

Skadis T-Clip System



Xuis

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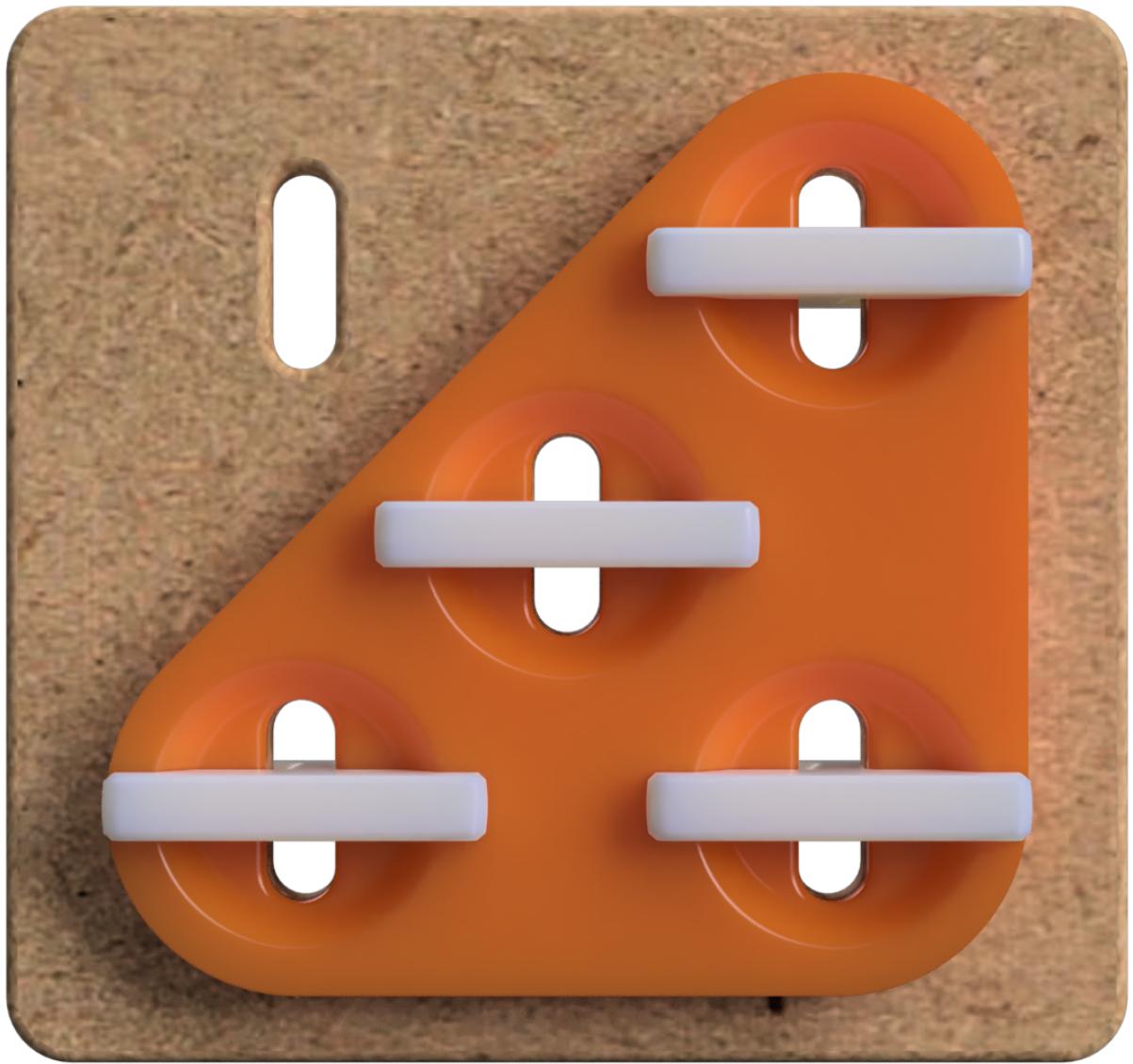
Summary

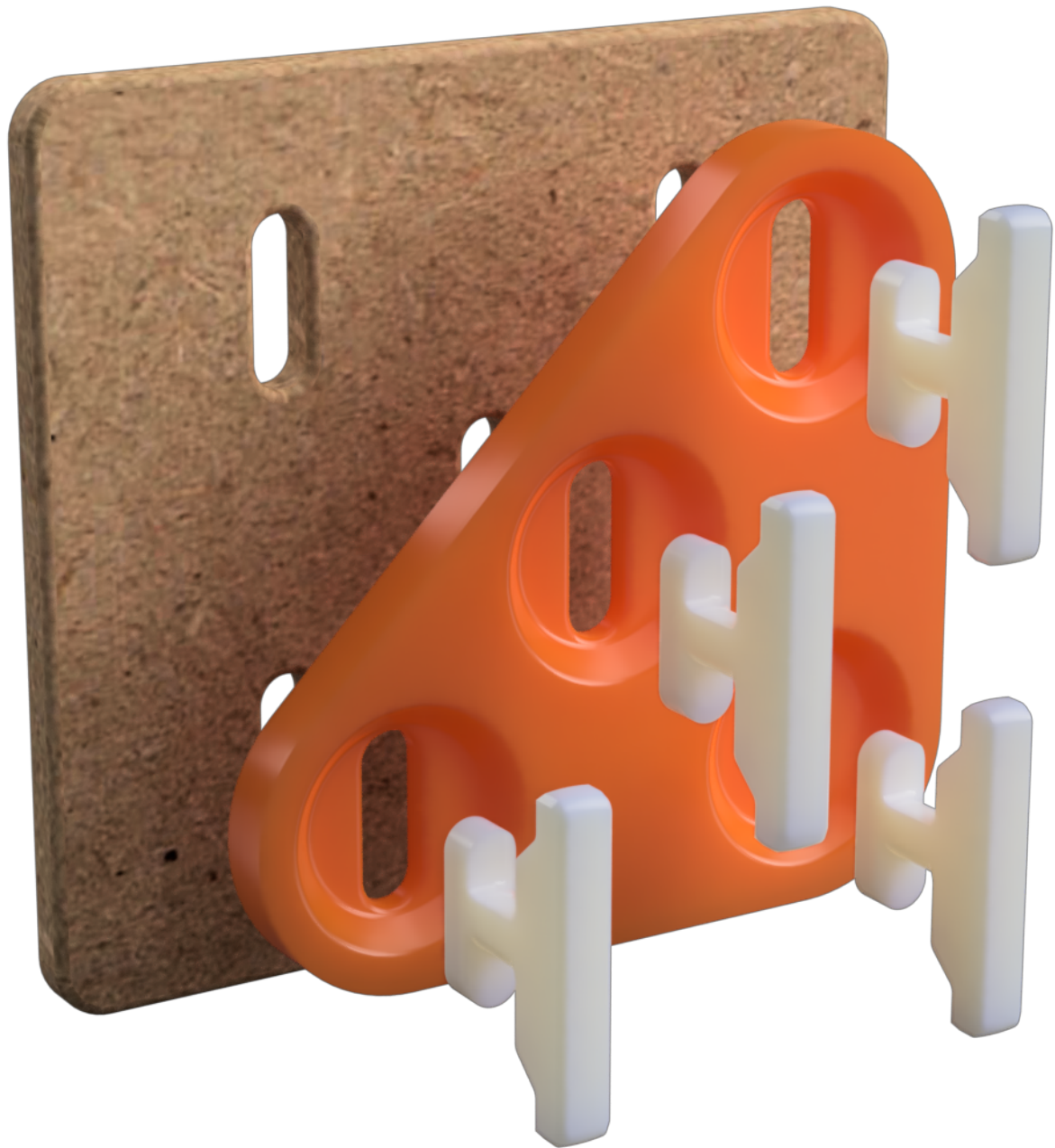
A fully printed system for fastening things to IKEA Skadis Pegboard.

[Household](#) > [Other House Equipment](#)

Tags: [parametric](#) [wallmounted](#) [ikea](#)

I have been fascinated recently by the ways that the 3D printing community has devised to attach printed parts to IKEA Skadis board. Skadis slots enable 3D-printed parts to attach much more securely and reliably than the holes in regular pegboard. The community has created some positively genius ways to interface with Skadis, and I'd like to add another option to the ways you can design attachments for this great pegboard.





Usage

The Skadis T-Clip system allows you to design objects that attach to IKEA Skadis pegboard. The T-Clip connection is snug, fully printed, secure, and easily movable! The load-bearing parts print in the optimal orientation, and it looks pretty cool too. The best part is, it's easy to integrate into your design. Included here are all the files and considerations you'll need.

To get a feel for T-Clips, you should [print the example piece](#) in the downloads or my [example coat-hook](#)!



Limitations To Keep In Mind

My design isn't perfect, and there are some aspects that may make you think about other Skadis attachment Options like [T-Nuts by @6d6178](#) or [Secure Clips by @mkingery](#). (More about them in the “**comparison with other attachment methods**” section!)

Skadis Thickness Differences

While designing this, it came to my attention that Skadis boards come in two different thicknesses: painted (black and white)[5.23mm] and unpainted (wood colored)[4.82mm]. This means that I need two different T-Clips to work nicely. To test the fit, I published these [Skadis Thickness Testers](#) you can use to make sure your pegboard will fit nicely with T-Clips. If they don't work to your liking, try tweaking the Fusion 360 file to find the fit that works best with your printer/Skadis.

Variables

This model is driven by a variety of variables that you can play around with in Fusion 360's “Change Parameters” menu.

Clip Length Tolerance

Since I want the clip to fit tight, I made it slightly shorter than it needs to be. By default, -0.1 works well here. +0.1 makes the clip a little loose. This is the variable that you should use to fine-tune how well the clip fits your pegboard. This measurement is used to calculate the **#ResultingClipLength** variable. This variable is used in the sketch “Twist Clip / End Peg Length”

Twist Angle

I wanted to make sure you could configure how far the clip could twist before it was stopped mechanically. So one of the parametric options is to adjust the stem properties to do just that. The parameter is called “TwistLimitAngle” and is 90° by default.



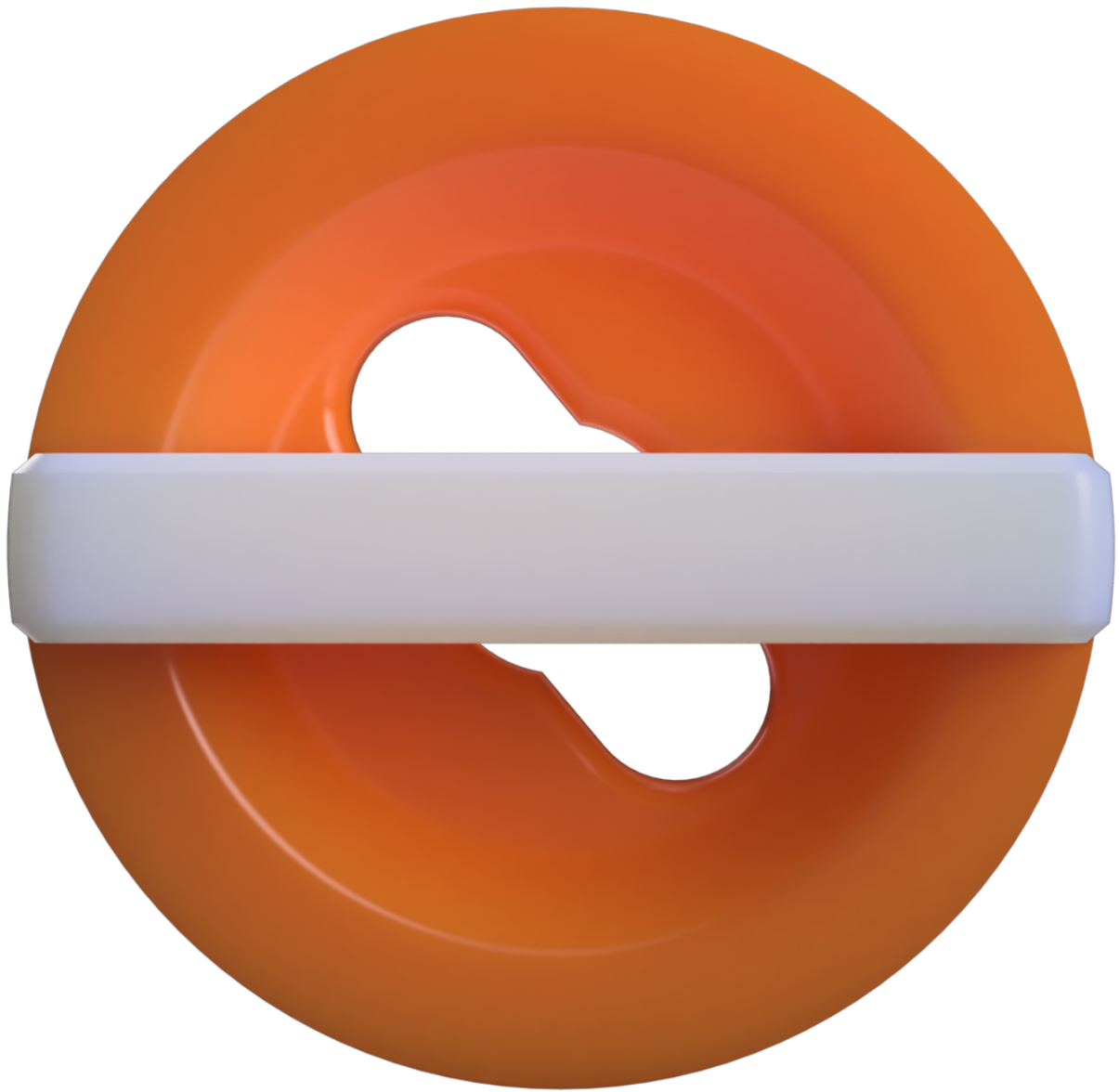


Insert Angle

My original idea was to have the clip inserted at a different angle than the Skadis slot. This option is also parametric. The idea was that you would insert all the keys into the part, then push it onto the skadis board all at once. It ended up being easier to just have the slots aligned with the Skadis slots. But it's still there if you want to play around with it!

The parameter is called “AttachmentSlotAngle” and is 0° by default. I'd suggest trying -40°





Developing Your Own

I designed this whole system with the hope that you would use it to make your own Skadis attachments! You'll want to download the Fusion 360 file in the downloads

Design Limitations

When using T-Clips, you'll need at least two points of attachment (2 clips) to secure your attachment to the skadis. The two points of attachment need to align with the slots on the skadis board. (#TODO: Add Example)

In addition, it's nice to add some alignment bumps if you have the opportunity. (#TODO: Add Example)

No Go Areas

Handle Path: You don't want to have geometry preventing the handle from rotating.

Interaction Space: You don't want to put anything in the way of blocking your hand accessing the handle.

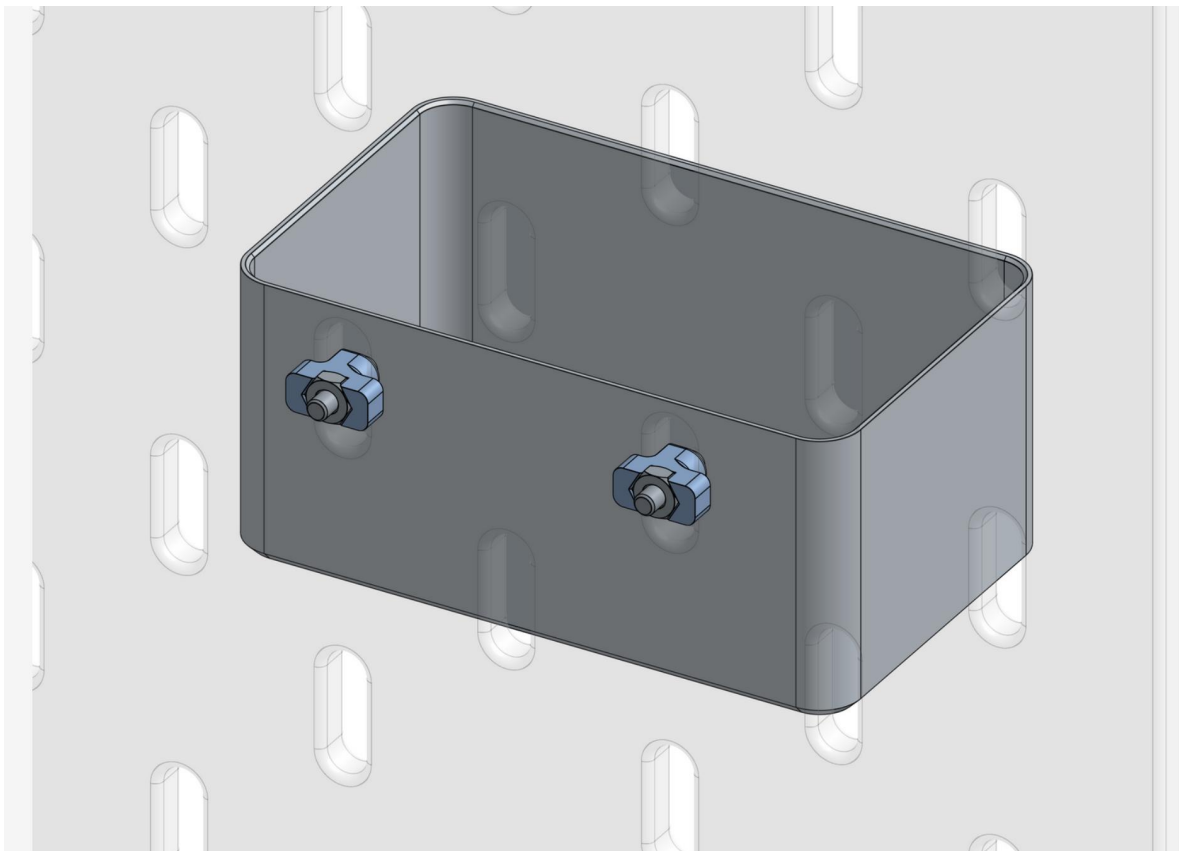
Basically keep the design out of the circle, and you're good.

Comparison With Other Good Attachment Methods

T-Nuts by @6d6178

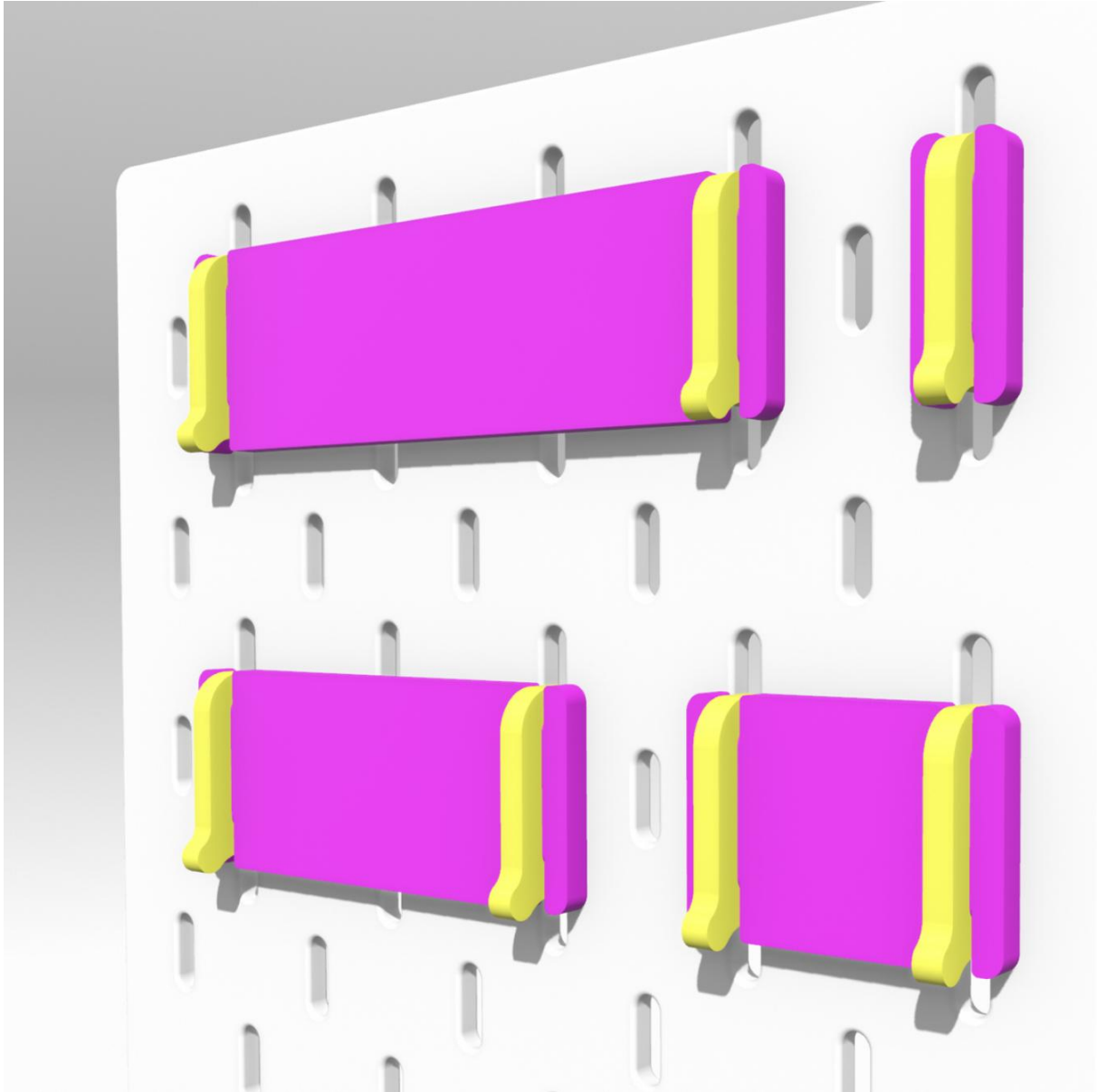
The amount of polish 6d6178 has put on these T-Nuts is astounding. Not only are they an easy system to design for, but the documentation for them is comprehensive.

Downsides include needing additional hardware and needing a tool for removal. However, the ease of design and the secure fit make this one of the best ways to attach your design to skadis.



Secure Clips by @mkingery

This clever system is fully printed and also prints the load-bearing pieces in the optimal orientation for print-strength. Though it shares about the same difficulty to integrate into a design in comparison to my T-Clips system, it takes a smaller horizontal footprint. It also looks great!



Other Aspects I Want To Brag About

Handle Max Sizing

The maximum size of the handle for my clips is determined by the standardized distance between slots in skadis. If they were wider, then they could collide with each other if placed directly neighboring each other.

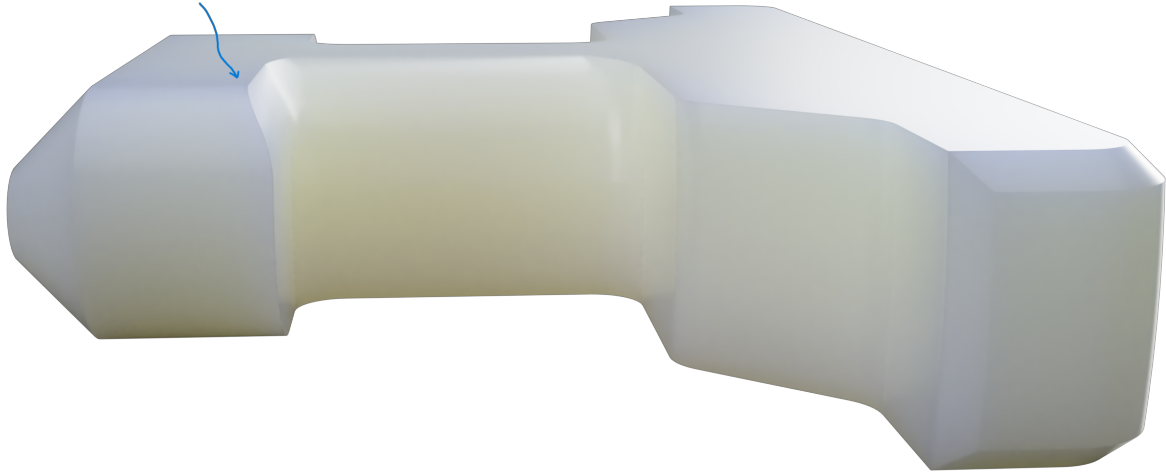
Angled Sidewall

Since I want the T-Clip system to be compatible with multiple orientations of printing, I made the side-wall follow a 45° angle so it can be printed upright if needed.



Hook Ramps

One issue that I ran into was the ends of the T-Clips catching on the back-side of the skadis too much. That's why I added these little ramps to the sides of the clip:



Fastener Reinforcement

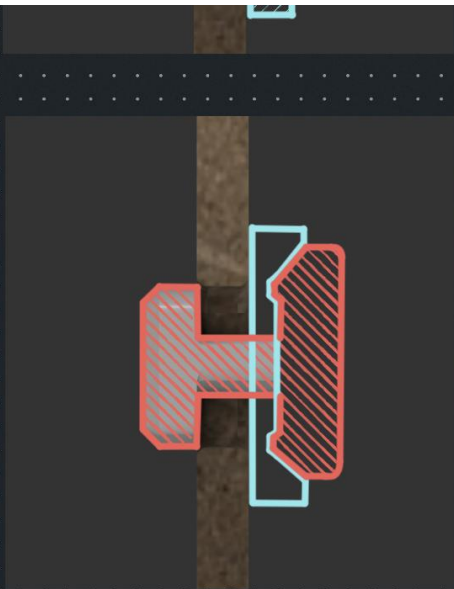
In my original design, I was worried that the stem of the clip would not be strong enough. I have the allowance for an M3 screw to reinforce the shaft of the clip. This turned out to be needed, but I wanted you to know that it's possible.

Can be used with other attachment Methods

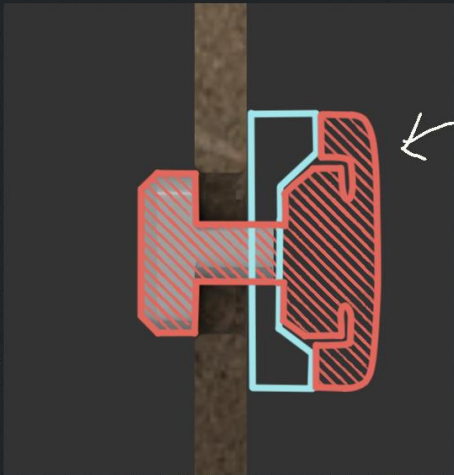
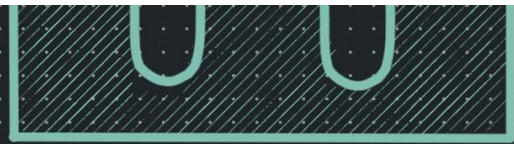
I really like the idea of combining these T-Clips with more common Skadis attachment methods like a standard hook. You would only need one T-Clip to “lock in” another method.

Spring-Loaded Clips

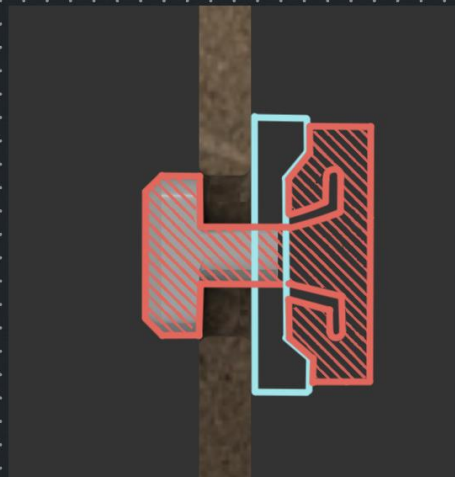
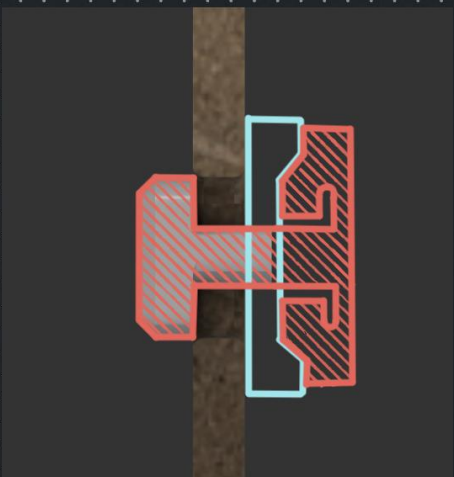
To combat the problem of different Skadis board thicknesses, I've drawn up some concepts for T-Clips that hold the clip in tension and allow for a variable board thickness! I have a lot of work to do on this front, and I'll keep you all up to date.



Locking Nubs for holding closed



Flexure Wings for tensioned fit



Thoughts

One of the most wonderful things about small-scale manufacturing is that it allows people to make beautiful objects that are not limited to the traditional engineering design space. I am not limited as much by the material used or the time it takes for me to design. Even on objects that may be taken for granted, the community can discover the best possible form and bring beauty to them through meticulous attention.

I really enjoy doing well organized CAD, and this has been a very fun undertaking. I'd love to see you post your makes and show me how you use this attachment method. If this has gotten you considering your pegboard more carefully like it did for me, consider ♥ liking the design, leaving me a tip using the 🍷 button at the top-right and [subscribing to my designs here](#).



Model files



T-Clips

4 files



t-clip-for-painted-skadis.stl

☐ This clip is adjusted for Black or White Skadis boards.



t-clip-for-painted-skadis.step

☐ This clip is adjusted for Black or White Skadis boards.



t-clip-for-unpainted-skadis.stl

☐ This clip is adjusted for Wood-Color Skadis boards.



t-clip-for-unpainted-skadis.step

☐ This clip is adjusted for Wood-Color Skadis boards.



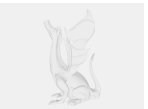
clip-seat.step

☐ This is what you'll want to build into your design. It's the seat for the clip.



example-attached-part.stl

☐ Print this part and some clips to get a feel for how the T-Clips work!



skadis-t-clip-v32.f3d

☐ Here is the original Fusion 360 file I used to make this.

[Find source .stl files on Thingiverse.com](https://www.thingiverse.com/thing/1000000)

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