Alien simracing pedals

User manual

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Introduction

Thank you for purchasing Alien Simracing pedals! We hope you'll have a great time using our set of professional simracing pedals. To get started, please read this user's manual to set up your pedals and adjust them to your needs. Not really into reading? You can watch our video guide, which has some hands-on wrenching action: Video guide

Setting up your pedals

So you've just unboxed your new set of pedals, right? Let's help you set them up, so you can get racing as soon as possible.

Mounting your pedals to a rig

Notice: it's better to adjust your pedals before you attach them to your rig. Some parts are better accessible in that case.

If you're using our base plate and heel rest combo, follow this part of the manual, where we'll show you how to put everything together. If you plan to attach our pedals to your rig without our base plate, that's fine, but you'll have to figure it out on your own.

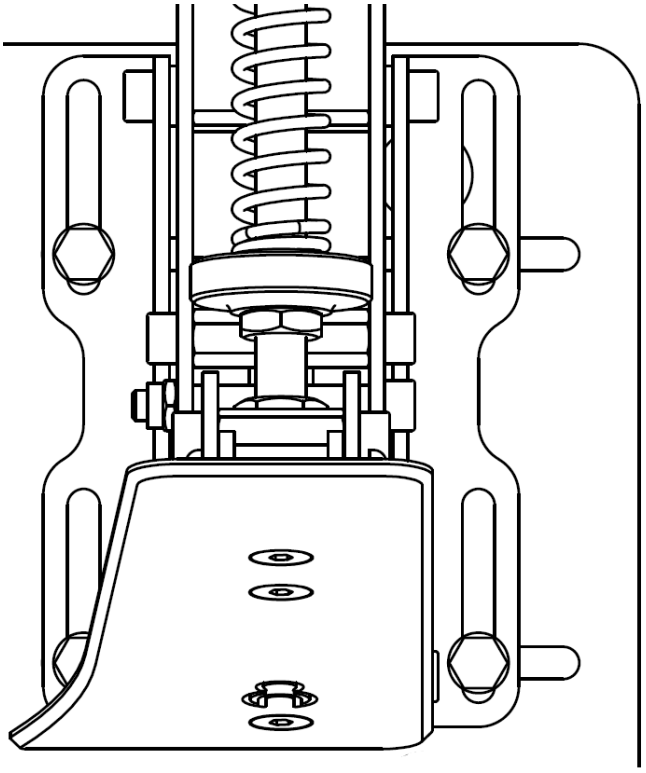
Fix your base plate to a rig

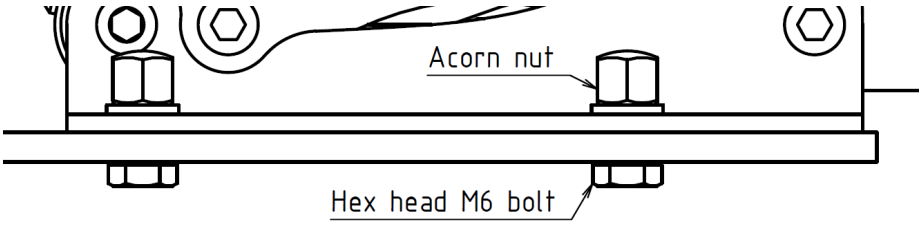
Notice: If you're mounting the base plate against a flat surface, you'll want to use some washers to lift up the base plate, so there is room for bolts that hold the pedals themselves.

The first step is to fix the base plate to your rig. There are 10 countersunk holes on the base plate, all of which can be used to screw the base plate down to your rig's aluminum profiles using the included countersunk M8 bolts.

Mount your pedals to the base plate

After fixing the base plate, you are ready to mount your pedals. Line up your pedals with the grooves and attach the pedal with four pairs of a hex head M6 bolt and an acorn nut, as seen in the figures below. Position the pedal to your liking before you tighten everything.





Repeat this process with remaining pedals and you should have yourself a fully occupied base plate with pedals.

Attach the heel rest

The last part of assembly is attaching the heel rest. That's pretty simple – just take the four included M6 hex key bolts and screw the heel rest onto the base plate. You can adjust the position of the base plate to match your pedals before tightening the bolts.

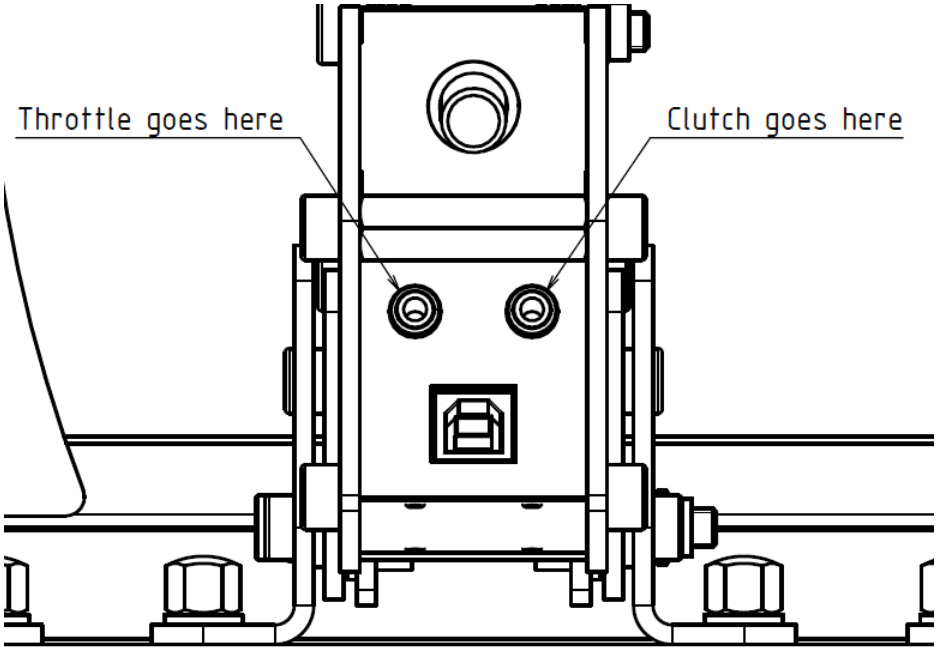
Connecting your pedals to a PC

Now that your pedals are all sorted hardware-wise, it's time to plug them in and calibrate.

Plugging in

Notice: do not connect or disconnect the throttle or clutch pedals (3,5 mm jack cables) while the brake pedal is connected via USB.

Before plugging your pedals to the computer, you first need to connect the throttle and clutch pedals to the main pedal (brake) using the included jack-jack cables. See figure below for reference to plug each pedal to the correct hole.



Now you can connect the pedals to your computer with a USB cable.

Calibration

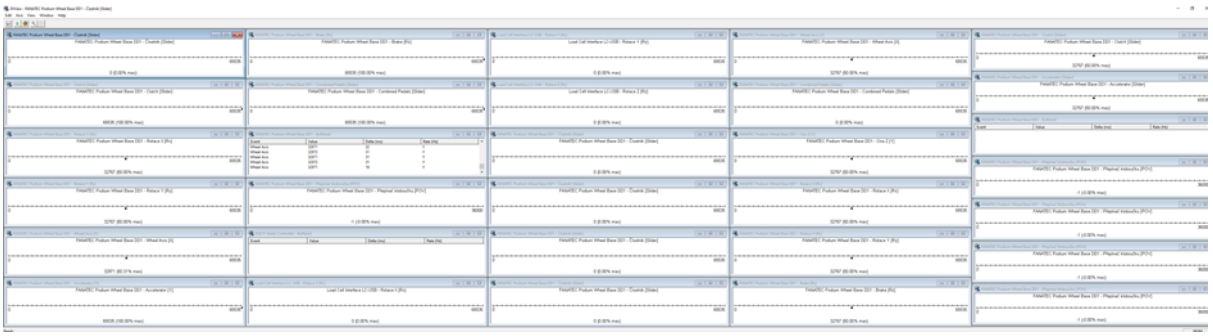
DIView software

Alien pedals use Leo Bodnar electronics. That means you need to use Leo Bodnar software to calibrate them. The software is named DIView and you can download it here:

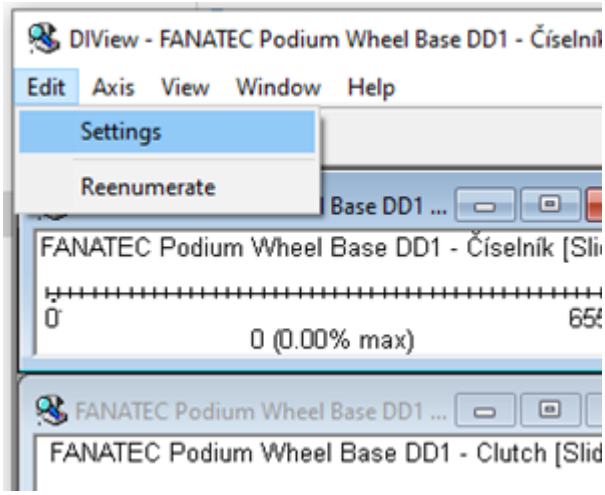
Utilities & Configuration Software : Leo Bodnar, Simulator Electronics
(http://www.leobodnar.com/shop/index.php?main_page=page&id=12)

DIView is not the most friendly software on the market, but we can do it together. Follow this manual to set things up and calibrate your pedals.

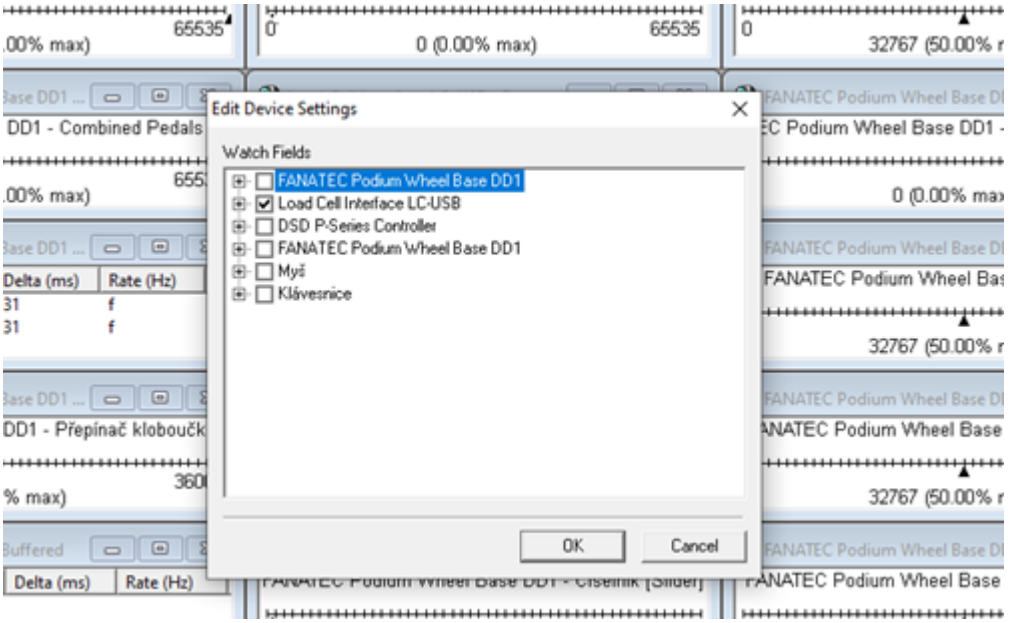
First, start the DIView program. There might be a lot of windows. 2 or 3 of them belong to your connected pedals.



You can limit the number of windows just for your pedals. Go to Edit/settings.

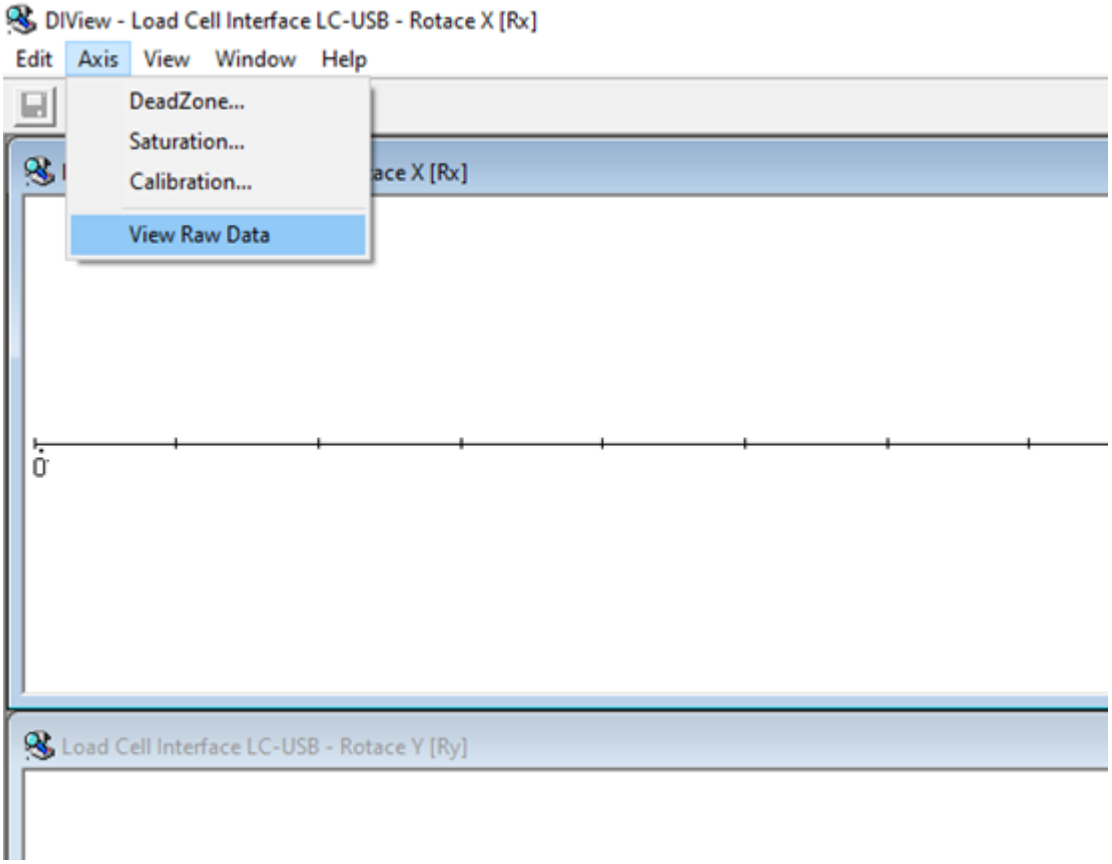


Now select your pedals (Load cell Interface LC-USB)

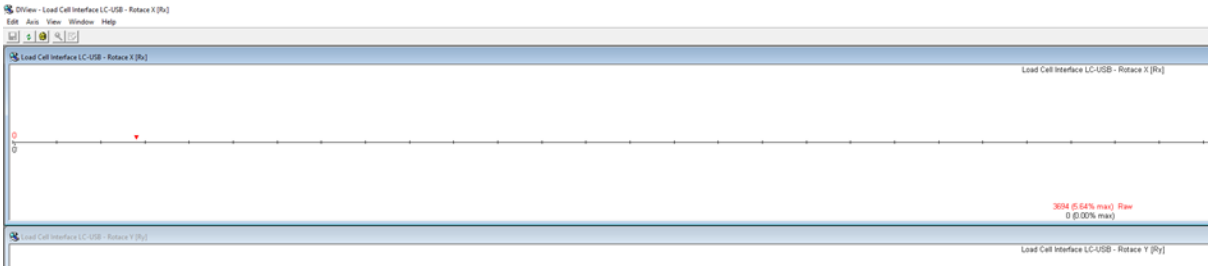


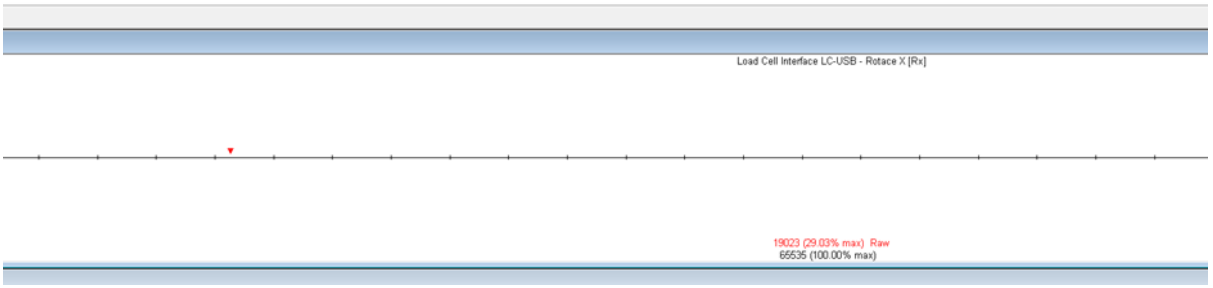
Now only 2 or 3 windows should remain.

Good. It is time to celebrate and calibrate. **Choose one of the windows**. By the way, if you push pedals, you should see a triangle move across the line. Go to Axis/View Raw Data. Red numbers and a red triangle will appear.

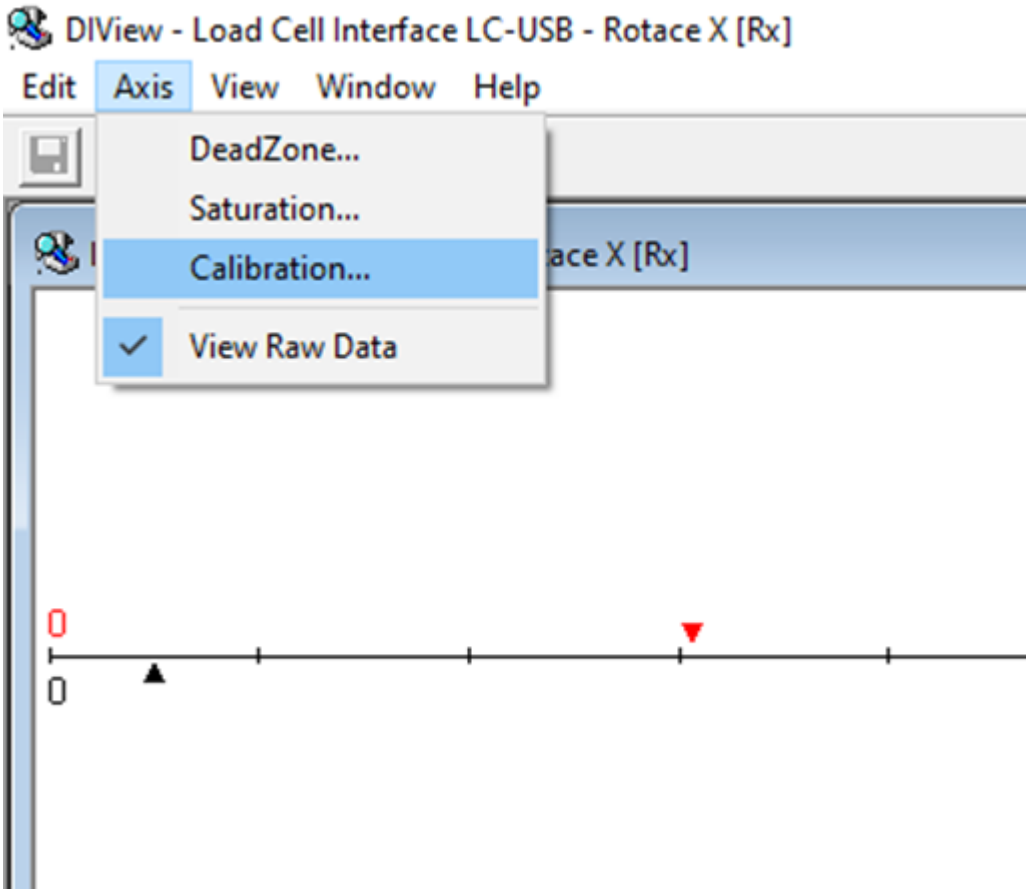


Our goal is to set where the starting point and end point of pedal travel (measured by pressure). Note the red initial number and then the red number at the end of pedal travel. The number is not steady, as there is a tiny bit of movement, but that is ok. For example, if the initial point is oscillating around 3650, note down 3700. And if the end point is oscillating around 18 950, note down 18 900.





Now go to Axis/Calibration



And now you have to do the math. You have to write down the starting point (for example 3700), Max point (for example 18900) and then you have to calculate the center point, which is the average. In this example: 18900 + 3700 = 22600. Divide this number by 2 to get the result, which should be 11300

S - starting raw value
E - Ending raw value
C - center value

(E + S)/2 = C

Use this method on each of the pedals. On the brake pedal you have to choose the ending raw value by feeling. Do not use too much force as you need to brake many times during the race and you need to stay consistent and not exhausted.

Dead zones, special curves

Most of today's sim games have their own options for advanced settings. You can set dead zones or different curves according to your personal taste.

For example, you lay down your foot on the pedal and it is pushed by 3 %, just by the weight of your foot. Set the deadzone 3-4 % to avoid applying any throttle when you don’t intend to.

Adjusting your pedals

We offer plenty of adjustments on our pedals. Let’s take a look at them one by one and see how to adjust them to your specific needs.

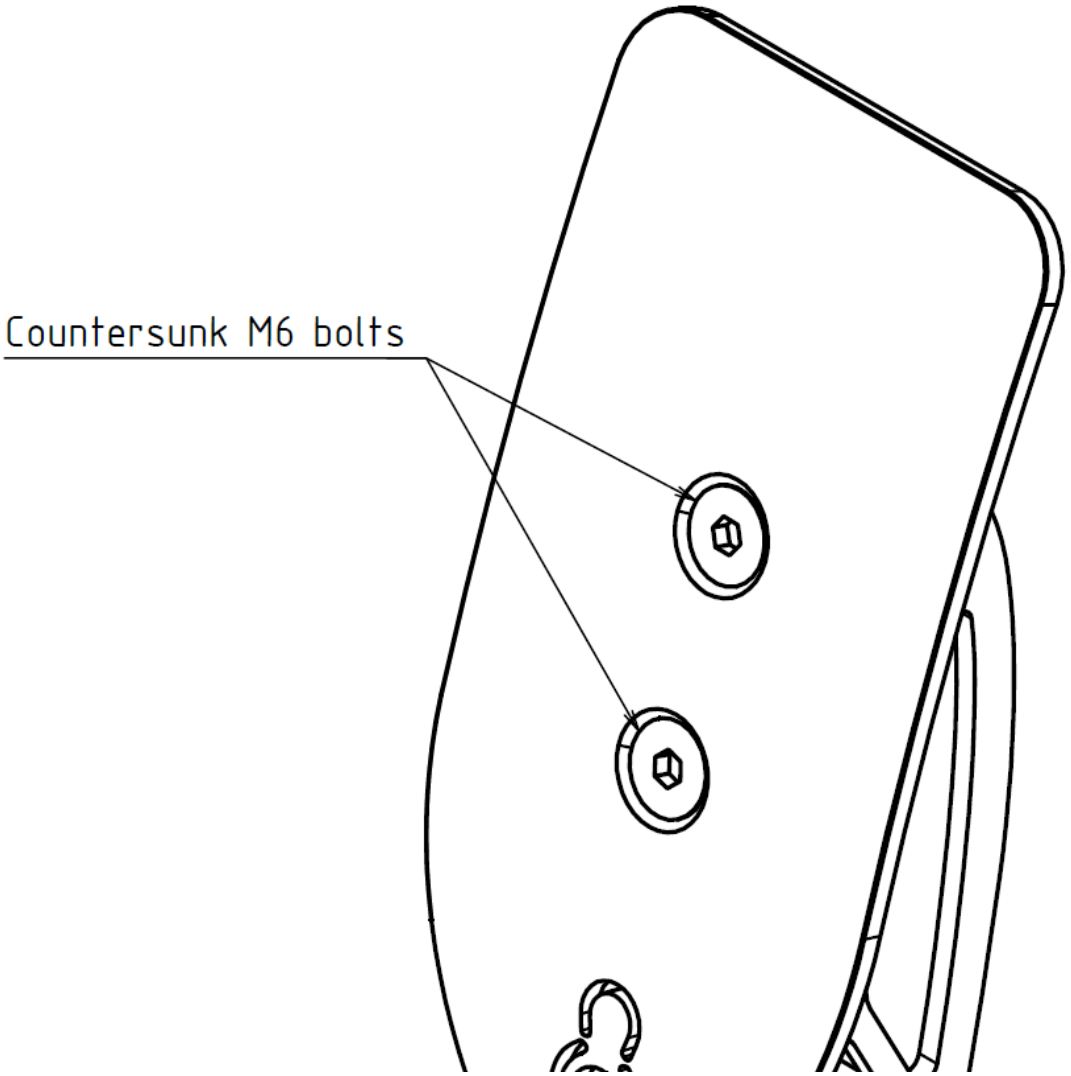
Common adjustments

First up are adjustments that are common across all of the pedals, so the same procedure will apply regardless of the pedal shown.

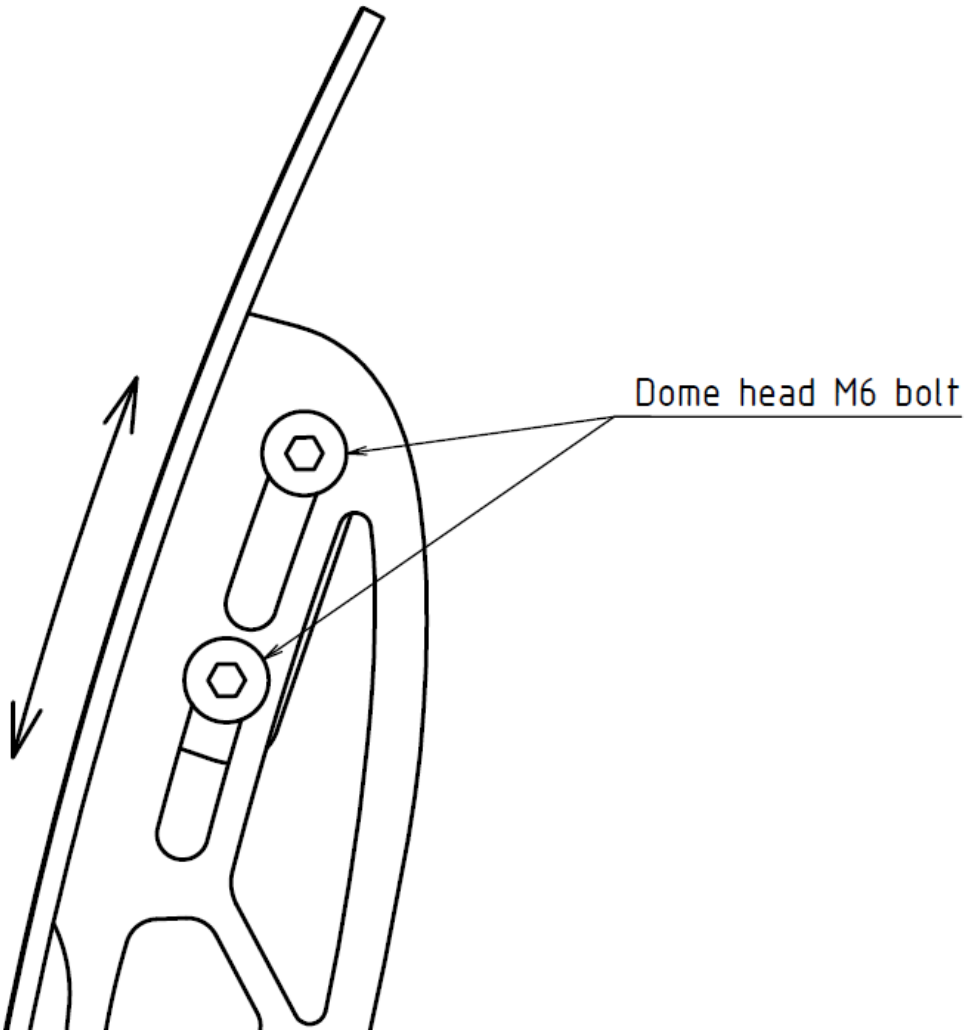
Pedal height

Everyone’s feet are a different size. Some people even have one foot bigger than the other. To ensure maximum comfort and efficiency, you need to set your pedals to a correct height. There’s a 20 mm range of continuous adjustment, which should be plenty for most people.

Let’s start by loosening the countersunk M6 bolts on the pedal face itself. One or two loosening turns using a 4 mm hex key should do the job.



Then, the four dome head M6 bolts on the side of the pedal can be loosened. Again, just a turn or two should be enough. Now you should be able to move the pedal face up and down, as indicated in the figure below.

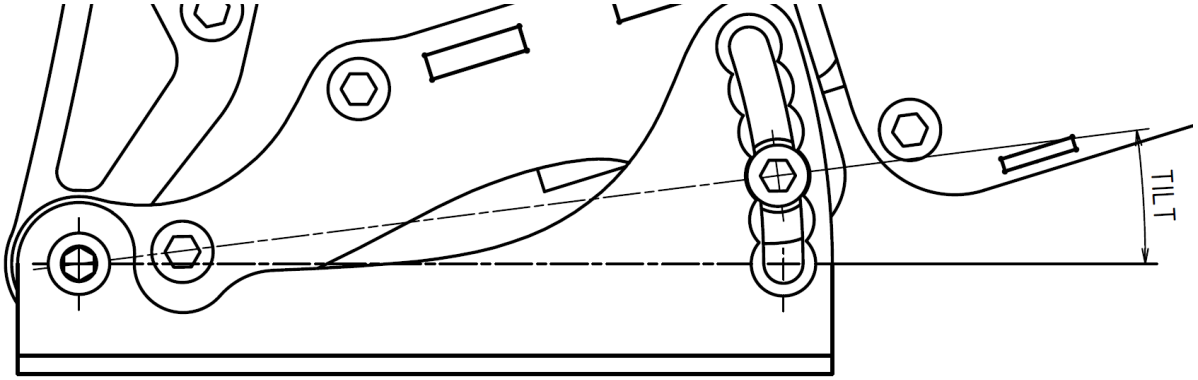


Slide the pedal face to your desired height and then tighten the dome head bolts again. Finally, finish this procedure by tightening the countersunk screws on the pedal face itself.

This adjustment is going to work on all pedals and all styles. However, a longer throttle pedal face (available for bedroom and racing styles) is a set height and can not be adjusted. To swap in the longer pedal face, look further in the Changing to a longer pedal face chapter.

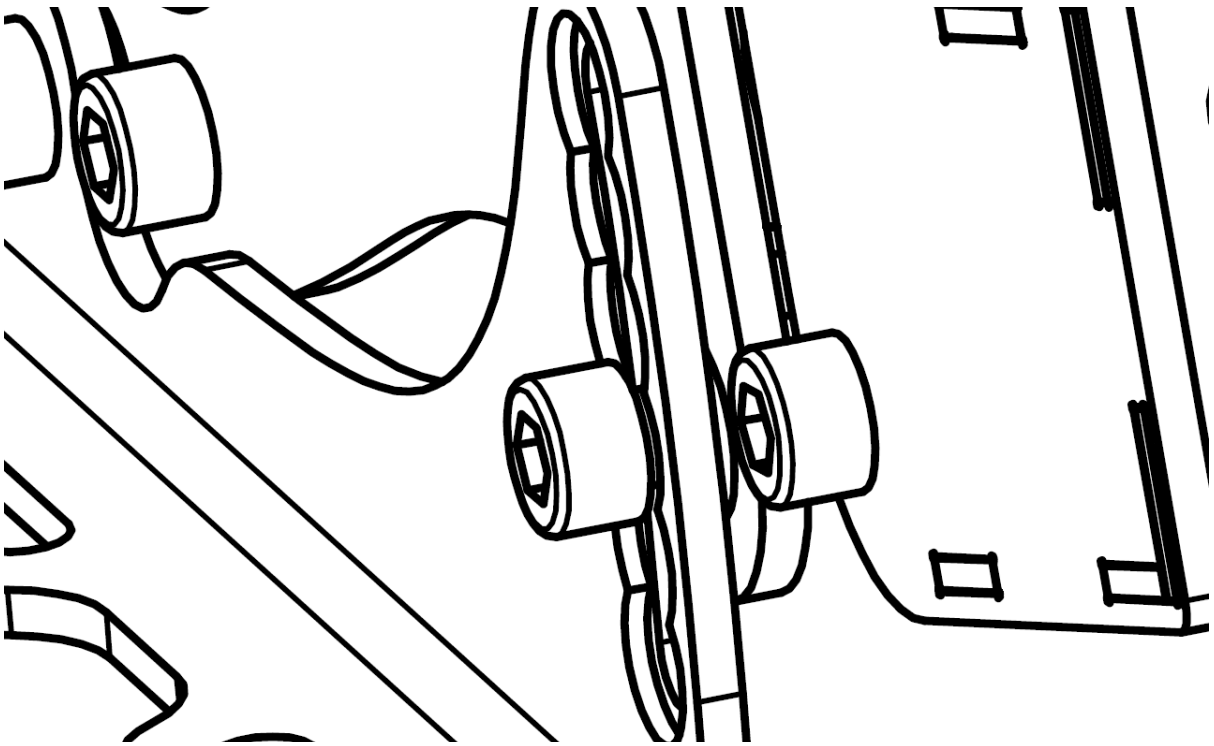
Initial tilt of pedals

Our pedals can be mounted in several ways. The basic configuration is as shown everywhere in our materials, with the base plate mounted on the rig's floor and the pedals standing up. However, some people prefer their pedals mounted upside down, because that's how it's usually done in a car, sometimes with the exception of the throttle pedal. You can mount our pedals however you like, and in this chapter, we will show you how to set the tilt of the pedal. By tilt of the pedal, we mean this:



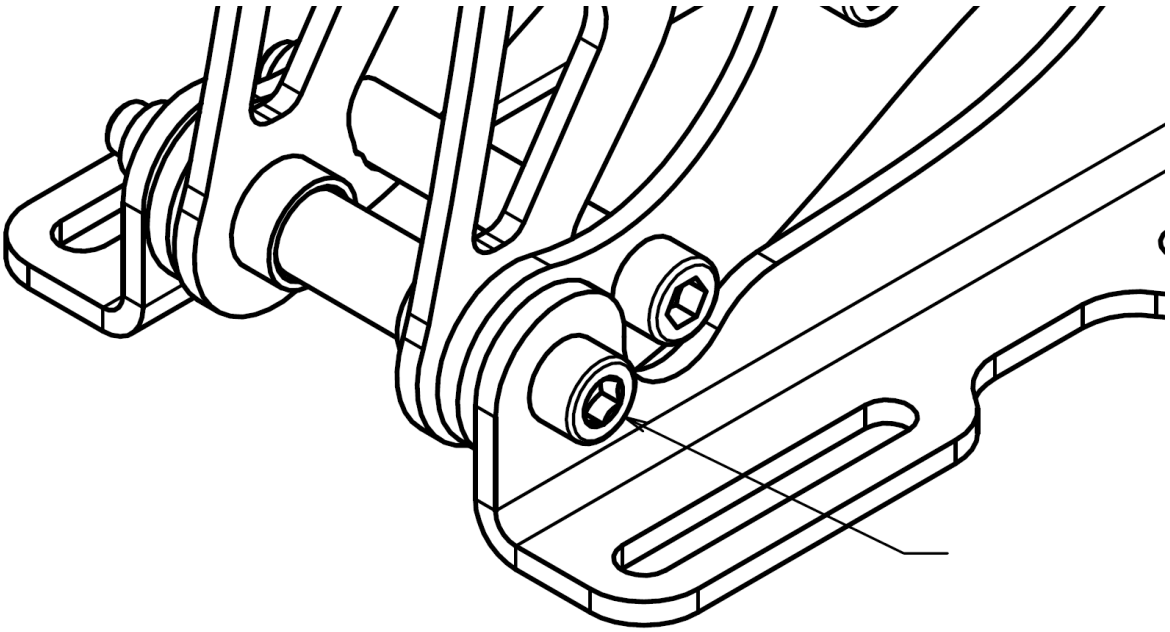
There's an 18° adjustment range with 3,6° increments on the brake and continuous on throttle and clutch pedal. We've machined pockets for the head of the bolt on the brake in these increments in order to secure the pedal from unwanted movement under very heavy braking loads.

Setting the tilt is very simple. Using two hex keys, loosen the two M6 bolts (one on each side) as shown in the figure below. If you are adjusting the brake, do a couple more loosening turns to get the bolt outside of its pocket, just like this:



If the bolt spins freely and doesn't seem to loosen more than the initial snap, you might need to grab the standoff inside of the pedal. That might be harder to do when the pedals are mounted on the base plate.

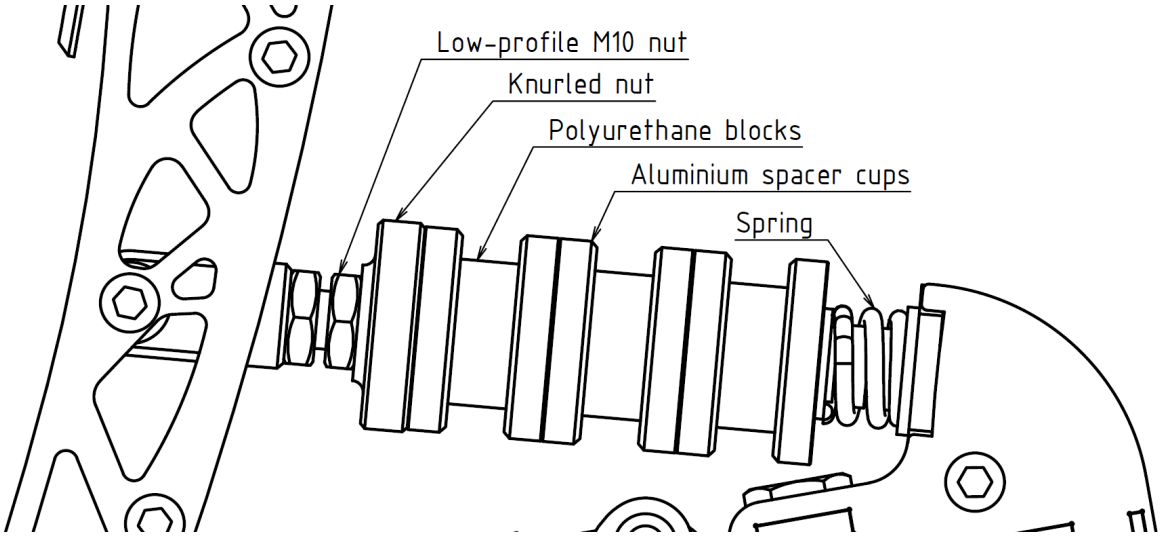
When the bolts are properly loosened, the pedal should be free to move up and down. If that's not the case, you might need to loosen this main joint bolt and its locknut:



Now that the pedals are free to move up and down, set your desired tilt and tighten everything back together. Do keep in mind that the rear bolts have to sit in the machined pockets on the brake pedal.

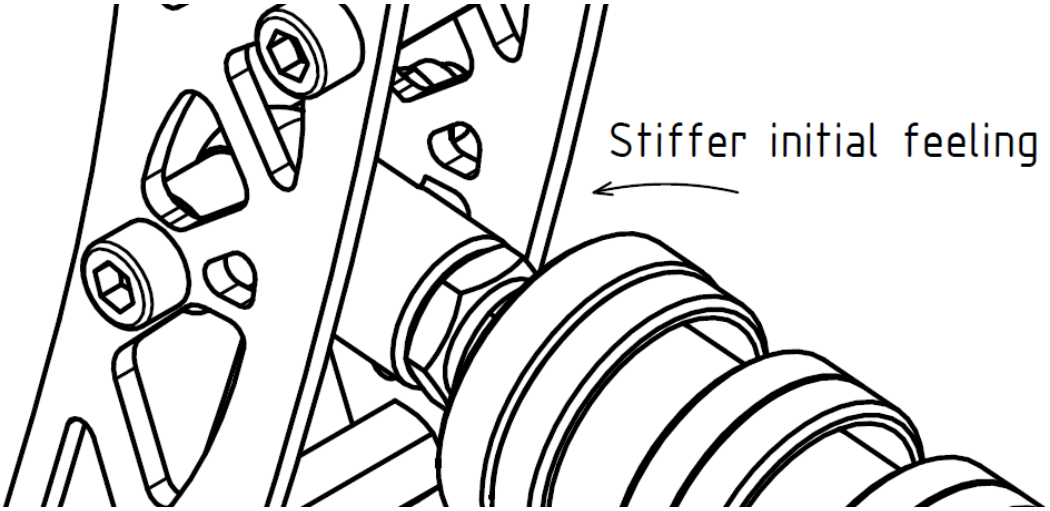
Brake adjustments

Brake is the single most important pedal. In comparison to throttle and clutch pedals, this pedal's effect is not determined by its position, but rather by the force applied. To adjust the feeling of the brake, we must change the stiffness and preload of the deformation elements, meaning the spring and the individual polyurethane blocks. To be exactly clear, here's a picture with all of the parts named:



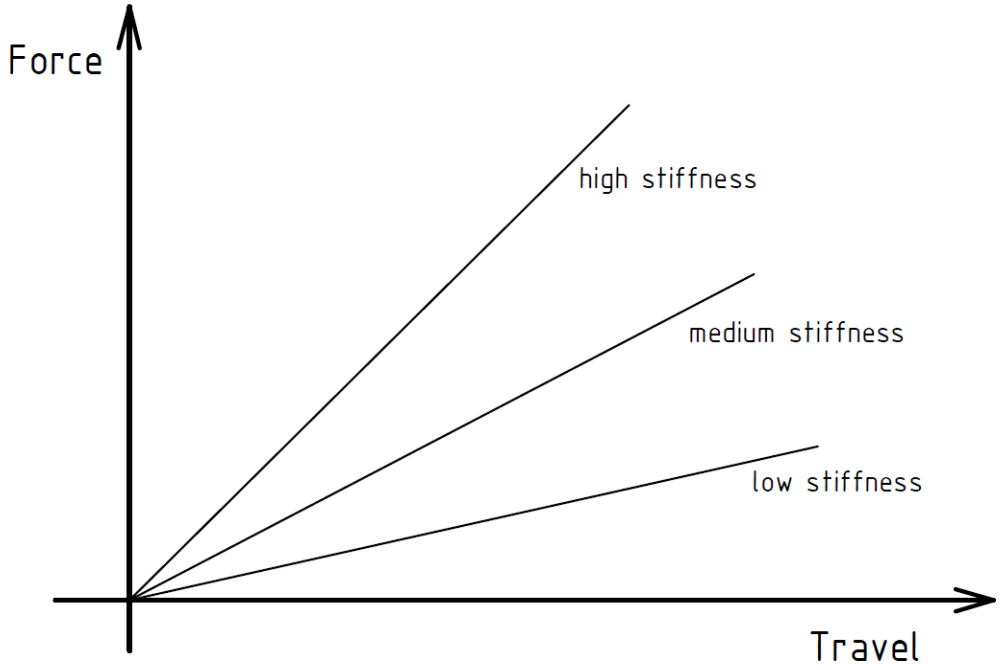
Spring preload

The easiest adjustment of them all is the preload of the spring. You can adjust that using the knurled nut, which is secured by a low-profile M10 nut. To adjust the preload, you first have to loosen the low-profile nut sitting against the knurled nut. After that, simply turn the knurled nut to your desired position (see figure below for reference) and then secure it by tightening the low-profile nut against it. This has to be done so the nuts do not move on their own over time when racing.



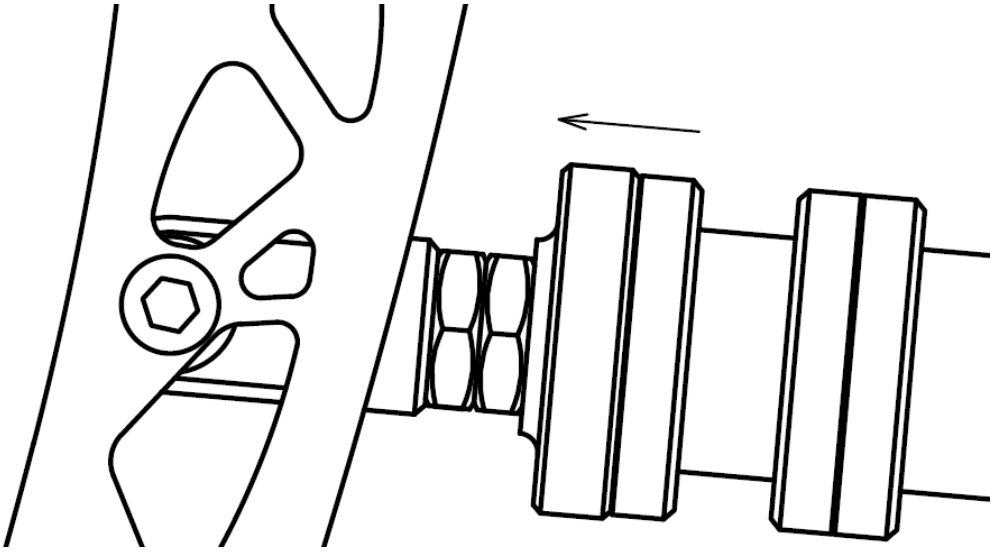
Stiffness configuration

Sometimes, the initial feeling just isn't enough of an adjustment and you might find yourself needing to change the character of force progression, which is called stiffness. To imagine what stiffness really means, here's a nice diagram:

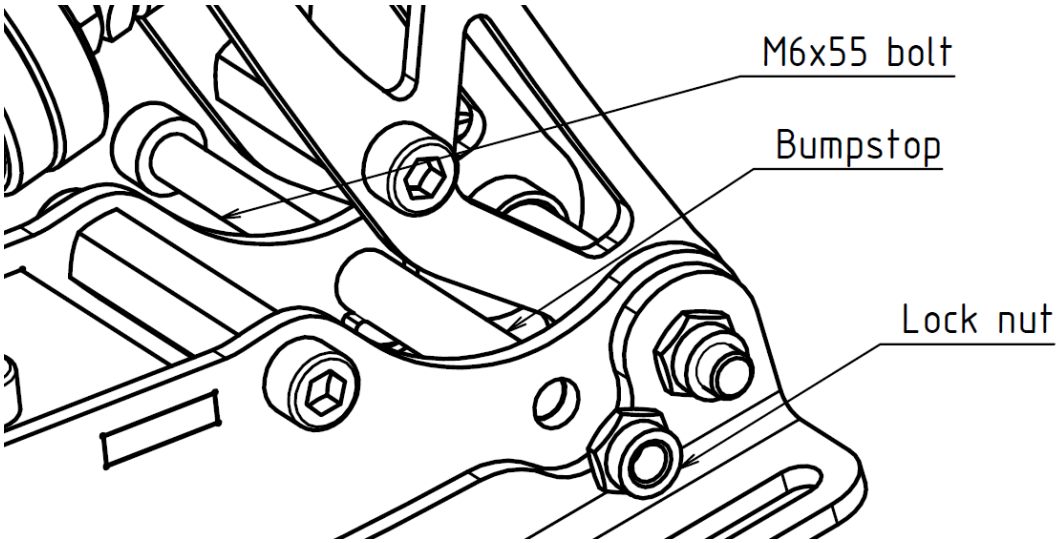


As you can see, the higher the stiffness, the more force you need to push the pedal in. There are multiple stiffnesses to configure on your brake pedal. The spring, which determines the initial feeling, and the individual polyurethane blocks. To change these up, you need to take some things apart. Let's do this.

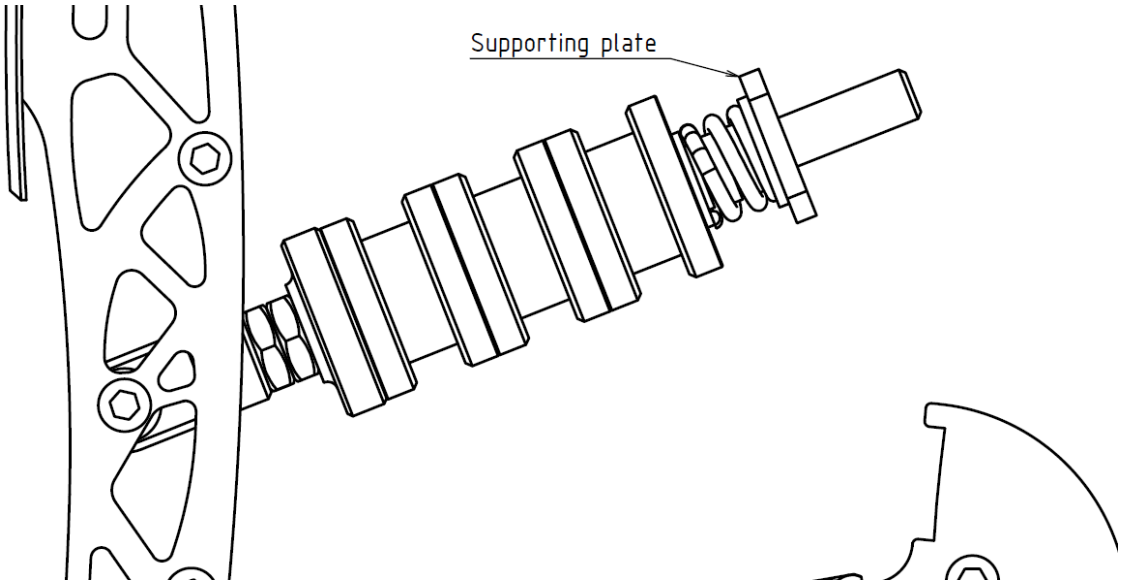
First of all, we need to kill all of the existing tension in the pedal. To do that, just loosen the securing low-profile M10 nut and together with the knurled nut, screw those two all the way towards the joint, just like this:



After that, the rod and all of the elements should feel very loose, if not free to wiggle. Next step is to remove the bumpstop, so we'll be able to take the entire assembly out. To remove the bumpstop, you'll need to unscrew the lock nut and take out the bumpstop bolt. You'll need a 5 mm hex key and a 10 mm wrench. See figure below for reference.



You can now slide the supporting plate out of its nest and access all of the elements on the rod, as seen in the figure below. Now comes your individual responsibility to select your prefered polyurethane blocks and spring – you can find alternatives in the box. The bumpstop itself should now rest freely in its pocket, whilst you're working on your configuration. If it somehow falls out, just put it back in its position when assembling the pedal back together.



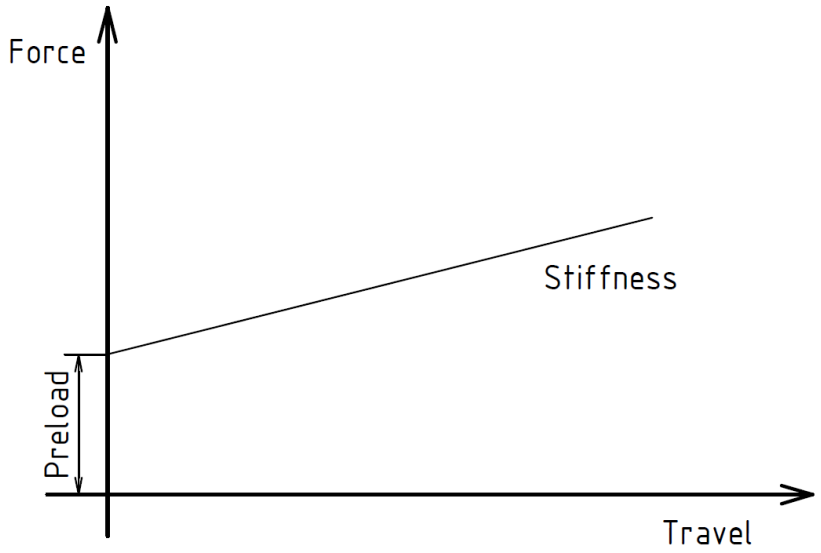
After selecting your desired combination of polyurethane blocks and spring, put everything on the rod in the correct order, as seen in all of the figures above. After that, you just assemble everything back together, following common sense and experience from the disassembly. Slide the supporting plate in its place, put in the bumpstop bolt, secure it with the lock nut (do not overtighten! just make sure the nut sits nicely against the metal) and set your preferred preload as described in the previous chapter.

Throttle adjustments

Our throttle can be configured and set up in many ways. From just slightly feathering the throttle over a long distance to a very tough, force demanding, short throw pedal. There is also an option to add a longer pedal face for better heel and toe downshifting.

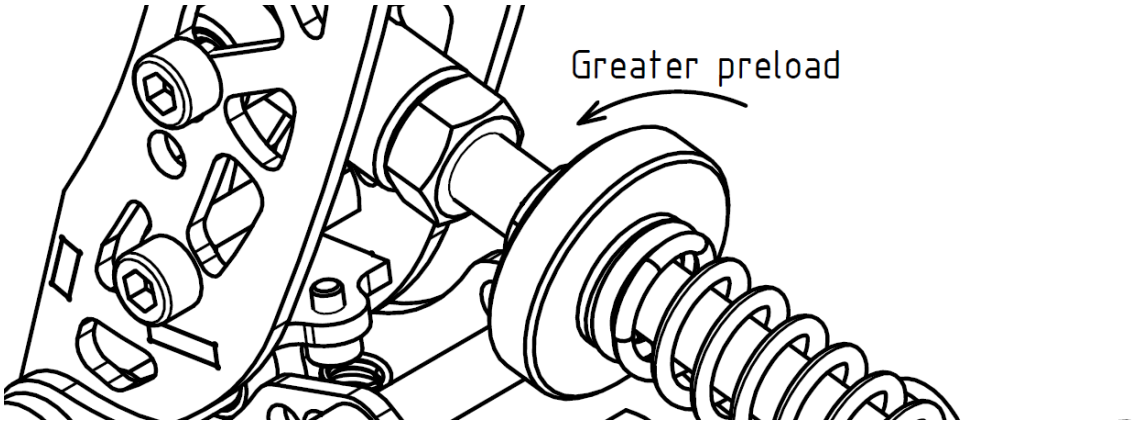
Spring preload

Preload is probably the easiest way to alter your throttle feeling. To show what preload really means for the feeling of the pedal, we've made a diagram for you again:



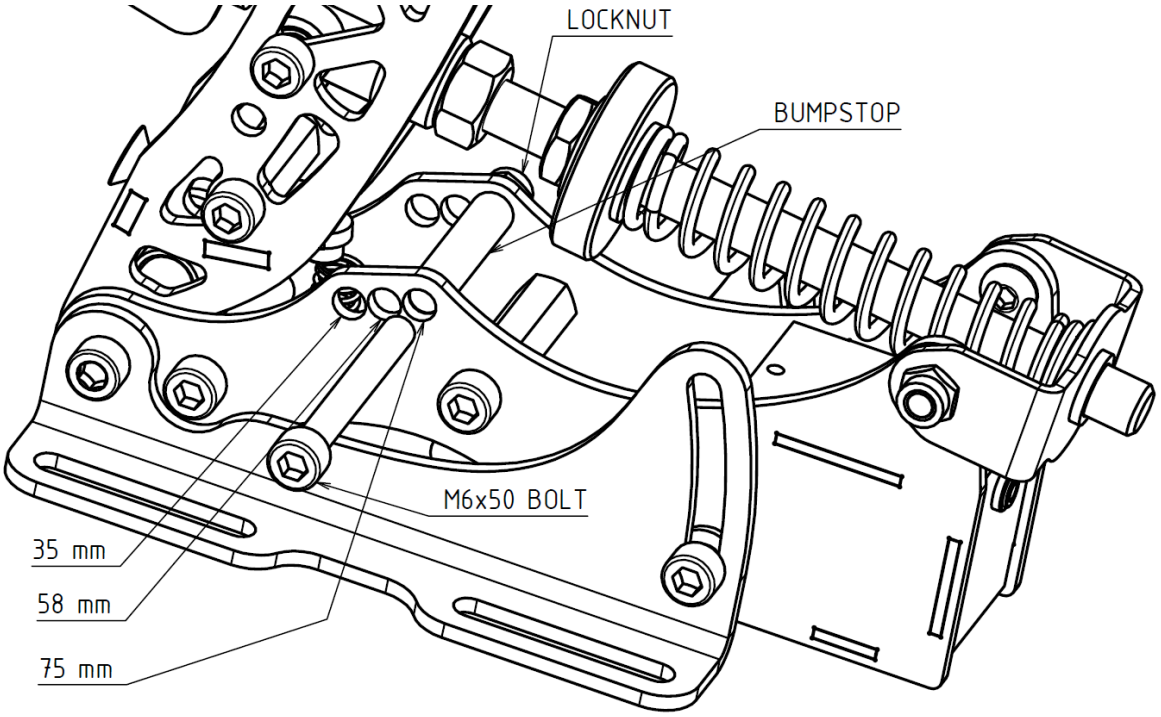
As you can see, if you have a lot of preload, the force that you feel does not change all that much through the travel of the pedal. There is a fine balance between preload, stiffness and travel, so experiment and find your perfect combination.

To adjust the preload, you first have to loosen the low-profile nut sitting against the knurled nut. After that, simply turn the knurled nut to your desired position (see figure below for reference) and then secure it by tightening the low-profile nut against it. This has to be done so the nuts do not move on their own over time when racing.



Pedal travel

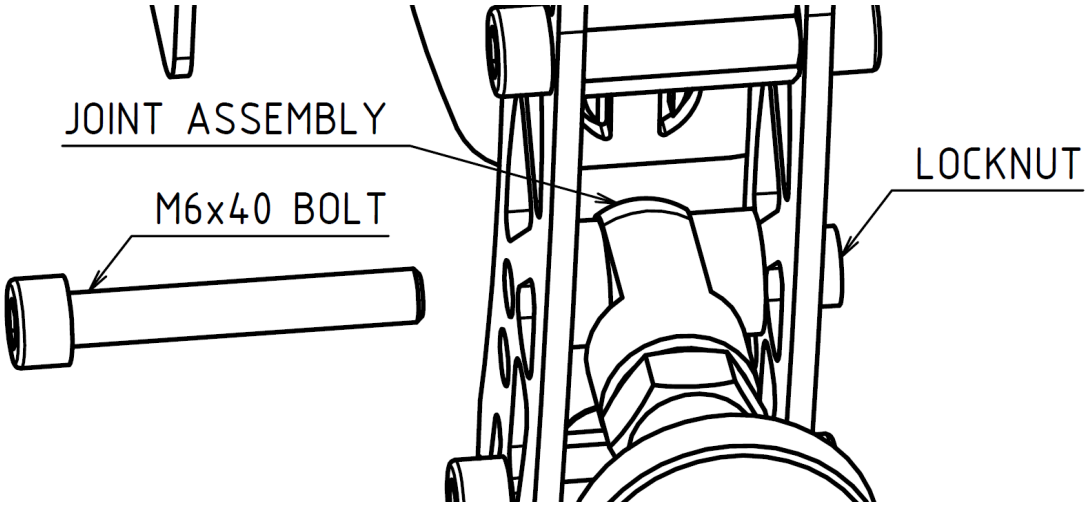
There are 3 options of pedal travel to choose from: short (35 mm), medium (58 mm) and long (75 mm). It is easy and fast to change. There is an M6 bolt and a lock nut through a bumpstop. Just undo the locknut, take out the bolt, move the bumpstop to a different hole, reinsert the bolt and secure it with the locknut. Do not overtighten, just make sure the nut sits nicely against the metal.

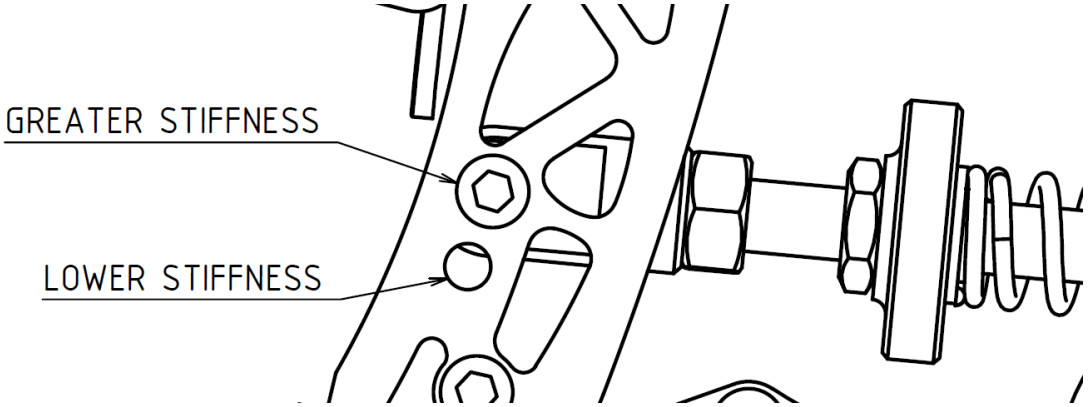


Throttle stiffness (leverage adjustment)

There are actually two ways to adjust the stiffness of the throttle – you can swap in a stiffer spring, or you can change the pedal's leverage. It's much easier to adjust the latter, so let's do that first. If you feel you still need some extra stiffness even after this adjustment, then a stiffer spring is still there for you.

Much like adjusting the travel, there's an M6 bolt through the joint secured with a lock nut. Undo the lock nut, take out the bolt, line the joint assembly up with the other hole, and reassemble. See figures below for reference.

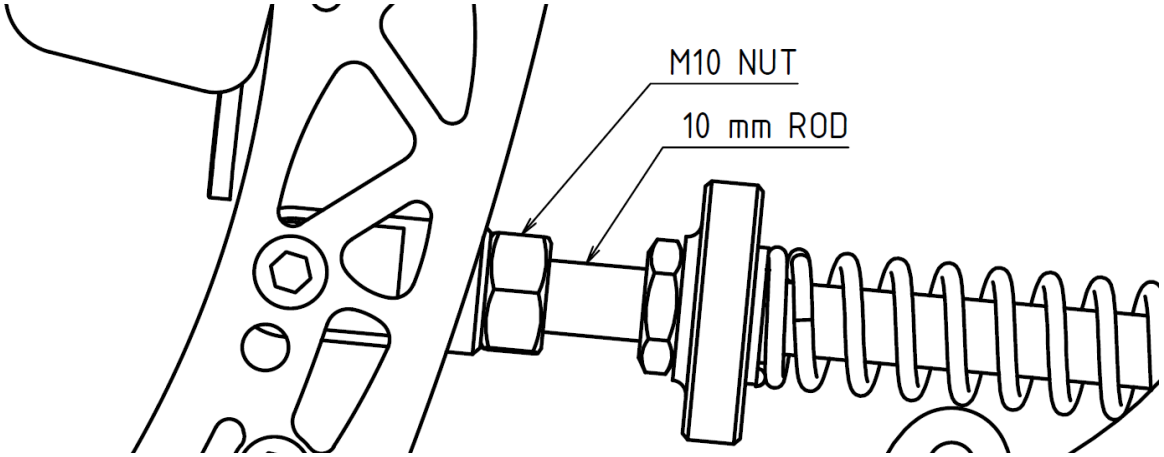




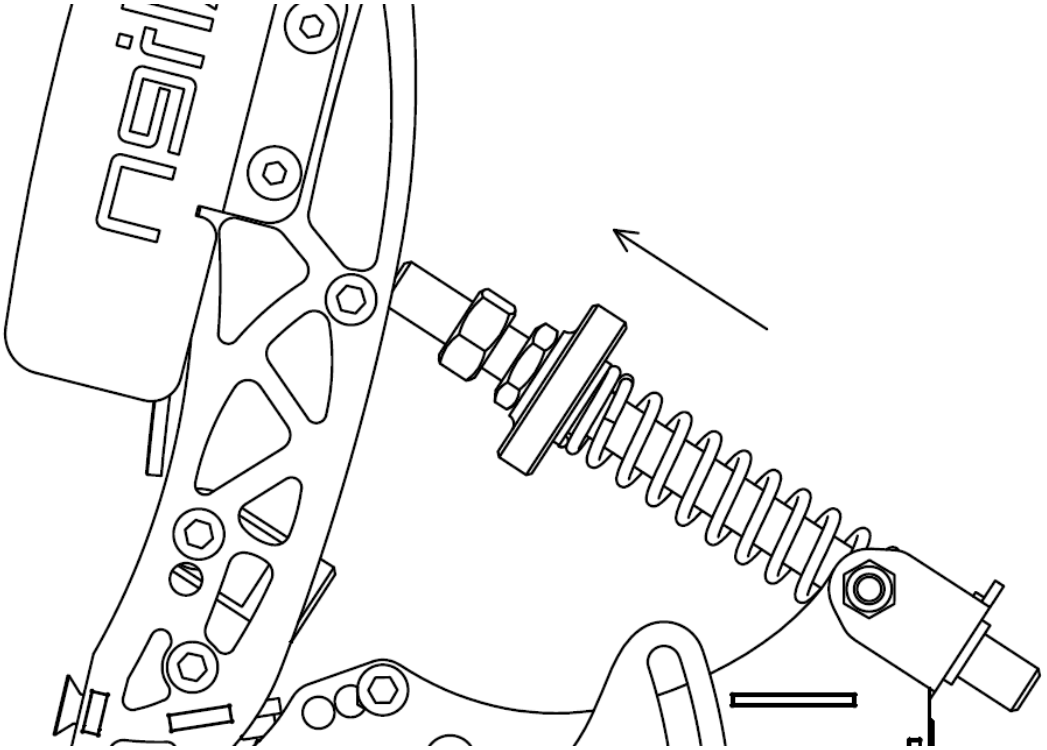
Throttle stiffness (swapping a spring)

Like we said, if the upper, stiffer hole is still too light for your needs, you can swap in a stiffer spring. To begin this procedure, get rid of any preload on the pedal until the spring is pretty much free to move (you can follow chapter Spring preload for reference).

After that, loosen the securing regular-size M10 nut right next to the joint and begin to unscrew the entire 10 mm rod, until it's completely undone from the joint.



When the rod is completely free, tilt it up and slide it out of the rear bushing. Now comes the time to change the spring on the rod.

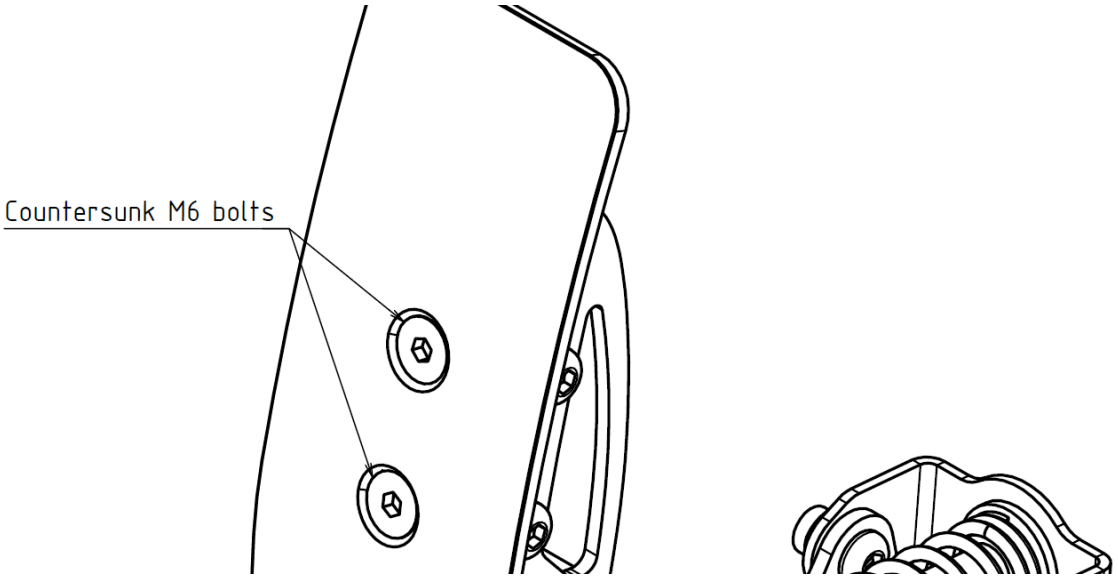


After you have selected your desired spring and put it on the rod, reinsert it into the rear bushing, tilt it back and align with the joint. Screw it back into the joint and don't forget to secure the rod by tightening the regular sized M10 nut back against it. Set your preload again and you're all done.

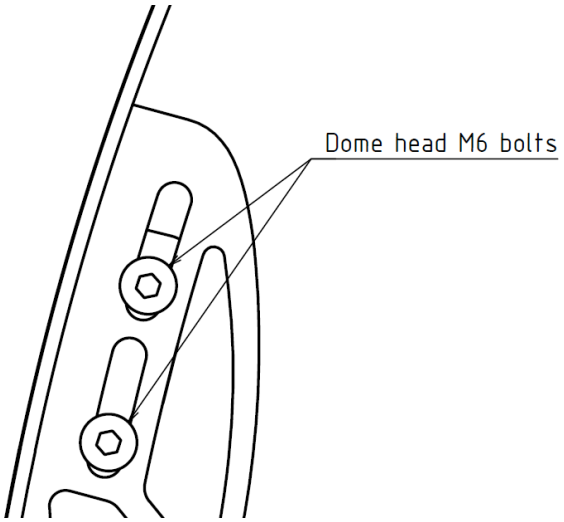
Adding a side support

In a real race car, there is a big centrifugal force when cutting a corner. Because of that, it might be harder to switch your foot position from brake to throttle quickly and precisely. Some teams try to mitigate this problem by adding a sort of side support to the pedal, which serves as an end stop for the driver's foot. In simracing, there are no such forces, but this still might help to position your foot when switching between brake and throttle quickly. It's also about the looks – this is your opportunity to customize the look of your pedals and make them look like a real race car.

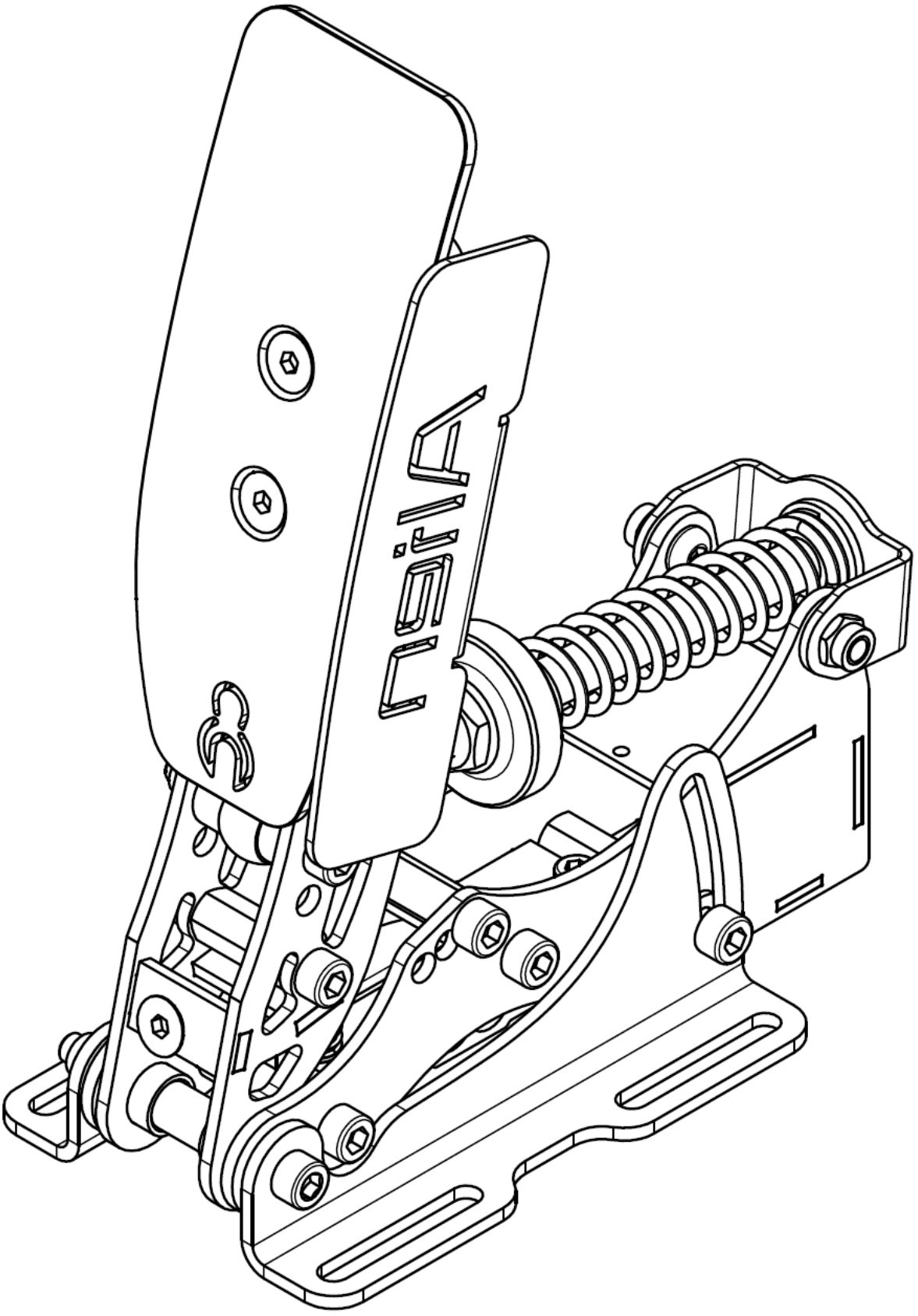
To add the side support, start by loosening these countersunk M6 bolts on the pedal face by just a turn or two:



Then remove the two dome head bolts on the right side (when facing the pedal):



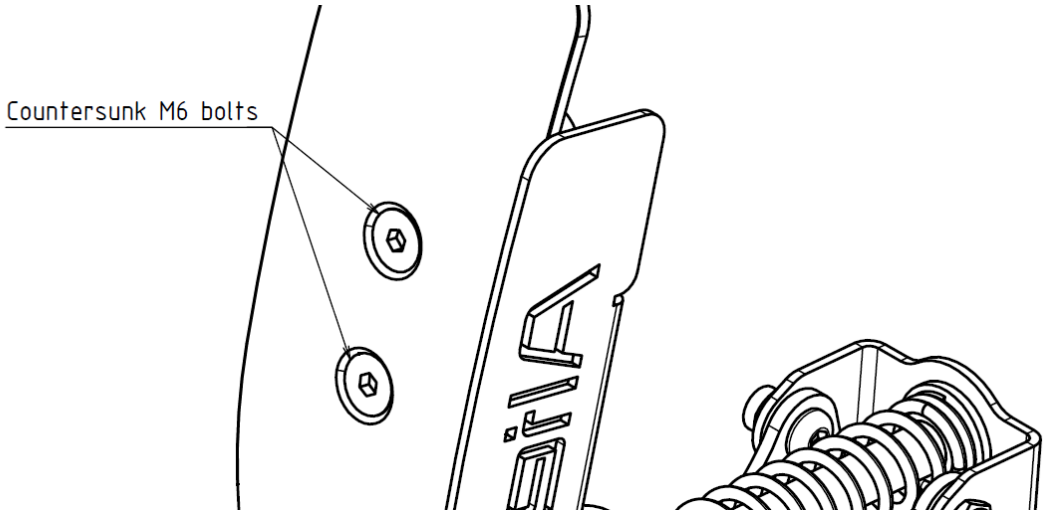
Now you can attach the side support using the two dome head bolts. Tighten them, then tighten the countersunk bolts on the face and you're done. Now your pedal should look like this:



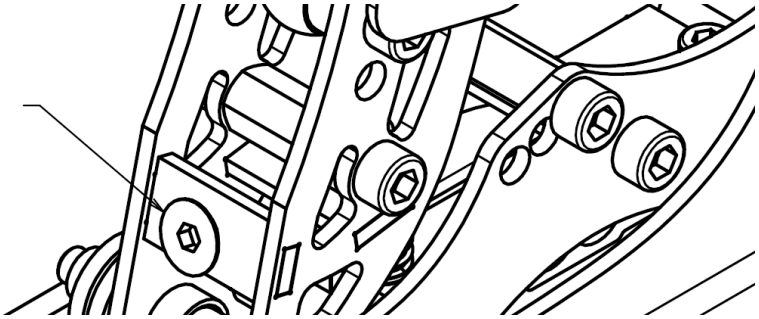
Changing to a longer pedal face

We ship bedroom style sets and racing style sets with longer pedal faces, which are perfect for heel and toe downshifting. They also look pretty cool too.

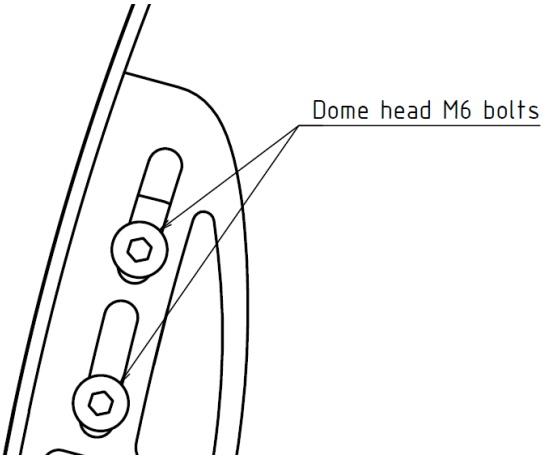
To install the longer pedal face, you need to remove the shorter one first. That's easily done by completely removing the two countersunk bolts on the face:



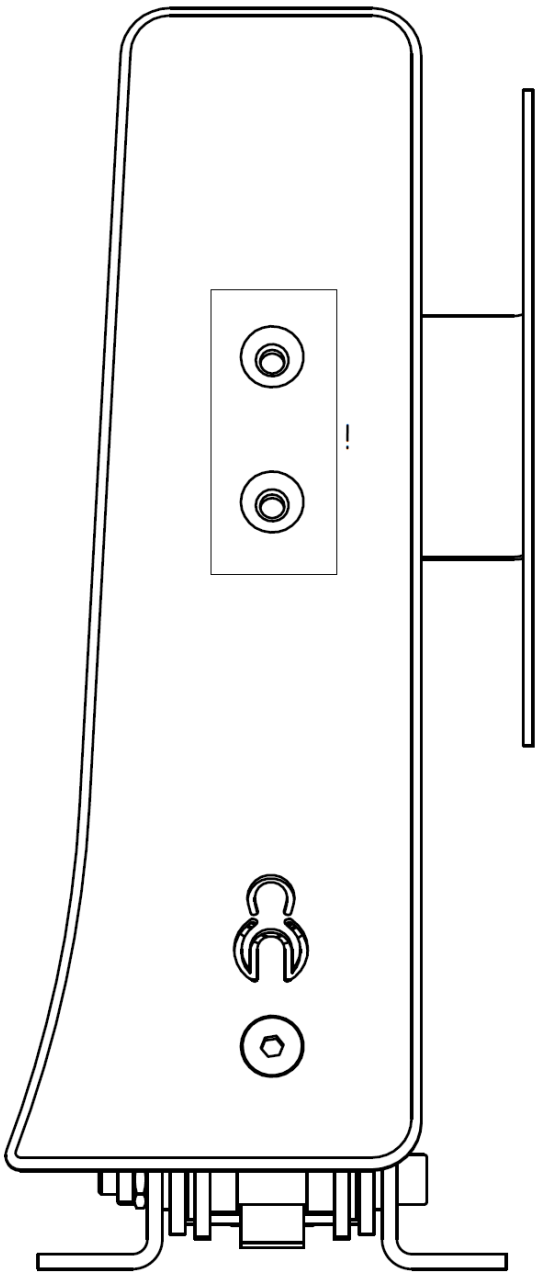
You also need to remove the other countersunk bolt in the lower portion of the pedal that came preinstalled in the thread:



For installing the longer pedal face, it is also critical to loosen four dome head bolts on the sides of the pedal, so we can line up the holes.



Next step is to attach the longer pedal face using only the lower bolt at first, and then lining up the holes as seen in this figure:



Then it’s just a matter of adding the remaining countersunk bolts (not tightening yet), tightening the four dome head bolts on the side and then tightening all of the countersunk bolts. With all of this done, your throttle pedal is now ready for some intense heel and toe action.

Clutch adjustments

Spring preload

Same procedure as for the throttle pedal, see Spring preload for instructions.

Pedal travel

Same procedure as for the throttle pedal, see Pedal travel for instructions.

By limiting travel on the clutch pedal, you also get rid of that push-through feeling of a real clutch. There's a 40% drop in force at the end of the stroke with the longest travel, a 15% drop with the medium travel and the clutch loses this drop entirely with the shortest travel. Some users prefer their clutch without that push-through feeling, so this would be the ideal setting for them.

Clutch stiffness (leverage adjustment)

Same procedure as for the throttle pedal, see Throttle stiffness (leverage adjustment) for instructions.

Clutch stiffness (swapping a spring)

Same procedure as for the throttle pedal, see Clutch stiffness (swapping a spring) for instructions.

Maintaining your pedals

Our pedals use loadcell measuring technology across the board, so you don’t need to worry about a sensor malfunctioning due to tiny dust particles. However, it is still a mechanical device and isn’t carefree.

The entire pedal set is put together using metric bolts, which may come loose over time due to the hardcore nature of simracing. We recommend checking your pedals for loose bolts regularly, preferably once a month, if you’re using them every day. This is a good habit to develop overall, it’s always better to find a problem before the problem finds you.

If you experience squealing in your pedals, try to identify where the sound comes from by placing your finger on different parts of the pedal and feeling for any vibrations. When you identify the problematic spot, apply some grease to the moving parts to get rid of any noise-causing friction.

If you smell or feel that the pedal electronics are heating up and are non functional, unplug pedals immediately, contact us and send them back for service.

FAQ

- Do you sell replacement parts?
    - Yes, we do provide replacement parts. Reach out to our service at info@simracing-alien.com for an inquiry. We sell replacement parts for our pedals at a reasonable price.
- I bought just the throttle and brake pedals, but now I feel I need the clutch too
    - You can buy the clutch pedal separately any time, without compatibility issues.
- My rig has a mounting hole pattern for Fanatec pedals, will your base plate fit?
    - Yes, our base plate is compatible with Fanatec mounting holes.

Legal information

This product is made by Sim Alien, s.r.o.
Service is provided by Sim Alien, s.r.o.

The company Sim Alien, s.r.o. (“the company”) is not responsible for any injury suffered by any person whilst mechanically adjusting the product.

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