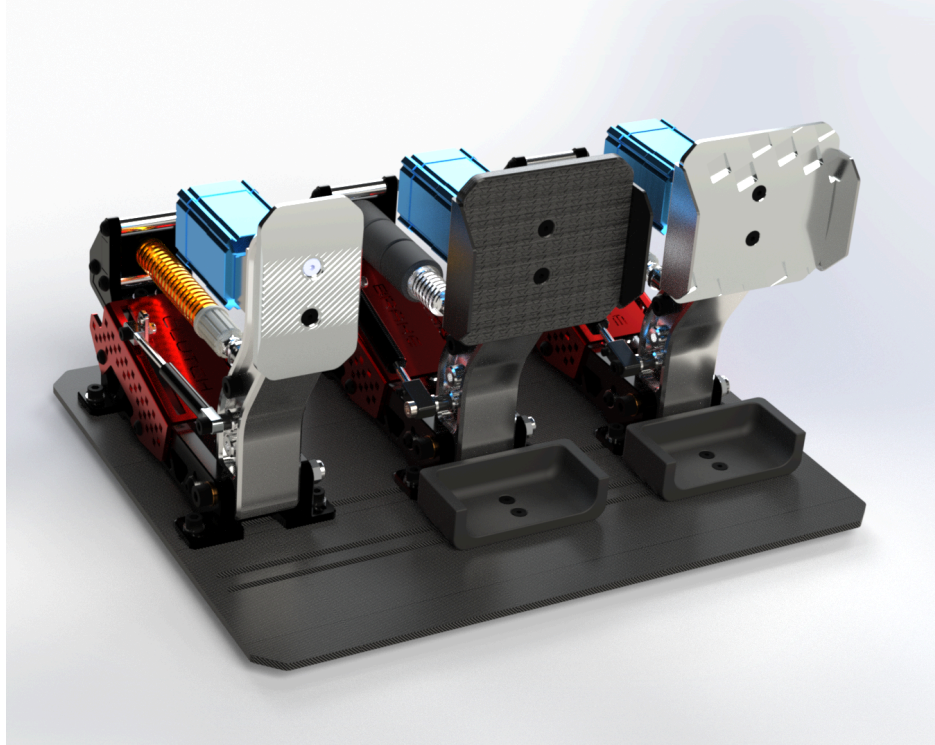


Readme

Load Cell Pedals

Hydraulic Damper & Haptic Ready

By Diy Sim Studio



Is the Red Aesthetic Cover mandatory for the assembly?

No! The Red Cover ("**Fixed Part Cover**") is purely optional. It was designed to give the pedal set a "Pro-Racing" look. The pedals are 100% structurally functional without it. You can choose not to install it for a more "industrial/raw" look or 3D print it in any color to match your rig.

Is there a specific software required to calibrate the Load Cells?

It depends on your electronics. If you use an Arduino with our recommended sketch, you can use **Windows Joystick**, **DIVIEW** or **FreeJoy** for calibration. If you choose a Leo Bodnar or AliExpress Plug & Play board, they are recognized as standard Windows Game Controllers and can be calibrated directly in-game or via Windows settings.

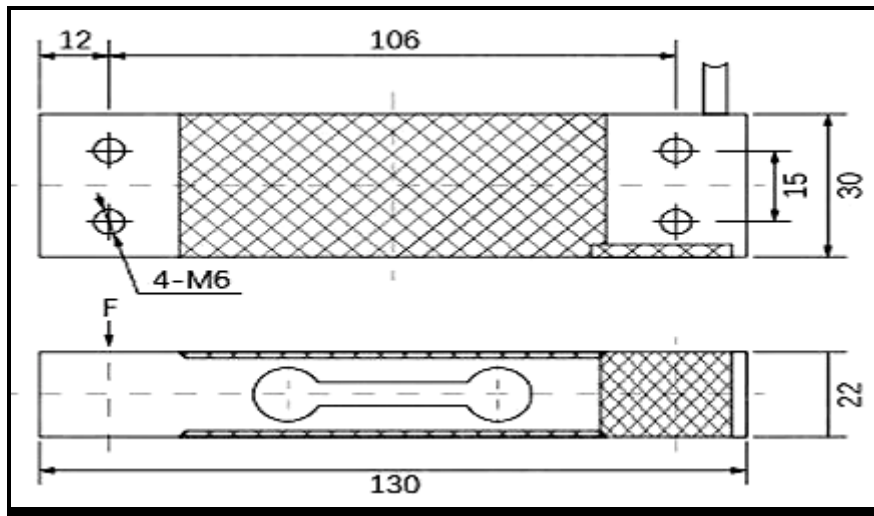
To calibrate your pedal set, feel free to follow [our Youtube guide here](#).

Recommended Load Cell Weights

- **Brake Pedal:** We recommend a **100-120kg Load Cell**. This provides the necessary overhead for high-pressure trail braking and a realistic "stiff" racing feel.

- **Throttle & Clutch Pedals:** A **20kg Load Cell** is ideal. Since these pedals are travel-based, a 20kg sensor offers extreme precision and durability without requiring excessive leg force.

Load Cell Dimensions



Is the hydraulic damper required?

No, the pedals work perfectly with the included spring and elastomer system. The Hydraulic Damper is an **optional upgrade** for those seeking a more “viscous” and realistic hydraulic feel on the pedals.

What kind of dampers can I use?

The pedals are designed to be compatible with two types of dampers:

1. **Standard Gas Struts:** Affordable and effective for consistent resistance.
2. **Adjustable Hydraulic Dampers:** For those who want to fine-tune the “viscous” damping effect to their exact preference.

How do I prevent damaging the hydraulic dampers?

To ensure the longevity of your dampers, please follow these three critical rules:

1. **Perfect Alignment:** Ensure the actuator rod is perfectly straight during the stroke. It should not deflect left or right when pressure is applied.
2. **Structural Integrity:** The “**Hydraulic Damper Support**” part must be printed with **100% infill** to handle the mechanical load without flexing.
3. **Mechanical Stops:** This is the most important step. Your pedal’s physical travel must be limited by the “**Fixed Part**” stop (the **M6x40 spacer**) *before* the hydraulic damper reaches its internal end-of-stroke. **Never use the gas damper as a mechanical stop.** Forcing the pedal against a fully compressed damper will lead to immediate failure.

First of all, we invite you to carefully check your soldering, as well as the installation of the Joystick and HX711 libraries.

Issue: I got an error message when compiling my sketch.

- Use another USB cable (a data transfer cable)
- Change the USB port
- Connect the USB board directly to the PC
- Make sure you have chosen the right PORT and the right Board in the Arduino software ("Tools" menu).

Issue: My load cell pressure is reversed

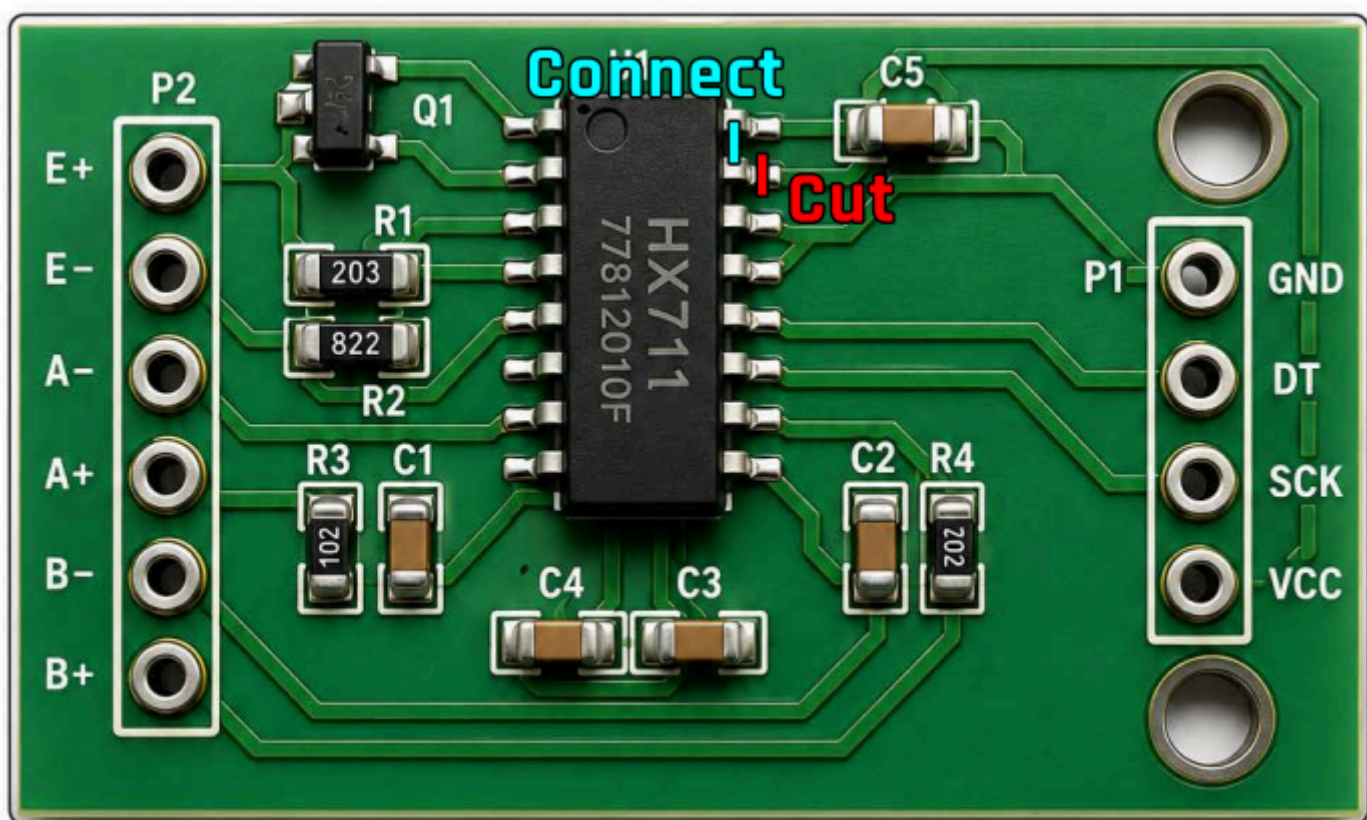
Edit a line of the Arduino sketch, you need to remove or add the `-` just before ***scale***

Issue: I have a dead zone when pressing my load cell

Slightly adjust the tightness of the four M4 and M5 lock nuts which support the loadcell.

Issue: There is a lack of responsiveness on my load cell, a slight delay.

The HX711 sensor needs a slight modification; a connection needs to be cut and an image reconnected. Here's an image to help you:



And a video: <https://www.youtube.com/watch?v=0cxS-a837bY>

What are the recommended dimensions for dampers, springs and rubbers?

To ensure a perfect fit with the internal mechanisms, please follow these specifications when sourcing your hardware:

- **Hydraulic/Gas Damper:**
 - **Maximum Outer Diameter:** Ø15mm
 - **Maximum Length:** 140 mm
- **Springs:**
 - **Minimum Inner Diameter:** Ø8mm (to slide freely over the M8 rods).
- **Elastomers (Brake Rubbers):**
 - **Minimum Inner Diameter:** Ø8mm
 - **Maximum Outer Diameter:** Ø35mm (to fit within the pedal housing/washers).

For more information, you can consult the [Frequently Asked Questions](#).