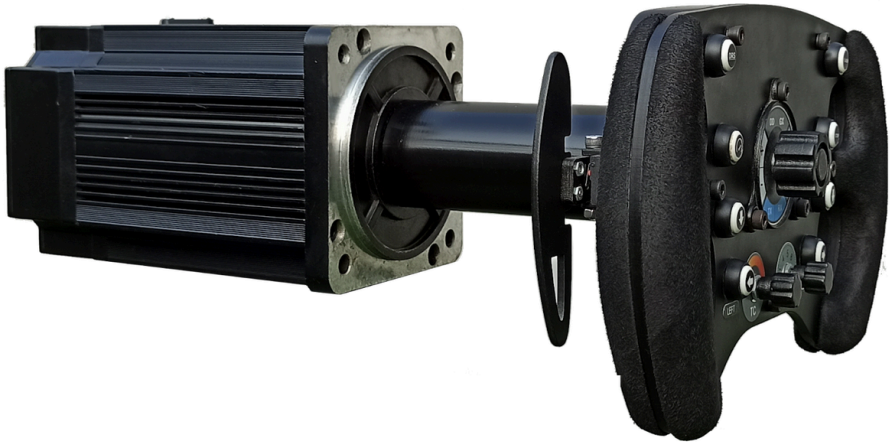
DirectTorque X20 Wheel Base



User Manual

Updated: 2024-06-27
Target hardware: RSR DT X20 v2.0.1

Product Features

- Peak Torque: 20 Nm
- Compatible with a wide range of games
- USB type C port for communication
- USB Hub 4 ports for additional peripherals
- 4-pin Molex connector for Emergency Stop (sold separately)
- RSR Paddock software for wheelbase configuration

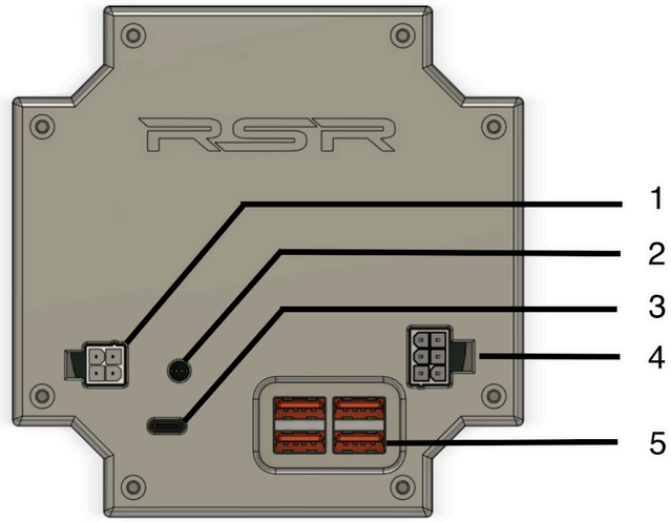
Specification

- Platform: Windows PC
- Drive Type: direct drive
- Servo motor: Refurbished Dorna 130DNA
- Base Torque: 9.55 Nm
- Peak Torque: 20 Nm
- Max Wheel Rotation: 1440 degree
- Encoder: High resolution magnetic encoder, 16384ppr
- Servo Housing Material: aluminium
- PCB Housing Material: 3D print ABS
- Color: Black/White
- Power: average 180 watt, max 360w
- Power Supply Input Voltage: 110V~220V AC
- Power Supply Output Voltage: 48V DC
- USB Refresh Rate: 1000Hz
- USB Hub Function: supported, USB 2.0 type A
- Boss kit: included (70mm)
- Quick Release: N/A
- Connection Ports: DC Input, E-stop, USB, USB Hub
- Power Indicator: RGB LED
- Accessories: user manual, power supply, data cable, bracket
- Method: 4 holes bottom mount
- Emergency Stop Switch: supported via 4-pin molex connector (sold separately)
- Mounting bracket: included (4mm steel plates)

Packing List

- Wheel base
- 10 cm boss kit hub
- Mounting bracket
- Power adapter
- Power cord
- Screw kit
- RSR stickers

Connection Ports



1. Emergency Stop (molex 4 pin)
2. Indicator RGB LED
3. USB Type C
4. Power socket (molex 6 pin)
5. USB Hub Type A (4 ports)

Base Installation Guide

- There are 4 screw holes on the servo motor. Mount it with the main mounting bracket plate. Use M8 bolts and nuts from the screw kit.
- Put two other mounting bracket plates into your rig. Use M6 bolts and nuts from the screw kit.
- Connect the power adapter to the wheel base, then connect the power cord to the power source. **This needs to be done first before plugging in any USB cable from the wheel base to avoid electrical spark.**
- Plug in the USB Type C cable from the wheel base to your PC
- Download and install the RSR Paddock software from our website https://repas-sim-racing.github.io/. For alternative and more control, you can use the OpenFFBoard Configurator too (https://github.com/Ultrawipf/OpenFFBoard-configurator/releases)

Troubleshooting Guides

- Force feedback becomes dull or lost at all.
    - Please restart the wheelbase with this sequence
        - Unplug the USB cable from your PC
        - Unplug the wheelbase power cable from the power source
        - Wait for 10 seconds
        - Plug in the wheelbase power cable to the power source
        - Plug in the USB cable to your PC
- Steering wheel is not detected in game that launched from Steam
    - Please disable the Steam Input for the game

Supported games

- Assetto Corsa
- Assetto Corsa Competizione
- Automobilista 2
- Forza horizon 4
- Forza horizon 5
- Dirt Rally 2.0
- Dirt Rally
- Dirt 4
- EA WRC
- F1 2020
- F1 2022
- rFactor 2
- BeamNG
- KartKraft
- Project Cars 1
- Project Cars 2
- WRC 8
- WRC Generations
- Trackmania 2020
- DCS World
- IRacing
- Euro Truck Simulator 2
- Raceroom
- Live for Speed
- Wreckfest
- F1 CHALLENGE 99-02
- Mud Runner
- Richard Burns Rally RSF

For other games, please refer to
https://github.com/Ultrawipf/OpenFFBoard/wiki/Games-setup

RSR Paddock Software

On the main interface:

- Top part has a connection indicator. If the wheel base is connected properly with your PC, it will turn green.
- There are 12 sliders for configuring your wheel base. If you are not sure what you are doing, just hover your cursor around it. A tooltip will appear to explain the configuration.
- The right part is the steering wheel angle. If your steering wheel is not aligned properly, please click the “Set to center” button.
- The bottom part is the profile management where you can save and delete unlimited profiles for your configurations.

Third-party Softwares

We owe a great deal to the free and open-source software that helped us reach where we are today. Below, you’ll find a complete list of the software we’ve used and their license terms.

- OpenFFBoard (MIT) https://github.com/Ultrawipf/OpenFFBoard
- VESC Firmware (GPLv3) - https://github.com/vedderb/bldc
- Tauri (MIT) - https://github.com/tauri-apps/tauri

Safety Guide & Additional Explanation

- This product is intended solely for simulated driving activities. Please make sure to differentiate between simulated games and real-life driving to maintain safety on the road.
- The product images and descriptions provided are for demonstration purposes and may not exactly match the actual product's design (including appearance, color, size) or content display (including background, UI, images). For accurate information, please refer to the actual product.
- Information provided, such as descriptions and images, may change. Please refer to our website for the latest update.

About Us

Our goal is to elevate the immersion of racing simulation. We provide an excellent yet affordable sim racing experience by delivering both quality hardware and endless innovations. What began as the enthusiasm of passionate DIY builders and sim racers has transformed into a well-engineered product for serious and pro sim racing gamers like you.

The RSR team consists of 3 individuals that are based in Indonesia.

For more information, please refer to our website:
https://repas-sim-racing.github.io