OpenROV

Converting a 2.6/2.7 to 2.8

Upgrading the older 2.6/2.7 to 2.8 electronics and wiring

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# INTRODUCTION

This guide will show you how to upgrade your 2.6 or 2.7 to a 2.8 hybrid. Using the new wiring harness, endcaps, motors, battery tubes and overall style.

## TOOLS:
- Wire Strippers (1)
- Heat Gun (1)
- 2-Ton Epoxy 'Flowmix' (1)
- Hacksaw (1)
- Soldering Iron and Solder (1)
- Solder Sucker (1)
- Drill (1)
- Hot glue gun (1)

## PARTS:
- 2.8 Endcap Replacement Kit (1)
- Battery Tube Replacement Kit (1)
- Heat Shrink (1)
- 2.8 motors (3)
- DST-700 brushless DC motor
- Horizontal DB25 connector (1)
- 2.8 Acrylic Electronics Chassis (1)

*Needs to be lazer cut*
Step 1 — Introduction

- This guide will walk through upgrading a 2.6 or 2.7 completely to a 2.8 i.e. only the motherboard and chassis are 2.6 or 2.7.

Step 2 — Wiring

- First take out the electronics sled and dismantle the existing wiring loom by taking it away from the frame. Be it wether its attached with cable ties.

- If keeping the motors unsolder or cut the cables connecting them to the old harness.
The new configuration of the 2.8 system requires the vertical DB25 to be horizontal.

- So in order to do this the old one must be removed this can be one of two ways

⚠️ 1. Take a hacksaw and carefully cut the whole thing off leaving only the pins of the DB25. Which can then be unsoldered.

- 2. Try to unsolder the vertical DB25 connector by unsoldering each connection with a solder sucker and then take the whole thing off. This takes a lot longer and is generally harder than the first method but potentially a lot better for the electronics board.

- Solder on the new horizontal DB25 connector
Step 4 — Acrylic Electronics Chassis

- Get the files from [https://github.com/OpenROV/openrov-hardw...](https://github.com/OpenROV/openrov-hardw...)
- Cut all the files from that, glue them together and wait to dry.
- You will then need to take the Hacksaw and Cut the edge of the circle off on one side as the older mother boards are too long for the chassis and the old ones don't fit with the new end caps
Step 5 — Electronics on the chassis

- The electronics from the 2.6/2.7 can be reused. The camera on 2.6 needs to be disassembled as in the 2.8 guide.

- Just dismantle the case, until you are left with the board and cable.

- If using the old style lights you will need to glue (Hot or super) the camera board to the new pan tilt piece then the lights can be attached with glue to the front.

- Old lights if super glued to the old pan/tilt board can be reused it just requires you to cut the acrylic as close as you can then stick the whole thing on.

- If using the light board follow the normal mounting procedure.
Step 6 — Mounting the new Motors

If using the old motors ignore this step

- The motors will not mount straight away to the old main chassis.

- The new motors shaft sticks out more than the old ones and doesn't line up with the old chassis part.

- The new motor mounts should attach to the old holes but only in two places with the gap in the circle pointing downwards on the port and starboard motors.

- Once attached you will notice if you try to put the motor in the mount it will not line up with the existing hole for the shaft.

- This needs to be drilled out in order to mount the motor
Step 7 — Wiring Mounting Holes

- New holes need to be drilled to cable tie the new wiring to the Frame. I used a 3mm drill bit but as I had small cables ties

- Holes need to be drilled two above and below the connector for the case to attach. On the 2.6 it’s a kind of rounded piece with pegs on.

- The holes should be the same distance and the width of the cable so place the cable up to the acrylic and mark with a marker pen

- For the Middle section you should be able to find existing holes in the frame that allow cable ties (shown in 2nd and 3rd picture)

Step 8 — Endcaps

- Follow end caps the official Guide

- [Guide 2 - Electronics Tube Endcaps](https://openrov.dozuki.com/)
Step 9 — Wiring Routing

- Follow wiring guide
- [Guide 4 - Wire Routing](#)
- Only difference being the places where you mount the harness with the mounting cable ties

Step 10 — Finishing

- Assemble the whole thing much like the 2.8 using the guides.
- The strap to hold the main electronics tube in place will remain the same as which ever version you were using before (2.6 or 2.7)
- The battery tubes can be held in place with cable ties or with the old method which ever works for you.