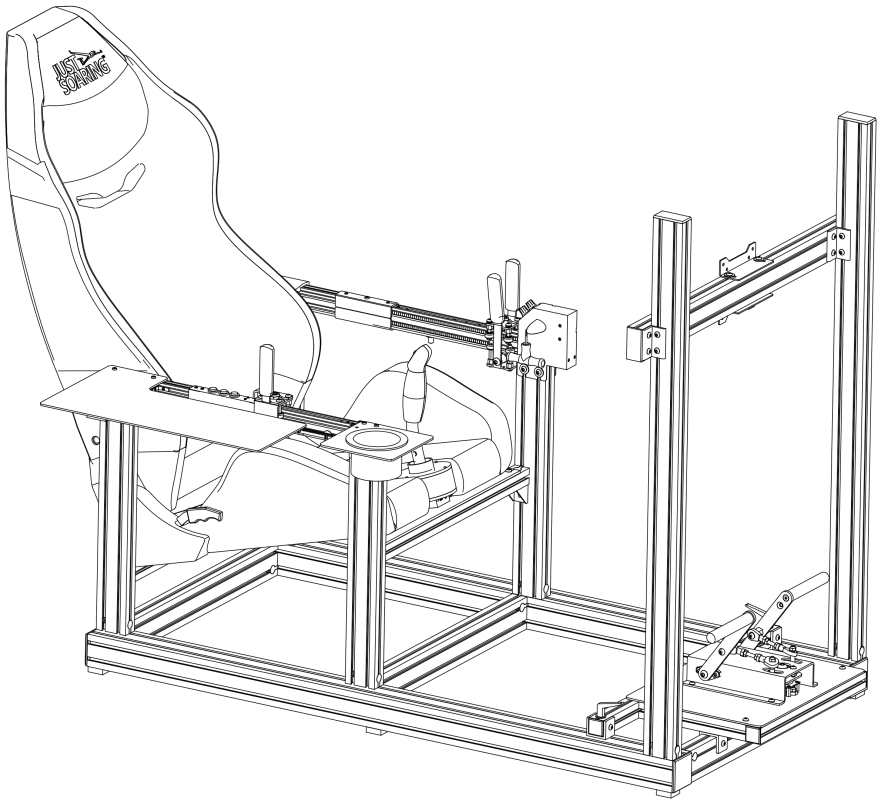
# Just Soaring Condor Rig

Instruction Manual - Glider flight simulator



# Contents

# Kit Part List

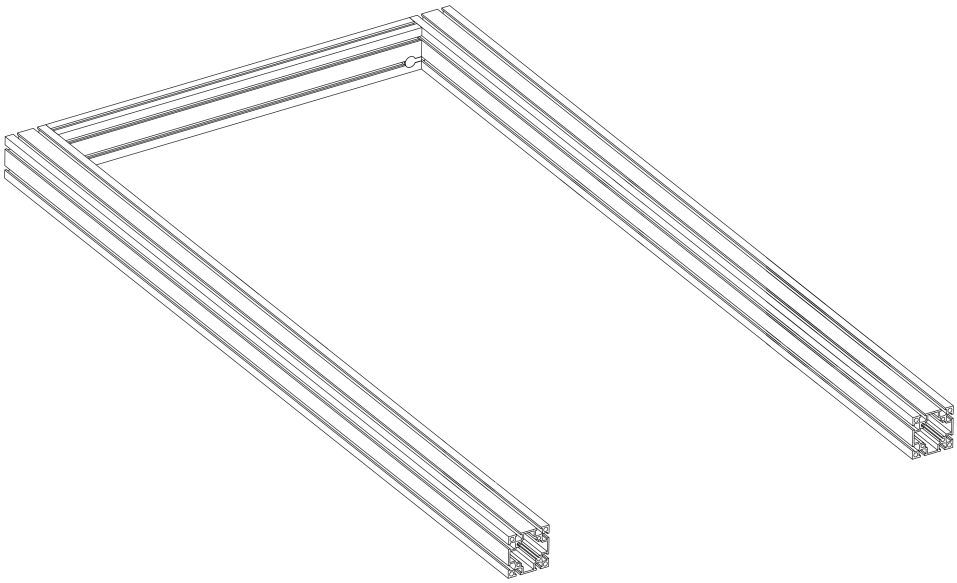
Parts List

| Qty | Item | Description |
|---|---|---|
| 2 | A | 1100mm 6060 series aluminum profile |
| 3 | B | 540mm 3060 series aluminum profile |
| 4 | C | 440mm 3060 series aluminum profile |
| 2 | D | 540mm 3030 series aluminum profile |
| 1 | E | 600mm 3030 series aluminum profile |
| 2 | F | 220mm 3030 series aluminum profile |
| 1 | G | 360mm 3030 series aluminum profile |
| 2 | H | 1000mm 3060 series aluminum profile |
| 1 | J | 600mm 3060 series aluminum profile |
| | | |
| 1 | | Seat base |
| 1 | | Seat back |
| 1 | | Seat mounting plate |
| | | |
| 1 | | Rudder assembly |
| 1 | | Left flight controls |
| 1 | | Right fight controls |
| 1 | | Joystick |
| | | |
| 1 | | Base frame HW pack |
| 1 | | Seat support HW pack |
| 1 | | Monitor stand HW pack |
| 1 | | Final assembly HW pack |
| 1 | | Spares HW pack |

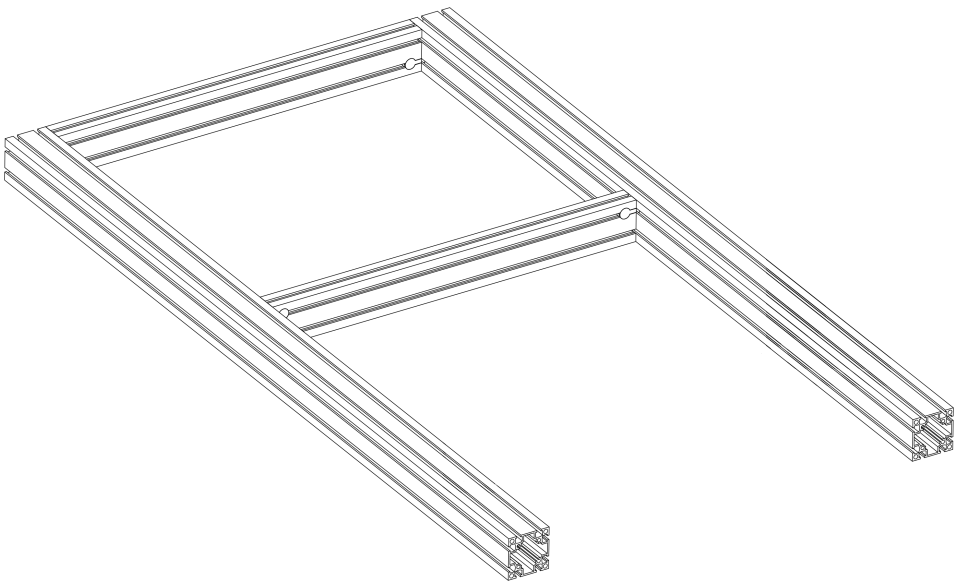
# Base Frame Assembly

Parts List
2x A 1100mm 6060 ; 3x B 540mm 3060 ; 1x E 600mm 3030 ; 2x F 220mm 3030 ; 1x G 360mm 3030

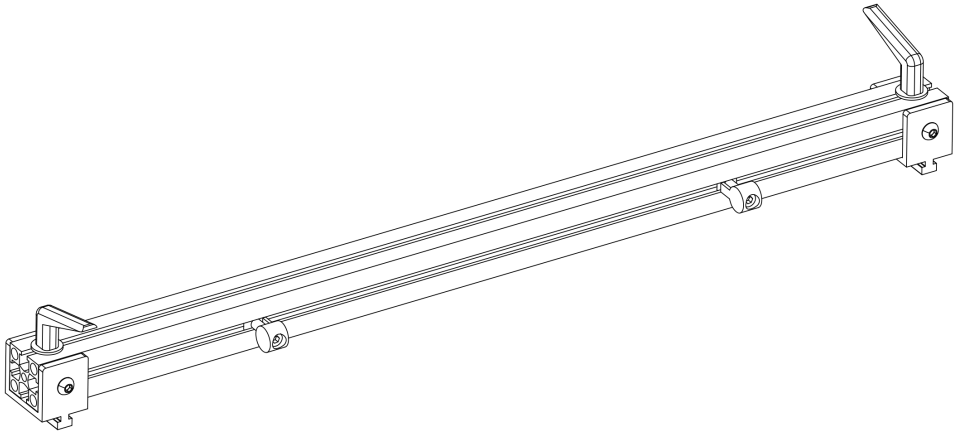
Step 1
Take x2 long 1100mm 6060 side profile beams (A), at the rear end add a one 540mm 3060 cross beam (B), secure with x4 anchor fasteners.



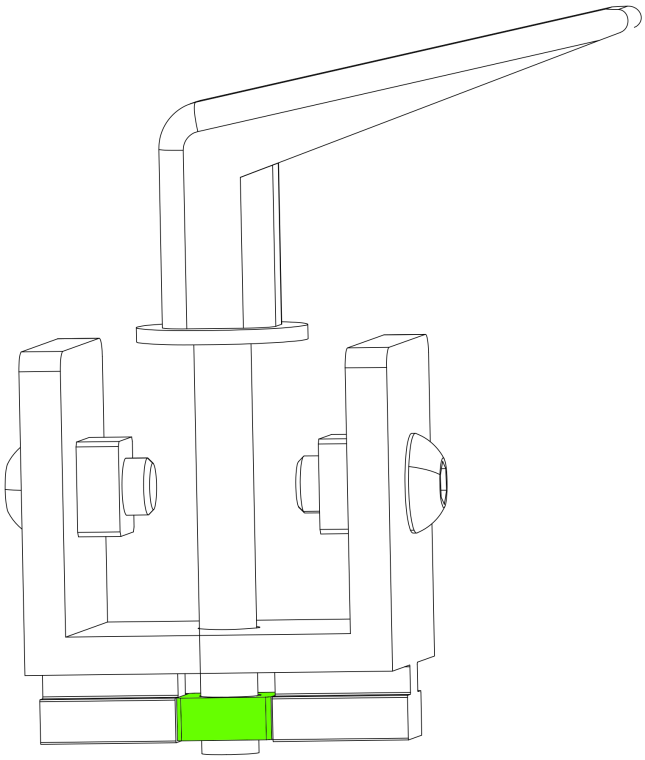
Step 2
Take one 540mm 3060 cross beam (B), place 480mm from the rear, secure with x4 anchor fasteners.



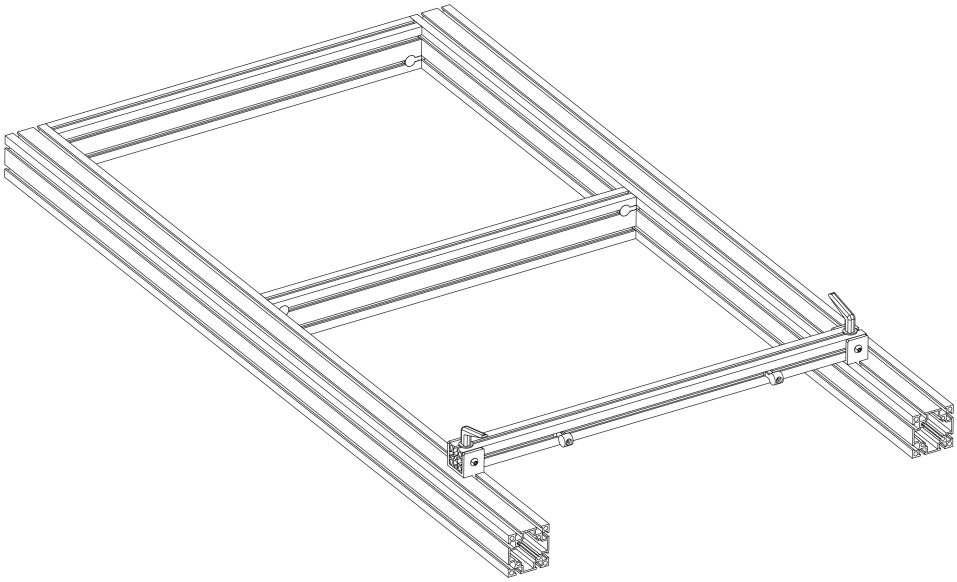
Step 3
Take 600mm 3030 rudder rear cross beam (E), add x2 anchors in the front channel before attaching the slider, then add a slider at either end, fasten slider in place with M6x12 button head screws and Tnuts.



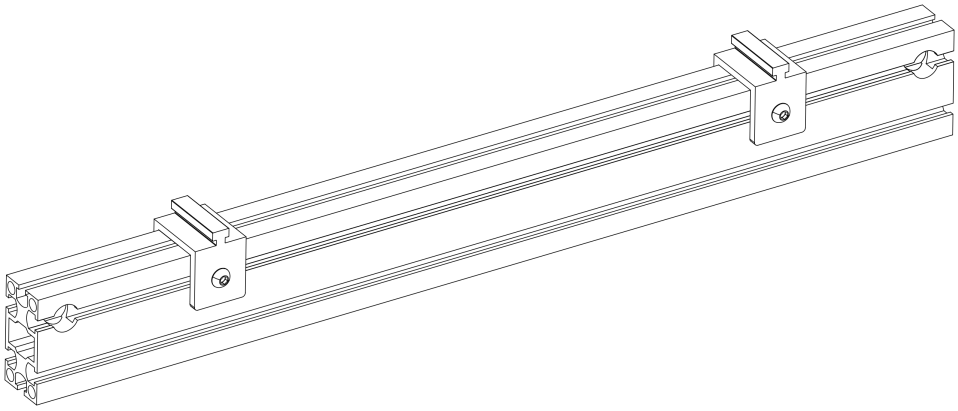
With the slider in place loosely fasten the handle in place with an M6 Tnut in the gap found at the bottom of the slider, this will be used to lock the rudder assembly in place.



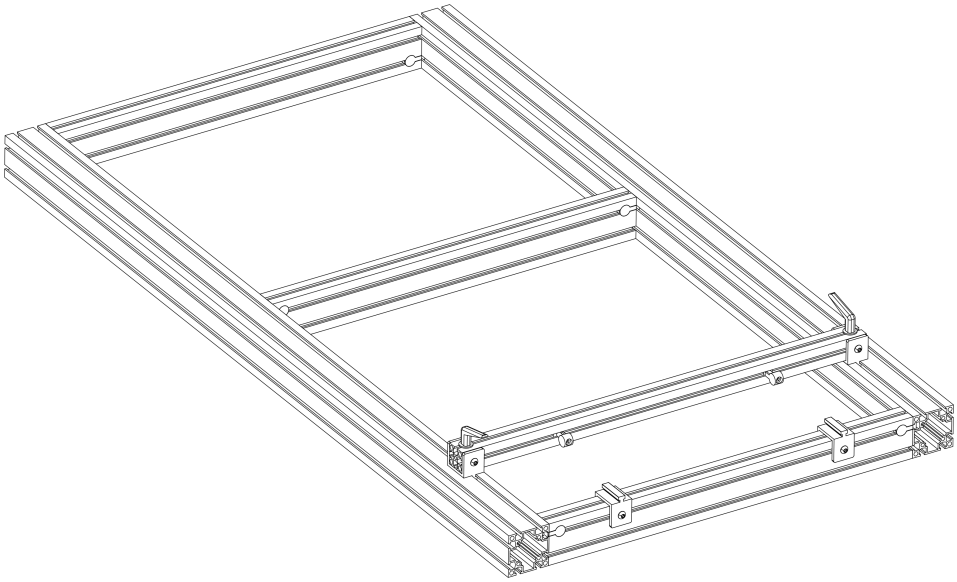
Step 4
Slide the rudder rear cross beam (E) from the front of the rig, ensure tightening handles can lock in place and the anchors are in place.



Step 5
Take the last 540mm 3060 cross beam (B), add the remaining two slider plastics on the top, secure loosely in place with M6x12 button head screws and Tnuts.

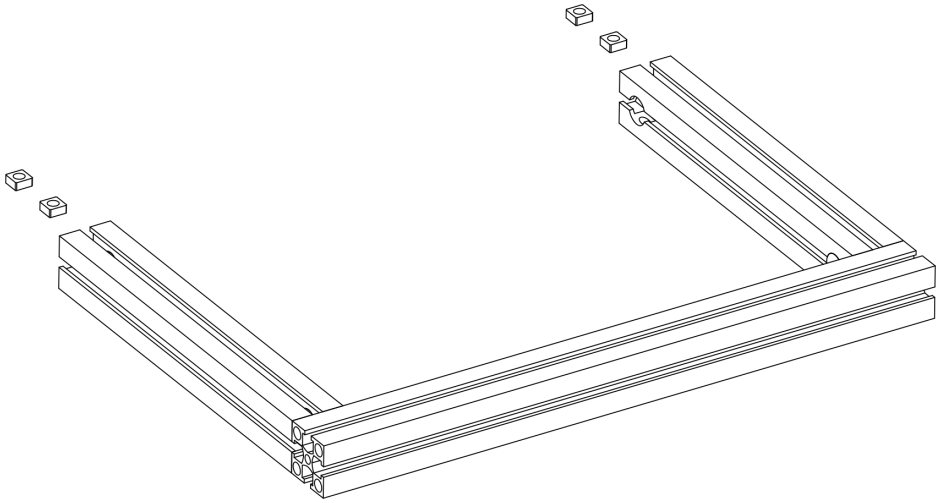


Step 6
Take this cross beam and mount it flush to the front of the rig, secure with x4 anchor fasteners.

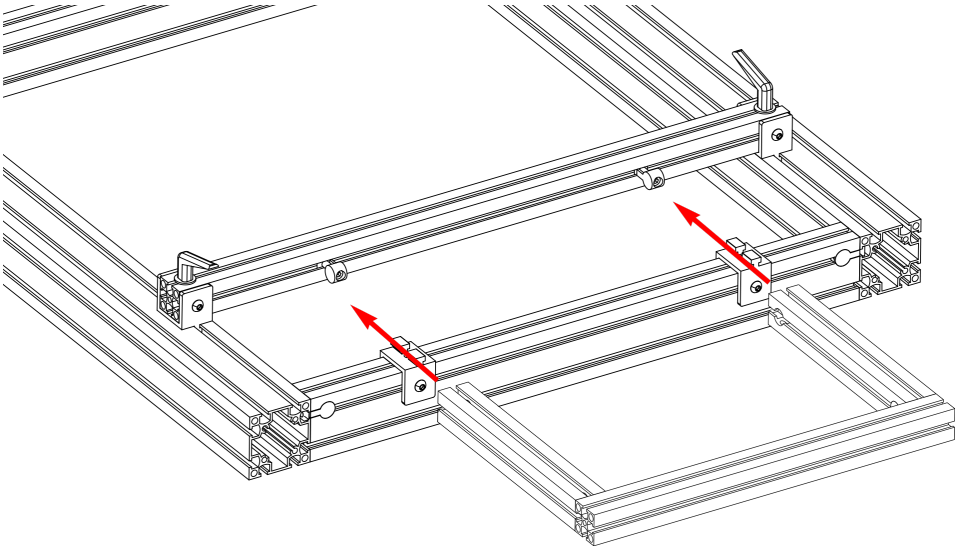


Step 7
Take x2 220m 3030 rudder side beams (F), and the 360mm 3030 rudder front beam (G), join and secure with x2 anchor fasteners.

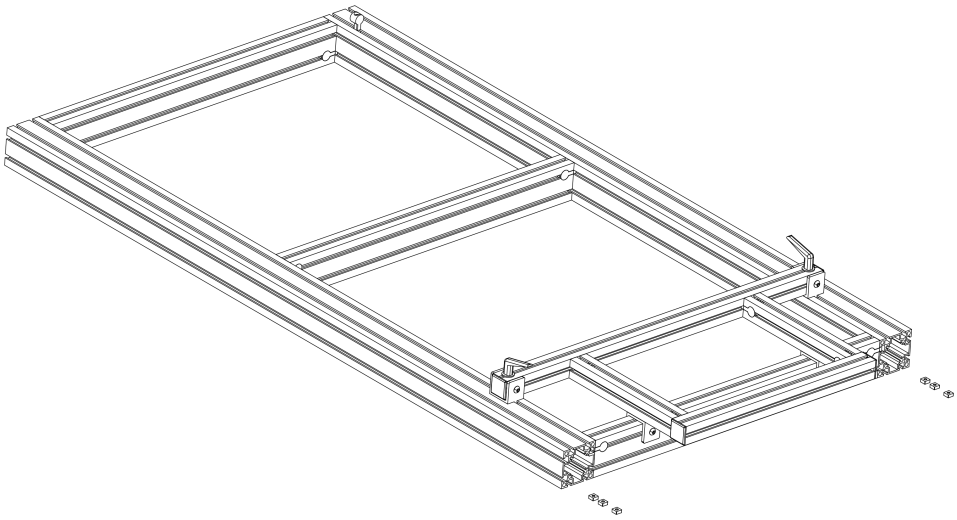
Add x2 M6 Tnuts in the top channel of each side beam, these will be used later to fasten the rudder assembly to the frame.



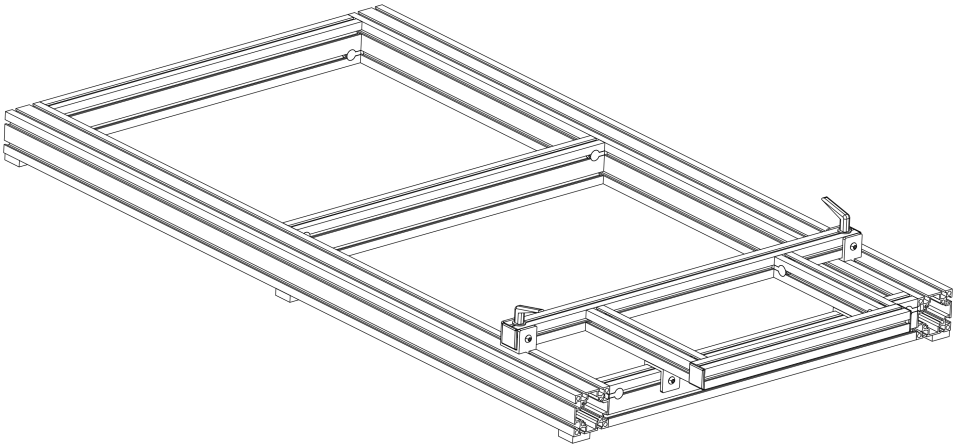
Step 8
Carefully slide the assembly over the sliders at the front of the frame until it reaches the rear rudder cross beam and fasten loosely in place with the x2 anchor that were added in advance.



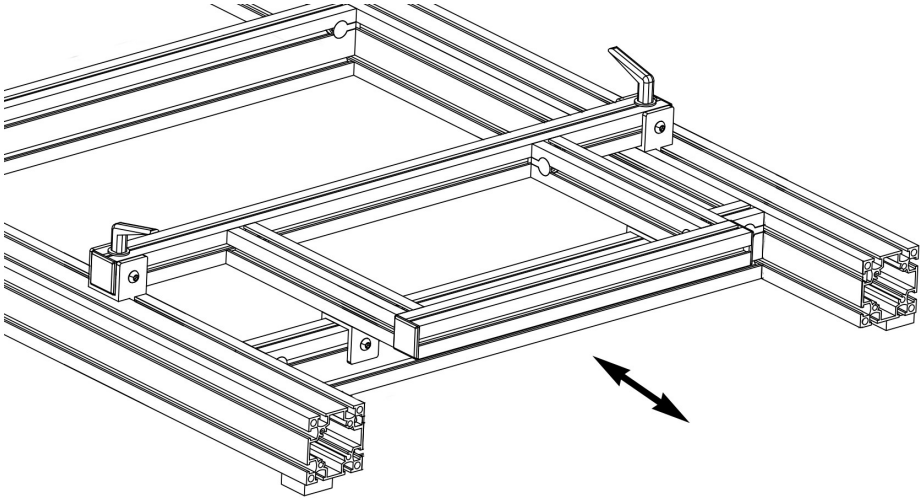
The front sliders should still be loose at this point, if you slide the assembly fully to the rear it will help with alignment ensuring everything is square with the frame and slides smoothly, once centered and square tighten both the anchors and the sliders. Ensure the x4 Tnuts are still present in the top channel.



Step 9
At this point take the x6 rubber feet and mount them on the bottom side of the frame, they can go in either the outside or inside channels, using the inside channels will give the appearance of the rig floating.



Note: The rudder platform has about 8” of travel to adjust for different height users. When fitting if you find the location of the rudder is too far forward you can move the front cross beam rearwards positioning the 8” of travel in a more suitable place.



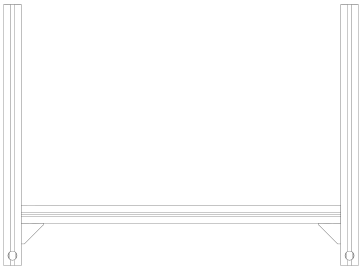
Congratulations the base of the frame is now assembled.

# Seat Support Frame Assembly

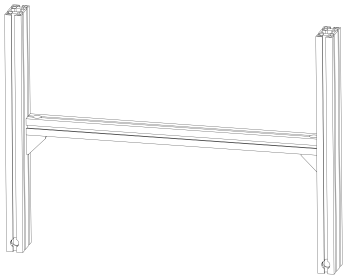
Parts List
4x C 440mm 3060 ; 2x D 540mm 3030 ; 1x Seat Plate

Step 1
For rear seat support, take x2 440mm 3060 seat leg beams (C), 120mm from the bottom add the 540mm 3030 seat support cross beam (D), secure with x2 anchor fasteners and x2 90° brackets, include 2x Tnuts for attaching seat plate. You should position the anchor at the top and the bracket at the bottom.

Step 2
For front seat support, take x2 440mm 3060 seat leg beams (C), 240mm from the bottom add the 540mm 3030 seat support cross beam (D), secure with x2 anchor fasteners and x2 90° brackets, include 2x Tnuts for attaching seat plate. You should position the anchor at the top and the bracket at the bottom.



Rear seat support



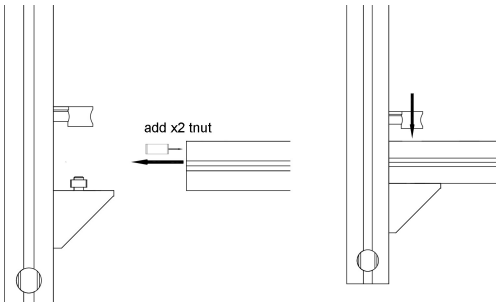
Front seat support

Note: add x2 M6 Tnuts in the top channel of each cross beams for mounting the seat plate.

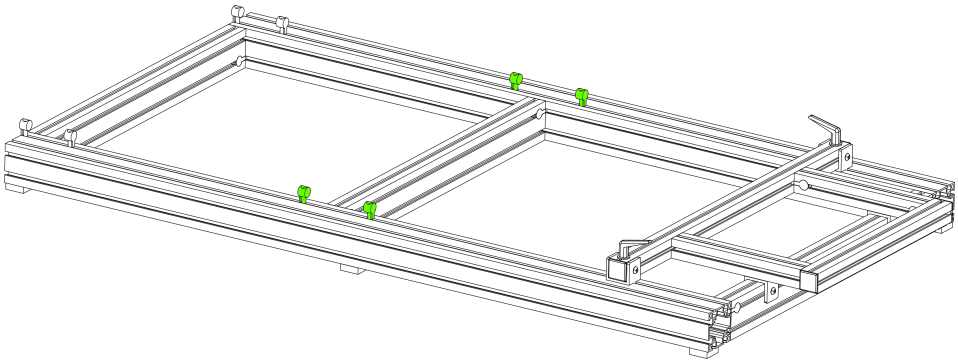
Note: Ensure anchor holes on the legs are positioned to the bottom for attaching to the frame.

Note: Initially follow the recommended seat plate height, you can adjust to your own preference after fully assembling your rig, not following instructions can lead to brake slider hitting the seat base and damaging the seat fabric.

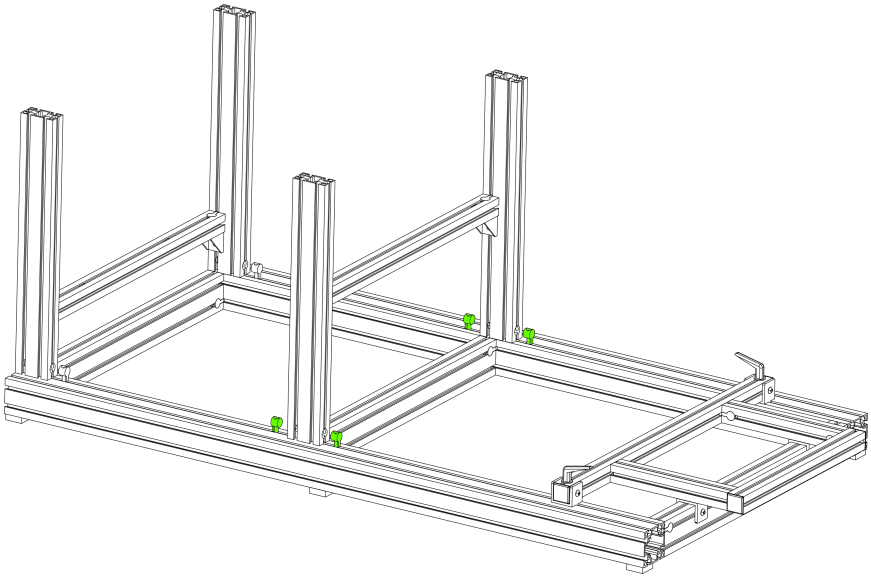
Note: The easiest way to assemble is to add the anchor and bracket on the leg beam, slide the cross beam into the bracket, tighten then slide the anchor in place.

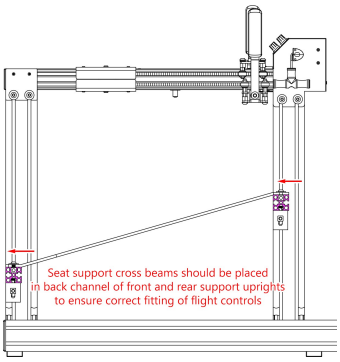


Step 3
Add x4 anchor fastners in the inside top channel of the side beams, and then attach the rear seat support in place with another x4 anchors, align with the rear edge of the rig.



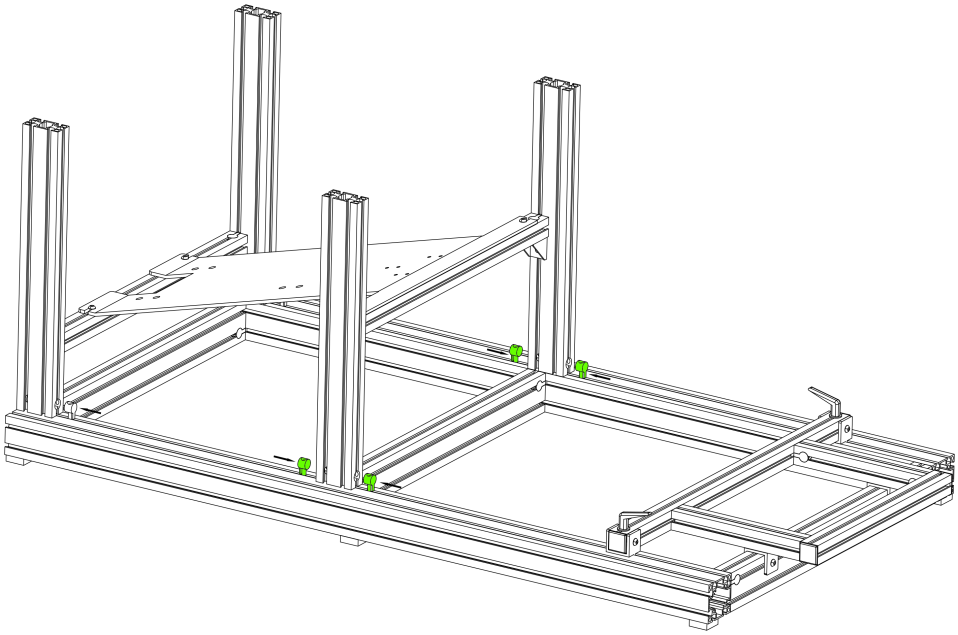
Step 4
Place the front seat support in the general location, without attaching/tightening the anchors






Note: when mounting seat support, orientate so that the cross beams are in the rear channel for both front and rear legs. This will ensure correct sizing for later mounting the flight controls

Step 5
Mount the seat plate to the front and rear cross beams with M6x12 buttonhead screws and the previously added M6 T nuts, this will align and set the correct position for the front seat support. Once correctly positioned use the x4 anchors to fasten in place.

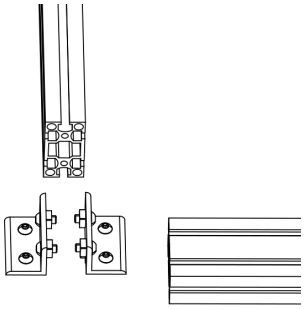


Congratulations the seat frame is now assembled.

# Monitor Stand Assembly

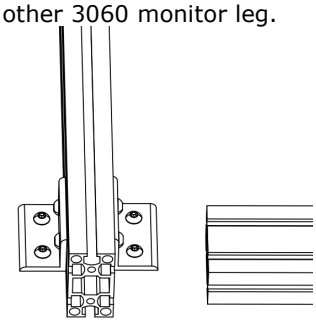
Parts List
2x H 1000mm 3060 ; 1x J 600mm 3060 ; 4x Double bracket ; 16x M6x12 buttonhead ; 16x M6 Tnut

Step 1
Add M6x12 buttonhead screws and M6 Tnuts loosely to all holes in the double brackets.

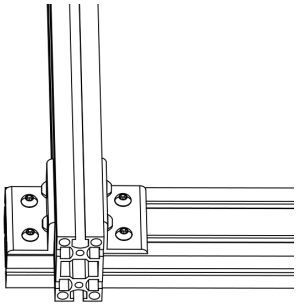


Step 2
Take x1 1000mm 3060 monitor leg beams (H), with anchor holes positioned at the bottom, attach x2 double brackets to the top end.

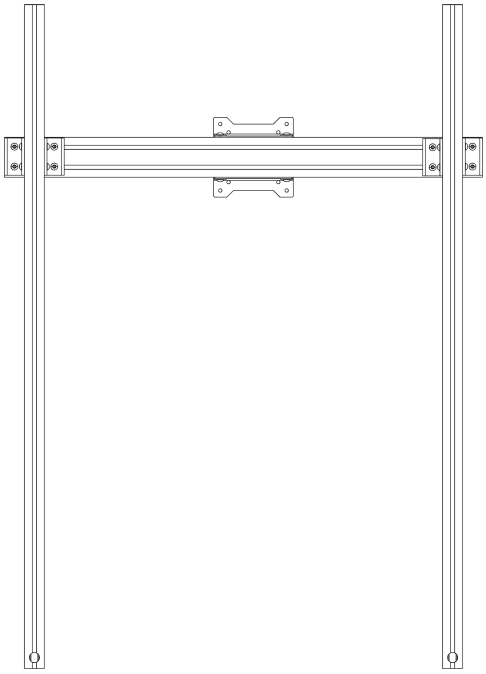
Repeat the process for the other 3060 monitor leg.



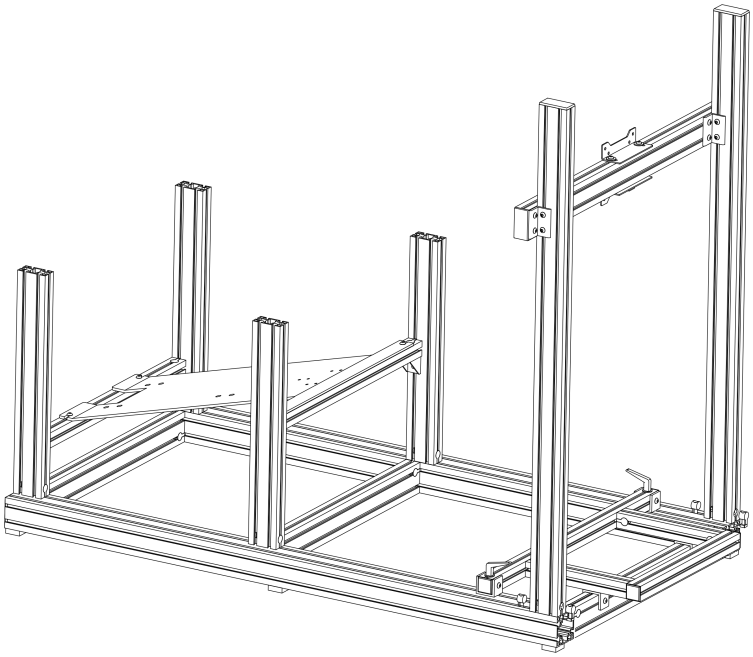
Step 3
Take the 1x 600mm 3060 monitor support beam, slide it into the brackets, there should be sufficient room to align the Tnuts one by one with your fingers to make sliding together trouble-free.
Once in place align the end of the support beam with the edge of the bracket and tighten.



Step 4
Take the monitor support frame and attach it to the front of the main rig using x4 anchor fastners located in the outer channel to fasten in place.



Depending on the size of your display, you can mount the monitor stand either in front or behind the moveable rudder plate assembly for best in game experience.

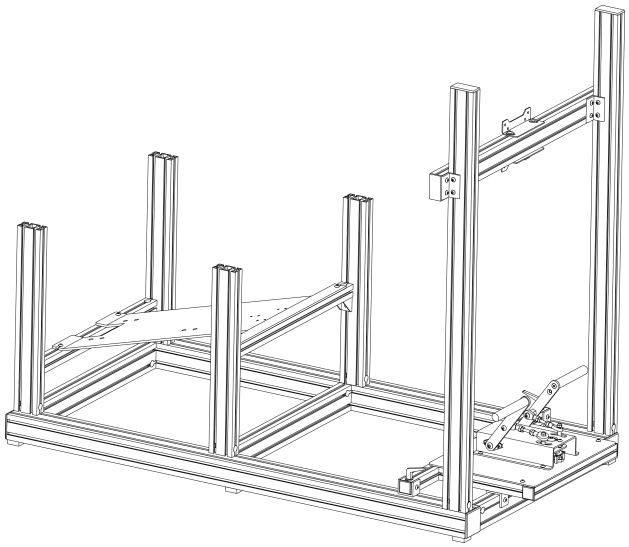


Congratulations the monitor stand is now assembled.

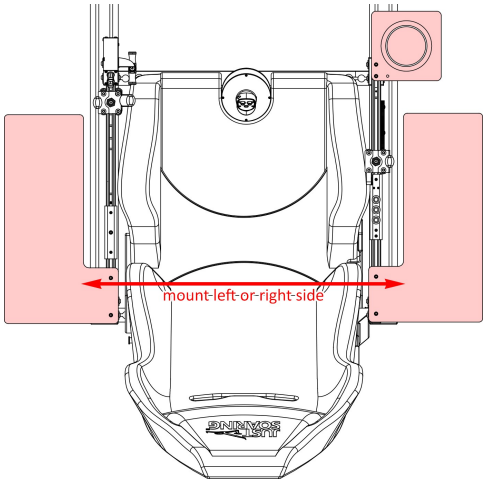
# Final Assembly

Parts List
Left Flight Controls ; Right Flight Controls ; Keyboard tray ; Cup holder ; Seat; Joystick ; Rudder

Step 1
Mount the rudder assembly on the top of the rudder frame using x4 M6x12 buttonhead screws and the M6 Tnuts previously placed into the frame.

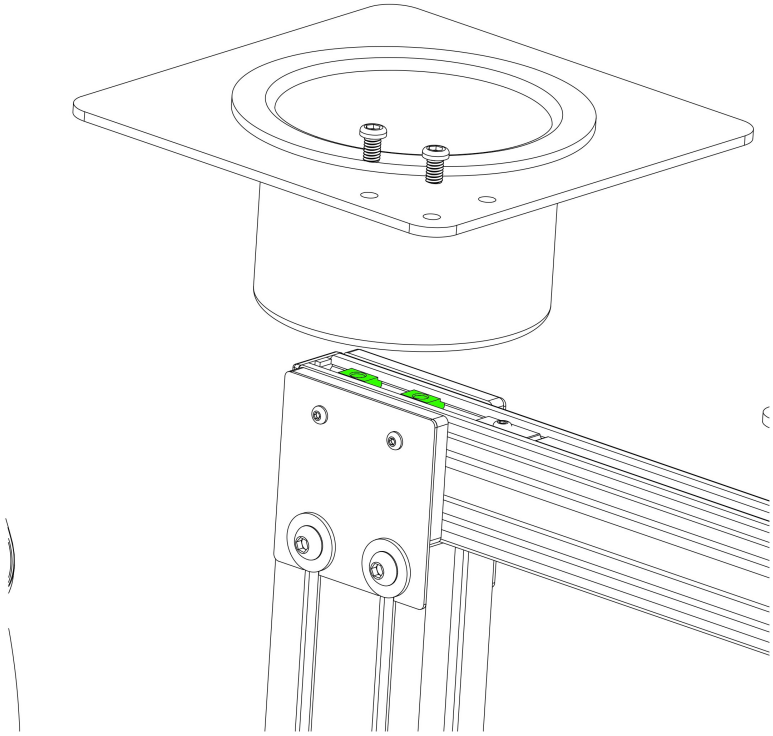


Step2
Attach the keyboard tray and cup holder, to the flight controls while mounting them. We recommend mounting both on the right side, with the keyboard tray at the rear and the cup holder at the front.

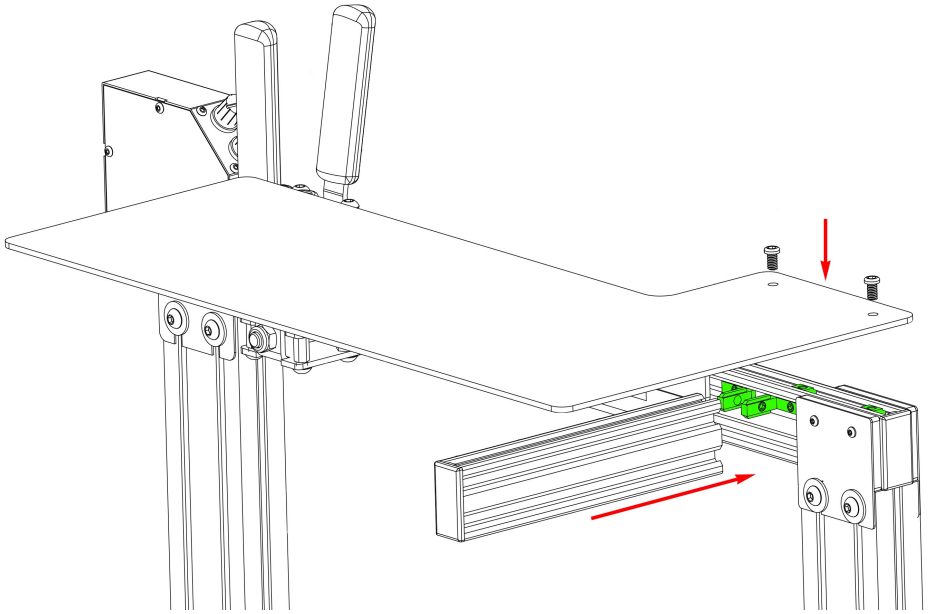



Depending on your workspace you can mount the keyboard tray either on the left or the right. Based on your preference the cup holder can be mounted front right or rear left/right.

To mount the cup holder, slide x2 M5 T nuts into the frame, fasten the plate with two M5x8 screws. Push the plastic cup base into the hole.

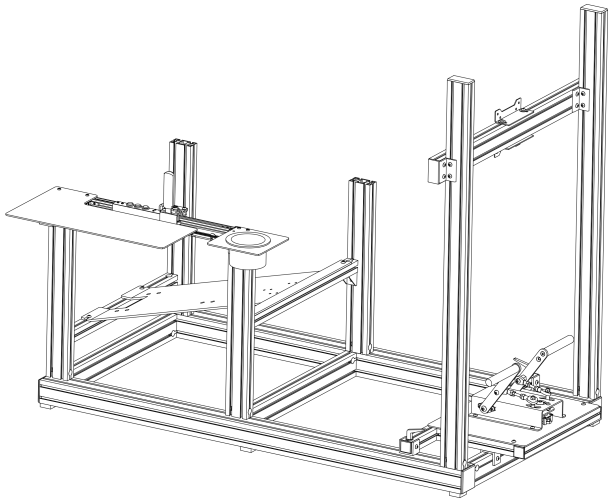


To mount the keyboard tray, slide the two 90 degree brackets into the side of the frame, and two M5 Tnuts into the top. Attach the 180mm 2040 profile to the brackets and then  tighten the four grub screws to add tray support.
Fasten the tray with two M5x8 screws.

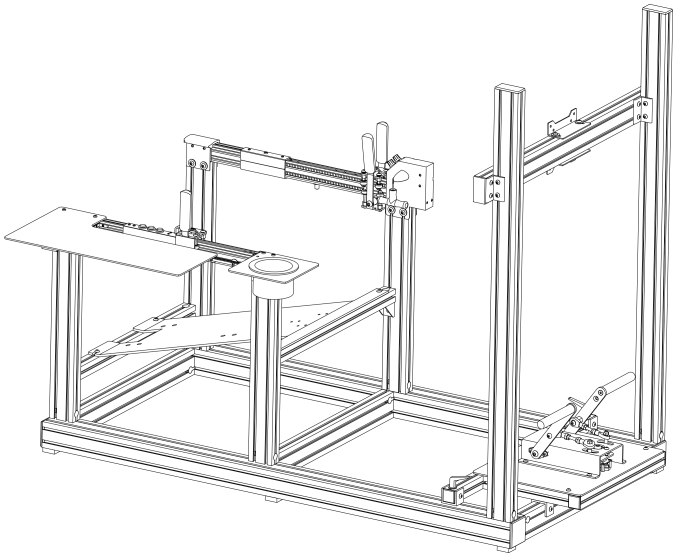


Step 3
Mount the right flight controls onto the top right seat supports using x8 M6x12 buttonhead screws and the M6 Tnuts, easiest way is to screw together, drop down into the seat support channel, put the flight controls in place and then raise the screw together with the Tnut and tighten.

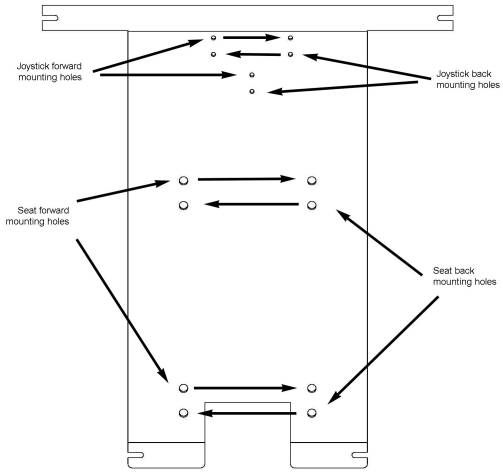
Note: cup holder and keyboard tray should be mounted to the controls prior to mounting on the frame



Step 4
Mount the left flight controls onto the top left seat supports using x8 M6x12 buttonhead screws and the M6 Tnuts, easiest way is to screw together, drop down into the seat support channel, put the flight controls in place and then raise the screw together with the Tnut and fasten.

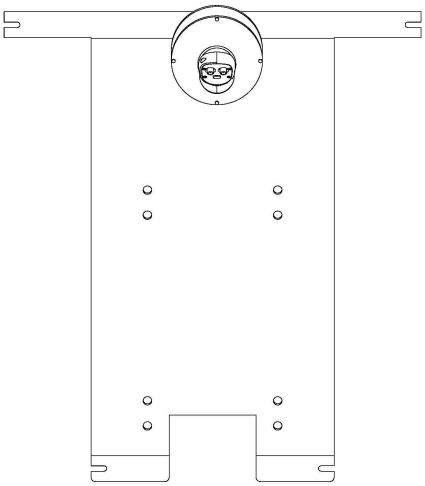


Step 5
Remove the seat plate again to make mounting of the joystick and seat easier.

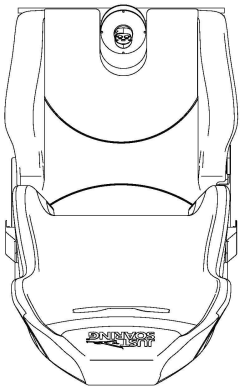



Step 6
Mount the joystick onto the seat mounting plate x3 M4x30 screws, screws go from the underside through the plate and into the base of the joystick.

There are 2 different mounting locations to support larger and smaller users, try the rear position first.

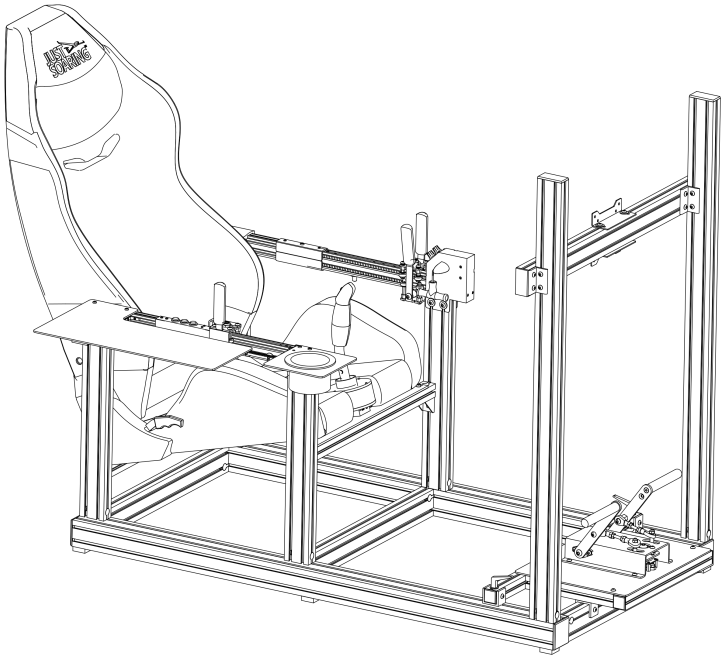


Step 7
Attach the seat base onto the seat plate using x4 M8x25 screws, use the forward set of holes to begin with, they try the rear set of holes if the gap between seat/joystick position is too tight for you.



Mount the seat back onto the seat base, secure with x4 screws then add the plastic covers.

Step 8
Once the seat and joystick are mounted, re-attach the seat plate to the main frame, before tightening the mounting screws check seat and joystick fit, adjust as necessary.



Congratulations the Condor Flight Simulator Rig is now fully assembled.

# Connecting and Testing

Step 1
Route the 6 pin miniDIN cable from the *LEFT and RIGHT flight controls* under the front seat support, push the connectors together to link.

Route the USB cable from the LEFT flight controls to your PC.

Step 2
Route the 6 pin miniDIN cable from the *RUDDER to the JOYSTICK*, push the connectors together to link.

Connect the MINI USB connector into the front underside of the JOYSTICK, and route to your PC.

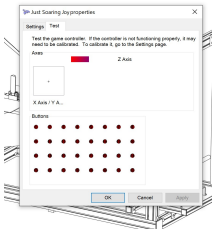
Step3
Tidy the cabling using the supplied cable clamps and/or stickers, ensure sufficient length is left to allow the rudder assembly to freely move forwards and backwards without straining the cable.

Ensure rudder cable is tight again the frame and does not present a tripping hazard, it is best to route this cable on the opposite side of the rig where you normally enter and exit.

It is possible to push the cables into the channel, and then add one of the supplied stickers or some tape on the outside to keep in place, this can keep the cabling hidden and can prevent accidental damage.

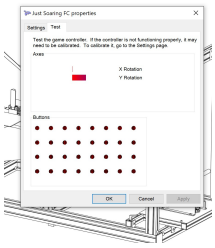
Step4
Plug the JOYSTICK USB into your PC, it should be automatically detected by the PC and a new device "*JustSoaring Joy*" should appear, going into properties you should be able to see the 3 axis functioning as you move the stick and pedals.

Pressing each of the 11 buttons can be seen as a flicker on the button section below



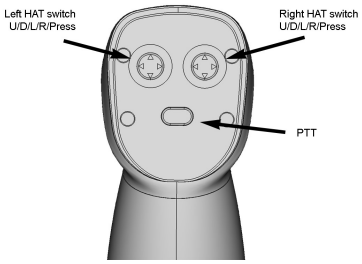

Step5
Unplug the JOYSTICK and plug in the FLIGHT CONTROLS, it should be automatically detected by the PC and a new device "*JustSoaring FC*" should appear, going into properties you should see axis for both AirBrake and Flaps.

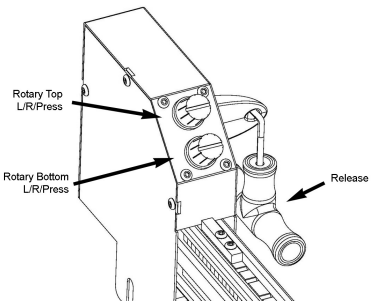
Moving the Brake you should see the X rotation bar move, and moving the flaps you should see the Y rotation bar move.



# Recommended Key Assignment

The glider sim pro has 5 analog axis and 23 assignable button actions. You can assign most all of these to any function you like, but we recommend the following as a complete basic setup. Any function from the list below you do not use you can reassign the button to any function you use.




To assign these actions, run Condor and assign controls

Below are some suggested control assignment, as well as some comments.

| Action | Button/Axis Device | Comment |
|---|---|---|
| Bank | JS Joystick, X axis | |
| Pitch | JS Joystick, Y axis | |
| Rudder | JS Joystick, Z axis | |
| AirBrakes | JS FC, X rotation | |
| Flaps | JS FC, Y rotation | |
| | | |
| Trimmer Up | JS Joystick, button 1 | Left hat switch up |
| Trimmer Down | JS Joystick, button 3 | Left hat switch down |
| Trimmer Center | JS Joystick, button 4 | Left hat switch press |
| Gear | JS FC, button 5 | Gear handle |
| Wheel Brake | JS FC, button 16 | **Fully pull brake |
| Release | JS FC, button 8 | Release handle |
| Water | JS FC, button 0 | Red armrest button |
| | | |
| View pan left | JS Joystick, button 10 | Right hat switch left |
| View pan right | JS Joystick, button 8 | Right hat switch right |
| View pan up | JS Joystick, button 9 | Right hat switch up |
| View pan down | JS Joystick, button 11 | Right hat switch down |
| View reset | JS Joystick, button 12 | Right hat switch press |
| Pause | JS FC, button 1 | Yellow armrest button |
| Miracle | JS FC, button 2 | Top rotary press |
| Handheld next screen | JS Joystick, button 0 | Left hat switch right |
| Vario vol+ | JS FC, button 27 | Bottom rotary right |
| Vario vol- | JS FC, button 26 | Bottom rotary left |
| Altimeter up | JS FC, button 24 | Top rotary right |
| Altimeter down | JS FC, button 25 | Top rotary left |
| Lift helper | JS FC, button 6 | Bottom rotary press |
| Start flight | JS FC, button 4 | Green armrest button |
| | | |

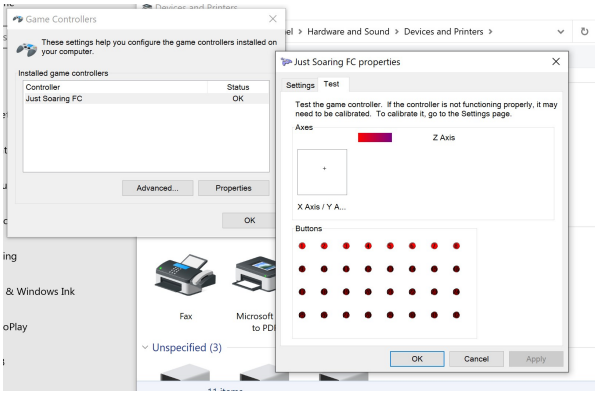
# Calibration

You can download the flight controls calibration tool from the following link:
http://files.justsoaring.com/JS_calibration_tool_v01r01.zip

*JOYSTICK* (unplug flight controls)
The joystick should be provided pre-calibrated, however if you find misalignment in the axis you can follow the steps below.

1. To begin calibrating the joystick, plug in the joystick USB while pressing the PTT button (single push button) for 3 seconds.

2. If you go into settings>devices>devices & printers, then right click on JUST SOARING JOY, select game controller settings and then properties you will see all the top row of switches lit when in calibration mode...



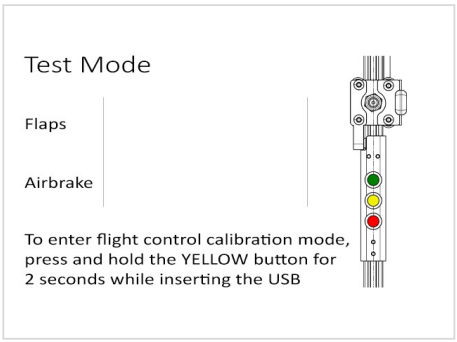

3. When in this mode, move joystick fully fwd/back/left/right and return to center, then move rudder pedals fully left/right and return to center.

4. Once complete press the PTT button again to save the calibration, you should now see each axis move correctly

*FLIGHT CONTROLS* (unplug joystick)
The flight controls should be provided pre-calibrated.

Running the flight controller calibration application, in TEST MODE you should see the brake axis has a smooth analog transition along its length, The flaps step in increments from notch to notch (7 in total).

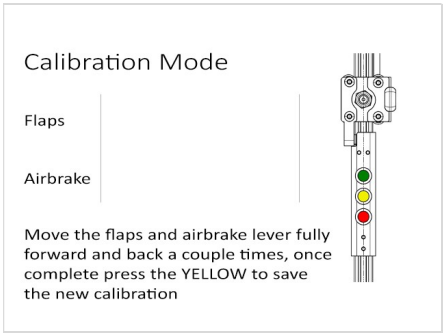
If you find misalignment in the axis you can follow the steps below.



When calibrating flight controls you need to first calibrate range and then position for the flaps to function correctly so it is a two-step process.

1. To calibrate the flight controls 'range', open the supplied app, unplug USB, while holding middle button (yellow) plug in USB and keep holding for more than 3s

2. App should change to CALIBRATION MODE page

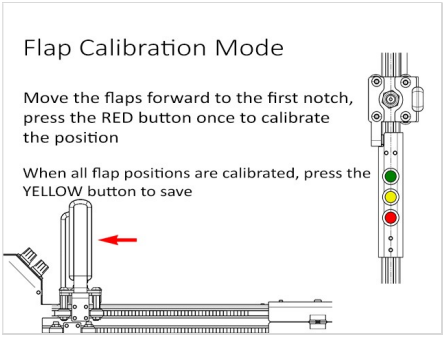



3. Follow on screen instructions move both brake/flaps handles fully forward & backwards

4. Once complete press middle button (yellow) again to save range calibration. This will calibrate the range of each axis.

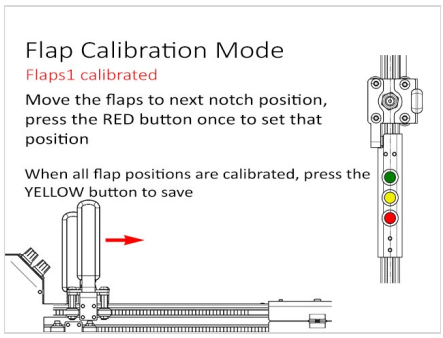
5. 2nd step, to calibrate the flaps notch positions; Similar process, this time we will use the rear button. Unplug USB, while holding rear button (red) plug in USB and keep holding for more than 3s

6. App should change to FLAP CALIBRATION MODE page

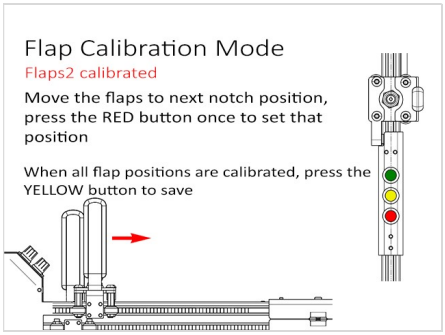



7. Move the flap handle fully forward into the front 1st notch

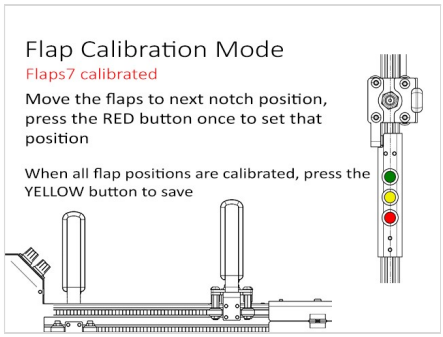
8. Then press the rear button once, screen should animate moving flaps to 2nd position and display "Flaps 1 calibrated"
   *Note: if during this process a key press is accidentally detected as multiple presses, start the process again*




9. Move flap handle to 2nd notch, then press the rear button once again, screen should animate moving flaps to 3nd position and display "Flaps 2 calibrated"




10. Repeat until done that for all notch positions (should be 7 notches)




11. Once complete and at the end of travel, press the middle button once to save all of the notch position calibration

12. App will return to the TEST MODE page, further testing you should see each notch position increases one step in the bar with each bar equally divided into 7 steps

13. . Flaps forward should show no bar, and fully back should be a full bar

14. When working 100% correctly airbrake will be an analog range as the handle moves, the flaps will steps from notch to notch.

# Tips & Tricks

Below are a number of useful hints, tips and tricks we have learned along the way which you might find helpful.

- *Wheel brake button press*
  To allow the use of the wheel brake when on the ground, a button press command is sent when the BRAKE lever is pulled to 100%. This allows analog control while flying with the wheel brake at the end of the travel.

  To program, select the wheel brake button in Condor, and while detecting the key press, pull the brake lever fully to the rear.

- *Gear handle reversed*
  The landing gear in Condor uses a push button to toggle the state. This means is you begin the simulator with the handle in the wrong position, it will be out of sync.

  To rectify this during game play, you can momentarily stow and release the handle again which will reverse the state to force them in sync.

- *Looking around during flight*
  If you do not use head tracking, we recommend using one of the joystick HAT switches to pan the pilots view. You should assign the press button to 'reset view' this allows you to easily pan your view and quickly return to default without removing your hand from the joystick.

- *Tidy cabling*
  To keep your cabling tidy you can run the USB cables inside the channel of the aluminum profile. A sheet of silver stickers are provided to help keep the cables in place.
  *Note: Remember to leave sufficient cable length to allow full travel of the rudder pedals*
  *Note: it makes sense to run the cables down the opposite side of the rig to where you normally enter/exit to prevent tripping*

- *Plastic end covers for aluminum profile*
  We include plastic end covers for all exposed ends of the aluminum profile. As these parts will become loose/damaged if added and removed multiple times we suggest not installing until you have the rig fully assembled, you have checked fitment and are completely satisfied with the layout.

  The covers push-fit onto the end of the profile. Some extra spare parts have been included.

  These come in 4 sizes:
  60x60 (4pcs) for the ends of base frame
  30x60 (4pcs) for top of monitor legs and ends of monitor support
  30x30 (4pcs) for rudder plate frame
  20x40 (3pcs) for flight controls (these are pre-installed)

# Troubleshooting

*Hard to move flaps when engaged in a notch*
The flaps control has a spring-loaded ball which engages in the notches for each flap position. If you feel the adjustment is too loose/tight, you can loosen the locking nut and then use a 5mm allen key to unscrew the ball-spring. Tighten the locking nut while still holding the ball-spring position with the allen key.

Note: we find the ideal tightness is achieved by not fully screwing the ball-spring so it touches the notch plate, but rather screw down and then turn back a ¼ turn so the ball is not fully engaged.