

PLAYSEAT CHALLENGE LOCK-MOD X TORQUE GUIDE



ABOUT

This is the torque guide for the Lock-Mod X, to be used in conjunction with the Lock-Mod X Assembly Guide.

Accompanying accessory assembly manuals can be found [here](#).

CONTENTS

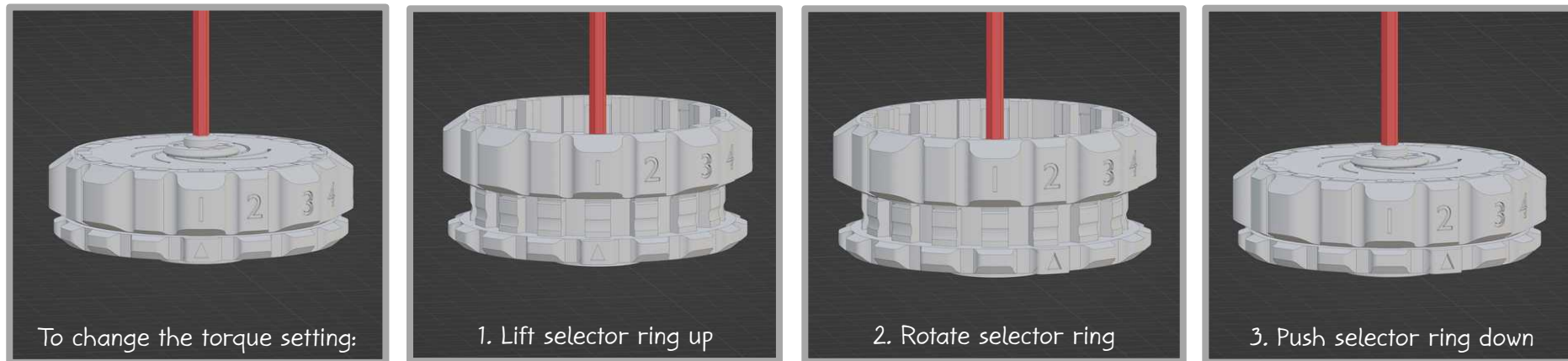
Tools	4
Additional Assembly Information	6
Care Instructions & Warranty	8
Part Torque Values	9

TOOLS

All tools required to assemble the Lock-Mod come with the kit, with these tools being 2 extra long ball ended hex keys (M3 & M4 size), and an adjustable torque wrench that they interface with.

The adjustable torque wrench has 8 settings, ranging from 0.25 – 1.54nm. The values are as follows (nm value accurate to within $\pm 10\%$):

T1: 0.25nm, T2: 0.44nm, T3: 0.63nm, T4: 0.82, T5: 1nm, T6: 1.18nm, T7: 1.36nm, T8: 1.54nm

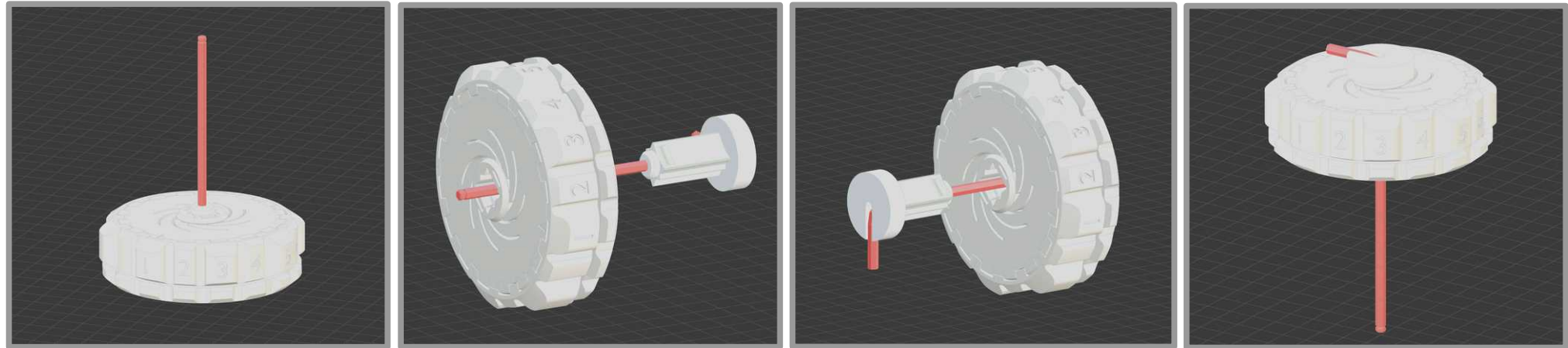


The torque values for each part can be found [here](#).

To ensure proper function of the Lock-Mod X kit, these torque values should be followed. However, if you notice that, for instance, a part has not been fully secured you may need to increase the tightness of the relevant bolts. If so, do not go above 140% of the bolts' listed spec to avoid damaging the part, and keep in mind that this is not recommended if the part is already functioning properly.

Additional Torque Wrench Guidelines

- For best torque value consistency, tighten bolts until the wrench clicks over 3 times consecutively, as the first few clicks can sometimes be below the referenced torque value.
- Limit rate of clicks to about 3 per second. Going faster than this reduces accuracy.
- Tool measures in clockwise (tightening) rotation. Anti-clockwise rotation can be used if needed, but won't click over at a consistent value.
- If stored in a hot enclosed space or left in direct sunlight for extended period, allow to stabilise to room temperature before use.
- Temperatures above 65°C/149°F can cause the plastic to permanently warp, reducing the torque wrench's accuracy and possibly breaking it.



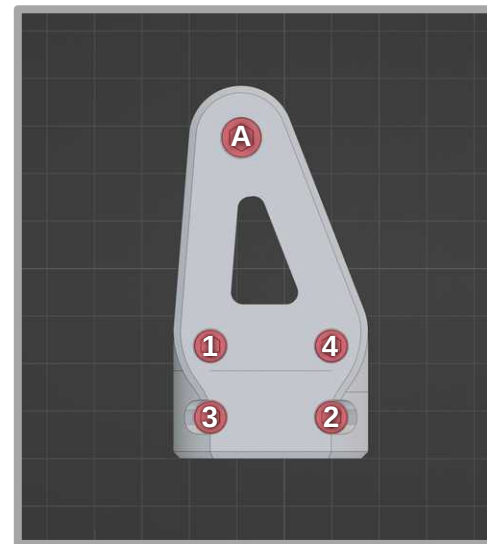
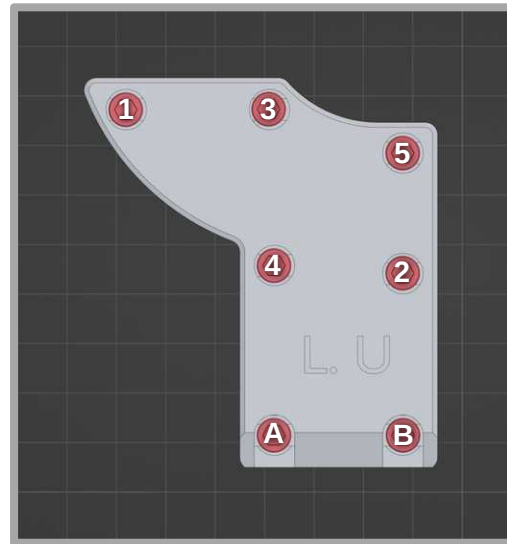
- The torque wrench typically only measures in the clockwise direction, but the half of the QR mechanisms need to be calibrated in the counter-clockwise direction. For these cases the hex key interface can be installed in reverse to allow accurate counter-clockwise operation.

ADDITIONAL ASSEMBLY INFORMATION

Cross Pattern Tightening

Where applicable, bolts should be tightened with cross pattern tightening. This applies to parts where multiple bolts are sharing a load, and involves incrementally increasing the torque while jumping between (roughly) opposite sides of the part. Doing this when assembling (or disassembling) a part will ensure a single bolt doesn't become over-strained, which can cause the thread/nut to seize up.

Examples of the cross pattern sequence are illustrated below. Note that this sequence will be repeated many times as you bring the bolts up to their final torque rating.



Torque values for non-3D printed parts

For bolts that don't directly connect to a 3D printed part (e.g aluminium connectors in the shifter assembly) a torque value will not be provided, as these parts can generally be tightened more than the plastic. Care should still be taken to not strip the hex key, which can happen when applying excessive force to the bolt head.

CARE INSTRUCTIONS & WARRANTY

Care Instructions

- Storing the kit in temperatures above 53° C or 127 F should be avoided to avoid parts from warping.
- A PTFE infused emulsified wax solution has been applied to lubricate sliding surfaces in the Lock-Mod. This should last the lifetime of the kit, but a few drops of liquid chain wax can be re-applied if necessary.
- All clamp levers should be moved to the open position if storing the assembled Lock-Mod for an extended period of time.

Warranty

This kit comes with a 2-year warranty from the date of purchase, and it covers any failures resulting from reasonable use. Reasonable in this case assumes:

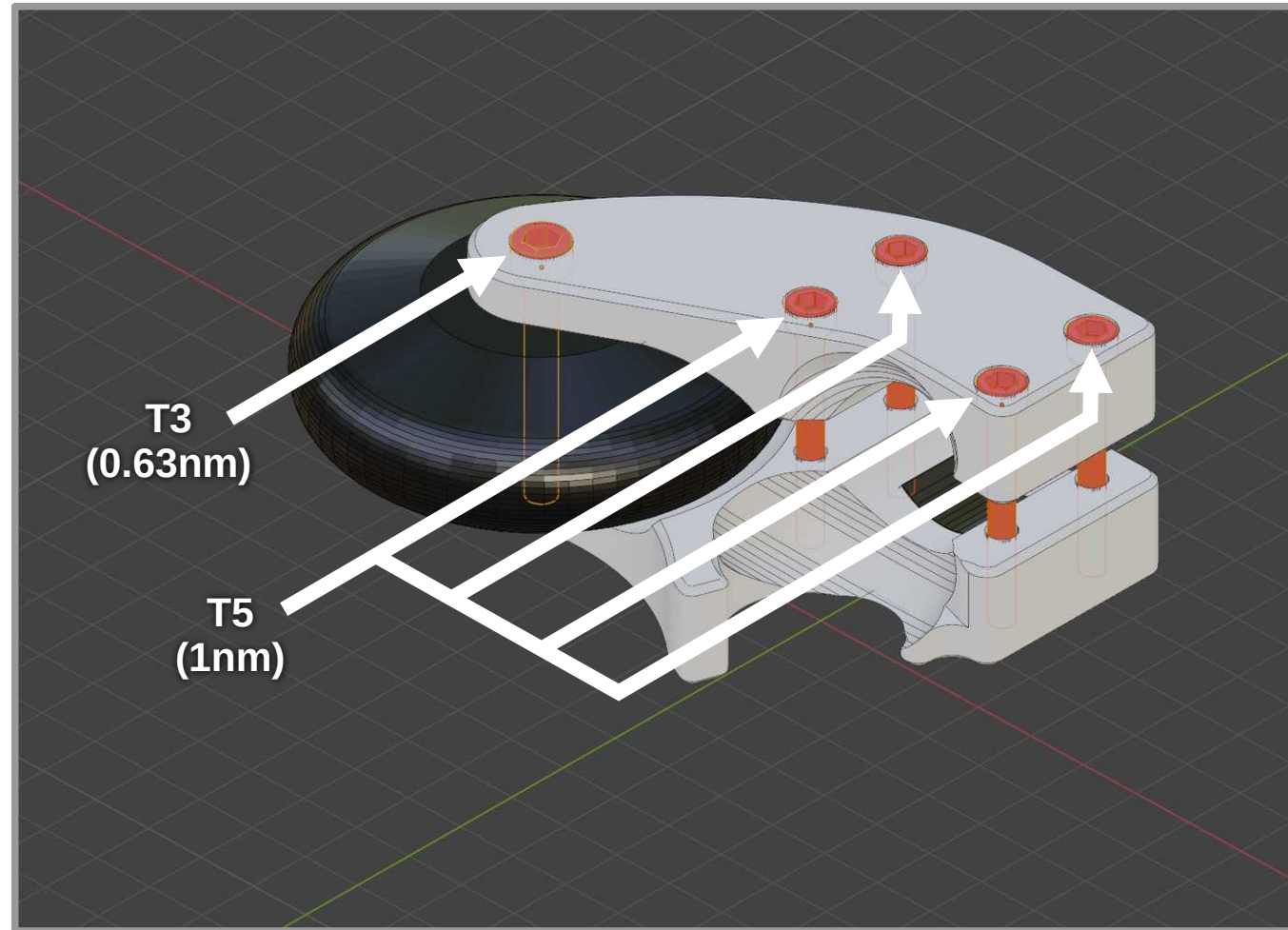
- All instructions in the assembly manual are followed.
- Maximum 20nm torque limit for the wheelbase in standard/reverse configuration, and 10nm in quick release configuration.
- Maximum 80kg of pedal force.
- Maximum 25kg force for the handbrake and shifter side assembly.

If these points are not adhered to the longevity of the Lock-Mod X cannot be guaranteed.

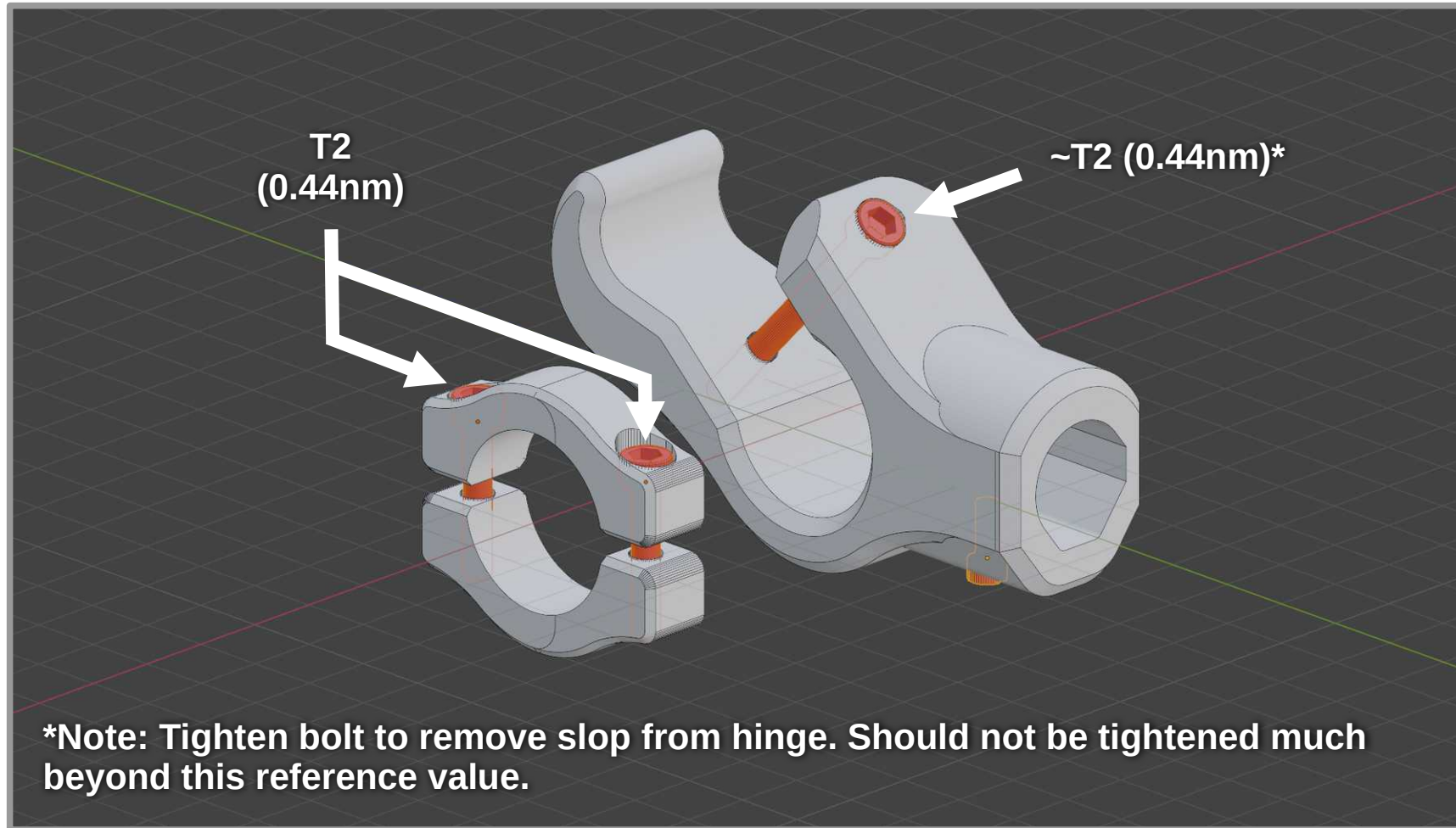
If any problems are encountered with the kit, use the contact found here:

<https://psyskip.com/about/>

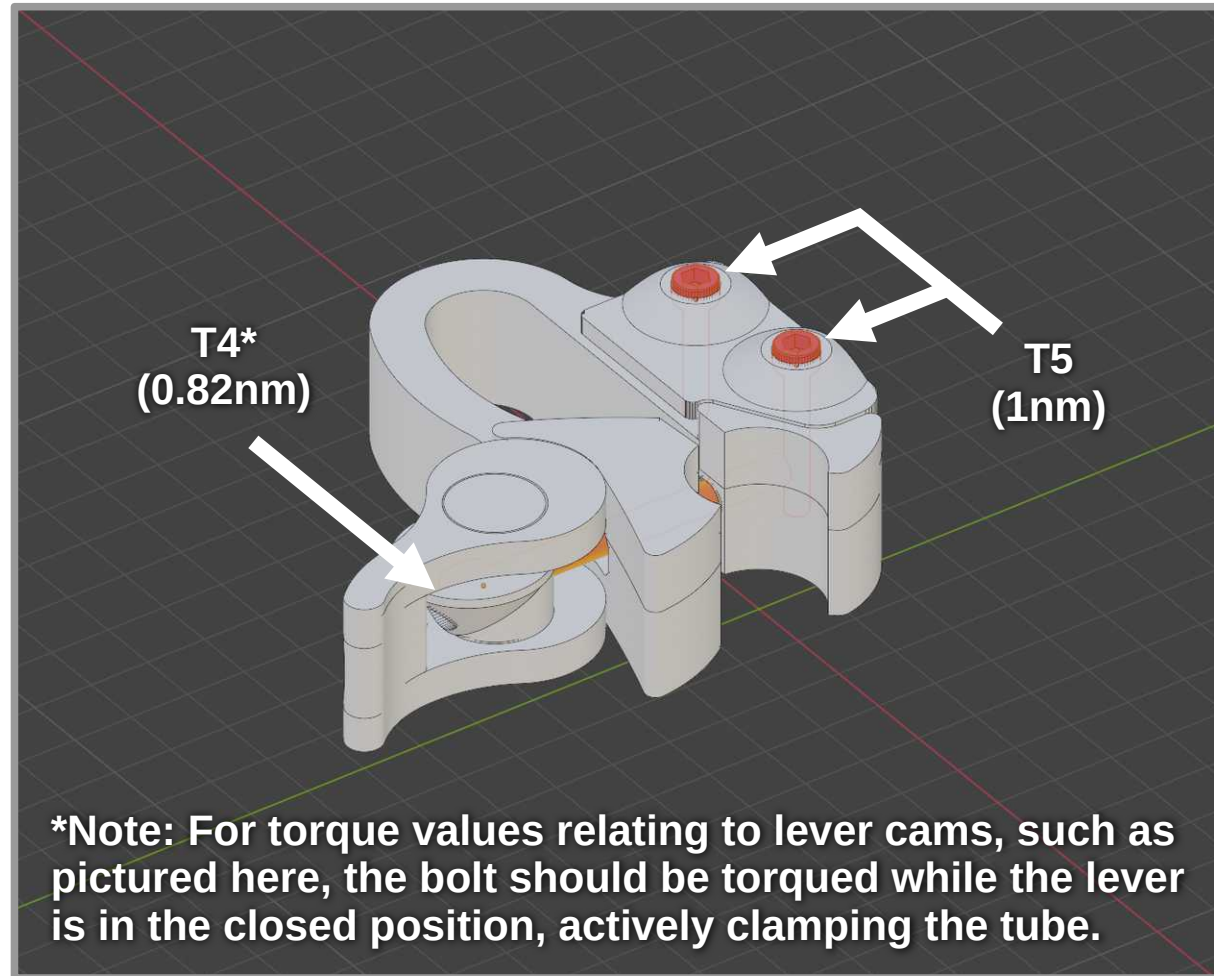
ROLLER WHEELS



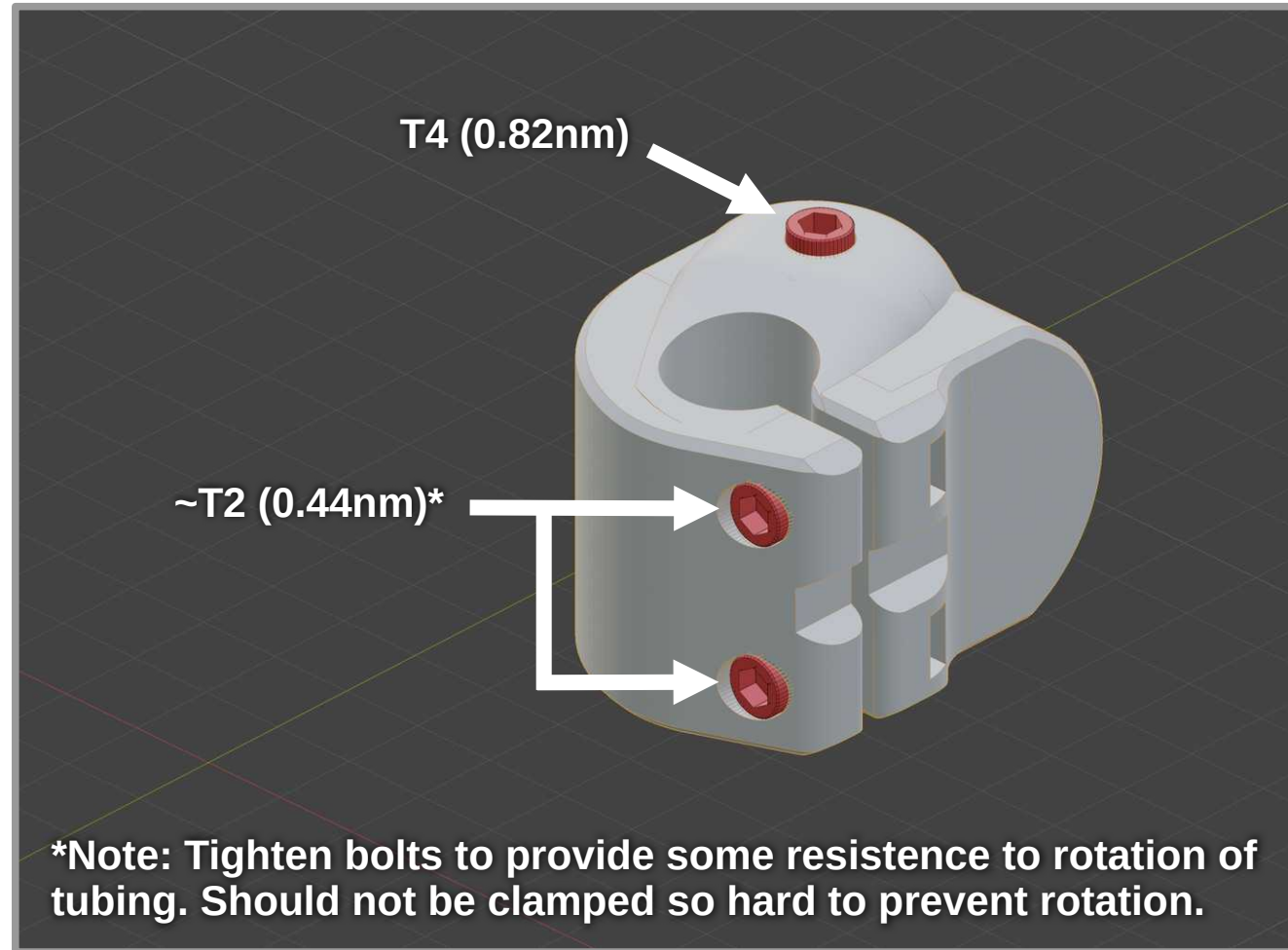
PEDAL-FRAME INTERFACE HINGE



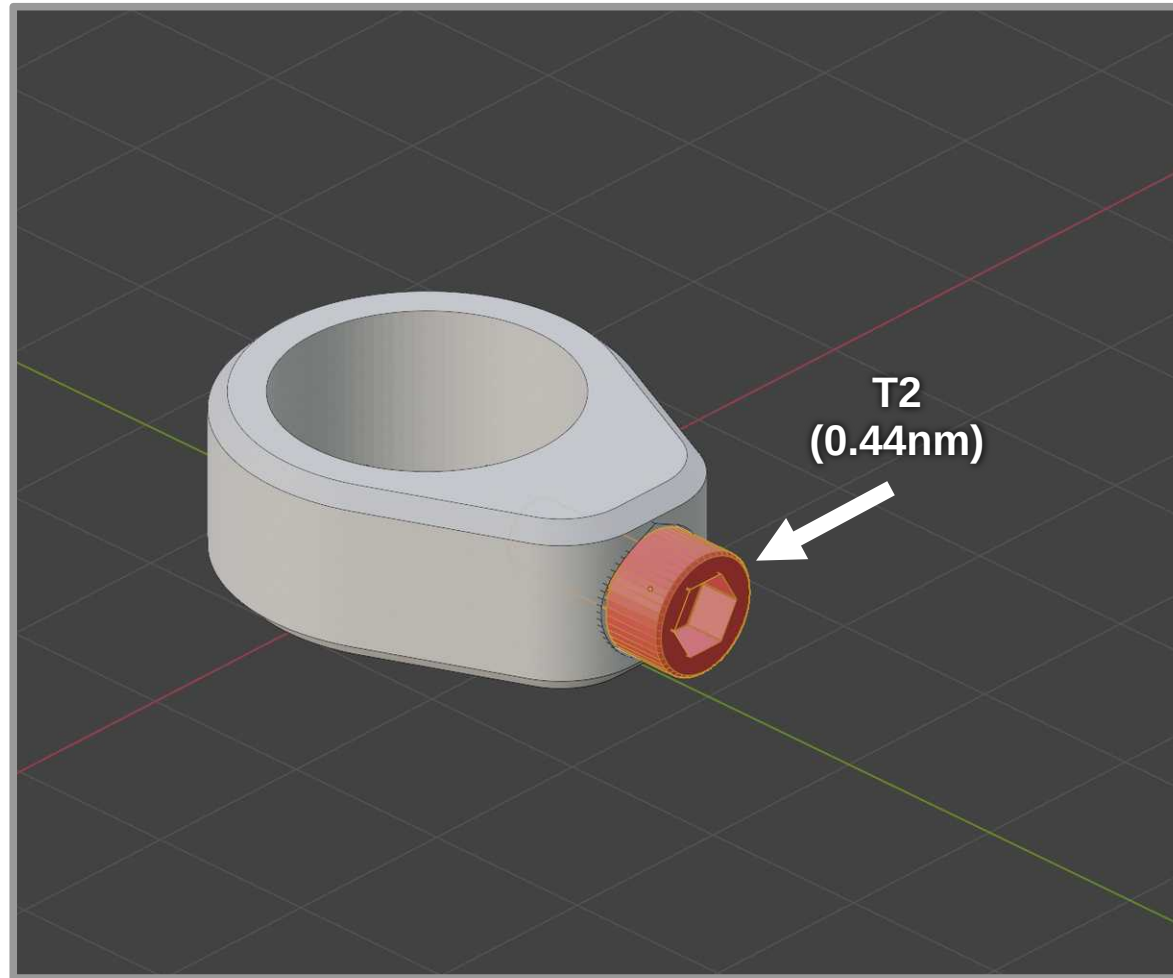
PEDAL TRAY QR INTERFACE



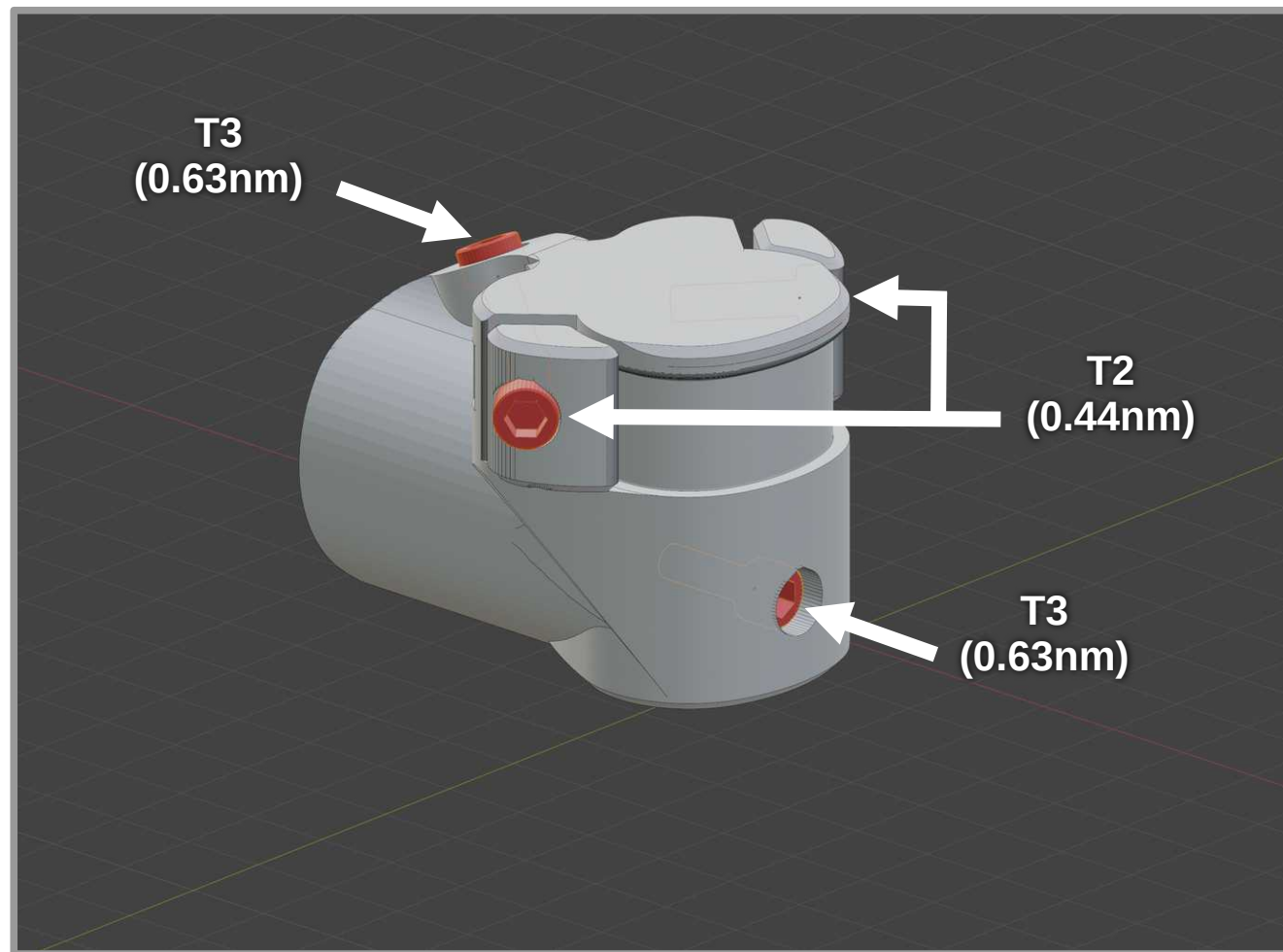
PEDAL TRAY HINGE INTERFACE



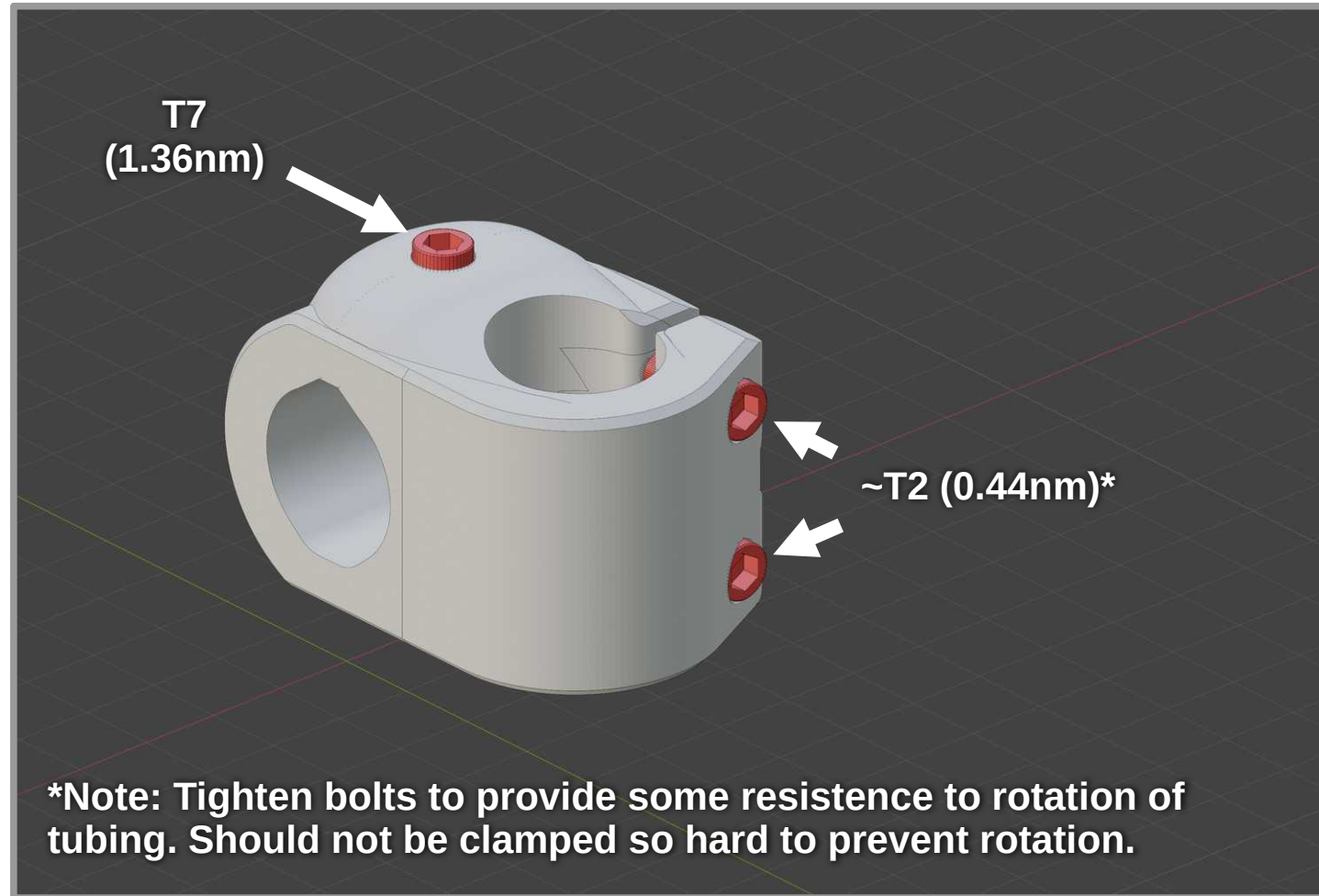
PEDAL-FRAME HINGE POSITION CLAMP



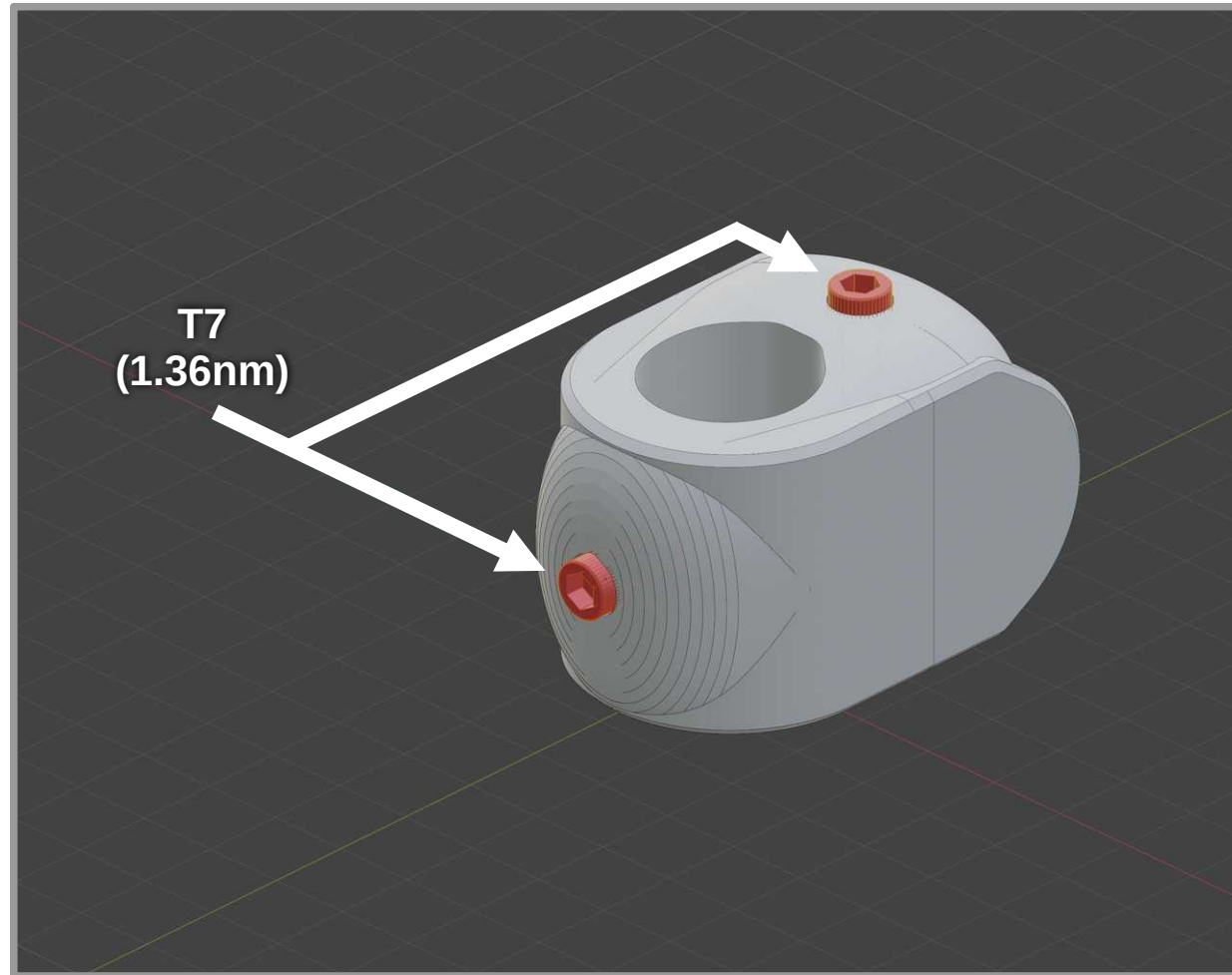
PEDAL FEET



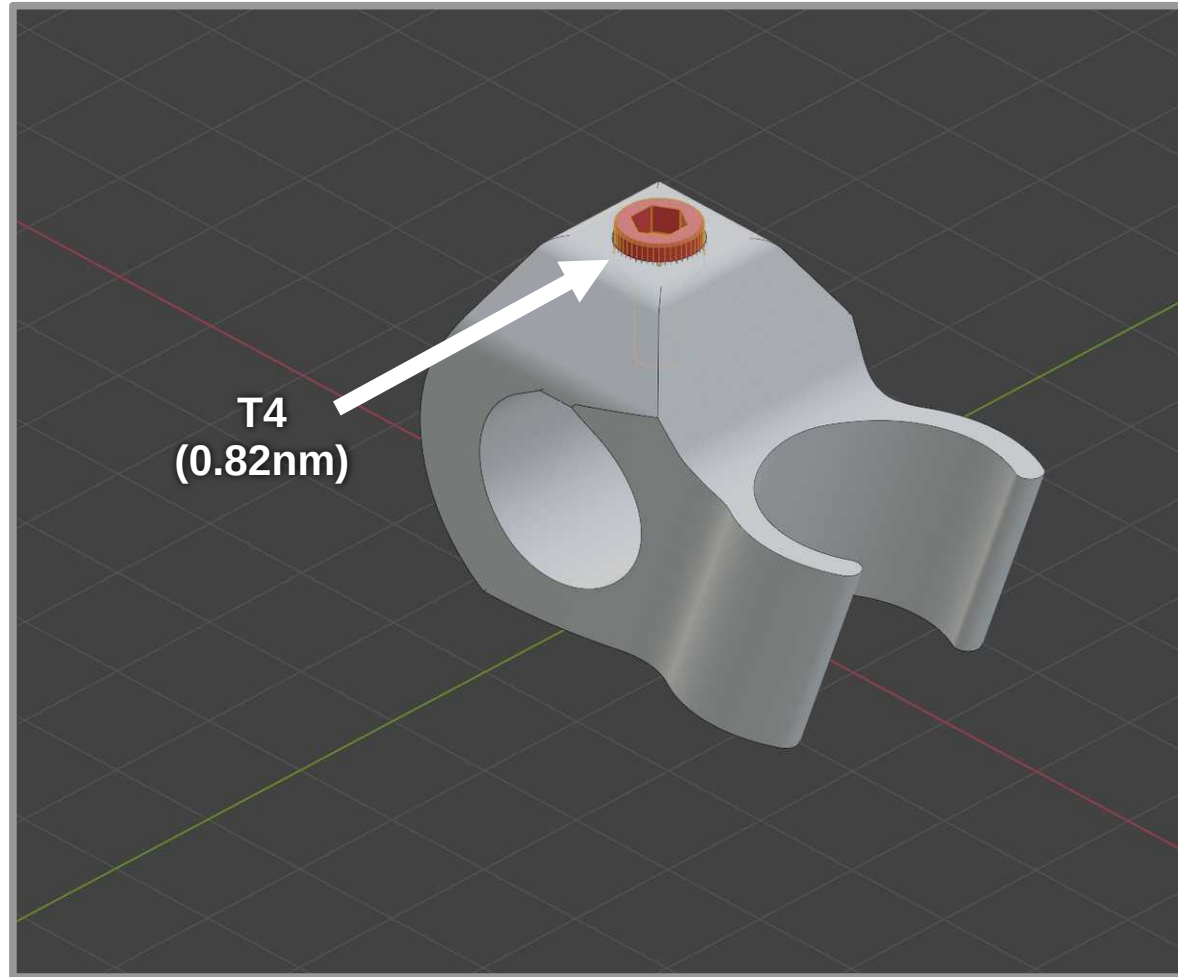
OFFSET L JOINT HINGE



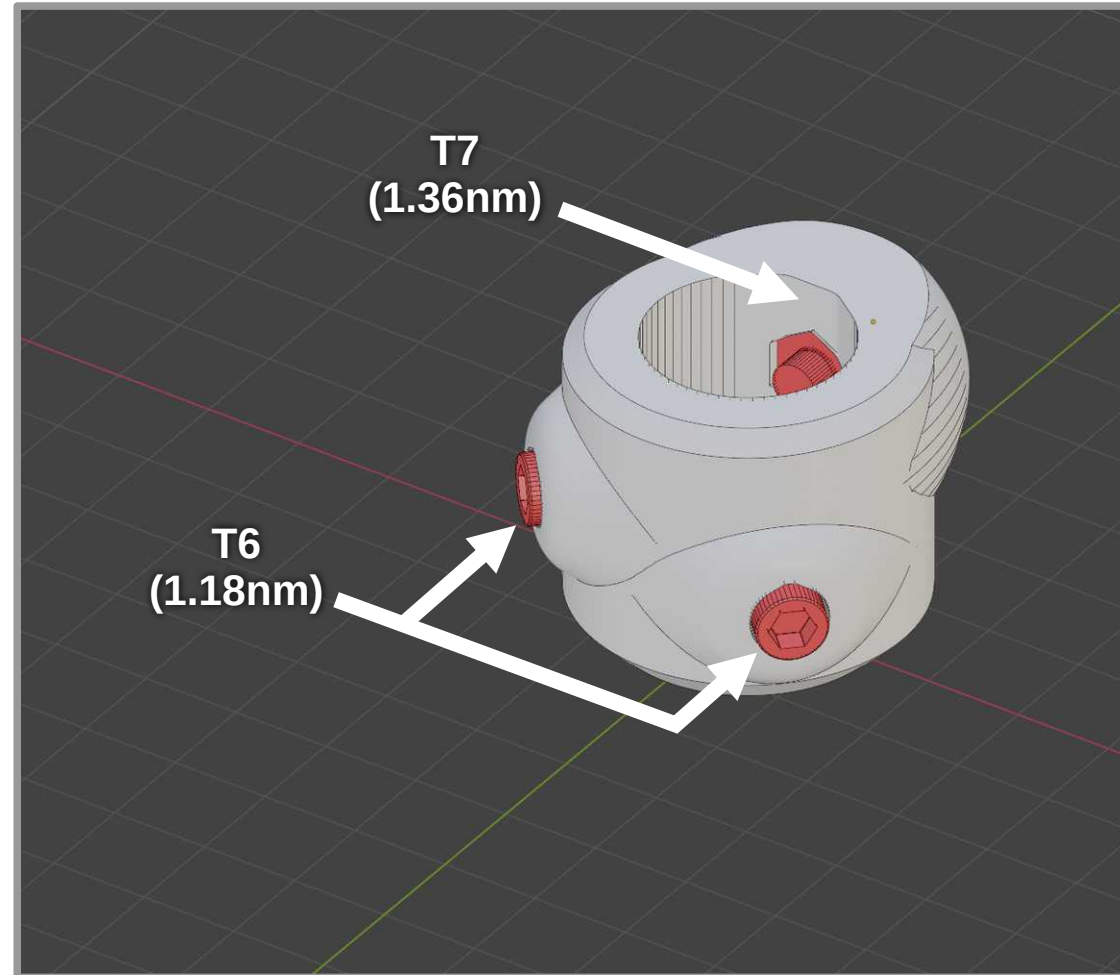
PEDAL OFFSET L JOINT CLAMP



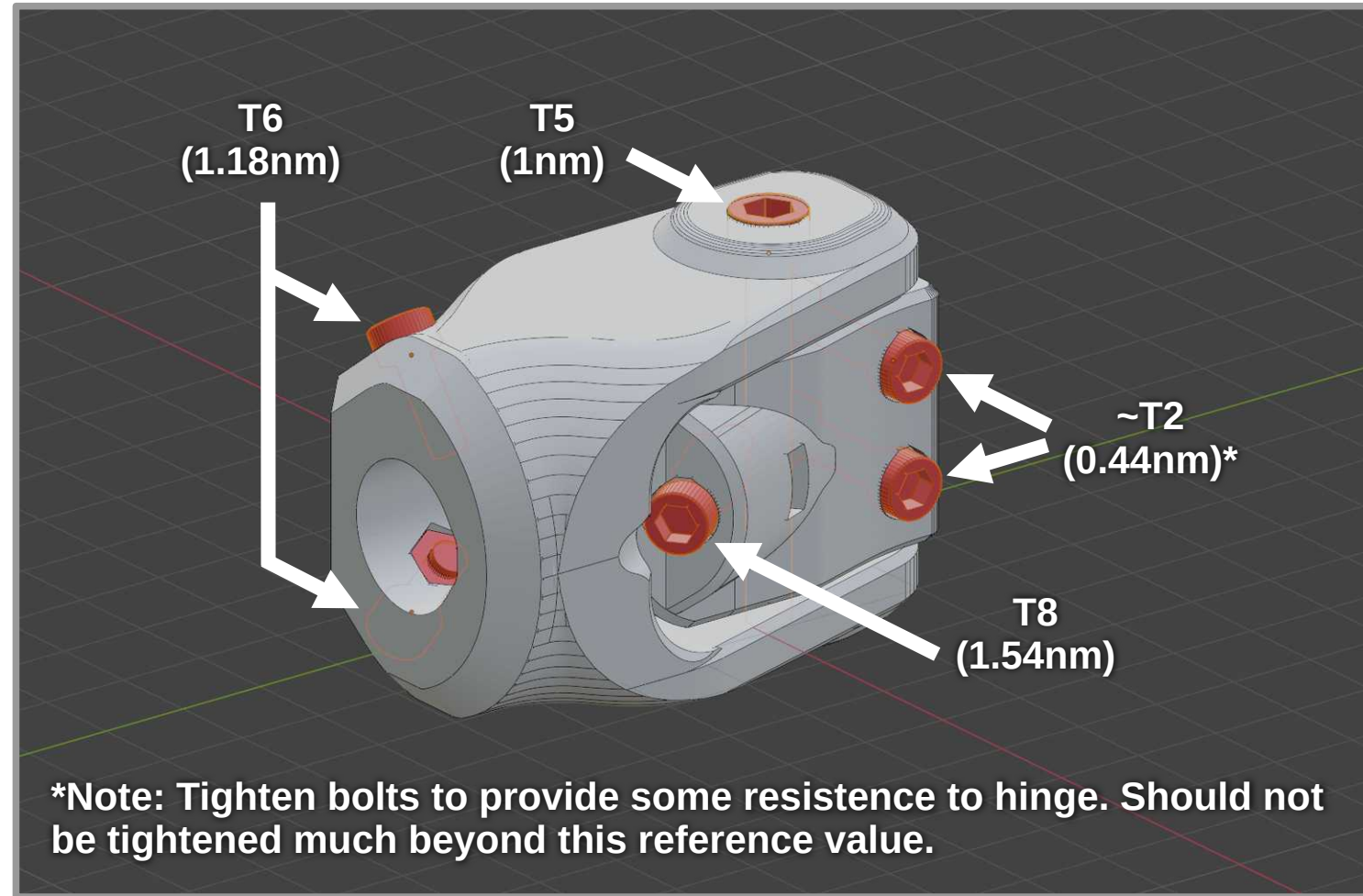
PEDAL FOLDING LATCH (EXTENDED/TELESCOPIC PEDALS)



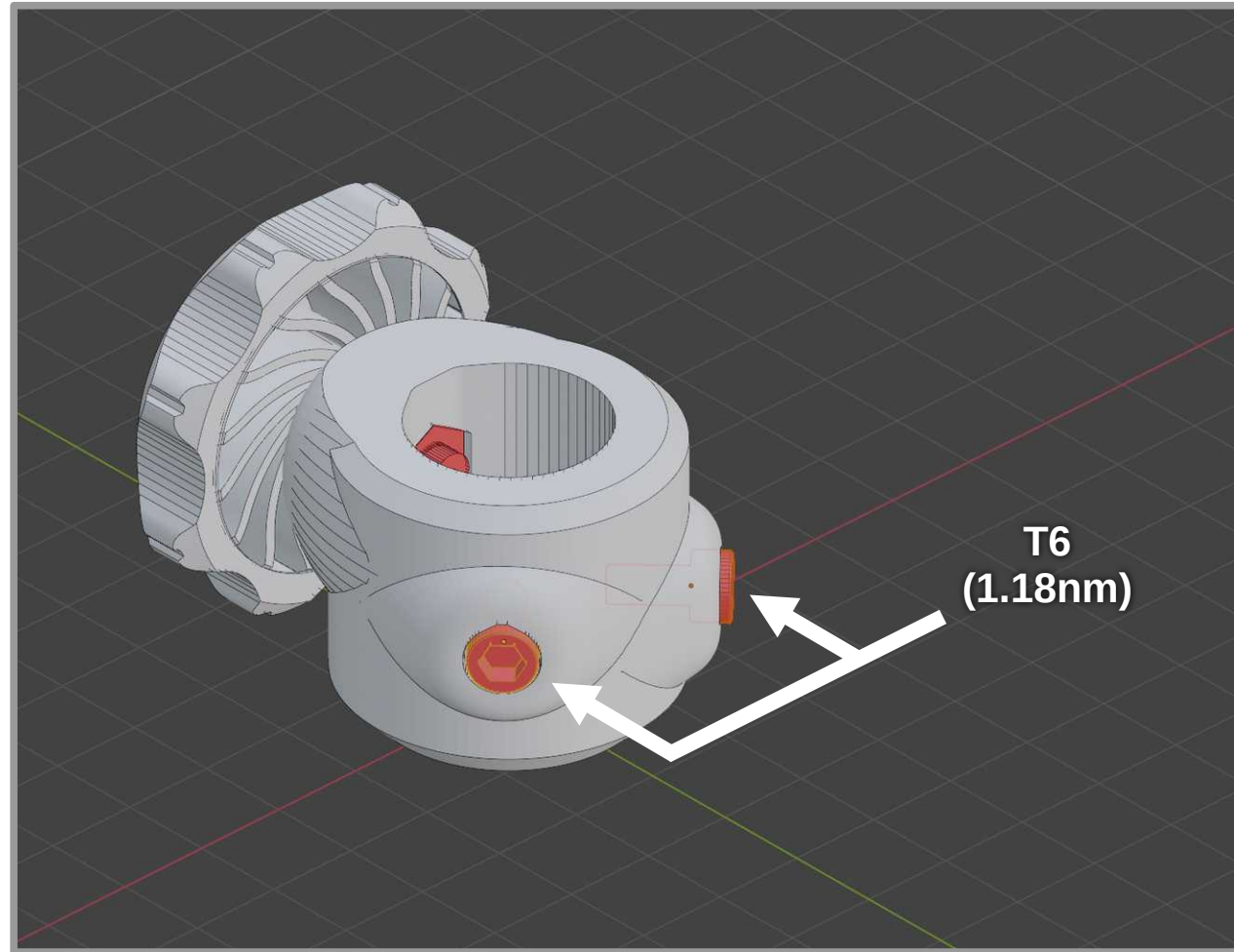
TELESCOPIC ASSEMBLY W/O THUMBSCREW (TELESCOPIC PEDALS/WHEELBASE)



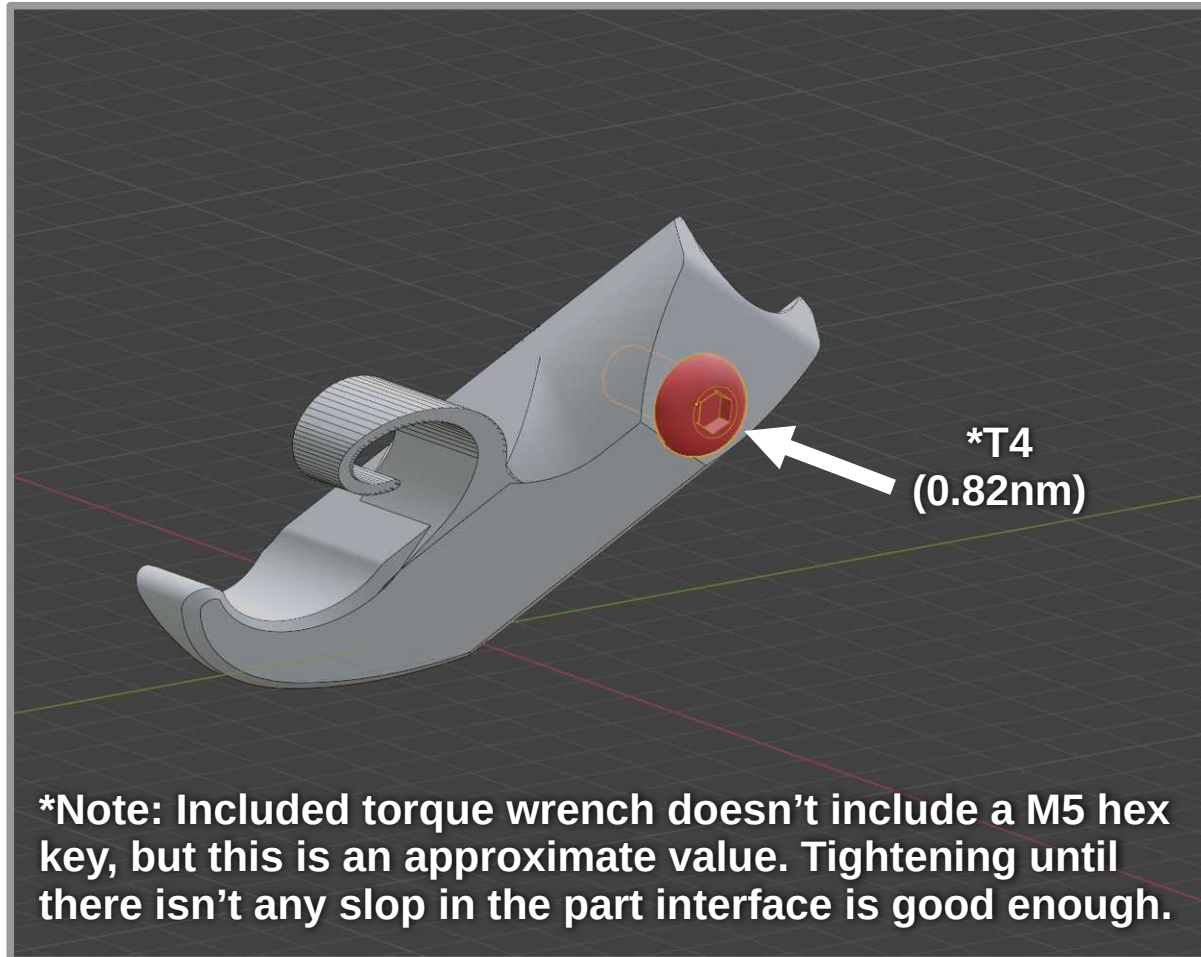
PEDAL STRUT HINGED L JOINT



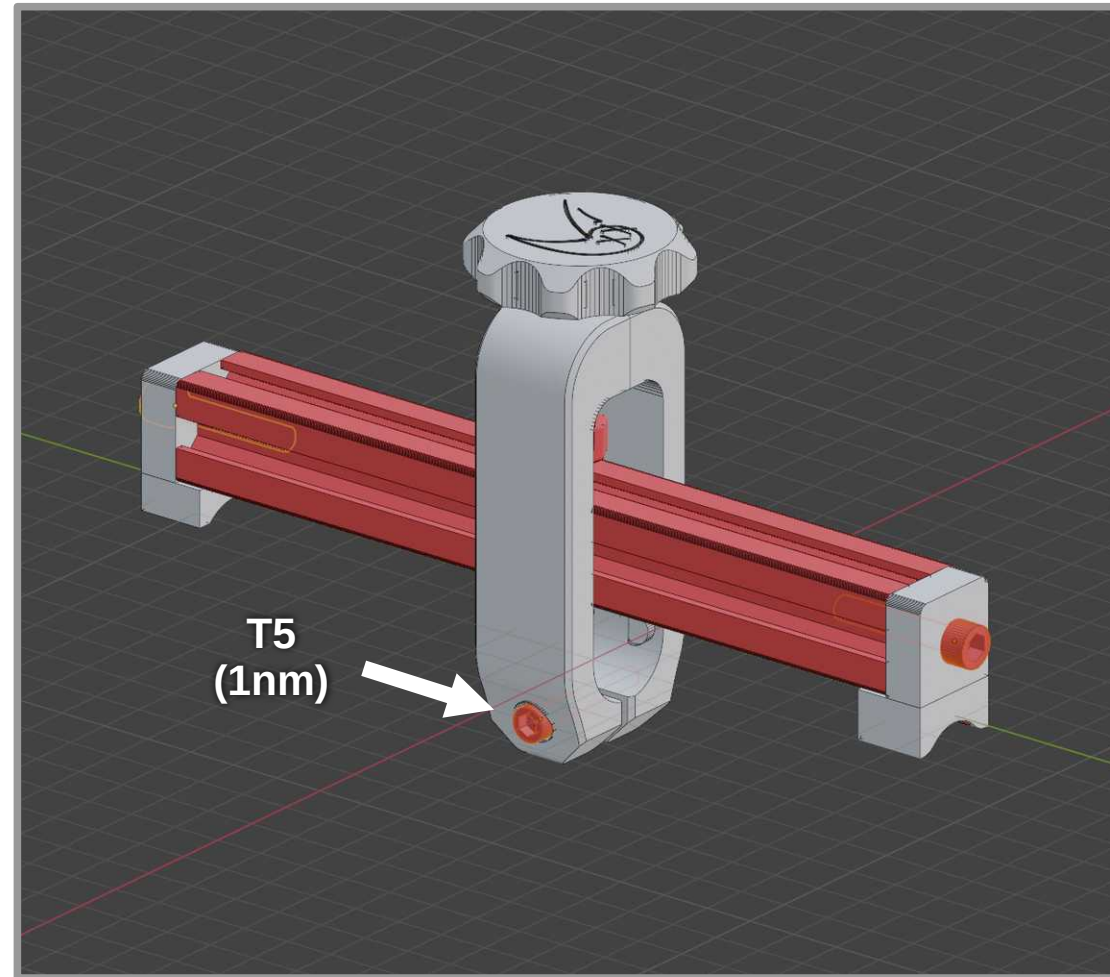
TELESCOPIC ASSEMBLY w/ THUMBSCREW



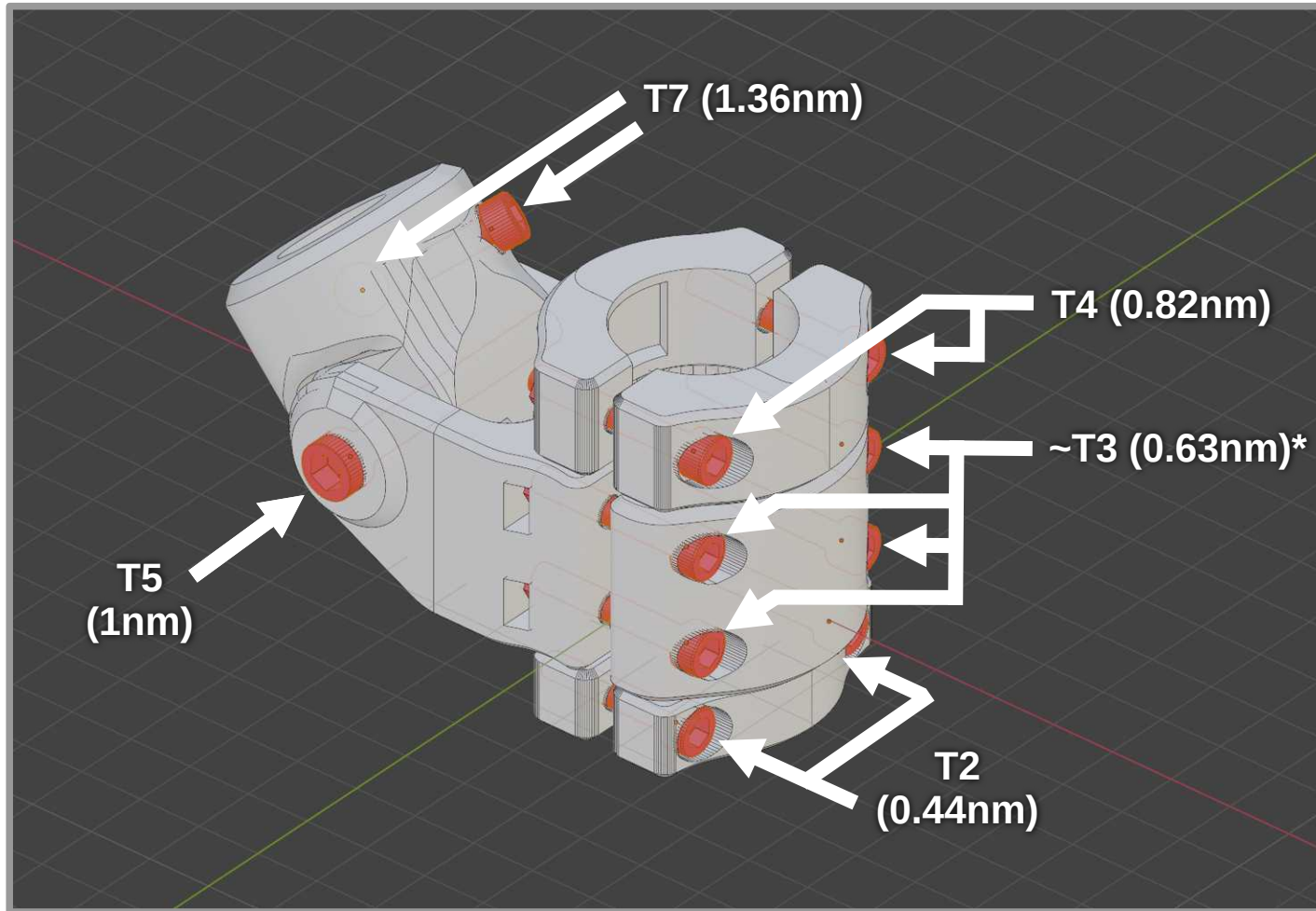
PEDAL FOLDING HOOK



PEDAL TRAY SLIDING LOCK



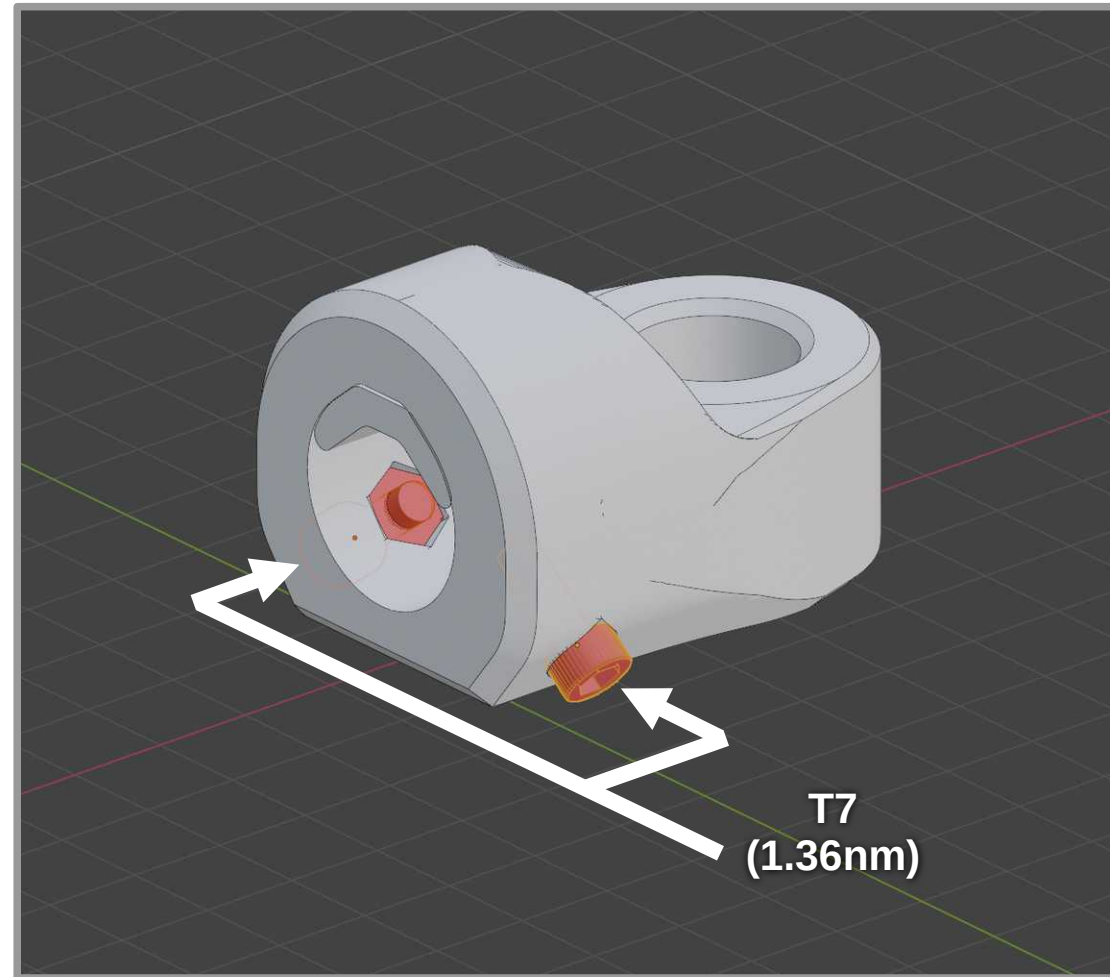
SEAT FRAME STRUT BOTTOM HINGE



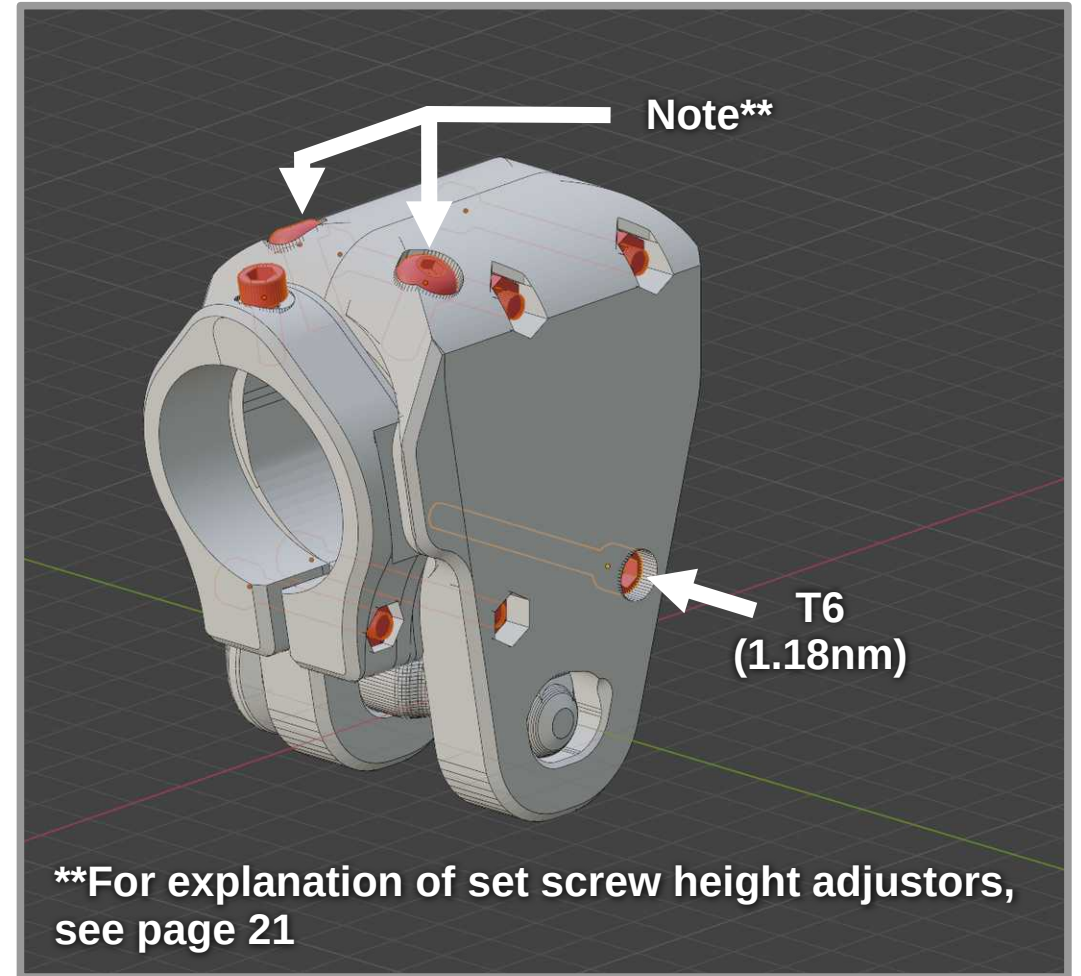
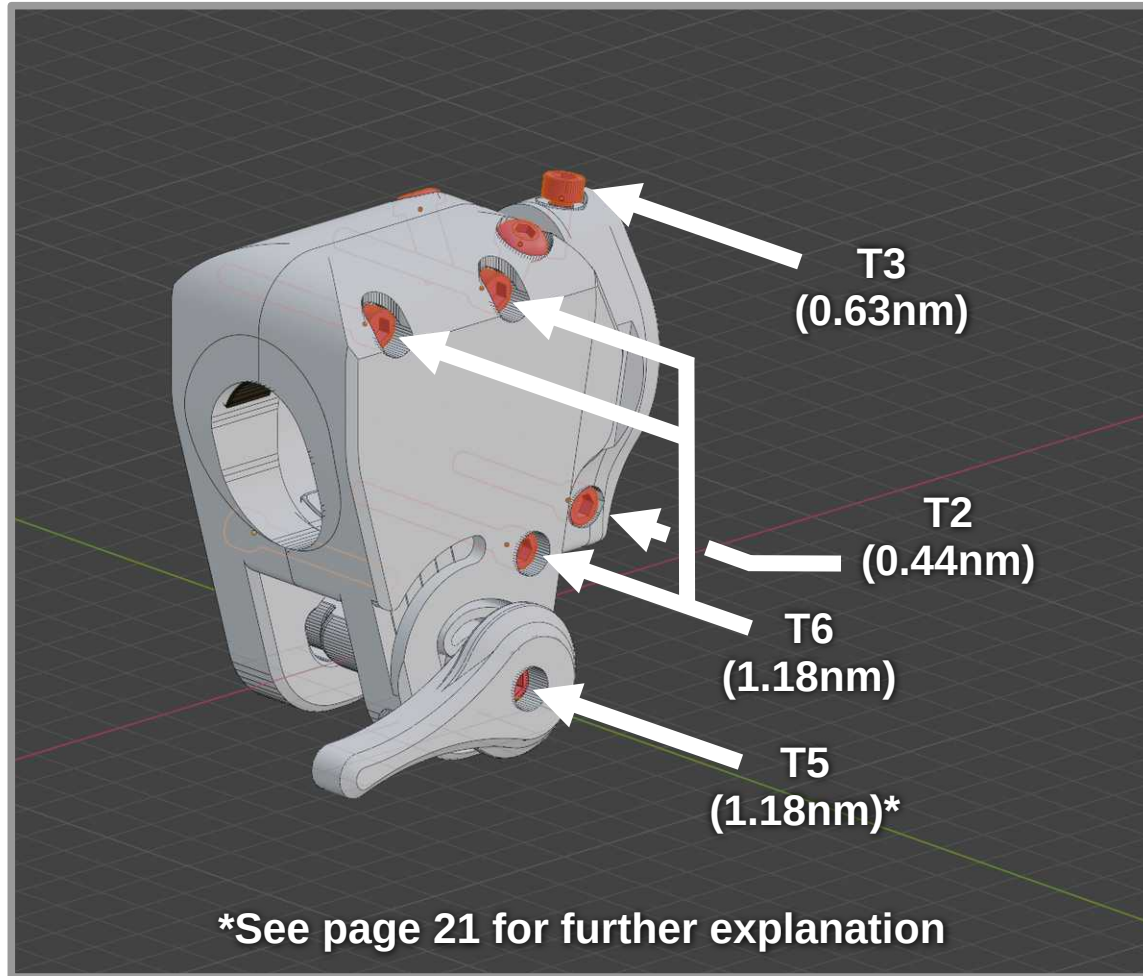
Notes:

*Tighten these bolts so that there is no slop in the interface, but the strut can still rotate to fold away. Shouldn't be tightened to far beyond the specified torque.

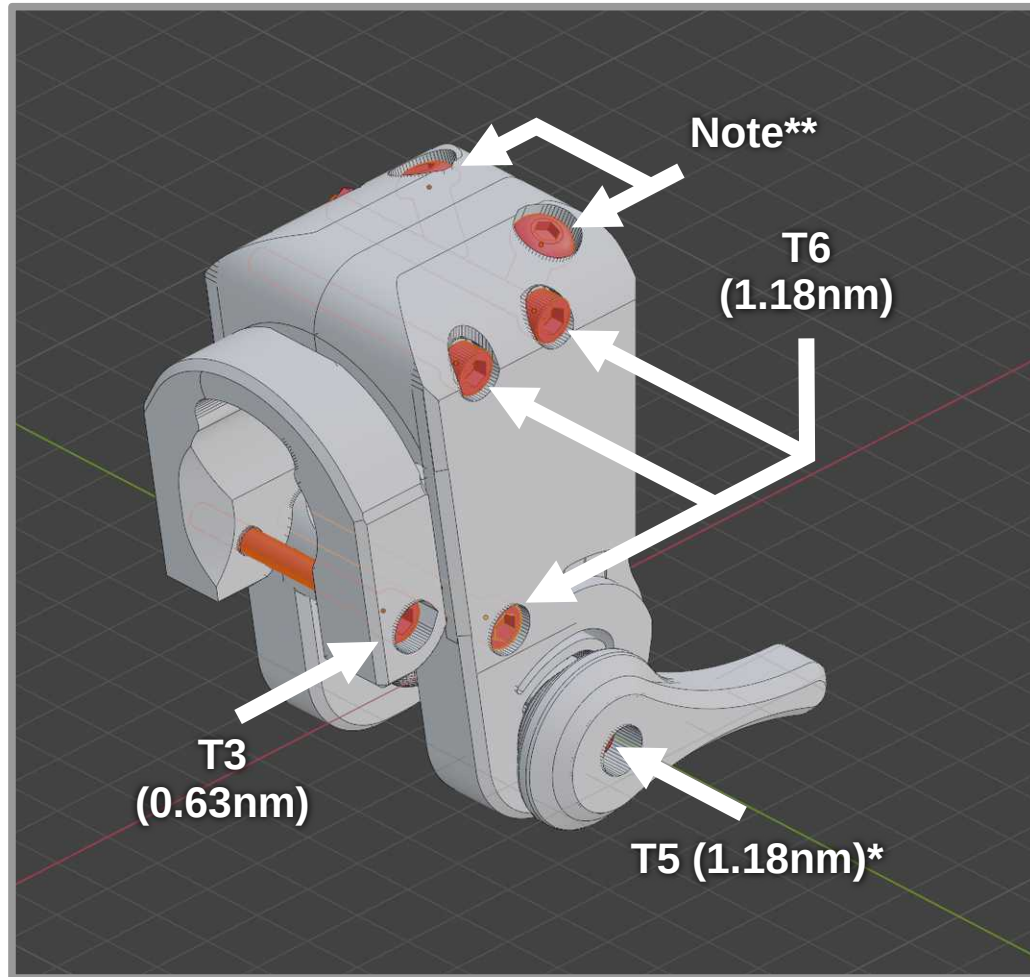
SLIDING CAM QR INTERFACE



SEAT FRAME STRUT CONNECTOR/REINFORCER (LEFT)



SEAT FRAME STRUT CONNECTOR/REINFORCER (RIGHT)

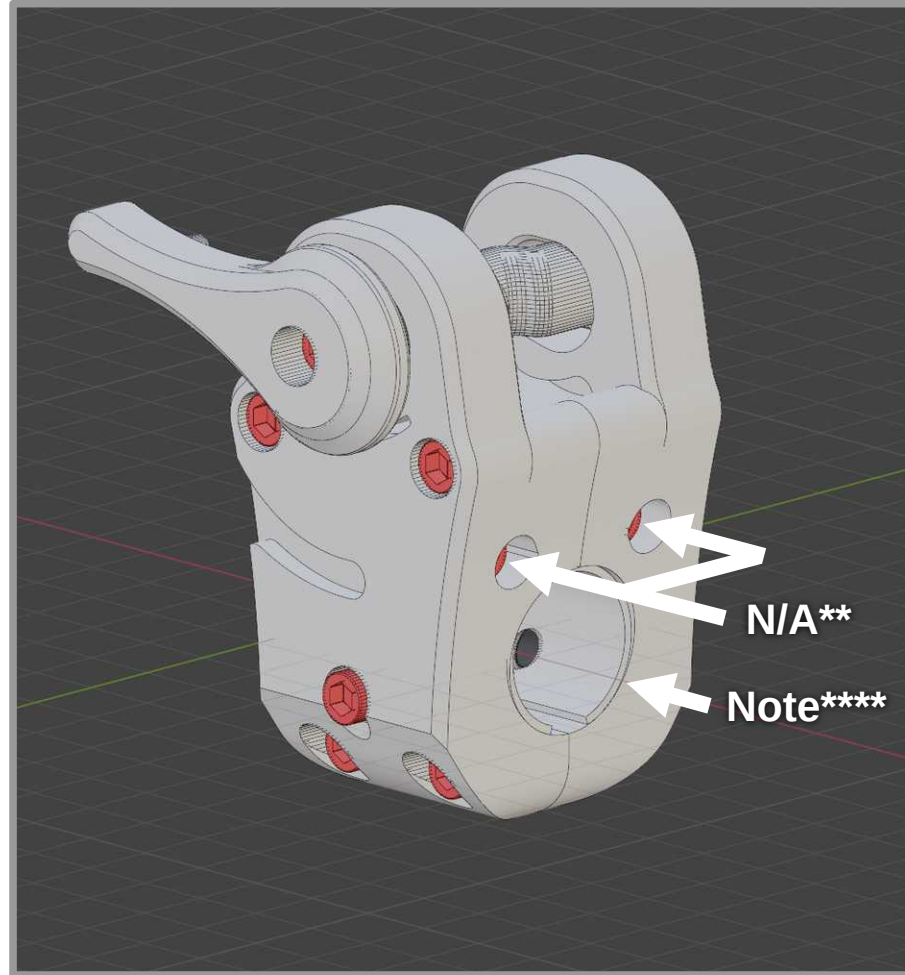
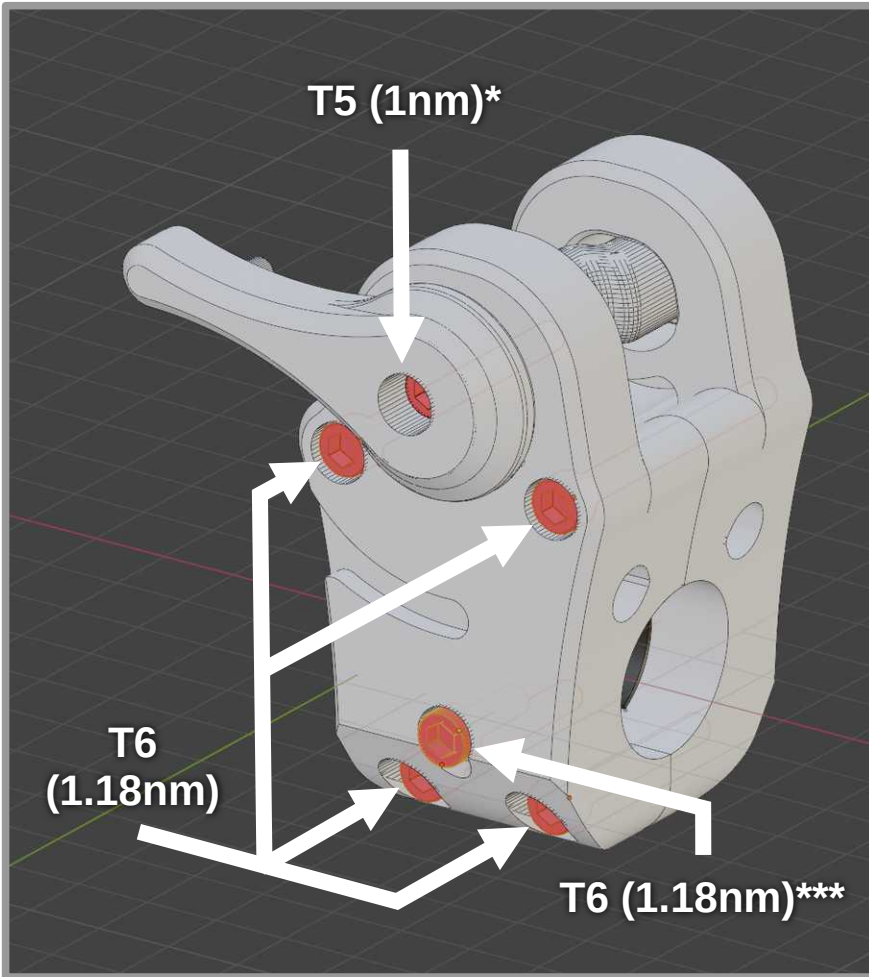


Notes:

*refer to previous note (page 21) for explanation for calibrating locking levers.

**These set screws adjust tightness of the locking mechanism in a similar way to the height adjusting bolts (page 21). These should be adjusted to achieve the desired torque setting for the locking lever*. Tighten (clockwise) these bolts for a tighter fit, and vice versa. Adjust these set screws in sync to ensure equal distribution of load.

PEDAL STRUT/FAR WHEELBASE QR CONNECTOR



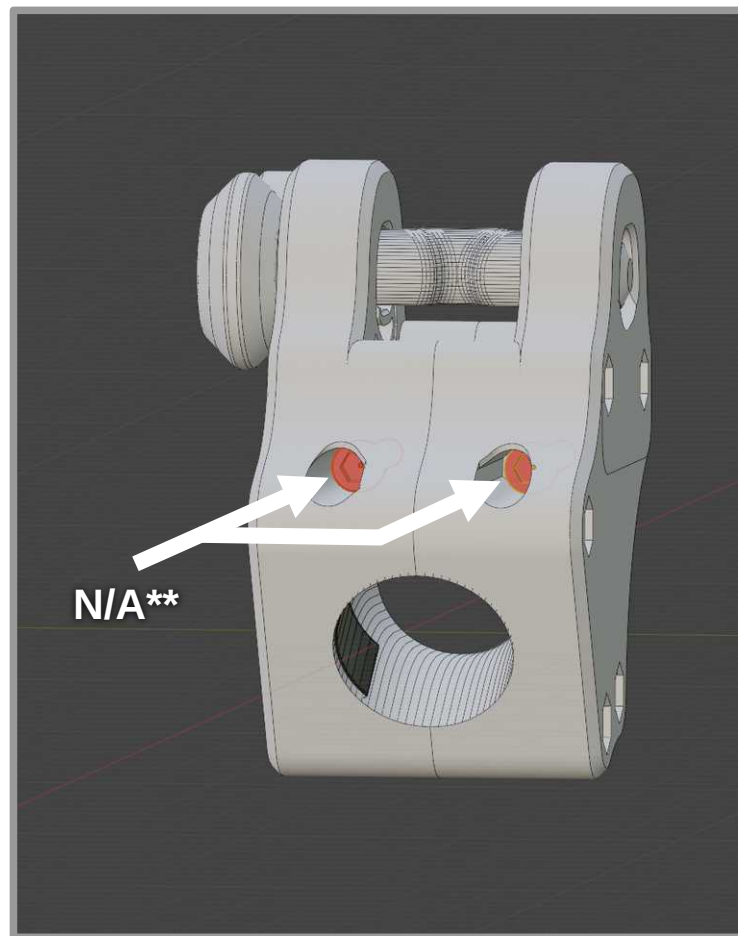
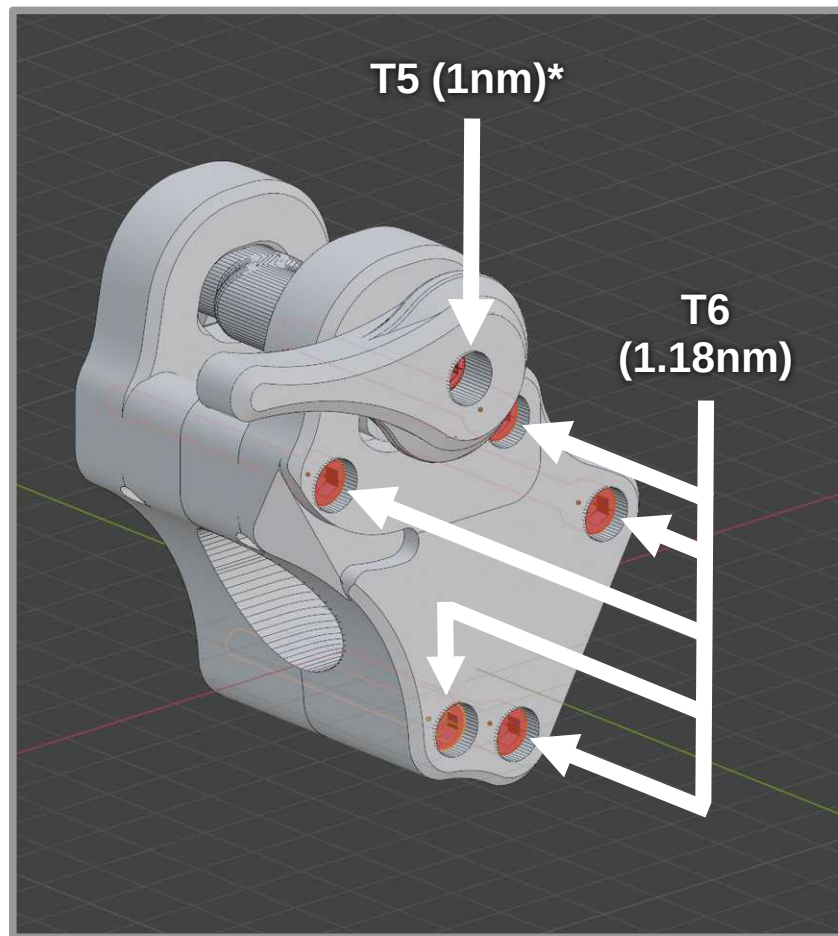
Notes:

*refer to previous note (page 21) for explanation.

**refer to previous note (page 21) for explanation.

/** This QR connector can be clamped onto the Playseat Challenge X tubing or the Lock-Mod 20mm tubing. For the PSC X tubing, the set screw and the sleeve insert**** should be removed. If attaching to the Lock-Mod X 20mm tubing, the sleeve should remain and the set screw tightened last to the specified torque level.

CLOSE WHEELBASE STRUT CONNECTOR



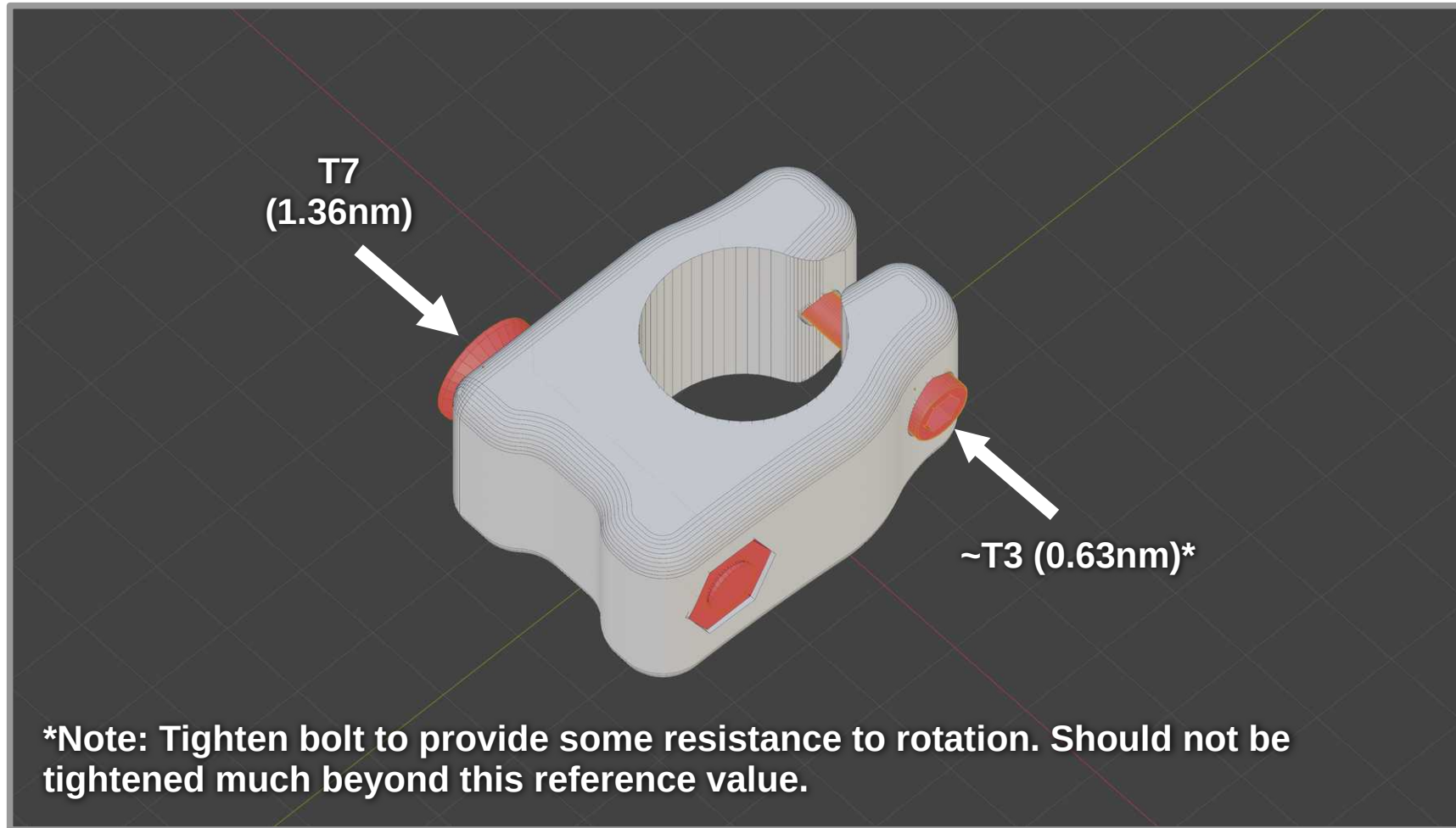
Notes:

*The sliding cam lever can be calibrated with the torque wrench. When locking in place, interface the torque wrench with the inner-bolt and rotate. The lever should click into place close to when the torque wrench clicks. This can be adjusted via the height adjusting bolts**.

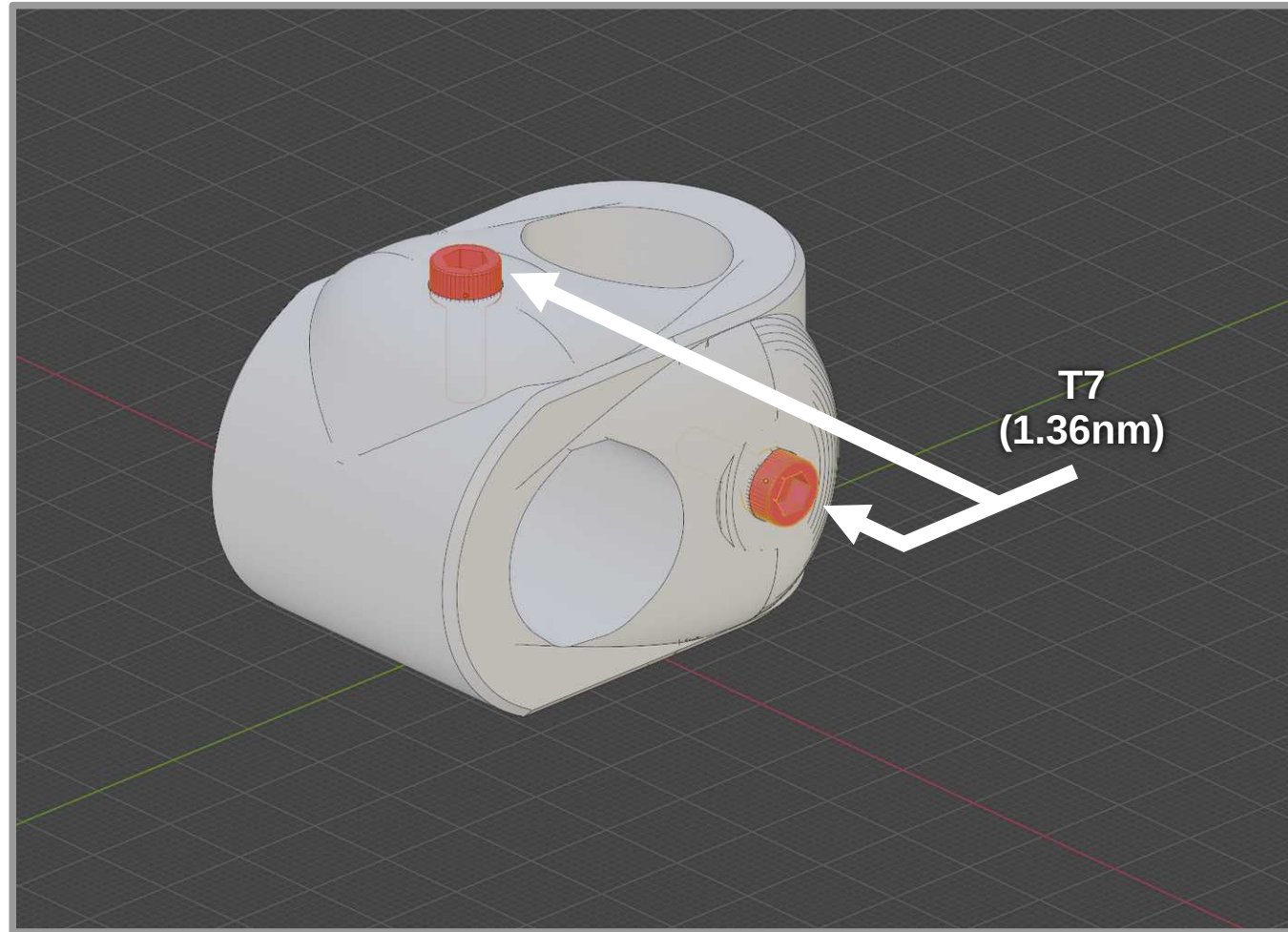
The torque wrench only functions correctly in the clockwise direction, but the hex key insert can be flipped to allow the torque wrench to read torque values in the anti-clockwise direction. This allows levers that lock in the anti clockwise direction to be calibrated correctly.

**These 2 bolts adjust the height of the inner block. Tightening them (clockwise rotation) will make the locking interface tighter, and vise versa. Bolts should be adjusted in sync with each other.

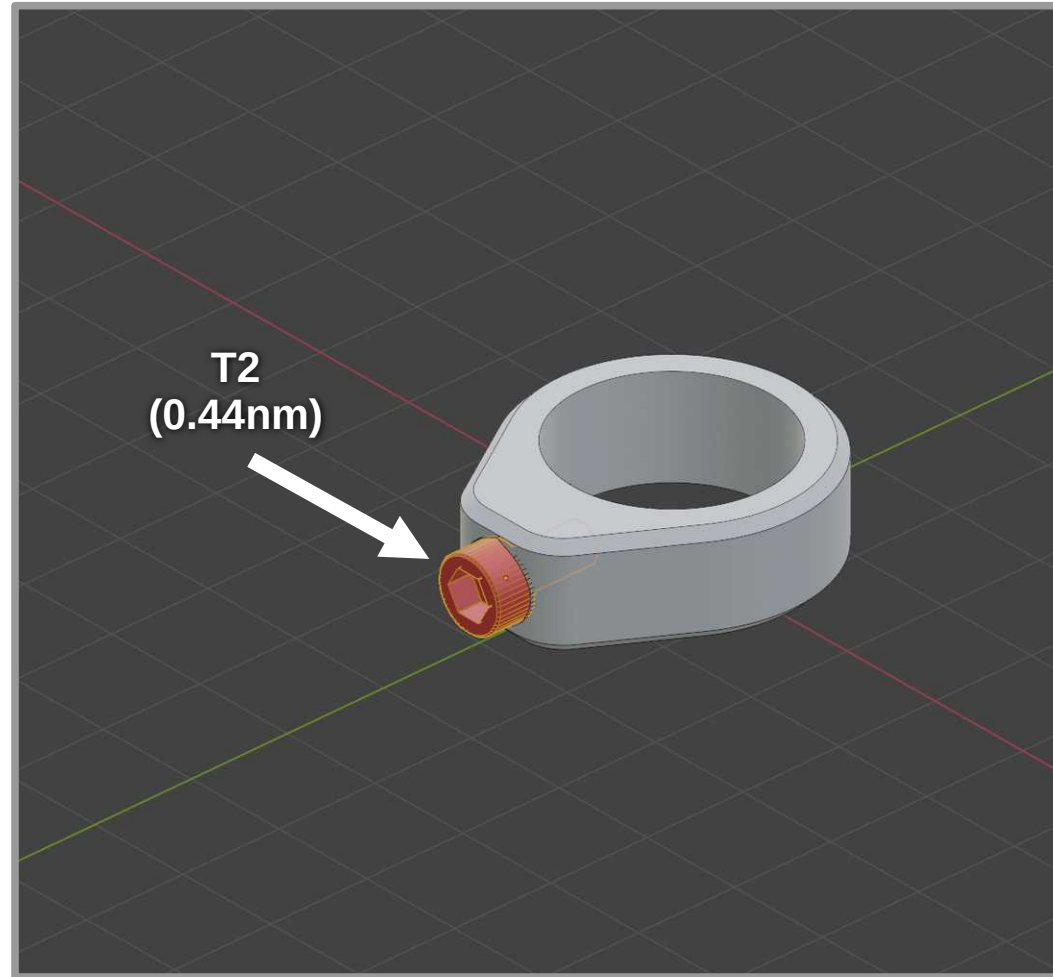
PLATE STRUT JOINT



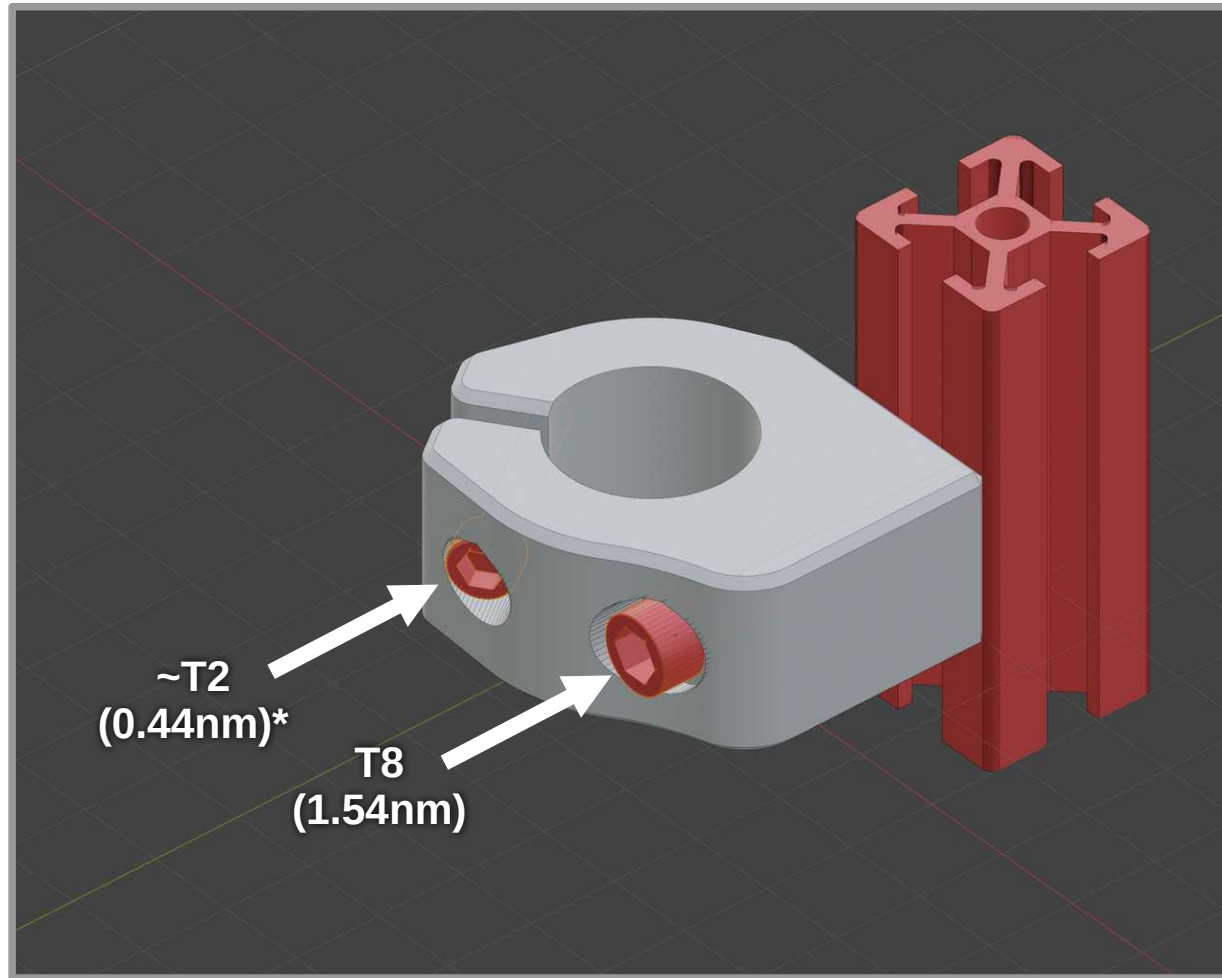
OFFSET L JOINT



POSITION SET SCREW CLAMP (SIDE MOUNT ASSEMBLY)



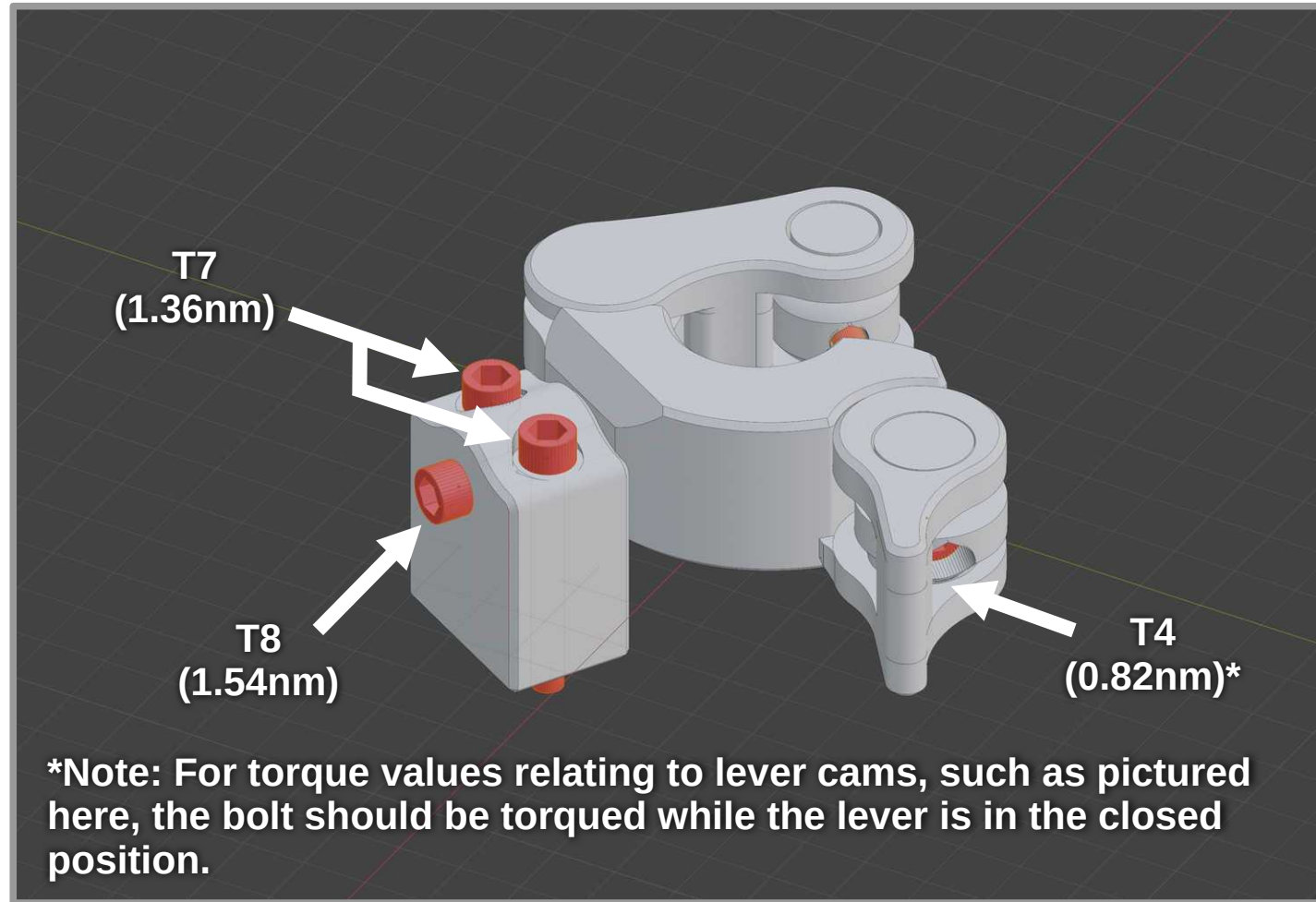
STRUT 2020 INTERFACE CLAMP (SIDE MOUNT ASSEMBLY)



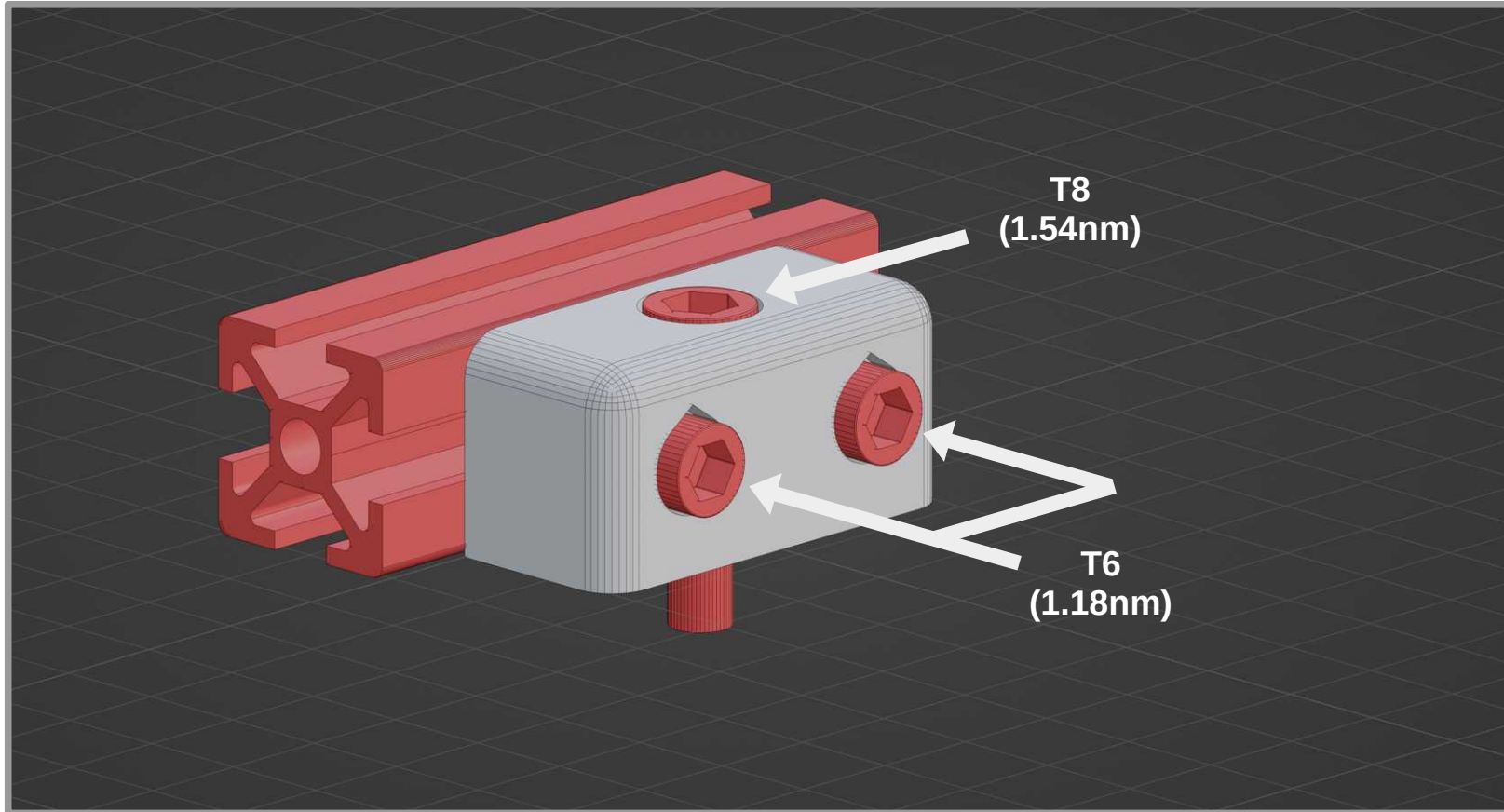
Notes:

*Tighten these bolts so that there is no slop in the interface, but the strut can still rotate to fold away. Shouldn't be tightened to far beyond the specified torque.

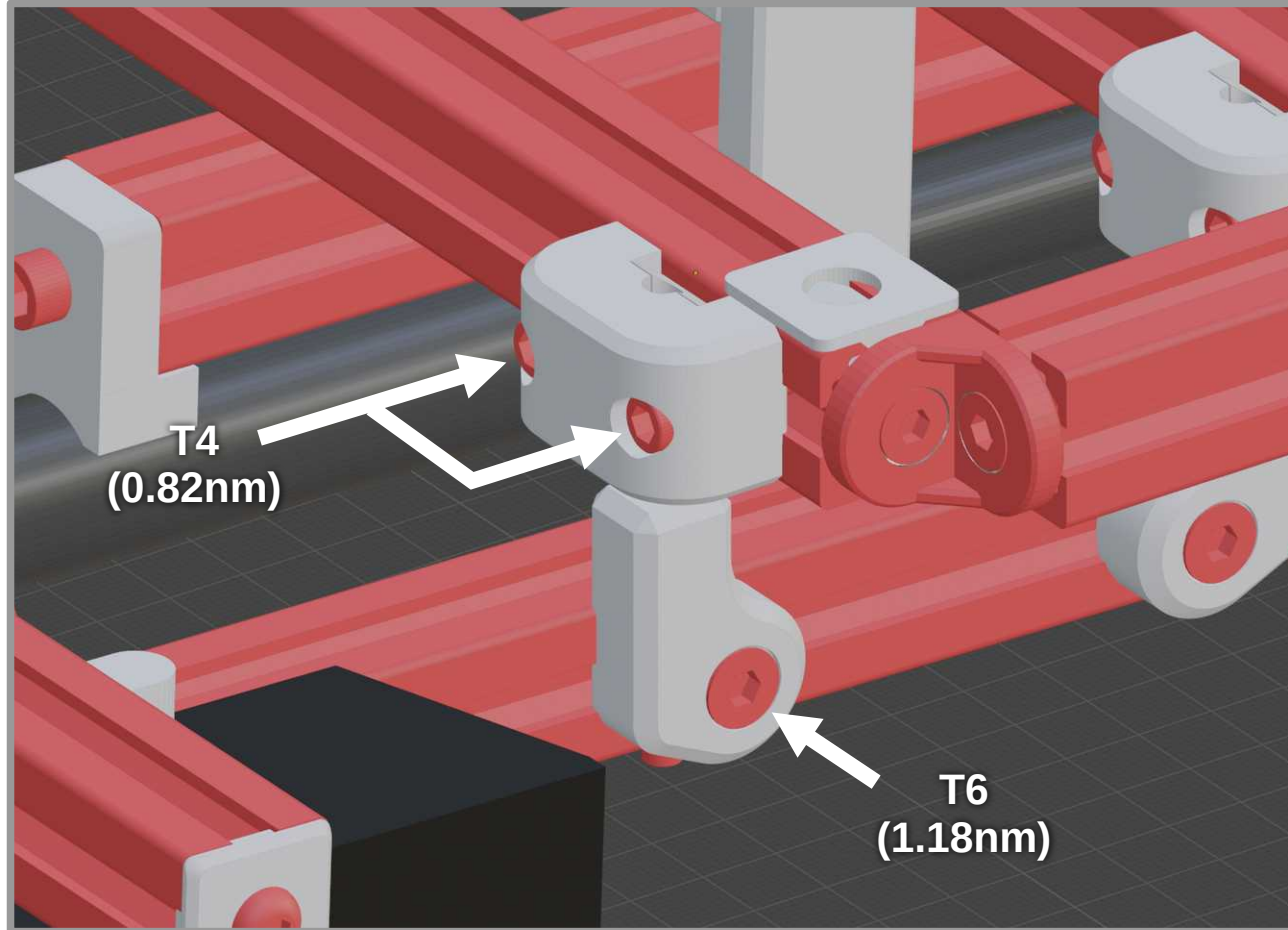
FRAME QR CLAMP (SIDE MOUNT ASSEMBLY)



RIGHT ANGLE ADAPTOR (PEDAL MOUNT/SIDE MOUNT)



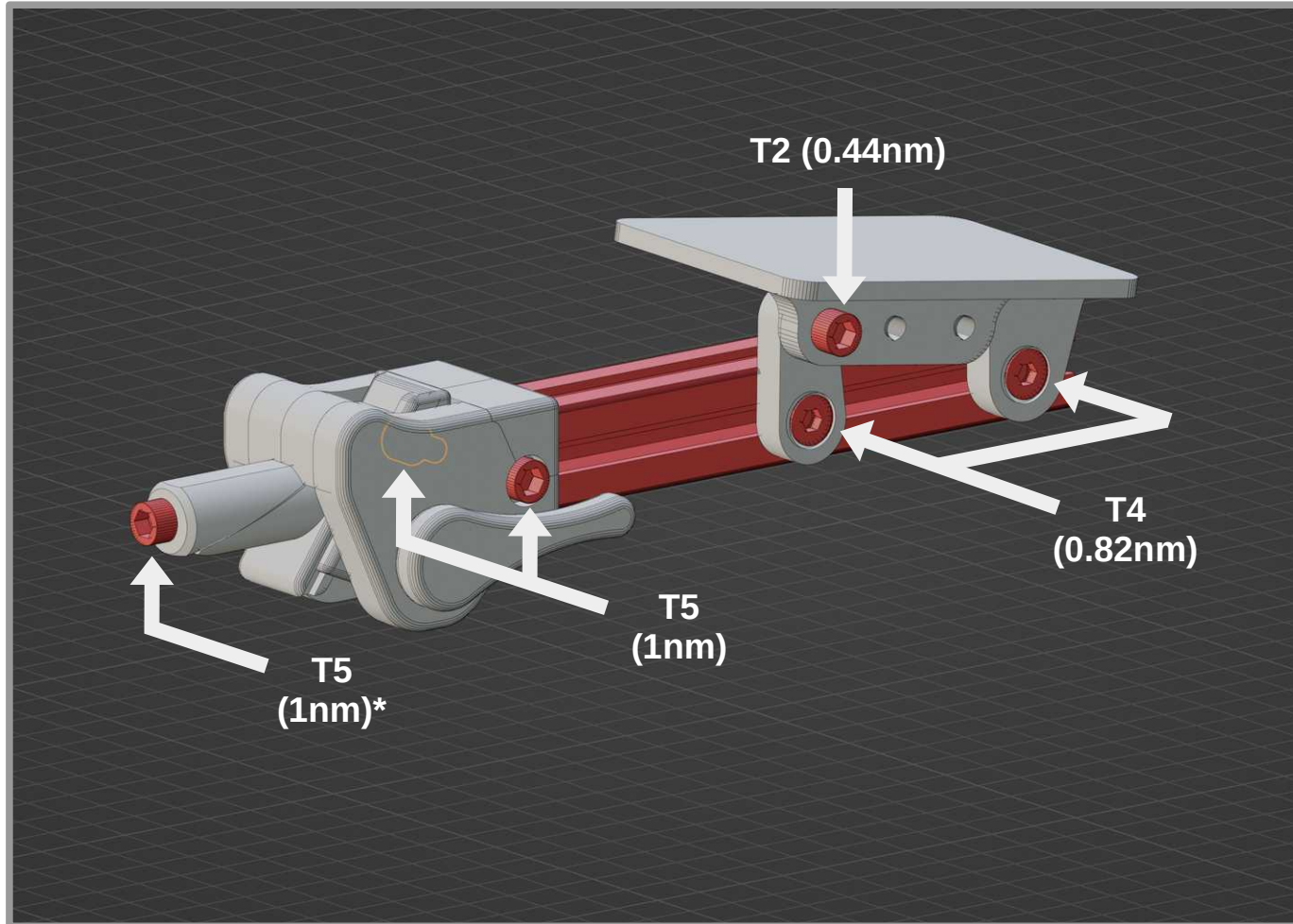
HEEL REST CONNECTORS (PEDAL MOUNT ASSEMBLY)



Notes:

For bolts that directly attach metal to metal (such as the aluminium right angle brackets, or the heel rest plate bolts, the torque wrench isn't as necessary. It can still be used if desired at the T8 (1.52nm) setting.

MAIN QR MOUNT SYSTEM (KEYBOARD MOUNT)



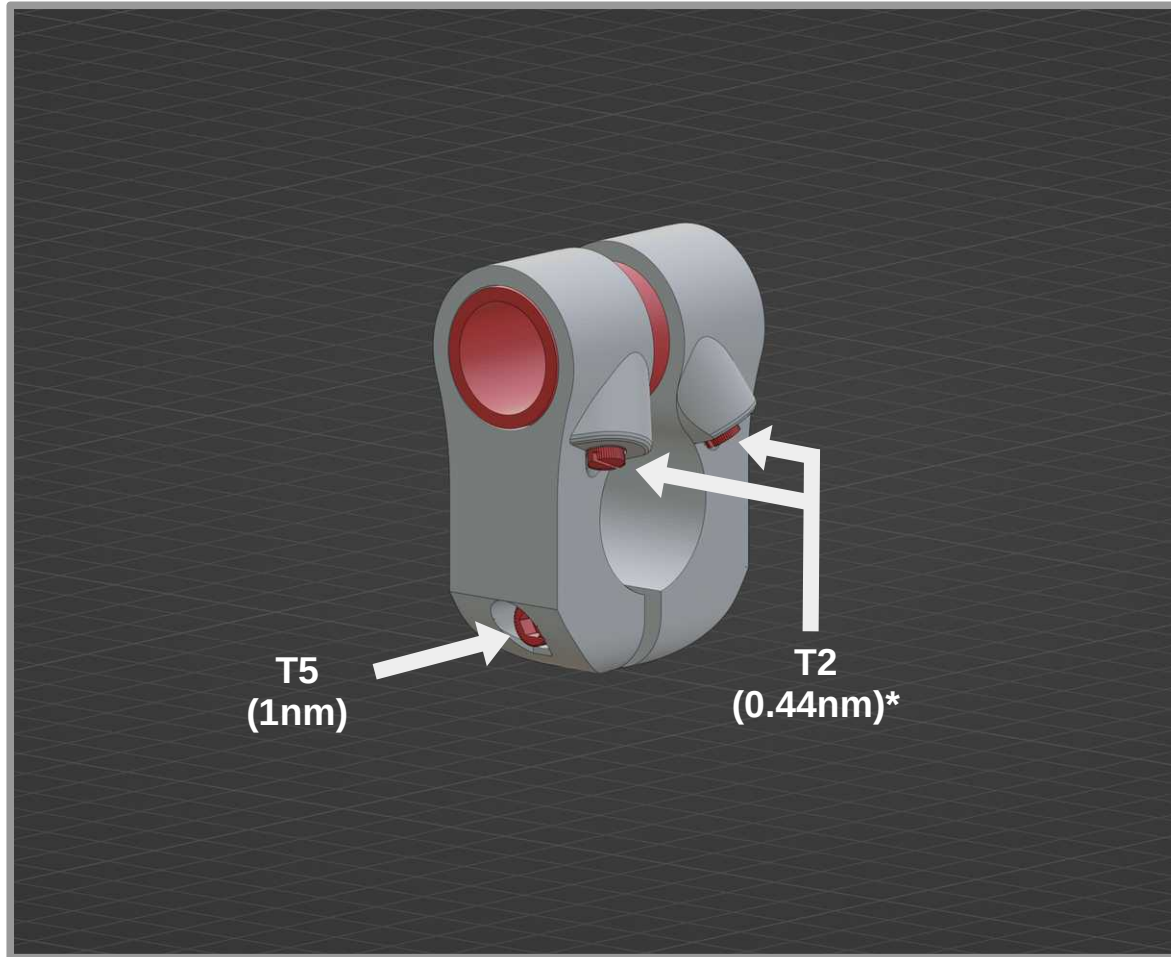
Note:

The end bolt of the QR mount is pre-calibrated to the specified torque value. This provides enough tension for the QR wedges to be firmly locked in the 20mm tubing it interfaces with, and going beyond this torque value may damage the QR mechanism.

If the QR tension needs adjusting, this is done by locking it into the *Additional Mounting Clamp* and torquing the bolt to the specified value.

If the *Keyboard Mount* wasn't ordered with an *Additional Mounting Clamp*, the tension bolt can still be adjusted while unmounted by making small adjustments between mounting the unit; the QR lever should 'lock in' smoothly without the mechanism feeling 'sticky' from an excess of force.

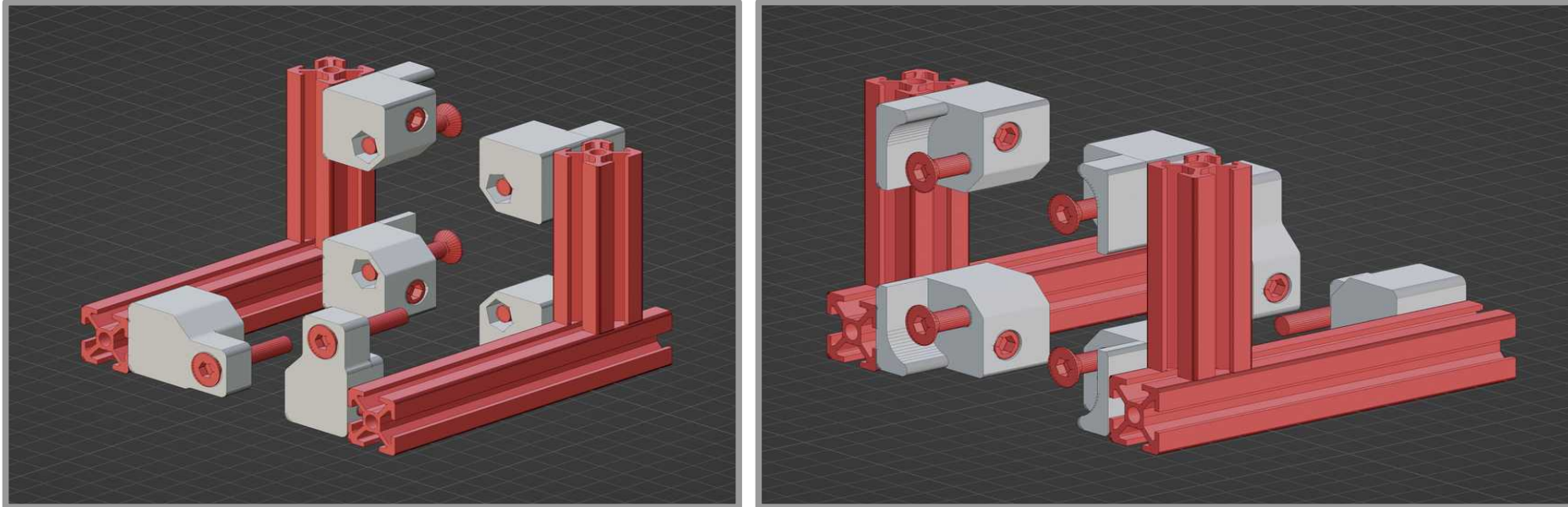
ADDITIONAL MOUNTING CLAMP (KEYBOARD MOUNT)



*Note

The included torque wrench does not come with a flathead that integrates with these set screws, but it is quite easy to feel when the screws bite into the aluminium tubing. Once that bite point is felt there is no need to further tighten these set screws, as the M4 bolt below will provide the necessary clamp tension when tightened.

WHEELBASE MOUNT (VRS DFP MOUNT)



All bolts pictured here torqued to T8 (1.52nm)

Note:

To ensure that the bolts in the mounting structure don't loosen over time (due to the vibrations caused by the wheelbase), thread-locker can be applied to the bolt threads.

The 90 degree aluminium bracket fasteners, as with the side assembly, can be tightened to T8 (1.52nm) and beyond, with the limiting factor for torque usually being the hex key insert which will round off with excessive force.

CONTROL BOX MOUNT (VRS DFP MOUNT)

