**USBW V7 Spreadsheet**

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| --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Photos** | **Functions** | **Solidworks**  **Model** | **Quantity** | **Need of**  **Manufacturing** | **Material** |
| **Steering wheel shaft** |  | Transmit the rotating motion from the motor to the steering wheel | [link](https://github.com/mlab-upenn/gokart-mechatronics/tree/main/SBW%20-%20upper%20V7) | 1 | custom | Aluminum pipe |
| **Steering wheel** |  | Manual driving | [link](https://github.com/mlab-upenn/gokart-mechatronics/tree/main/SBW%20-%20upper%20V7) | 1 | - | metal |
| **Steering wheel housing** | S | Mount the steering wheel | [link](https://github.com/mlab-upenn/gokart-mechatronics/tree/main/SBW%20-%20upper%20V7) | 1 | - | plastic |
| **beam** |  | Hold the whole USBW system onto the chassis frame | [link](https://github.com/mlab-upenn/gokart-mechatronics/tree/main/SBW%20-%20upper%20V7) | 1 | 3D printing | plastic |
| **Steering wheel holder** |  | Hold & mount the steering wheel shaft into the chassis frame | [link](https://github.com/mlab-upenn/gokart-mechatronics/tree/main/SBW%20-%20upper%20V7) | 1 | 3D printing | plastic |
| **Chassis frame** |  | Original go-kart chassis frame for holding the go-kart | [link](https://github.com/mlab-upenn/gokart-mechatronics/tree/main/SBW%20-%20upper%20V7) | 2 | - | metal |
| **ABS washer** |  | Adjust & limit the motion horizontally | [link](https://github.com/mlab-upenn/gokart-mechatronics/tree/main/SBW%20-%20upper%20V7) | 4+ | 3D printing | plastic |
| **offset** |  | Adjust the space between the beam and the chassis frame | [link](https://github.com/mlab-upenn/gokart-mechatronics/tree/main/SBW%20-%20upper%20V7) | 4+ | 3D printing | plastic |
| **Pololu motor** |  | 100:1 DC motor | [link](https://github.com/mlab-upenn/gokart-mechatronics/tree/main/SBW%20-%20upper%20V7) | 1 | [Purchase](https://www.pololu.com/product/4755) | metal |
| **D-shaft hub** |  | Connect the steering wheel shaft coupler and the motor shaft tightly, very efficient | [link](https://github.com/mlab-upenn/gokart-mechatronics/tree/main/SBW%20-%20upper%20V7) | 1 | [Purchase](https://www.amazon.com/gp/product/B0B7QX89VQ/ref=ppx_yo_dt_b_asin_title_o00_s00?ie=UTF8&psc=1) | metal |
| **New coupler** |  | Connect the hub and the steering wheel shaft | [link](https://github.com/mlab-upenn/gokart-mechatronics/tree/main/SBW%20-%20upper%20V7) | 1 | 3D printing | plastic |
| **USBW controller mount** |  | Connect the controller to the USBW | [link](https://github.com/mlab-upenn/gokart-mechatronics/tree/main/SBW%20-%20upper%20V7) | 1 | 3D printing | plastic |
| **USBW PCB** |  | PCB for controlling the motor | [link](https://github.com/mlab-upenn/gokart-mechatronics/tree/main/SBW%20-%20upper%20V7) | 1 | - | - |

For earlier versions, please check the corresponding folders in the dev branch for further details.