Creating the Bracket in Blender



Scale the default 2mm x 2mm x 2mm cube out to the bracket length. ("sy30 enter")



Scale the width to the width of the bracket. ("sx15 enter")



Scale the depth to the depth of the bracket back panel. ("sz2.5 enter")

🕸 Blender					
🚯 🕻 o File Add Render Window Help 📑 🕻 Defi	ault 🕂 🛠 🚺 🕯 Scene	🕂 🛞 🛛 🕄 Blender Render 🕴 💩 v2.67 Verts:4/8 Edges:2/12 Faces:0/6 Tris:12 Mem:7.58M (0.11	M) Cube	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
V Mesh Tools User Persp				Et O View Search All Scenes	
Qui i mia Add Render Window Help I i Call Mash Tools User Perp Syndhons Bandwidt Catada Bandwidt C		Image: Second	N) [C.br	Image: Second All Scores Scores Scores Scores Weidd Weidd Ump I Weidd Weidd <t< th=""></t<>	
(1) Cube				Overwrite File Extensions Placeholders	
● View Select Mesh 🕼 Edit Mode 🕴	🛛 🛊 🍫 🛊 🙏 🖉 🌈 🖉 Global 🛛 🕴 🚺 🔮			BW RGB RGBA	
				Color Depth: 8 16 Compression: 90%	
· -50 -40 -30 -20 -10 0 10	0 20 30 40 50 60	70 80 90 100 110 120 130 140 150 160 170 180	190 200 210 220 230 240 250 260 270 280	h Dulu	
🚱 🕤 View Marker Frame Playback 🕞 🥌 S	Start: 1 > < End: 250 >) (< 1) H H H No Sync + ● 22		P Dake	
J start 0 tender Concerted Table Concerted Tab					

In edit mode; select the top long edges and subdivide them ("w").



Select the new edge



Drag it down to where it is 8 units from the end. In this case we know the edge occurred in the middle and so we can key in the exact measurements to move it 30mm – 8mm = 22mm in the negative y-direction. ("gy-22 enter")



Go to the face select mode and select the face to extrude.



Extrude the face upward 25mm. ("e25 enter")



With the space-bar menu add a cylinder.

Or



Use the "Add" menu to add a cylinder.



Default cylinder size radius of 1mm and depth of 2mm. You can access the dimensions in bar on the left. To get the target dimensions of 5mm deep and 5mm in radius. Alternatively you could just scale the cylinder to the right size ("sz2.5 enter sx5 enter sy5 enter")





Top view drag the green y-axis arrow to line up centreline of cylinder with top edge.



Move the cylinder to its position 15mm from the edge. ("gy-15 enter")



With the face selection tool select the top and bottom faces of the "L" shaped bit and the cylinder.

🗢 Blender					
🚯 🕻 🗉 File Add Render Window Help 💷 🕇 Default	+ X 2 \$ Scene + X	Blender Render 🕴 🔕 v2.67 Verts:72	78 Edges:72/119 Faces:4/45 Tris:148 Mem:7.74M (0.:	.1M) Cube	
V Mesh Tools Right Ortho					Carlo View Search All Scenes
Transform:					P−∂ Scene
Translate					RenderLayers 20 Manual
Rotate					v—∰ Camera I 🔅 🔹 № 161
Shrink/Fatten					•
Push/Pull					♦—ਊLampi 🔅 🗢 🤤 🖬
Deform:					
Edge Slide					
Smooth Vertex					SCene Scene
Add:					▼ Render
Extrude Region					🐼 Render 🖗 Animation ▷ Play
Extrude Individual					Display: Image Editor 🗍
Subdivide					▼ Dimensions
Duplicate		1 · · · ·			Render Presets + # =
Spin					Resolution: Frame Range:
Screw Voito Select		Delete			X: 1920
Knife Project	_	- Edges			
Remove:		Faces	*		Aspect Ratio: Frame Rate:
Delete ‡		Only E	Delete selected vertices, edges or faces		X:1.000
Merge Remove Daubles		Only F. (Y: 1.000 Firme Remapping:
Nomais		Dissolve			Borde Crop (*:100 * 1:100 *)
Recalculate		Edm Col			🔻 🗹 Anti-Aliasing
Flip Direction		Edge Loc	D		5 8 11 16 Mitchell-Netravali \$
UV Mapping:					Full Sample Size: 1.000 >>
Unwrap					Sampled Motion Blur
▼ (De)select All					► Shading
Action					Performance
Toggle \$					► Post Processing
					Freestyle
					V Output
					· oopu
					(Amps
(1) Cube					Overwrite File Extensions
🐨 🗘 💿 View Select Mesh 😰 Edit Mode 🕴 💿 🛊 💁 🛊	L Z Global 🕴 🚺 🖬 💿				
أعادهم والمتحاد والمحاد والمتحا	ويقبع والمحاط والم				Color Depth: 8 16
					Compression: 90%
-50 -40 -30 -20 -10 0 10 20	30 40 50 60 70 80	90 100 110 120 13	140 150 160 170 180 190	200 210 220 230 240 250 260 270 280)	▶ Bake
🚱 🕤 View Marker Frame Playback 🕝 < Start: 1 🔸	< End: 250 >) (* 1 >) (33 (3) (*	No Sync 🕴 🖲 🐰			
😼 start 🔊 Blender 💽 Corel PHOTO-PAINT 11	D:(Images)Artworks				EN 🌒 2:54 p.m.

Delete the faces. ("Delete button")



With the vertex selection tool active. Select the vertices around the area we want to fill.



Yellow edges show that we have selected the top edge of the cylinder and the surrounding square of the bracket front face.



Fill the area by hitting Alt+f.





Fill the back panel with Alt+f



Hit "a" to deselect everything. Check the mesh by going to the Select menu and using "Select Non-Manifold". If everything is OK, nothing will happen. If some yellow vertices or edges appear, these are non-manifold and you will have to have a closer look to see what needs to be fixed. Often it will be a matter of filling a gap, or merging some vertices (Alt+m).



Rotate the object to an orientation that will be printable and maximise the strength.



Export the STL. Save your .blend file too.



The document by Hamish Trolove is licensed under a <u>Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License</u>.

