Hardware

Component	Qty	Link	Note
M4x16mm CHSS	10	eBay	20mm should be fine if you have it, cap-head are neatest but others will function.
8mm Linear Rod, 150mm	2	eBay	Bit cheaper if bought in longer lengths and cut. 8mm OD tube may be viable. Studding is awful!
LM8UU Linear Bearing	2	eBay	Optional but highly recommended
Expansion Spring, 30-50mm, 6-8mm OD, 0.5-0.8mm wire	2-4	eBay	If you already have an assortment, you may already have a suitable spring! 2 should be enough, but there's 4 mounts so you tweak it as needed.
Toggle Clamp	1	Amazon	Many others will be suitable, large clamping force not required

You can always modify the CAD file to accomodate different hardware!

Printed Parts

Component	Qty	Note	Walls	Solid Top/Bottom Layers	Infill
Press Bottom	1		3	4/3	Gyroid - 10%, or Grid - 20%
Press Top	1		3	3/4	Gyroid - 10%, or Grid - 20%
Press Cap	1	Tree support recommended on overhang	3	3/3	Gyroid - 10%, or Grid - 20%
Printed 'Bearing' (Optional)	2	If not using LM8UU (not recommended). Use minimal layer height	4	3/3	None (solid)

Material Options

PETG	Recommended for all parts
PLA	Likely okay, but be mindful of heat buildup, press surfaces may deform over time
ABS	Scale to 101% or measure + compensate shrinkage manually, most durable but awkward

Press Top/Press Cap have optional text/symbols

Printing with contrast colour	Requires a manual or automatic filament change on layer 1. If you print these both together, you only need to change once. PLA text on a PETG main body is fine. Use 3MF files, objects should be preset to use different filaments.
Print without logo/text	Use the plain STL files, or let both global filaments to the same in your slicer with 3MF files
Print with embossed logo/text	Delete the non-named objects in the slicer and the text will be 'cut into' the first layer

Assembly (about 10-20 mins)

Materials & Tools

- Soft Hammer/Mallet/ Hammer + Wood Block
- Lithium Grease
- 4x2 Offcut or other scrap timber
- Vice/Clamp (for pressing the bearings)
- M4 Tap (optional)
- 7.5mm Drill Bit (optional)
- 8mm Drill Bit (optional)
- Wood screws, length dependent on the timber used

Assembly Steps

Having a 7.5-8mm drill bit and an M4 tap is useful but optional. If cutting linear shaft, you will need a hacksaw and sandpaper.

If you haven't bought the shaft in 150mm lengths, cut it to 150mm lengths with a hacksaw. These have well over 10mm of tolerance, but its important they are both the same. Use sandpaper or other abrasive to sand a slight chamfer on the end. You can chuck the shaft in a cordless drill as a rudimentry lathe while sanding to make it nice and even!

Press Cap' and 'Press Top' contain printed M4 threads. Screws should self-tap, but if you have an M4 tap, use it to prepare the threads now.

Use the 8mm drill bit (can be done by hand) to properly size the two outer holes on the on the 'Press Top' and the 7.5mm for the 'Press Bottom' and 'Press Cap'. The shaft should pass freely through 'Press Top' and be very tight on 'Press Bottom/Cap'.

Using a soft hammer (or steel hammer with some protective wood), carefully drive the shaft into the 2 large holes on 'Press Bottom' until the end of the shaft is flush with the bottom of the part. You can stack 'Press Top' on top to help with alignment.

Smear some heavy grease inside the bearings before starting, light oil can work but a heavier grease is much better. Bear in mind that the inside of the bearing is open, and you can lose ball bearings if abused! Set 'Press Top' flat-side down and insert the 2 bearings into the 2 large 25mm holes. These should be a friction-fit. I reccommend getting them started very gently with a soft hammer, then using a vice or clamp to press them in. Please let me know if tolerances are a frustration and I'll find a more robust method of retaining it, or feel free to modify the CAD file yourself. Then carefully slide 'Press Top' onto the two shafts.

Fit two springs to 'Press Top'. Insert through one of the four holes on the top so the loop is aligned with the screw hole, then pass the shaft of the socket screw through the loop and screw it into the threaded hole. Do not overtighten, it is hard to undertighten. You can add up to 4 springs if needed.

Fit the cap by carefully tapping it onto the end of the linear shaft. If it is loose, there is an M4 screw hole that can be used to help secure it, but it shouldn't be needed.

Fit the top of the springs to 'Press Cap' in the same manner as 'Press Top'
Prepare the wooden base, you need a base part to screw the press down to, then a raised 'step' just behind about 40-50mm higher than the base, a 4x2" offcut is perfect.
Screw the toggle clamp to the raised shelf so that it is centred on the 'Press Top', adjust the clamp height so that the the two press surfaces make contact, any excess clamping force is transferred to the press rather than the patch, so there is no benefit of overtightening, but equally, you can't 'over-press' the patch, it is only too tight if its enough to damage the tool