PRO FLIGHT TRAINER PUMA X Helicopter Controller with Realistic Flying Experience User Guide

Contents

PRO FLIGHT TRAINER

PRO FLIGHT TRAINER PUMA X Helicopter Controller with Realistic Flying Experience

Product Information

The PUMA X is a flight control system designed for use in aviation simulations. It includes various components and accessories to assemble and operate the controls effectively.

- Flight Control Parts: These are essential components for controlling the flight simulation.
- Transparent Bag: Contains additional items for assembly and maintenance.
  - Haribo Bears: A snack included in the package.
  - Fold Stopper: Used for the Cyclic assembly.
  - Mini-Wrench Nr 13: Quick friction adjustment tool.
  - Nr 3 Key and Nr 4 Key: Keys for specific tasks.
  - Combo-Wrench Nr 7/8: Calibration wire for maintenance purposes.
  - Small tube of silicon-based grease: Used for friction washers and maintenance.
  - USB Cable: For connecting the flight controls to a computer or other compatible devices.

Product Usage Instructions

1. Check if someone is around and open the Haribo bears quietly. Count the bears and ensure there are at least 7. If less than 7 bears are found, immediately contact the quality control center.
2. Only consume the Haribo bears when instructed or when the symbol indicating permission is shown.
3. Refer to the following pages for instructions on assembling the PUMA X flight controls. Avoid using excessive force during assembly.
4. If the pedal tubes are already attached to the toe brakes, skip the steps related to attaching pedal tubes.
5. Remove the pedal screws or take them from the bag.
6. Insert the pedal tube into the mounting side, leaving the first hole empty.
7. Tighten the pedal screws on both sides. Eat 2 bears for energy.

8. Attach 2 screws on the collective arm and adjust both arm pieces as shown in the picture. Remove the upper collective screw on the frame assembly while holding the nut with one hand.
9. Place the collective arm to fit the upper slots and insert the screw. Slightly tighten the screw.
10. Remove the lower collective screw while holding the nut. Insert the lower collective screw and slightly tighten it.
11. Raise the collective assembly and loosen both collective screws if necessary. Once satisfied with the placement, tighten both collective screws without using excessive force.
12. Eat 2 bears only. Loosen the nuts on the cyclic assembly and insert the screws on the cyclic bar. Do not remove the screws from the cyclic curved tube.
13. Mount the nuts and tighten them. The flight controls are now assembled. Follow the wiring guide to connect the sensors.
14. Install anti-slip foots on all 4 corners of the frame. For additional stability, use the seat blocker assembly if required.

Part List

Aside from the flight control parts, you should find a transparent bag with:

Haribo bears

Fold Stopper for the Cyclic assembly

Mini-Wrench Nr 13 for quick friction adjustment

Nr 3 key and Nr 4 Key

Combo-Wrench Nr 7/8

Calibration wire, used for maintenance and special tasks

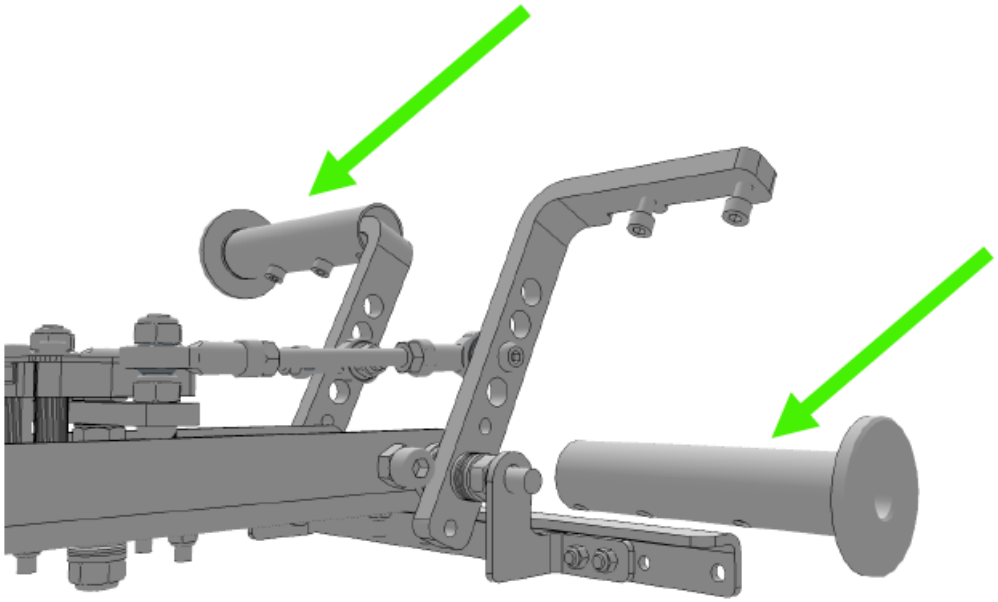
Small tube of silicon-based grease, used for friction washers and maintenance

USB Cable

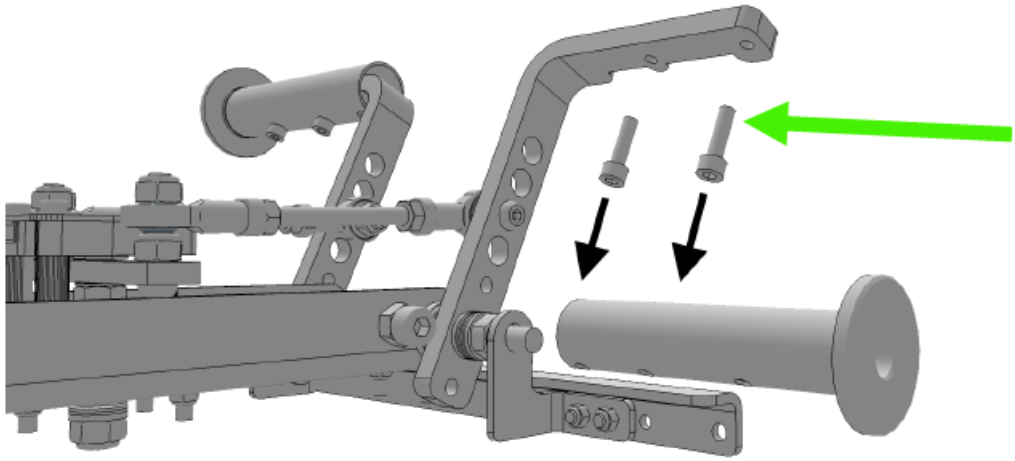
Check if someone is around.
Carefully and quietly open the Haribo bears and count them (High level of noise might attract nearby predators!).
If you have less than 7 bears in the bag, immediately call our quality control center to report a code red alert!
Only eat bears when instructed. That is crucial!
You may eat bears when you see this symbol:

The next pages show how to assemble the PUMA X flight controls.
Never use excessive forces.
Contact us if something is not working out, we are happy to assist you and get it sorted out.
Not that you might be able to skip some of these steps if the units comes packaged in a different way, your pedal tube might shipped already assembled!
If you ordered Toe Brakes, your pedal tubes are already attached to the toe brakes, you can skip this!

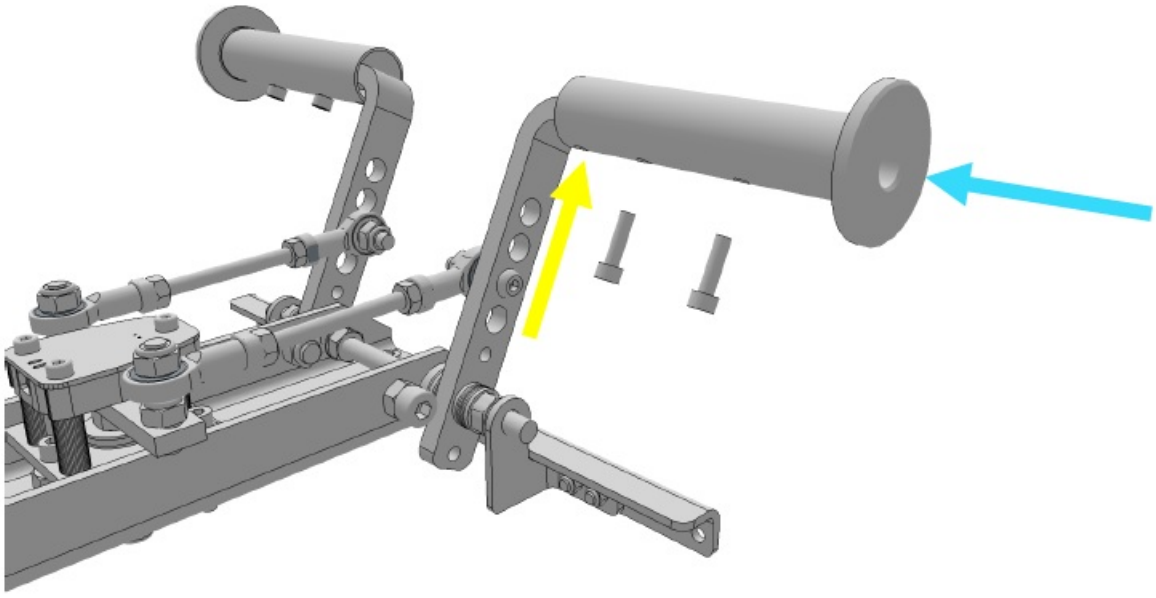
How to use?



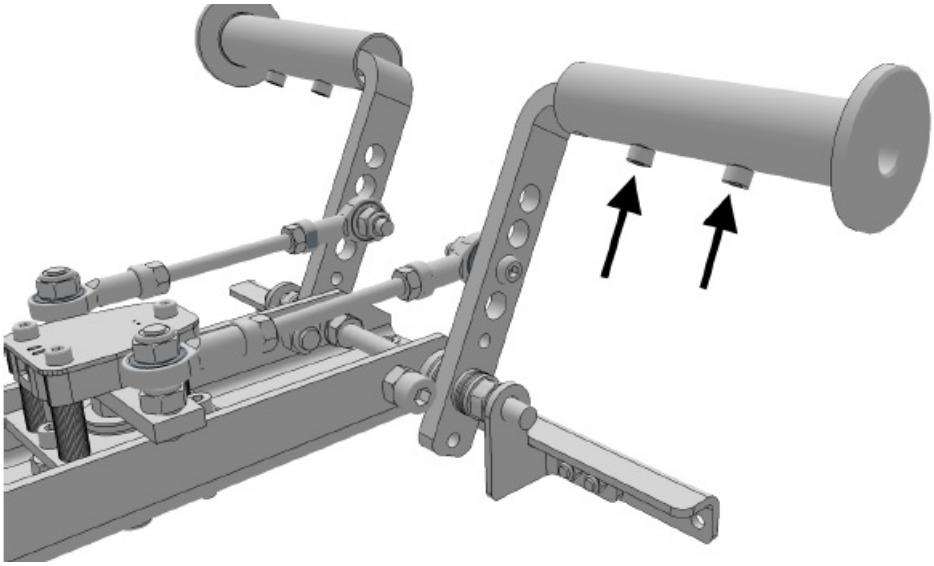
pedal tubes



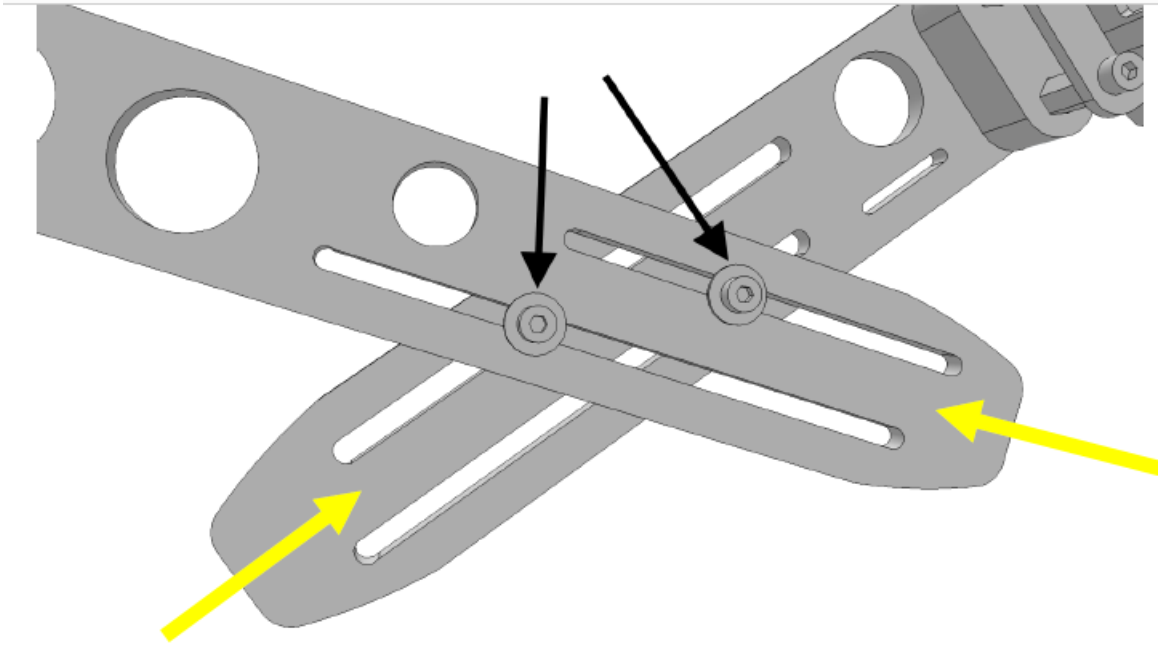
Remove pedal screws, or take them from the bag



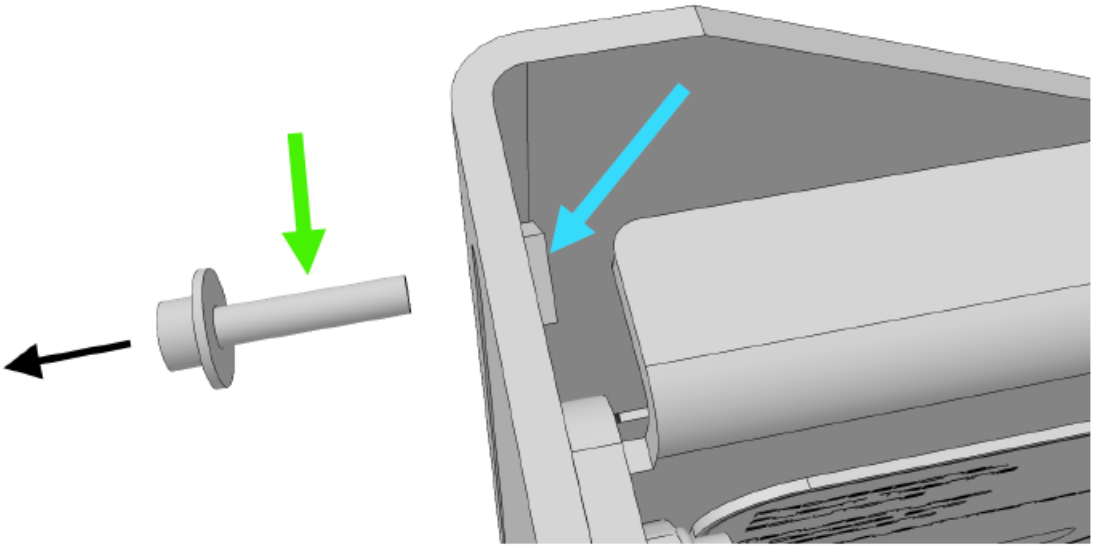
Insert pedal tube
There are 3 holes on the mounting side. The first hole stays empty



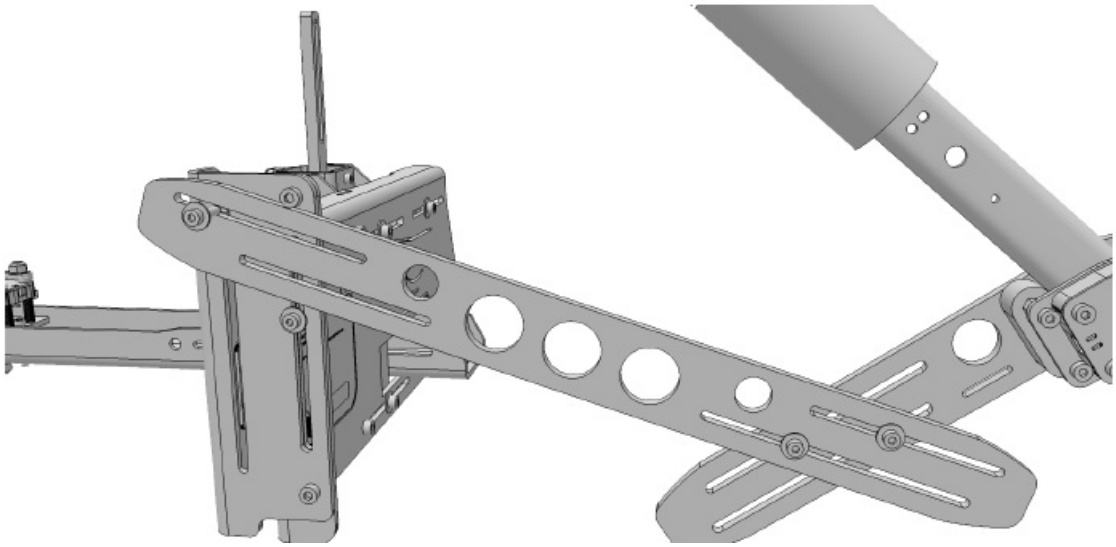
Tighten pedal screws, repeat on both sides Eat 2 bears to get some energy!



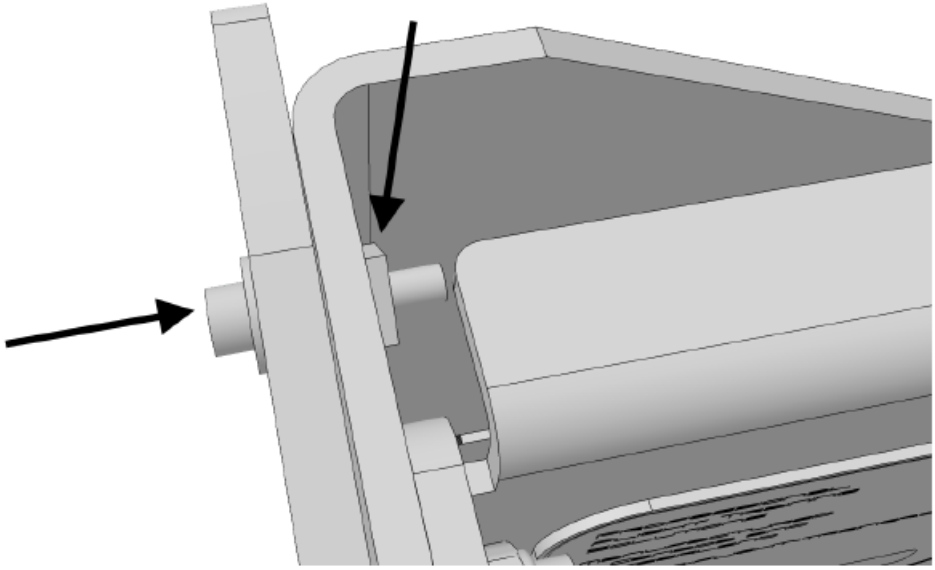
attach 2 screws on collective arm and adjust both arm pieces roughly as shown on picture.



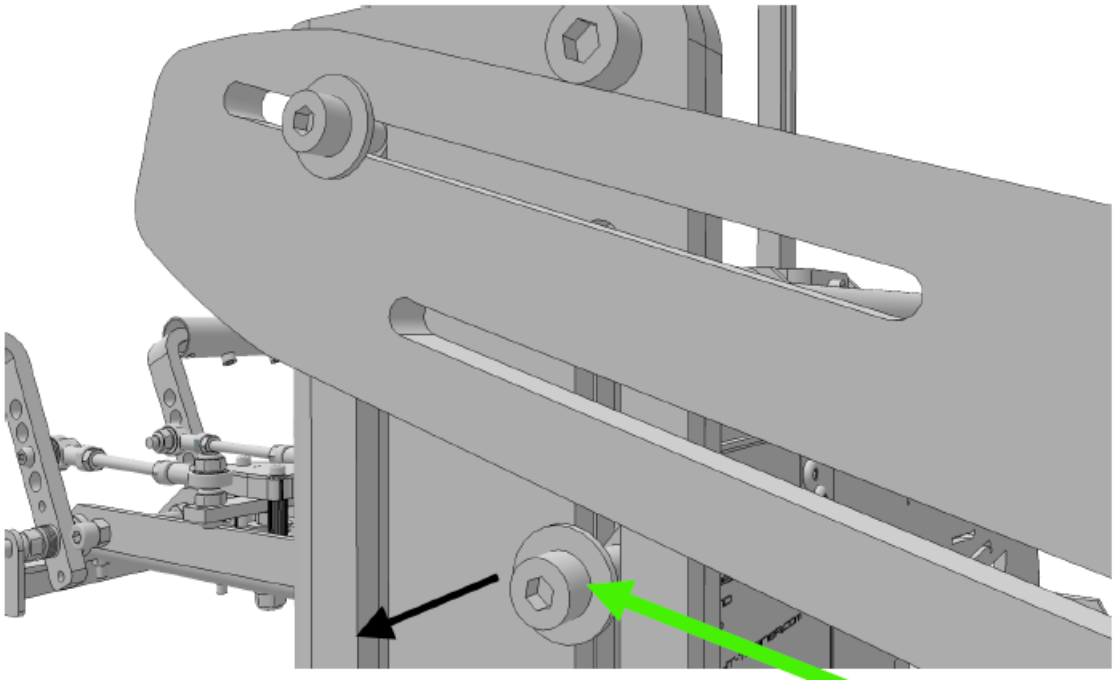
While holding the nut with one hand, remove the upper collective screw on the frame assembly



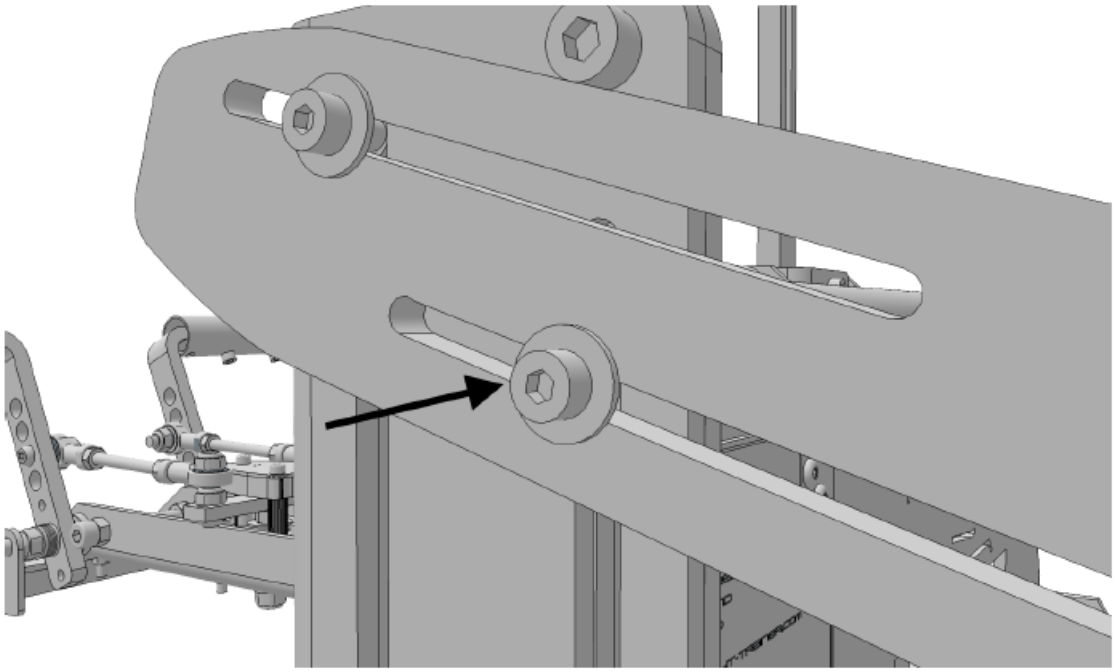
Place the collective arm (touches the ground on the right side) to fit the upper slots (for the upper collective screw we just removed)



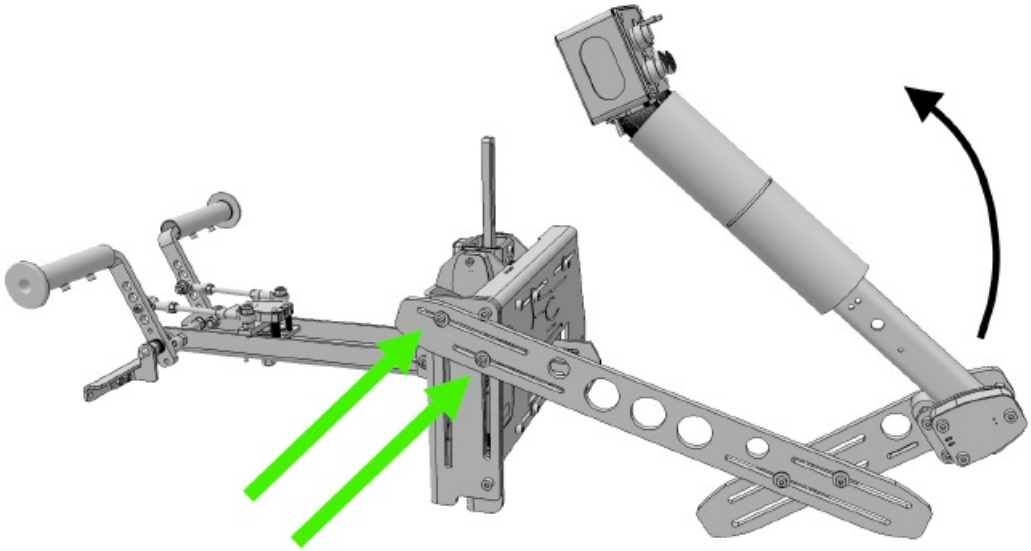
Insert the screw (if the nut falls during the process, just put it back in place at the top)
Slightly tighten the screw



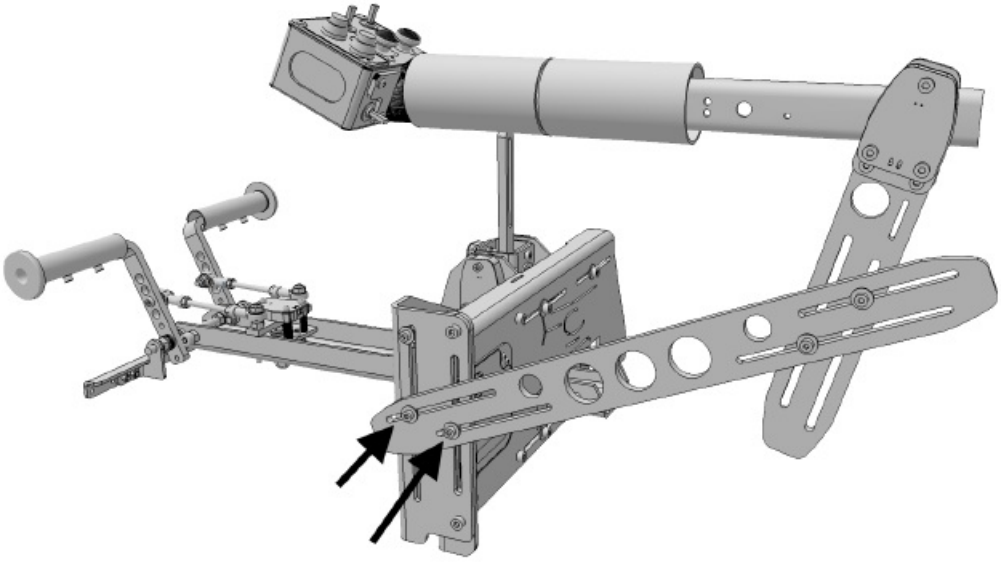
Remove the lower collective screw, while holding the nut



Insert the lower collective screw and slightly tighten it

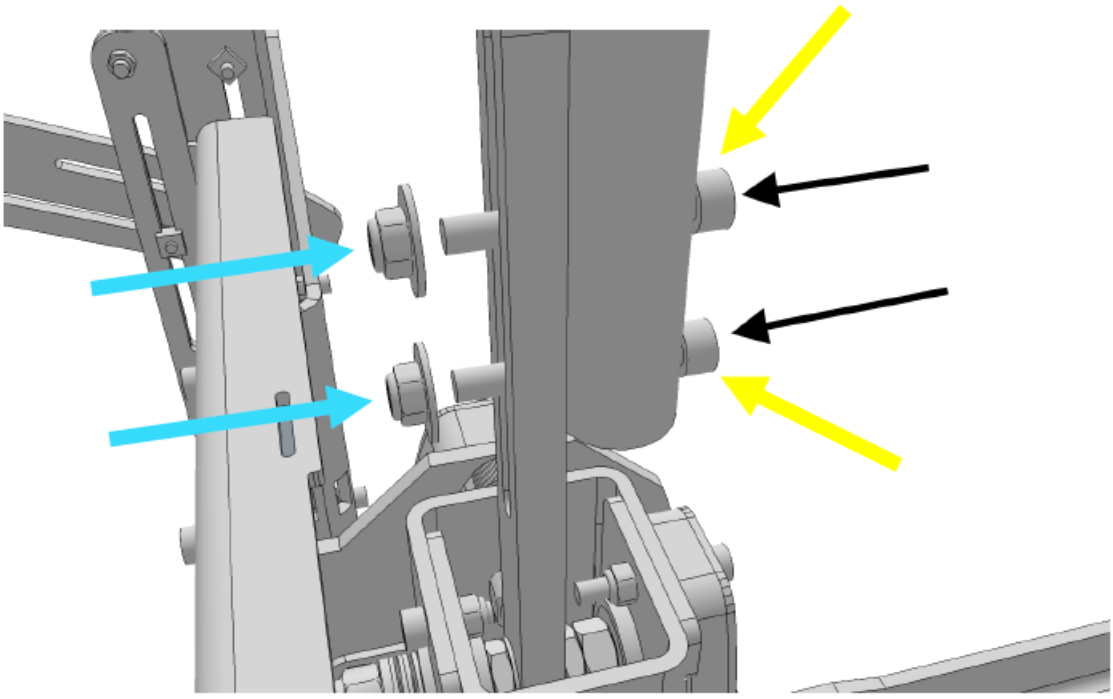


Rise the collective assembly; loosen both collective screws if you tightened too much

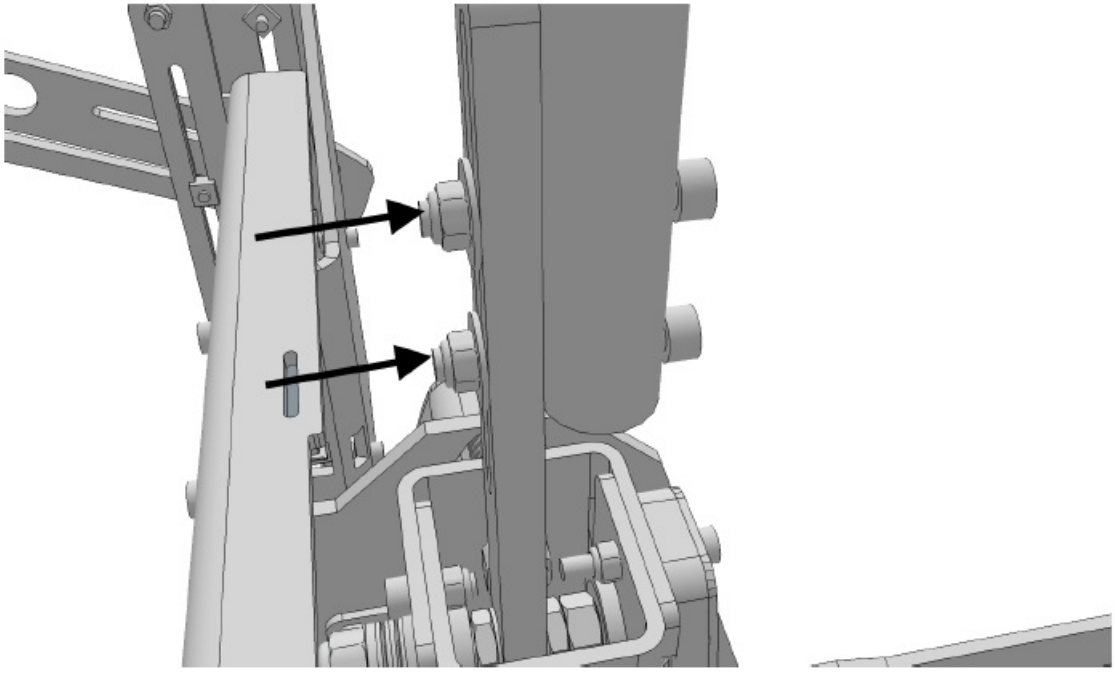


Once you are happy with the placement, you can tighten both collective screws, don’t use too much force or you will damage the screw heads!

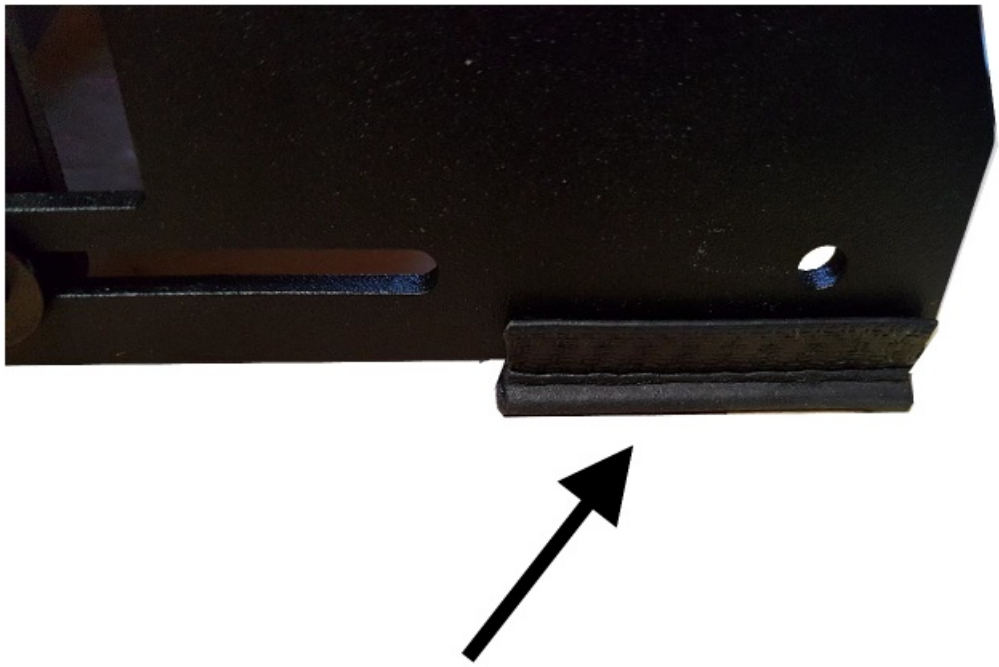
Eat 2 bears only. 
Resist the temptation to eat all remaining bears!
We know it’s hard. But you can do it!



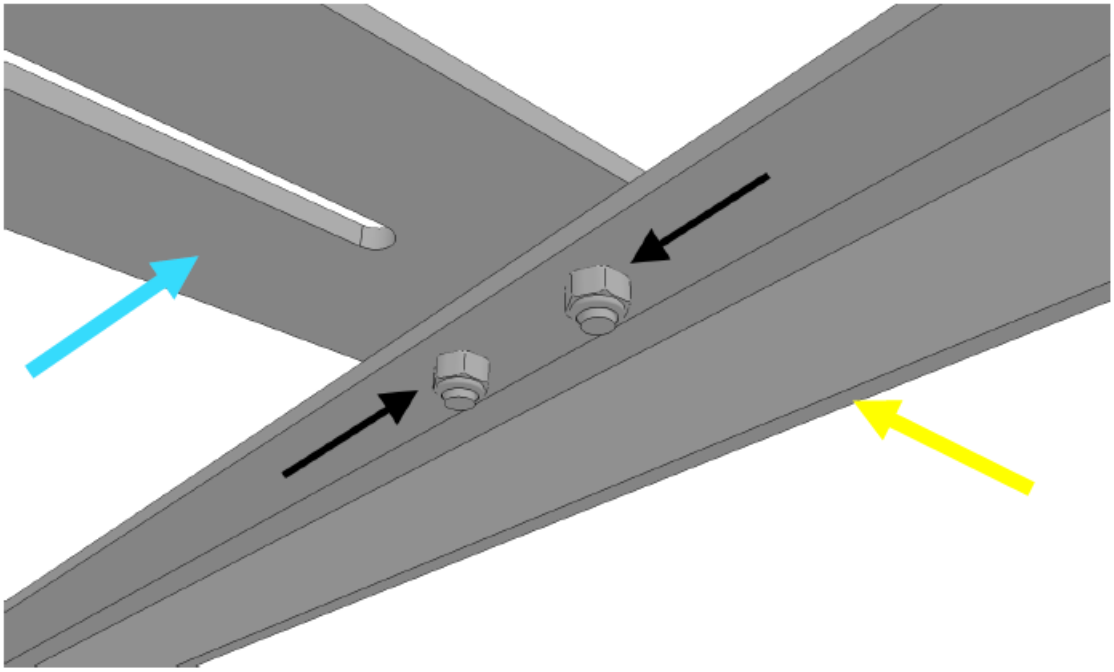
Loosen the nuts on the cyclic assembly and insert the screws on the cyclic bar. Don’t remove the screws from the cyclic curved tube!



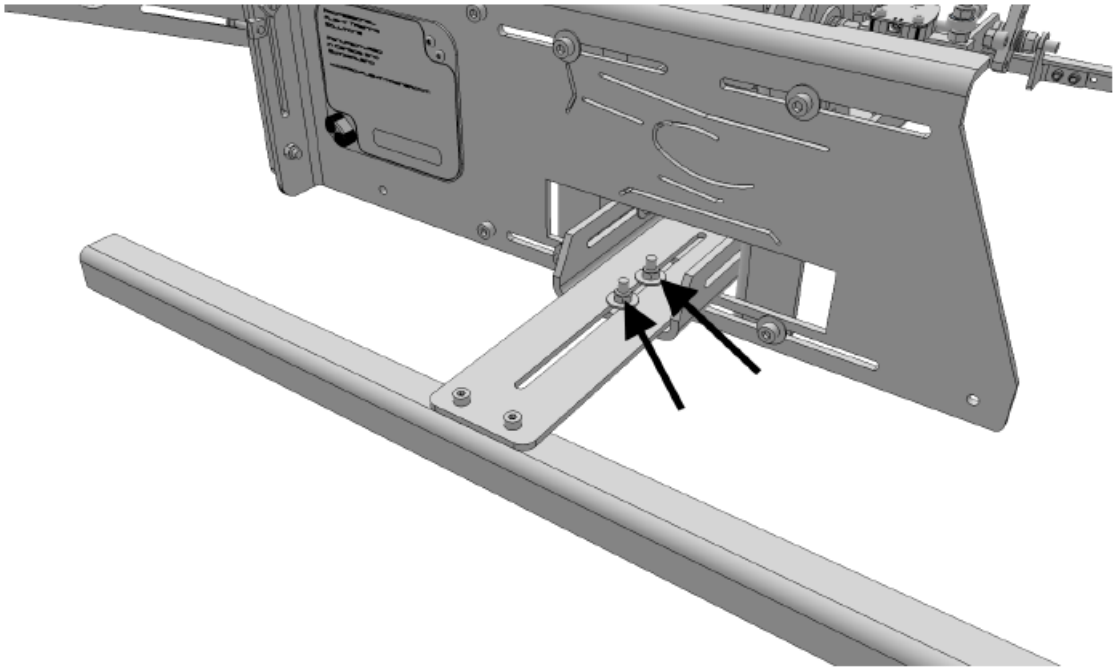
Mount the nuts and tighten them.
You did it! The flight controls are assembled. Follow the wiring guide to wire up the sensors.
You might want to keep the remaining bears for later, or not, that’s up to you!
The PUMA X flight controls come with anti-slip foots which you can install on all 4 corners of the frame as shown in the picture below.



In case the unit is used on a very slippery floor, or if you experience that the unit tends to move during usage of the pedals and brakes, you can add the seat blocker assembly to the frame.

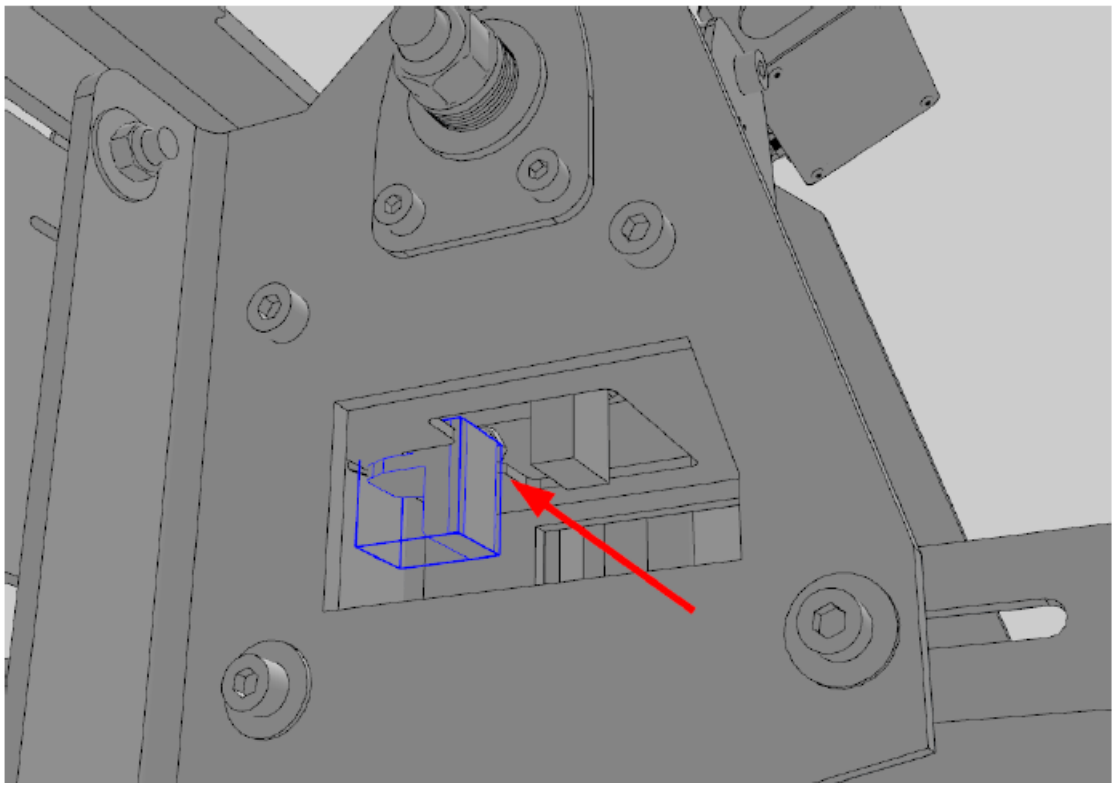


Attach the seat blocker bar to the blocker plate using 2 screws



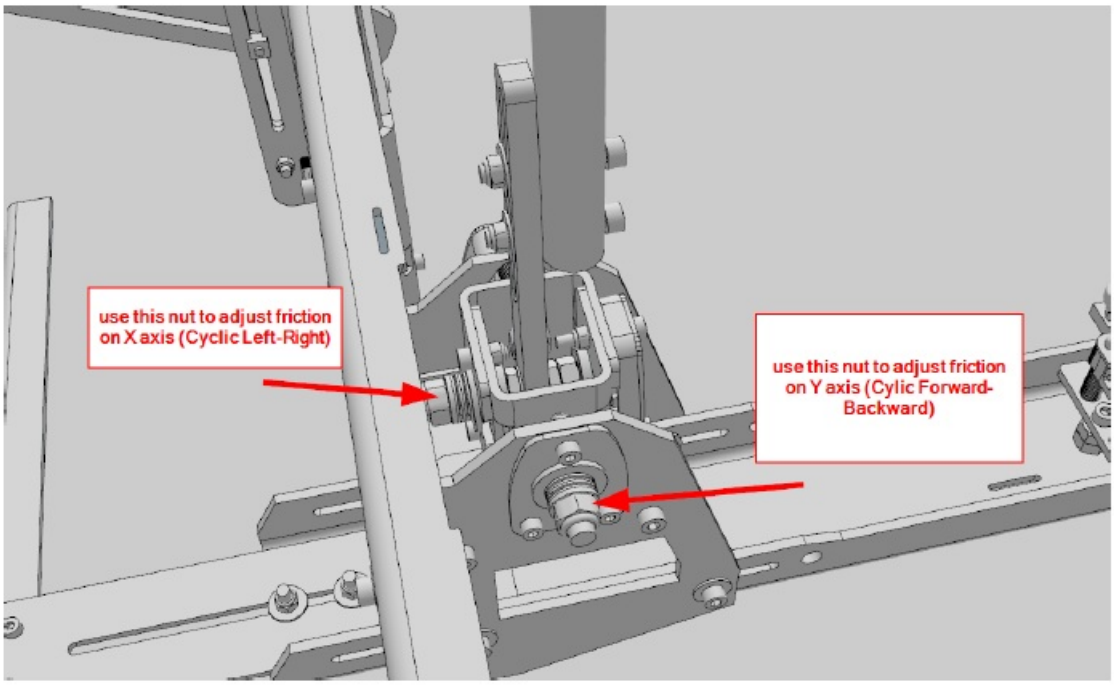
Attach the seat blocker assembly to the frame using 2 screws
The Fold Stopper for the Cyclic assembly can be used to prevent the cyclic from going through the fold slot.

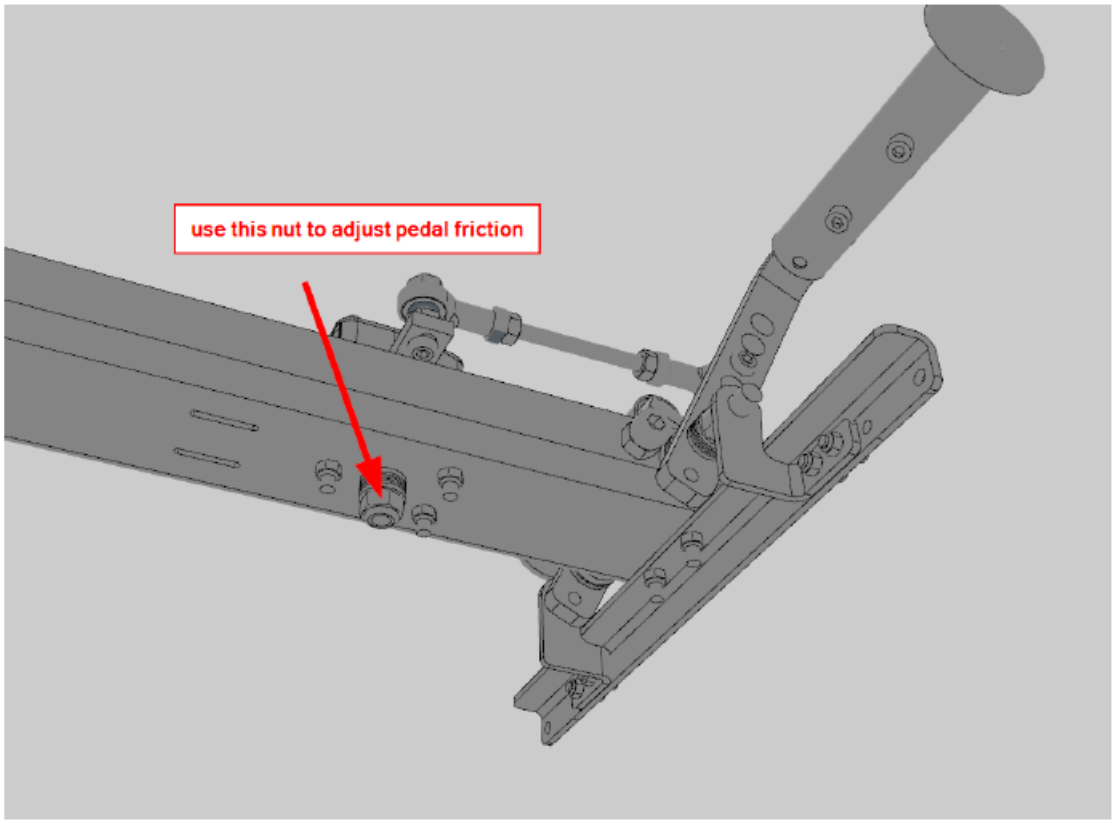
Start by bringing the cyclic into its upright position.
Insert the fold stop piece into the slot.

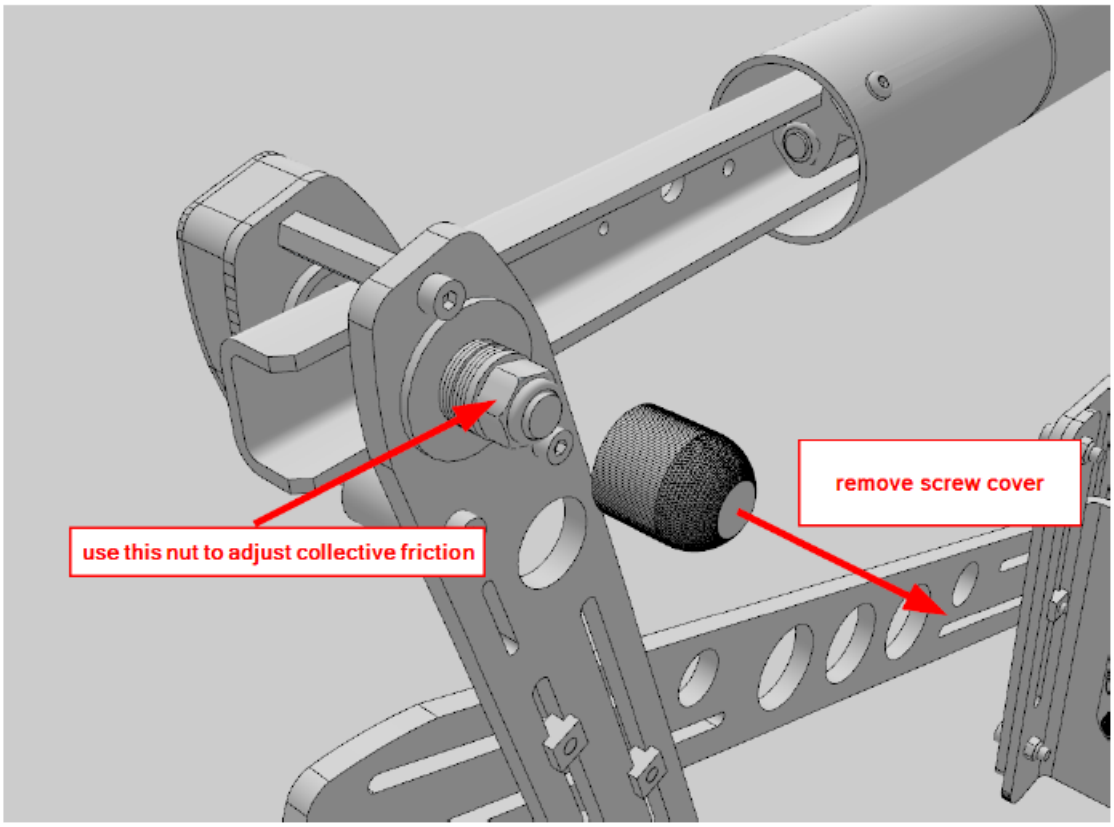


Mini-Wrench Nr 13 for quick friction adjustment

You can use this hand mini wrench to adjust friction on all 4 main axis “on the fly”.







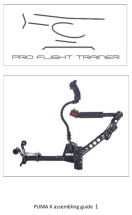
Calibration wire, used for maintenance and special tasks

This special wire and connector set is only used under instruction of our support team, keep it somewhere safe! ☺
Small tube of silicon-based grease, used for friction washers and maintenance

The grease can be used to lubricate the throttles, or the washers used on the main 4 axis after long usage, or if you want to achieve very high level of friction on the cyclic axis (not recommended but possible)
This little guide can help to find the “sweet friction spot”
It was written by a very experienced military helicopter flight instructor.
I’ve experimented with different friction settings, and I approach my adjustments in two different but similar ways to help me somewhat quickly change between control feels. Each method helps me adjust the cyclic feel for two types of helicopters, Light hydraulically boosted helicopters like the B206/AS350/H125, and another method for Heavier hydraulically driven flight controls and helicopters without hydraulic flight control systems. It’s also important to note that with these methods I am using the metal washers that you sent me as well as lubricating the

metal washers with silicon oil. I started using the oil after finding that my cyclic will squeak when being used at higher friction settings, the added benefit was smoother cyclic movements at friction settings that closer resembled the aircraft i normally fly in real life. I mention this because this might not be necessary for some users. the Cyclic feel of an AH-64 isn't the same as a R44, so most people won't need frictions set that high. for light hydraulically boosted helicopters, I start with no friction, and then tighten it to where the flight controls hold their position when moved and don't flop all the way over to the stop. From there, I'll add one half to one full turn of the nut. That's my base adjustment and I make smaller incremental adjustments from there until it feels right.
for heavier helicopters or non hydraulically driven/boosted models. I do the opposite. I tighten the until the controls don't move easily. I don't have a pull gauge, but i measure this by using two fingers and pressing on the cyclic in pitch and roll with my fingertips. my fingers should give and bend backwards before the cyclic moves. and it should be a smooth movement, the cyclic should feel like it has "broken free". from there I'll make smaller adjustments to get it just right. I also use this method on my pedals. mostly because the AH-64 has force trim in the pedals, and large "feel springs" that offer a lot more resistance than that of a 300 or any of the Robbies.
I've found these give me the best results short of some sort of mechanical control load/ force feedback (Which would be awesome by the way) it also doesn't address any sort of force trim, which again is a mechanical thing, but get's me close enough to be beneficial. Again, most of my adjustments are made to emulate what i fly on a regular basis, but it might be a useful technique for others.

Documents / Resources

	**PRO FLIGHT TRAINER PUMA X Helicopter Controller with Realistic Flying Experience** [pdf] User Guide RTF, PUMA X, PFT-003, EU-PFT-003, PUMA X Helicopter Controller with Realistic Flying Experience, PUMA X Helicopter Controller, Helicopter Controller, Controller