

3D Ski Binding Jig



3D Ski Binding Jig



MottN

[VIEW IN BROWSER](#)

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Summary

A mostly printable drill jig for ski bindings; Centering end grips, swappable templates, modifiable template SCADs

[Sports & Outdoor](#) > [Winter Sports](#)

Tags: [ski](#) [bindings](#)

*I've got enough requests for these that, yes, I will make you one If you're interested in this but can't make your own - send me a message. My cost to cover time and materials is \$65 for a jig and hardware and \$10/\$20 per set of templates (without inserts/with inserts). Shipping within the US is usually around \$15.

History

2023_12_27

- Added pivot rev2 templates. this is based on the binding freedom template instead of Knut Pohl's. This moves the toe line back 3mm relative to the holes - supposedly both have been verified and are correct, so test and decide what works best for you.
- Added alternate gripper arms and information on where to get rubber tubes which will be grippier than printing a TPU part.
- Updated toe and heel stops to allow for shorter screws and fit SHCS's
- Updated knobs and related hardware for sliders

2023_12_14

- Fixed G3 templates mistakenly having toe text on heel templates
- updated descriptions of some parts

2023_11_29

- Removed Note that Ski trab template was unverified. Is at least partially verified.
- Added 22 designs AXL template files and added to SCAD (thanks FabianN)
- Added Fristchi Vipec templates

2023_11_09 - added some templates

- Added ski trab heel template. Use ATK for toes
- Added 22 Designs templates
- Added plum Yak

2023_10_29 - Updates for ski season :)

- re-upped entire template library
 - Templates have chamfers at edges for easier fitting into jig
 - included templates at 8.25mm hole size for use without inserts (for anyone able to print this themselves, that is probably sufficient)
- primary rotation handle and housing hole are a little tighter fit. This should result in a more fully lockable clamp.
- changed knob to work with longer screws on slider.
- updated slider to be more friendly to different styles of t-slots
- updated some sections of writeup

2023_06_05

- added scad of hole size checker for use with different sized inserts

2023_04_16

- Uploaded new center position placeholder with raised text
- Uploaded new slider that is less sensitive to printer calibration and can be printed without supports.

2023_03_12:

- Changed slider geometry to be more friendly to different T-slot profiles, of which apparently there are more than a few variations for 20x20.

2023_01_05:

- Updated gear and side clamp for smoother motion
- Added slider with slightly wider slot. Depending on how the parts are sliced, this might be a better fit with templates
- new toe pin with captured nuts (and change from m5 down to m4)
- Updated templates
 - Text extends above surface (rather than cut into) for easier multi-color printing
 - different geometry for better tech toe pin positioning
 - slightly larger hex hole for toe/heel stop nuts
- I've switched to 9.0mm hole size from 9.1mm, most new templates I've uploaded for other features are 9.0mm. You can always generate templates for whichever size is preferred via the SCAD files.

2022_12_13:

- Added hole size test block to dial in fit for brass inserts; If you want a tighter or looser fit than the 9.1mm, determine a size and then use SCAD files to generate new templates as required.
- Added Demo templates for Salomon Warden 11 & 13, and Tyrolia attack, along with spacers specific to each of those.
- Added rental holes to ATK template.
- Added PLUM bindings.
- Added older template for older Solomon alpine bindings.
- Updated SCAD files to have these patterns aswell.
- Organized

2022_11_21:

- Added more standard template files.
- Added parameterized files for templates with multiple hole sets and standard templates for easy drill size modification.

2022_10_22: Original Release.

Description

This is for those who prefer to mount their own ski bindings but want something better than paper templates; this is a nice middle ground between printouts and a proper drill jig.

The basic system uses 2020 t-slot profiles with a centering clamp at each end to grip the ski. Riding on these are sliders that fit a toe and heel drill template and a center plate between them. The sliders can be used to lock the fore/aft position of each template but allow some vertical float to accommodate for the ski shape.

I've tried to keep the design inexpensive. Total cost should be around 5-15USD plus the aluminum extrusion which could be 20-30USD. A detailed parts list is included below.

I've included a bunch of templates based on paper template measurements, and the sources are noted for each. However, please double check measurements and/or perform a test mount before drilling.

Binding hole patterns and drill size combinations are endless - **Use the parameterized OpenSCAD file to create or modify a template for any binding** (use dimensions from paper drill templates available, or measure the binding yourself). **You can use the SCAD files to easily make templates that are sized for use without inserts or for non-stepped bits.** Also you may have to adjust the width of the templates for a more secure fit based on how much your filament shrinks.

Unless otherwise noted, my template holes are size for a brass tube to use as a drill bushing. I have a relief in the cylindrical hole to allow for the z-seam so it doesn't interfere with a good fit for the bushing.

This jig works well for me, but obviously I can't take any responsibility if you screw up a brand new pair of skis.

Printed Parts list

The jig will take ~500g PLA and the largest parts require a print bed that can fit 8"/205mm width. Templates vary in size, but are usually around 60-100g filament.

For most parts, I suggest 2+ walls, 3+ top and bottom layers, and 30+% infill assuming 0.6mm nozzle and 0.3mm layer height.

Item	Qty	Notes
Housing - Top	2x	Needs supports from buildplate only
Housing - Bottom	2x	
Side clamp	4x	
Handle	2x	Needs supports from buildplate only
Gear	2x	
Sliders	6x	Print without supports by orienting on the build plate 'V' shaped open upwards (ver 1.4)
M5 Knob	8x	
Mount Center	1x	
Templates		as required, needs buildplate supports for c-bore nuts

Item	Qty	Notes
Template stops		as required

Fasteners and other hardware

Hardware required should all be available at a hardware store, apart from the T-nuts maybe. I' have tried to keep everything M5 except the toe and heel stops which are too small for M5 screws.

Item	Size	Qty	Notes
BHSCS	M5x12mm	4*	Holds upper and lower centering clamp housing together
BHSCS	M5x8mm	4	Attaches assembled housing to v-slot with t-nuts
BHSCS	M5x30mm	2	attaches jig gear to handle
HCS	m5x45mm	2	friction clamp/lock for housing. 40mm length might also work I think.
HCS	m5x16mm	6	slider clamp knobs, attach to t-nuts
hex nut	m5	6	
t-nut	m5	10+	This style works best
Machine screw/SHCS	M4x20mm		as required, use for heel and toe stops
Machine screw	M4x10mm		as required, use for tech toe springs
hex nut	m4		as required, use for heel and toe stops, toe pin
rubber hose	12mm x16mm		This works for me. cut into ~5/8" long pieces

BHSCS=Button head socket cap screw

SHCS=socket head cap screw

HCS=Hex cap screw

The aluminum extrusion will probably have to be ordered. The brass tube is needed for drill sleeves if desired.

Item	Size	Qty	Notes
Aluminum extrusion	2020mm 600mm T-slot or V slot	2	There are different variations of t-slot; most should work but I'm not sure I've tested everthing. T-slot, V-slot or something similar to this (which is actually stepped) will work. You might need 650 length for the very largest boots and binding patterns, but for most 600mm will be long enough.
Drill bushings	brass tube K&S 8134		drill bushing material. If using, cut to 3/4" [19mm] length per insert

Print templates according to what bindings you want to mount. **The number label after each template file indicates the hole size.**

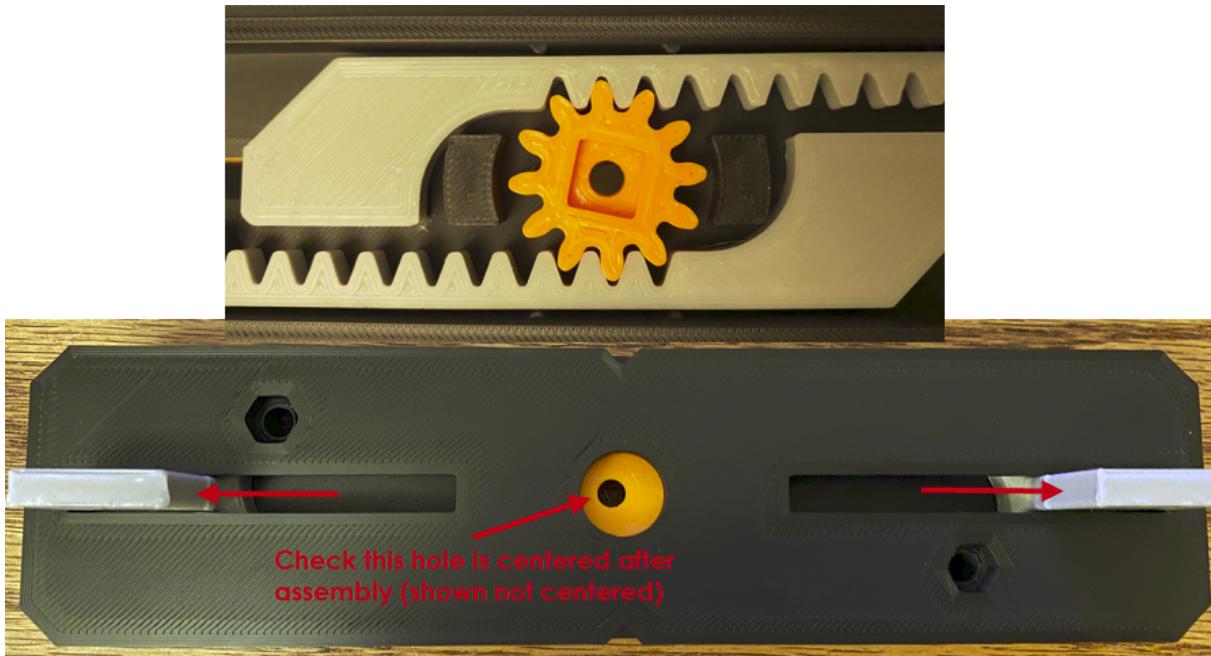
Use the 8.25mm holes if you intend to use **WITHOUT brass inserts** - If you are able to print your own parts, this is the simplest method.

If you want to use **WITH brass inserts** you will want to print the template parts that have a good snug fit - **use the templates labeled 9.0-9.1mm**. You will have to test the hole size and you'll want to print whichever size fits best on your as-printed parts. Different filament materials, mfg, color, etc all affect shrinkage a little bit and thus hole size.

Assembly

Assembly is fairly straight forward based on the pictures and noted locations of the fasteners.

When assembling the end centering clamps, be sure the side grip arms are centered. Put the arms at the limits of travel (to ensure each side is the same distance apart) and then insert the gear centered. Then, with the top part of the housing attached, ensure that the visible hole in the bottom of the gear is centered when the grip arms are as far as they can go inwards and outwards. If the hole is not centered, the arms will not correctly center.



Mounting procedure

- Attach jig to ski roughly centered lengthwise over mount position
 - Tighten handles on each housing to center jig
 - While applying some pressure to the handle tighten smaller knob to lock each end into place
 - (optionally) Attach extra clamps to secure ends to skis to ensure the jig doesn't move
- Set center slider on the center mark of the ski or wherever you intend to center the mount.
 - tighten slider knob to lock into position
- Set toe and heel templates
 - Align boot center mark with the center slider
 - Use template heel stop, toe stop, or toe pin springs to position templates relative to boot and mount center.
 - tighten slider knobs to lock each into position
- Use templates to punch and/or drill
- For second ski, use tape measure from tail to make sure jig is positioned identically and then only use ski center mark to verify position.
- Attach bindings and double check to the boot before glueing

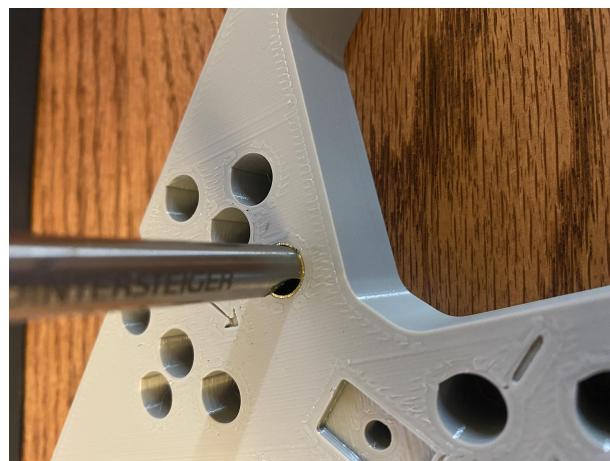
[Here](#) is a sped-up video of me doing a mount using an early version of the jig.

Templates

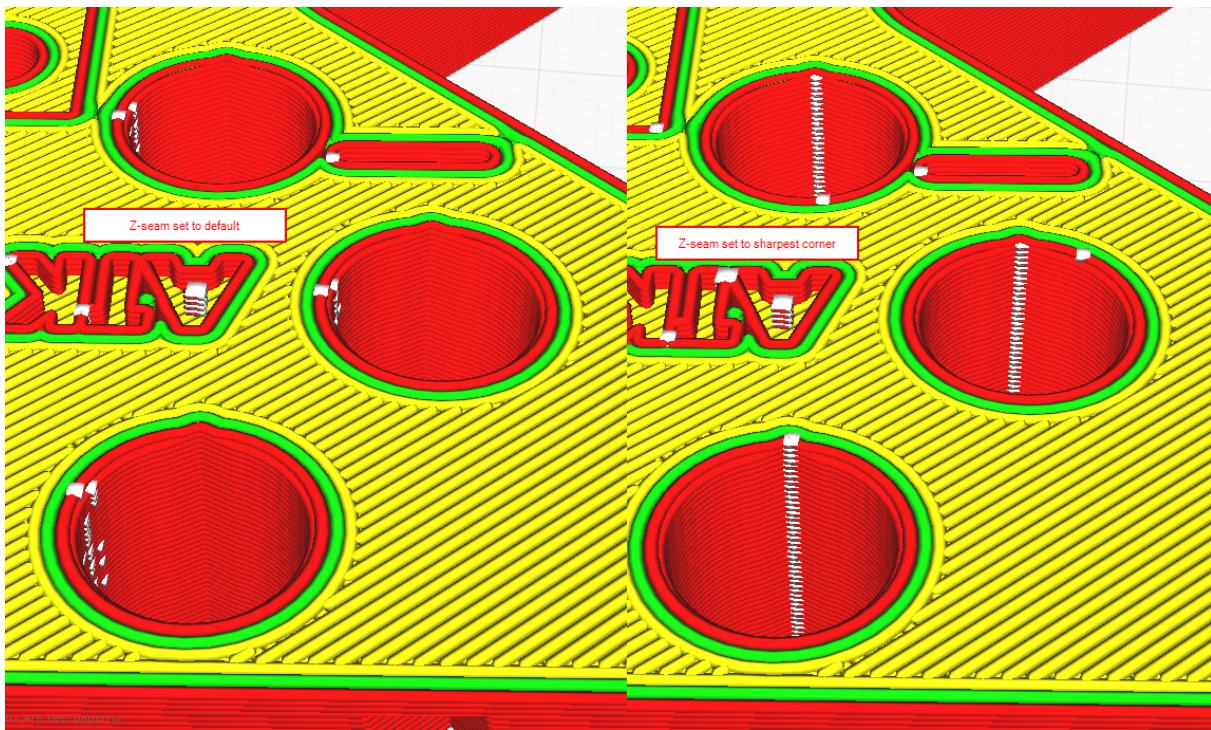
Template files have different sized holes for use with or without inserts. 8.25mm diam holes don't have the bottom hole and should work for direct drilling.

If using brass inserts print the test block to determine which of the 9.0/9.05/9.1mm templates to use for a good fit for the insert. A few drops of super glue is sufficient to bond to plastic.

The 11/32" x 0.014" wall brass tube is a perfect fit for the 8mm stepped bit and will increase durability. Cut to 3/4" length. For anyone printing their own it is probably not necessary.



The small notch in the hole is for Z-seam clearance. This is important to get a smooth cylindrical surface for drill guidance or for bushing fit. Make sure and set Z-seam position to be at the sharpest corner.



You may have to fine tune template arm width a little bit to get a nice snug fit between the rails. For me, I get variation of around $\pm .5\text{mm}$ with different materials mostly just based on how much they shrink.

OpenSCAD file modification

To modify or make a new template, first get [OpenSCAD](#).

The Follow the formatting to create a new template. You will need to input hole locations, type of template (toe/heel), basic sizes and some modifiers - It is probably easiest to copy and paste an entry and then modify. I just comment/un-comment the templates I want. It might be a little difficult to understand the formatting at first.

If you can't get it to work and send me a message and I can add for a template for you. I have a script that will run the file and output .stl's for every entry at each of the different diameters.

Model files



Tech heel templates (and tele)

70 files



dynafit-radical-20rotation-heel-91.stl



dynafit-radical-20rotation-heel-825.stl



dynafit-radical-20rotation-heel-905.stl



dynafit-radical-20rotation-heel-90.stl



dynafit-sttlt-heel-3236-x-525-825.stl



dynafit-sttlt-heel-3236-x-525-90.stl



dynafit-sttlt-heel-3236-x-525-905.stl



dynafit-sttlt-heel-3236-x-525-91.stl



dynafit-superlite-heel-32_36-x-525-825.stl



dynafit-superlite-heel-32_36-x-525-91.stl

dynafit-superlite-heel-32_36-x-525-905.stl



dynafit-superlite-heel-32_36-x-525-90.stl



g3-ion-zed-heel-825.stl



g3-ion-zed-heel-91.stl



g3-ion-zed-heel-90.stl



g3-ion-zed-heel-905.stl



marker-alpinist-heel-905.stl



marker-alpinist-heel-90.stl



marker-alpinist-heel-825.stl



marker-alpinist-heel-91.stl



marker-kingpin-heel-90.stl



marker-kingpin-heel-825.stl



marker-kingpin-heel-905.stl



marker-kingpin-heel-91.stl



plum-40mm-race-plate-91.stl



plum-40mm-race-plate-825.stl



plum-40mm-race-plate-90.stl



plum-40mm-race-plate-905.stl



plum-guide-wepa-pika-heel-32-x-53-905.stl



plum-guide-wepa-pika-heel-32-x-53-90.stl



plum-guide-wepa-pika-heel-32-x-53-91.stl



plum-guide-wepa-pika-heel-32-x-53-825.stl



plum-r99-r120-r150-heel-905.stl



plum-r99-r120-r150-heel-90.stl



plum-r99-r120-r150-heel-91.stl



plum-r99-r120-r150-heel-825.stl



plum-r170-oazo-heel-905.stl



plum-r170-oazo-heel-91.stl



plum-r170-oazo-heel-90.stl



plum-r170-oazo-heel-825.stl



plum-summit-heel-36-x-72-905.stl



plum-summit-heel-36-x-72-91.stl



plum-summit-heel-36-x-72-825.stl



plum-summit-heel-36-x-72-90.stl



salomon-mtn-heel-91.stl



salomon-mtn-heel-825.stl



salomon-mtn-heel-905.stl



salomon-mtn-heel-90.stl



salomon-shift-heel-825.stl



salomon-shift-heel-90.stl



salomon-shift-heel-91.stl



salomon-shift-heel-905.stl



atk-heel-patterns-v14-905.stl



atk-heel-patterns-v14-900.stl



atk-heel-patterns-v14-910.stl



atk-heel-patterns-v14-825.stl



ski-trab-heel-825.stl



ski-trab-heel-905.stl



plum-yak-heel-91.stl



plum-yak-heel-905.stl



plum-yak-heel-825.stl



plum-yak-heel-90.stl



22-designs-heel-825.stl



22-designs-heel-905.stl



22-designs-heel-91.stl



22-designs-heel-90.stl



vipec-heel-90.stl



vipec-heel-825.stl



vipec-heel-905.stl



vipec-heel-91.stl





Tech Pin toe templates (and tele)

56 files



dynafit-most-common-toe-30-x-39-91.stl



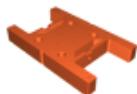
dynafit-most-common-toe-30-x-39-825.stl



dynafit-most-common-toe-30-x-39-905.stl



dynafit-most-common-toe-30-x-39-90.stl



dynafit-radical-20rotation-toe-91.stl



dynafit-radical-20rotation-toe-905.stl



dynafit-radical-20rotation-toe-825.stl



dynafit-radical-20rotation-toe-90.stl



dynafit-vertical-turn-toe-30-x-265-18-91.stl

dynafit-vertical-turn-toe-30-x-265-18-905.stl



dynafit-vertical-turn-toe-30-x-265-18-825.stl



dynafit-vertical-turn-toe-30-x-265-18-90.stl



g3-ion-zed-toe-825.stl



g3-ion-zed-toe-91.stl



g3-ion-zed-toe-905.stl



g3-ion-zed-toe-90.stl



marker-alpinist-toe-90.stl



marker-alpinist-toe-905.stl



marker-alpinist-toe-825.stl



marker-alpinist-toe-91.stl



marker-kingpin-toe-90.stl



marker-kingpin-toe-91.stl



marker-kingpin-toe-905.stl



marker-kingpin-toe-825.stl



plum-toe-30-x-265-91.stl



plum-toe-30-x-265-90.stl



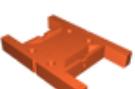
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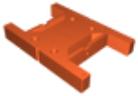
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plum-toe-36-x-69-91.stl



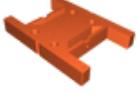
plum-toe-36-x-69-825.stl



plum-toe-36-x-69-90.stl



plum-toe-36-x-69-905.stl



salomon-mtn-toe-90.stl



salomon-mtn-toe-91.stl



salomon-mtn-toe-905.stl



salomon-mtn-toe-825.stl



atk-toe-patterns-v14-825.stl



atk-toe-patterns-v14-910.stl



atk-toe-patterns-v14-900.stl





atk-toe-patterns-v14-905.stl



plum-yak-toe-90.stl



plum-yak-toe-91.stl



plum-yak-toe-905.stl



plum-yak-toe-825.stl



22-designs-toe-viceoutlawlynx-90.stl



22-designs-toe-viceoutlawlynx-825.stl



22-designs-toe-viceoutlawlynx-91.stl



22-designs-toe-viceoutlawlynx-905.stl



22-designs-toe-axl-825.stl

22-designs-toe-axl-91.stl



22-designs-toe-axl-900.stl



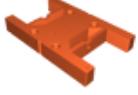
22-designs-toe-axl-905.stl



vipec-toe-905.stl



vipec-toe-91.stl



vipec-toe-825.stl



vipec-toe-90.stl



Alpine Toe templates

40 files

look-pivot-spx-toe-91.stl



look-pivot-spx-toe-90.stl



look-pivot-spx-toe-825.stl



look-pivot-spx-toe-905.stl



marker-duke-pt-toe-91.stl



marker-duke-pt-toe-90.stl



marker-duke-pt-toe-905.stl



marker-duke-pt-toe-825.stl



marker-m-series-toe-91.stl



marker-m-series-toe-90.stl



marker-m-series-toe-905.stl



marker-m-series-toe-825.stl



salomon-shift-toe-90.stl



salomon-shift-toe-91.stl



salomon-shift-toe-905.stl



salomon-shift-toe-825.stl



salomon-sth2-toes-91.stl



salomon-sth2-toes-90.stl



salomon-sth2-toes-905.stl



salomon-sth2-toes-825.stl



salomon-warden-13-11-toe-91.stl



salomon-warden-13-11-toe-90.stl



salomon-warden-13-11-toe-905.stl



salomon-warden-13-11-toe-825.stl



salomon-alpine-toe-916920-etc-91.stl



salomon-alpine-toe-916920-etc-905.stl



salomon-alpine-toe-916920-etc-825.stl



salomon-alpine-toe-916920-etc-90.stl



tyrolia-attack-toe-90.stl



tyrolia-attack-toe-825.stl



tyrolia-attack-toe-91.stl



tyrolia-attack-toe-905.stl



marker-squire-griffon-toe-90.stl



marker-squire-griffon-toe-825.stl



marker-squire-griffon-toe-905.stl



marker-squire-griffon-toe-91.stl



look-pivot-spx-toe-r2-905.stl



look-pivot-spx-toe-r2-825.stl



look-pivot-spx-toe-r2-90.stl



look-pivot-spx-toe-r2-91.stl





Alpine Heel templates

36 files

look-pivot-heel-91.stl



look-pivot-heel-90.stl



look-pivot-heel-825.stl



look-pivot-heel-905.stl



look-spx-heel-905.stl



look-spx-heel-90.stl



look-spx-heel-825.stl



look-spx-heel-91.stl



marker-squire-griffon-dukept-heel-905.stl





marker-squire-griffon-dukept-heel-91.stl



marker-squire-griffon-dukept-heel-90.stl



marker-squire-griffon-dukept-heel-825.stl



marker-m-series-heel-90.stl



marker-m-series-heel-91.stl



marker-m-series-heel-825.stl



marker-m-series-heel-905.stl



salomon-warden-11-heel-90.stl



salomon-warden-11-heel-91.stl



salomon-warden-11-heel-905.stl



salomon-warden-11-heel-825.stl



salomon-warden-13-sth2-heel-825.stl



salomon-warden-13-sth2-heel-90.stl



salomon-warden-13-sth2-heel-91.stl



salomon-warden-13-sth2-heel-905.stl



salomon-alpine-heel-916920-etc-90.stl



salomon-alpine-heel-916920-etc-91.stl



salomon-alpine-heel-916920-etc-905.stl



salomon-alpine-heel-916920-etc-825.stl



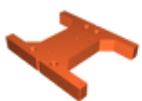
tyrolia-heel-905.stl



tyrolia-heel-91.stl



tyrolia-heel-825.stl



tyrolia-heel-90.stl



look-pivot-heel-r2-905.stl



look-pivot-heel-r2-825.stl



look-pivot-heel-r2-90.stl



look-pivot-heel-r2-91.stl

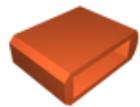


Centering Jig Components

9 files



m5-knob.stl



grip-flexable-round.stl



gear-v12.stl



slider-14.stl



handle.stl



housing-bottom.stl



housing-top.stl



m5-knob-v4.stl

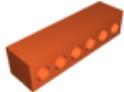
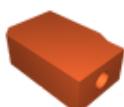


side-clamp-rubber-14.stl



Toe and Heel Stops, center, test part

6 files

tech-pin-toe-spring-v12.stl**hole-size-checker.stl****binding-check-pin.stl****hole-size-checker.scad****mount-center-position-14.stl****toe-and-heel-stop-shorter-screws-v2.stl****Parameterized Template Files (modifiable)**

1 file

**template_library-v17.scad****Demo Heel and Toe Templates + Spacers**

8 files

**salomon-warden-13-demo-heel-90.stl**



salomon-warden-11-demo-heel-90.stl



salomon-warden-1113-demo-toe-90.stl



tyrolia-attack-demo-toe-90.stl



tyrolia-attack-demo-heel-90.stl



demo-spacer-warden-11.stl



demo-spacer-attack.stl



demo-spacer-warden-13.stl

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- ✗ | Remix Culture allowed
- ✗ | Commercial Use
- ✗ | Free Cultural Works
- ✗ | Meets Open Definition