

Assembly Manual

This is for the 3D parts only, the wiring and electric components may be added in the future.

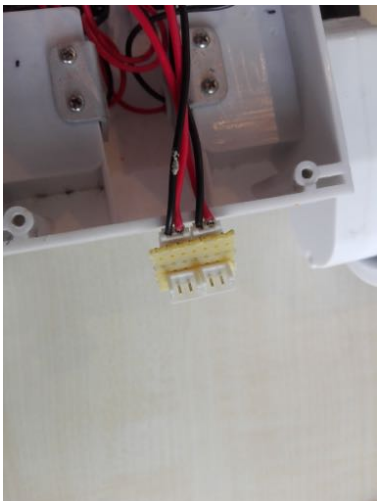
Parts

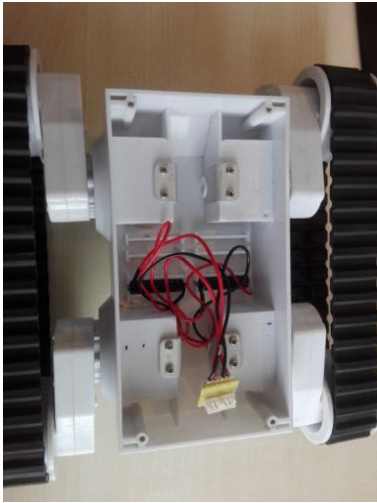
Amount	Part
4	Bracket
2	Bumper
1	Camera-Stand-A / Camera-Stand-B (choose)
1	Hold-Motor-Connector
1	Layer-01-Inner
1	Layer-01-Outer
1	Layer-02
1	Sensor-Stand-Foot
1	Sensor-Stand-Pipe
1	Sensor-Stand-Head
2	Stand-A
2	US-Sensor-Grove-Hold / US-Sensor-HC-SR04-Hold (choose)

Steps

Clean up Rover Tracked Chassis 5

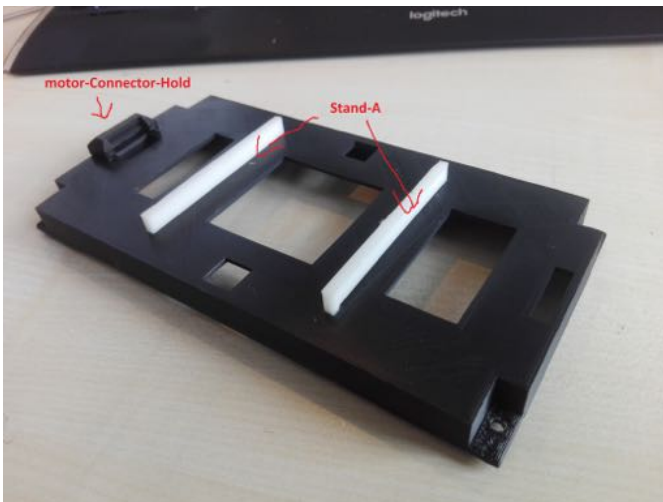
- a. Prepare Connectors for motors
- b. We used 2x2 Pin JST Connectors on a cuttet breadboard





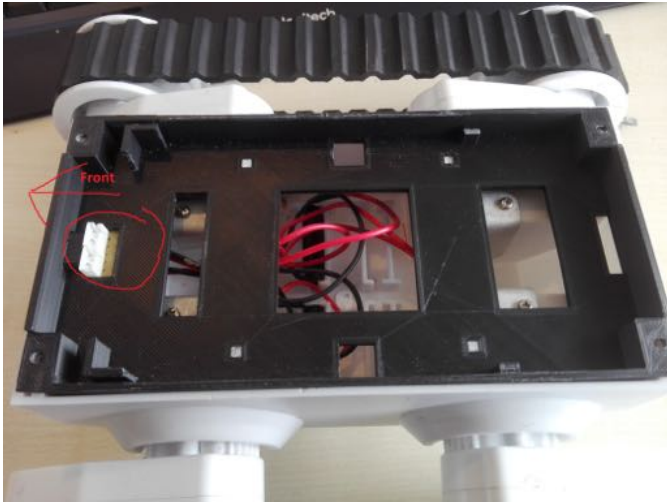
Layer-01-Inner (prepare)

- Position upside-down
- Place 2x Stand-A to the square holes
- If you also want to use a breadboard for the motor-connectors, place the Motor-Connector-Hold



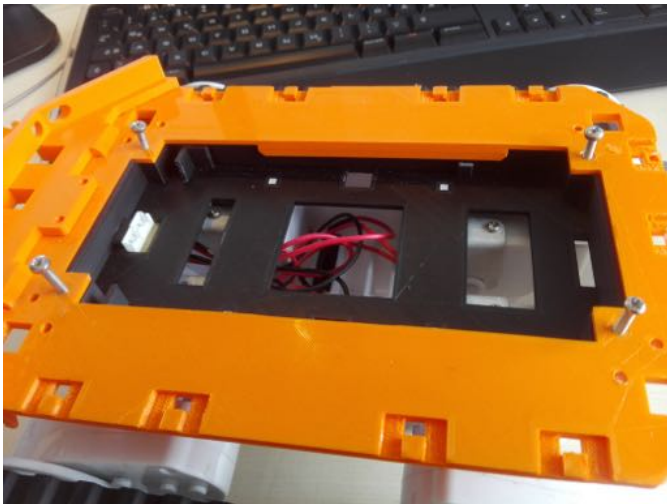
Layer-01-Inner

- Place the Layer-01-Inner into the Rover Chassis
- If used, attach the breadboard
- The outlet for the Motor-Connector-Hold marks the rovers front



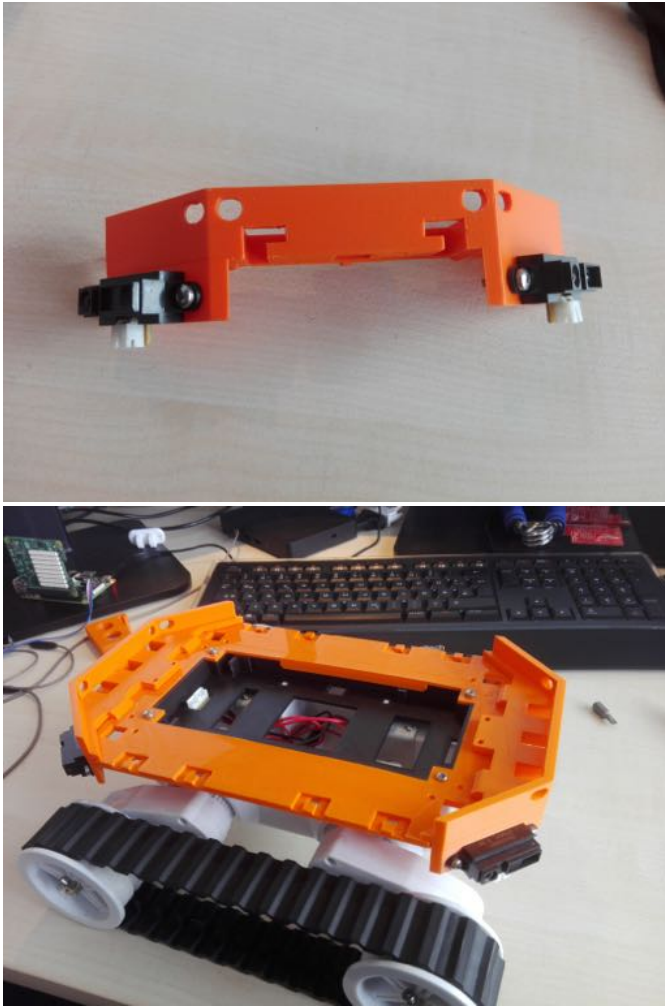
Layer-01-Outer

- a. Place the the Outer on-top the Inner Layer
- b. Tighten the screws (4x)



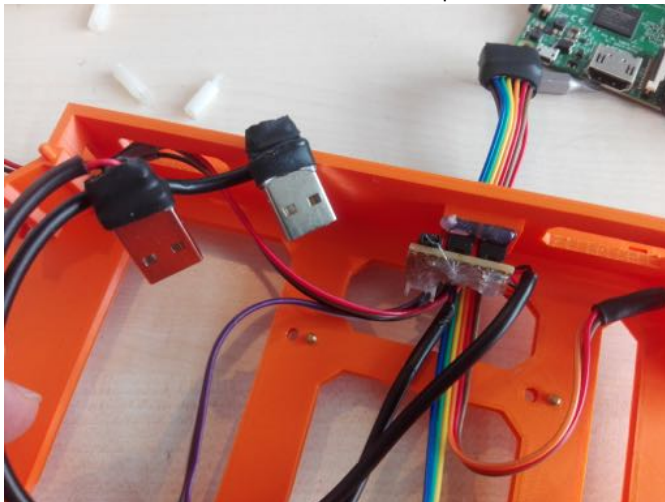
Bumpers

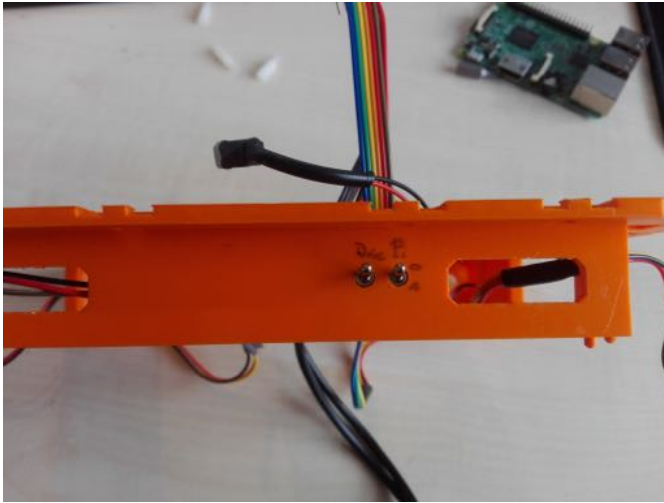
- a. Attach the Infrared Senors (4x)
- b. Attach Bumpers to Layer-01-Outer



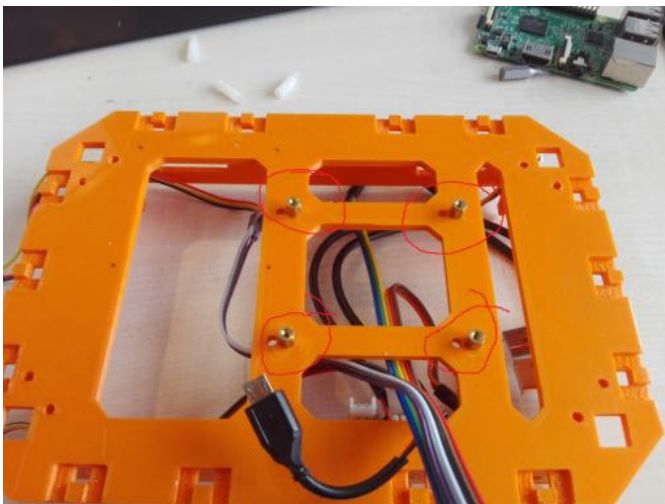
Layer-02 (prepare)

- a. Attach Switches
 - i. We used 2x switches, and 2x self-made USB connectors for the power-bank. So the driver shield and the Raspberry Pi each have their own connection to the power-bank.





- b. If you want to place the Pi statically, place 4 distance screws in the smaller holes. If you want to have your Pi “on-the-fly”, attach the distance screws on the bottom side of your Pi. In this case you can loosely place it in the bigger holes later on.
- c. Place the Pi Stack (Motor Shield, SenseLayer) on-top



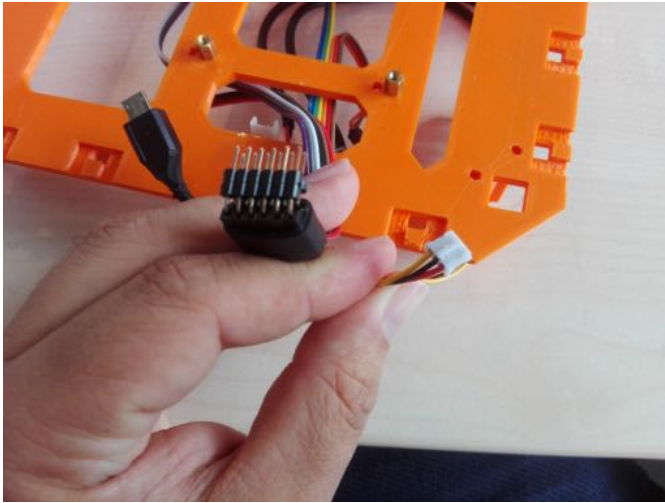
Layer-02

- a. Place Powerbank onto Layer-01-Inner
 - i. Connectors facing the rear side of the rover
- b. You may want to do some cable adjustment right here...
- c. Place the Layer-02 onto the Layer-01-Outer
 - i. Use the mount holes on Layer-01-Outer
 - ii. Pay attention to the direction -> the Pi Connectors face also the rear of the rover



Wiring

- a. Place the cables as you want
- b. I made some little helpers (e.g. a joint connector for all 4 Infrared connectors)



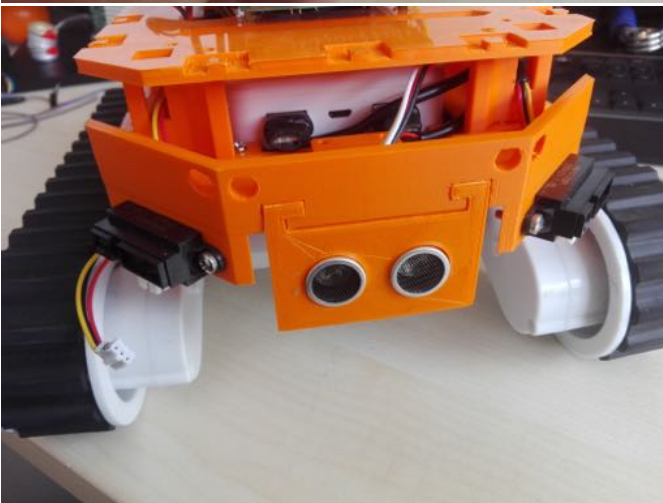
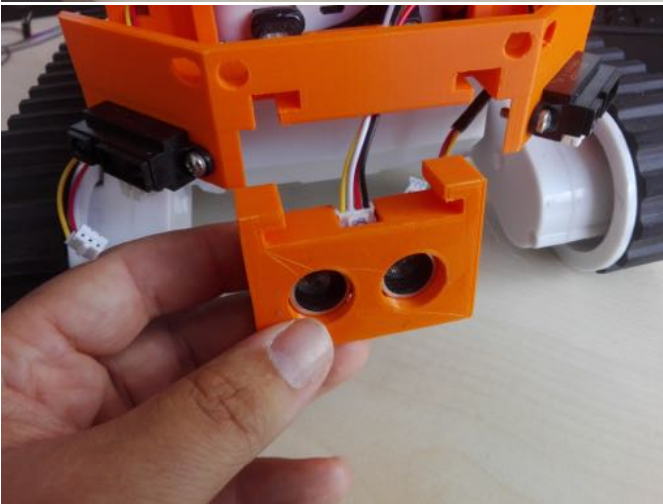
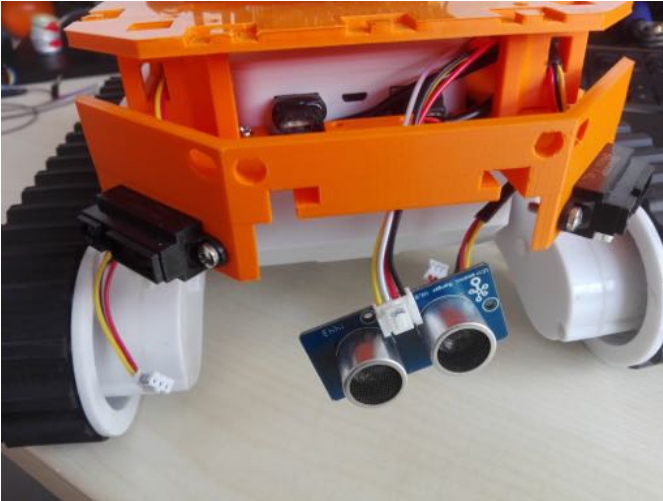
Camera

- a. Assemble the Camera parts
- b. Mount the Camera on a slot in the front of the Layer-02



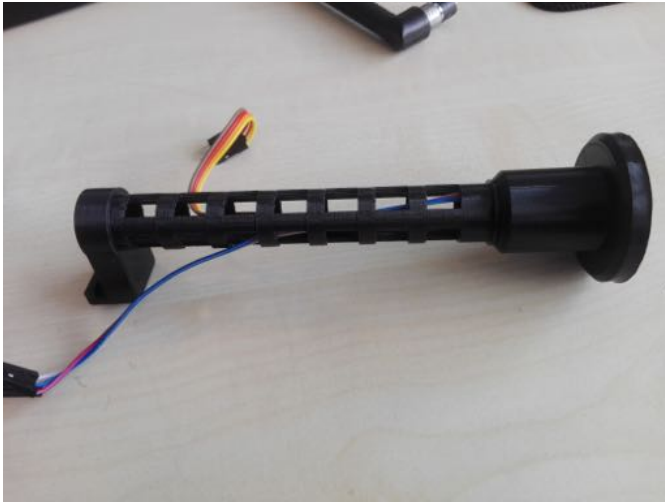
Bumper

- a. Attach the Ultra-Sonic Sensors
- b. Make sure you choose the right type of 3D print here (Grove vs. SR04)



Sensor-Stand

- a. Assemble Sensor-Stand- Foot/Pipe/Head
- b. Place Sensors (Magnetometer & Gyro)
- c. Prepare cables
- d. Attach the Sensor-Stand/Antenna on a Slot next to the Raspberry Pi on the rear-right side of the rover onto the Layer-02



Brackets

- a. For stabilization, attach the Brackets to free slots on the left and right side of the rover

