

5D Realities

Guide to Creating a Hang Gliding Simulator



This is a guide on how to create a hang gliding simulator that is fully compatible with Glider Island - Ride Edition software. A simulator is fairly easy to construct for those that are mechanically inclined. The fact of the matter is, you basically need to create a swing set that people are able to lie down in and swing back, forth, left and right. All the control is based off head movement.

Here is a quick overview of the components needed to create a compatible simulator:

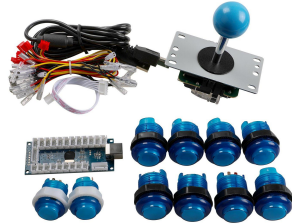
1. **Strong Support Frame:** Like a swing set, the frame needs to be able to support a heavy payload. A payload of more than 600 Lbs/ 272 Kg to be on the safe side. Here are some examples of possible support frames:

				
Shop Crane: \$180	Pallet Rack: \$200	Hoyer Hydraulic Lift Amazon \$880	Walmart Swing: \$60	12" Square Trussing \$500 - \$1000

2. **Handle bar with an input button.** The handlebar will be used to grab onto and weight-shift back and forth, therefore need to be super durable. Our software also

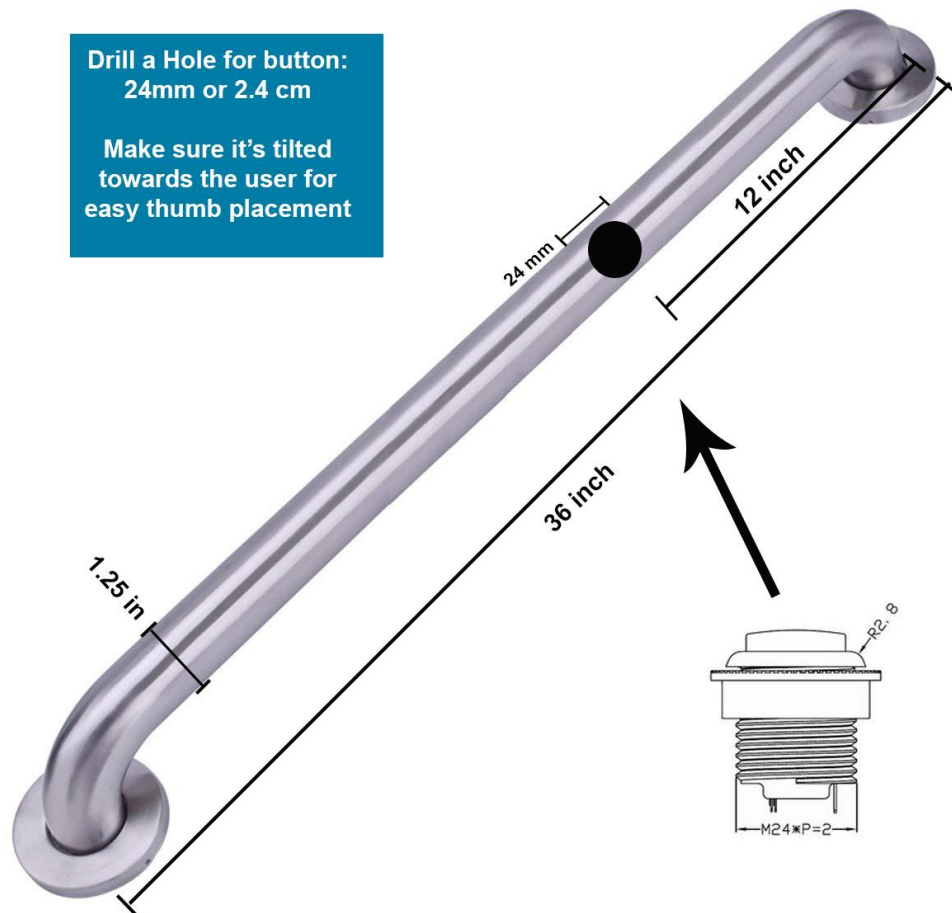
requires a button on the handle bar so the game can receive input from the user. The button is also used for the rocket booster mechanic.

- a. The button and USB encoder can easily be purchased through Amazon.



<https://www.amazon.com/gp/product/B00VT8MNS4>

- b. The easiest option is to use 1.25 inch diameter steel piping for the handlebar and drill a 24mm hole to fit the small button in. Or 1.5 inch diameter steel piping and drill a 30mm hole for the larger button.
- c. One solution is to order a [36 inch, 1.25 inch diameter Grab Bar on Amazon](#) and then drill a 24mm hole for the button as seen in this diagram:



3. **Bodyboard or Harness:** Ability for a person to lie down and be suspended safely above the ground. A bodyboard or harness works best. Some people have chosen to get a bodyboard produced by an upholstery shop that consists of plywood, foam and vinyl covering. There are many methods to producing your own bodyboard or harness. I have also seen a harness supporting the upper body and a separate strap supporting the legs, such as the simulator constructed by Sim Center in Tampa Bay FL.
4. **Cable, Chain, or Straps:** Need a strong durable connection between the bodyboard/harness and the support frame.
5. **6 DOF VR Headset:** Oculus Rift is preferable because tracking is very accurate and you only need one sensor. The HTC Vive is good but tracking not as accurate, especially in a room with glass or windows. The inside out tracking headsets such as Window Mixed Reality Headsets can work, but again tracking is poor at times.
6. **Fan (Optional) :** We have programmed the game to automatically start a fan when you start flying. To get this working you need to purchase the 1 channel USB Relay Module by Numato Labs and a USB to Mini B cable. And here is a tutorial video on how to install it available on our YouTube channel: <https://youtu.be/oSvstHyjcQ0>
<https://www.amazon.com/Numato-Channel-Powered-Relay-Module/dp/B00MY5I6BO>



<https://www.amazon.com/AmazonBasics-USB-2-0-Cable-Male/dp/B00NH13S44>



7. **Important thing to note:** We have designed our hang gliding software to work like in real life, where if you weight shift forward you pitch down. So it's important you incorporate this mechanic if you want the experience to feel realistic. We have found having 2 pivot points is better than having 1. When you only have 1 pivot point it causes the swing to pitch up when pulling forward, this is **not** good and does not simulate reality. But if you have 2 pivot points the swing acts like a glider would in real life where if you

pull forward you pitch down. See diagram:

