<p>Micro USB cable</p>	<p>1x</p>	<p>To connect to your computer.</p>
	<p>Power supply</p>	<p>1x</p>	<p>A power supply capable of providing 3A at 5V or 6V.</p> <p>Most generic power supplies come with a choice of end connectors, which is ideal.</p> <p>The one pictured is a Powseed Universal Power adaptor, available from Amazon.</p>

	<p>Standard size servo (20kg.cm or more)</p>	<p>2x</p>	<p>The driving force behind your OSR2.</p> <p>Standard size servos have a body size of 20x40mm. There is an incredibly wide range of this kind of servo available on the market, so you can make your own tradeoff between performance and cost.</p>
	<p>Futaba 25T M3 metal servo horn</p>	<p>2x</p>	<p>The interface between the servos and the 3d printed arms.</p> <p>A lot of 20kg.cm servos come with these as standard, but some don't. They are very common and can be purchased separately if needed.</p>
	<p>5.5x2.1mm female barrel jack connector</p>	<p>1x</p>	<p>A female connector with a set of trailing leads.</p> <p>The exact model is not important as long as it is compatible with your power supply.</p>
	<p>Cable tie</p>	<p>1x</p>	<p>Just a normal cable tie.</p> <p>Used to secure the barrel jack in position</p>
	<p>Bolts: M3x6mm M3x10mm M4x10mm M4x30mm*</p>	<p>2x 12x 4x 4x</p>	<p>These are metric threaded bolts.</p> <p>I recommend hexagon socket cap head bolts because they are easy to work with and there are no sharp edges, but any type is fine.</p> <p>*The M4x30mm bolts form the joints between the arms and the receiver. These bolts have 10mm of unthreaded shaft, which makes for a fantastic smooth joint. To take advantage of this however you will need use a hacksaw to cut them down to 20mm long. If you do not want to bother with this you can substitute M4x20mm bolts.</p>
	<p>Nuts: M3 M4</p>	<p>8x** 4x*</p>	<p>Metric threaded nuts</p> <p>*Use 8x M4 nuts if you want to use both the VESA 100 and the AMPS mounting holes.</p> <p>**<i>(Beta 2: M3 nuts not needed)</i></p>

	<p>Washers: M3 M4</p>	<p>12x* 4x</p>	<p>Metric washers, Form A. <i>*(Beta 2: only 4 M3 washers needed)</i></p>
	<p>6mm (or 1/4") wiring grommet</p>	<p>4x</p>	<p>The dreaded wiring grommets!</p> <p>These are rubber rings normally used to protect wiring as it passes through holes in metal plates. However, it also turns out that they are fantastic as a simple universal joint for a stroker robot arm!</p> <p>To avoid confusion: 6mm is the Outer Diameter (OD). This should correspond to an Inner Diameter (ID) of about 4mm.</p> <p>The best source I have found for these is ebay, where you should be able to find a pack of 25 for about \$3.</p>

Tools you will need

Not much!

Allen keys and/or a screwdriver.

Hacksaw if you use M4x30mm bolts (see above)

OSR2+ Parts

Part	Qty	Description
<p>OSR2+ Pitcher</p> 	1x	This fits between the OSR2 base and the VESA mount to hold the 3rd, pitcher servo. It should be fitted on the left side of the base.
<p>OSR2+ Pitcher Lid</p> 	1x	The cover that clips into place over the pitcher enclosure.
<p>OSR2+ Pitcher Arm</p> 	1x	This arm mounts onto the pitcher servo's servo horn and attaches to the support arm.
<p>OSR2+ Spacer</p> 	2x	These sit between the OSR2 base and the VESA mount on the two bolts that don't go through the Pitcher.
<p>M3x10 Bolt & Washer</p> 	6x	Used to assemble the servo into the pitcher, and the pitcher arm onto the servo horn.