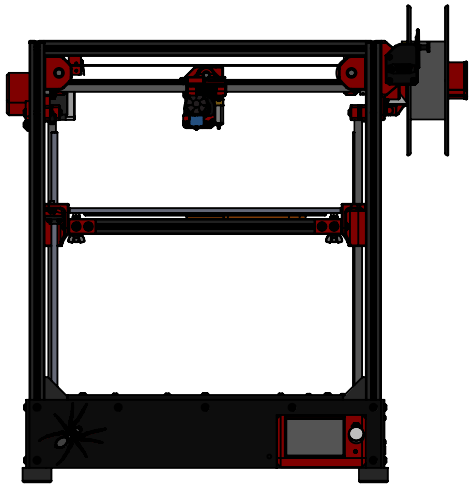
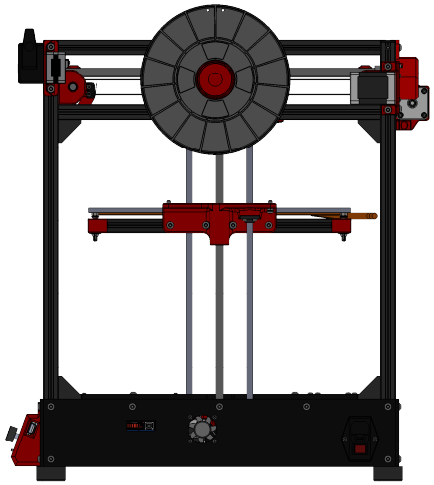
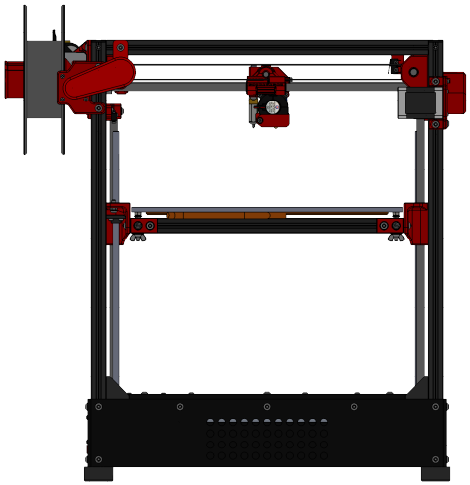
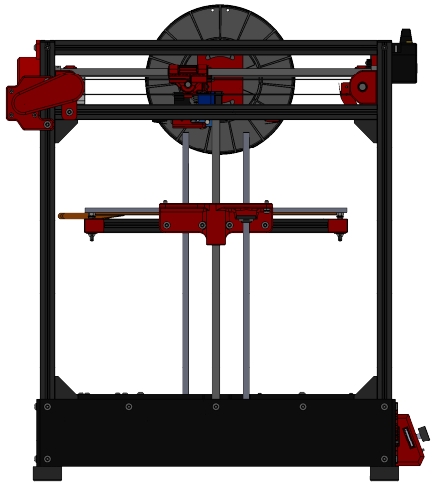
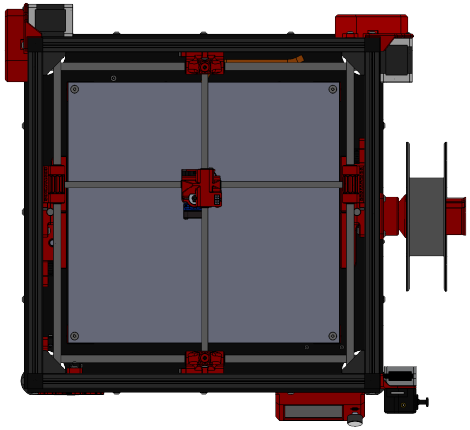
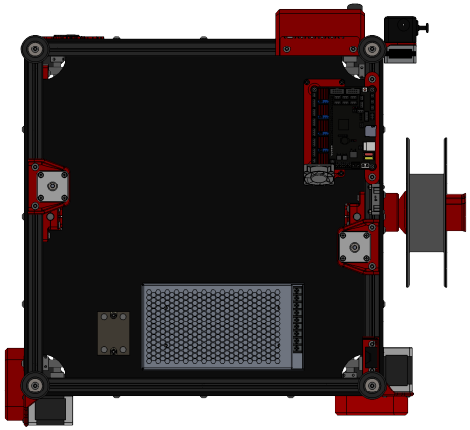
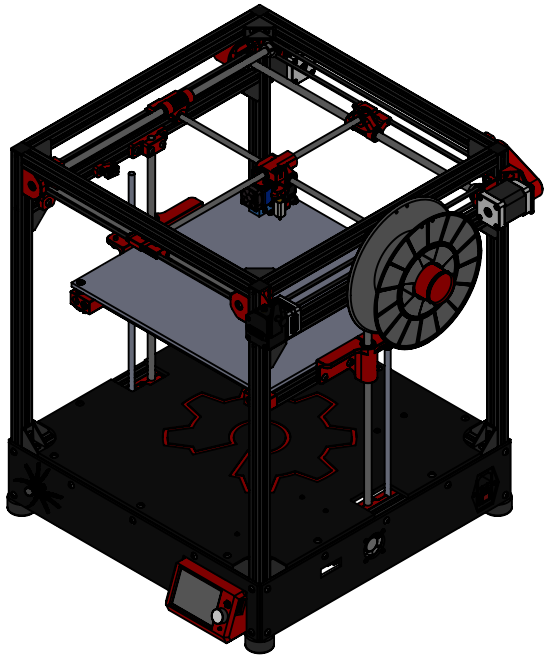








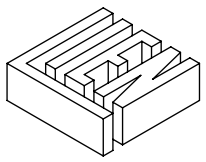
Notes & Details:

Max Travel Limits (X = 312mm / Y = 314mm / Z = 306mm)
Designed Print Area (300mm x 300mm x 300mm)
32bit Controller = SKR V1.4 running Marlin 2
TMC2209 Drivers (Qty:5) Independant Z for Marlin Auto Tram
24V Power with 500W Mains Powered Bed controled via SSR Relay
Endstops:
- X&Y = switches or TMC Endstopless homing
- Z = single or dual switches, or BLTouch/3DTouch homing

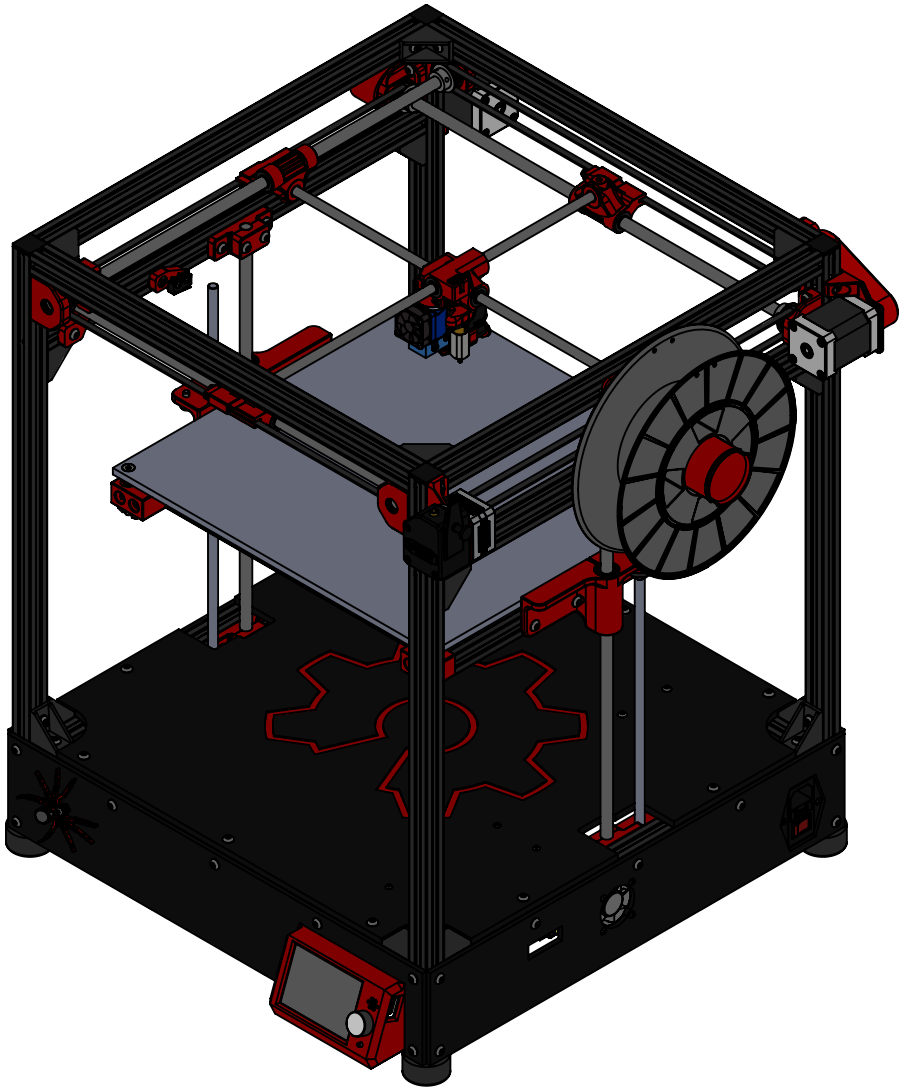
Leveling:
- Manual with endstops or autolevel w/ BLTouch/3DTouch

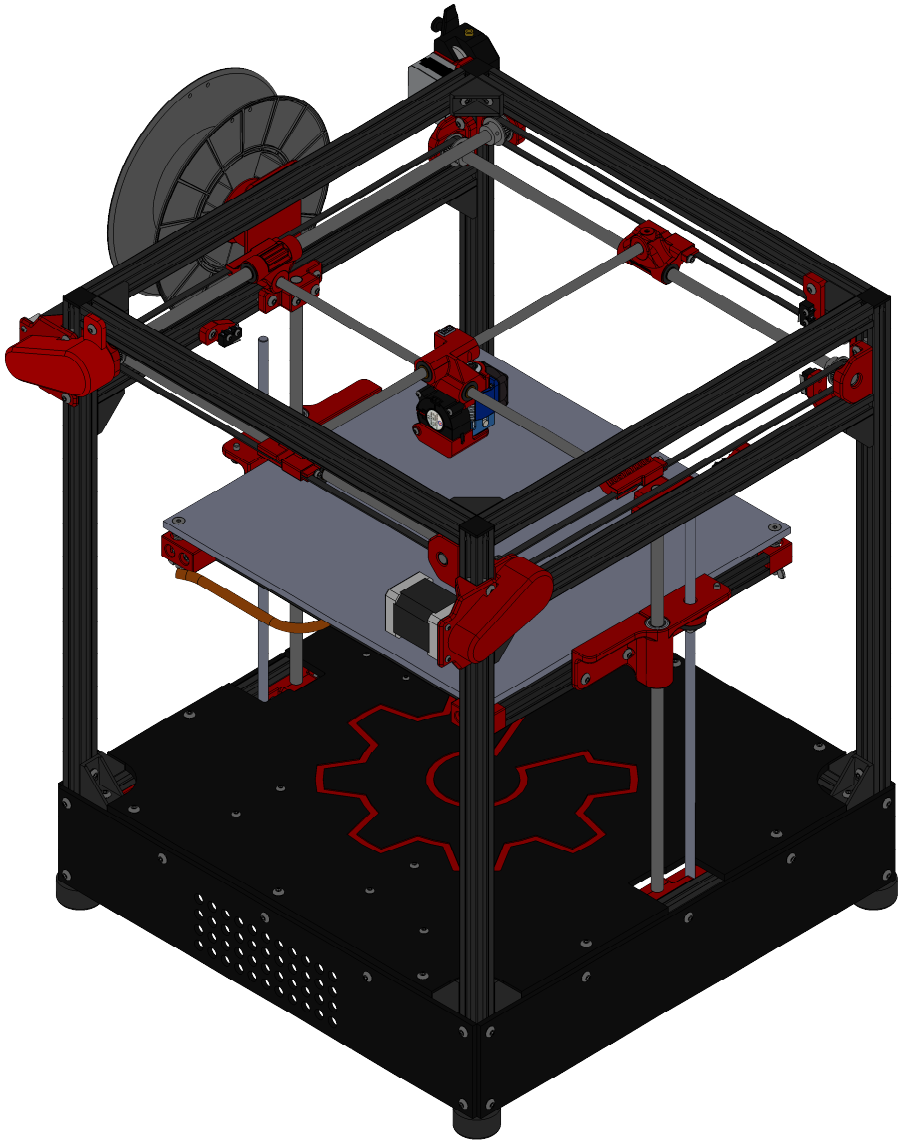
For additional details see the Github for this project: https://github.com/eclsnowman/Eustathios-Spider-V2.5

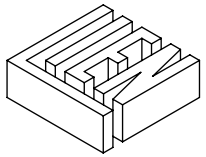
Derivative of original Eustathios by Jason Smith (github.com/jasonsmit4/Eustathios)



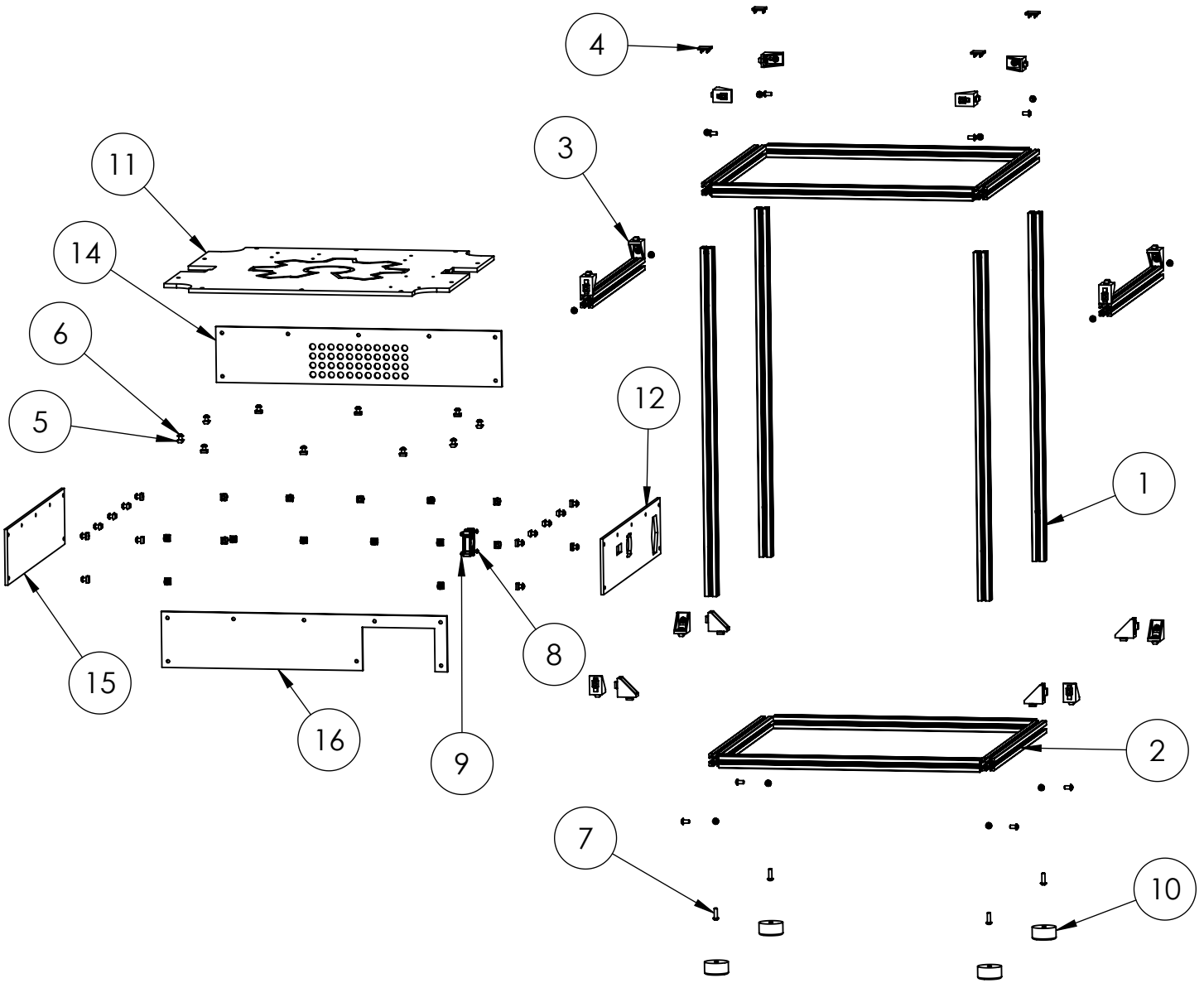
DRAWING NAME:	Eustathios Spider V2.5			DRAWING #:	ESV25_P1
SCALE:	1:10	SHEET SIZE:	8.5" x 11"	DATE:	06-30-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOM		FINISH:		NA



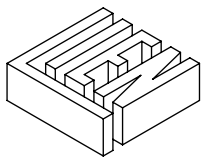




DRAWING NAME:	ESV25 3D View			DRAWING #:	ESV25_P2
SCALE:	1:6	SHEET SIZE:	8.5" x 11"	DATE:	06-30-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOM		FINISH:	NA	

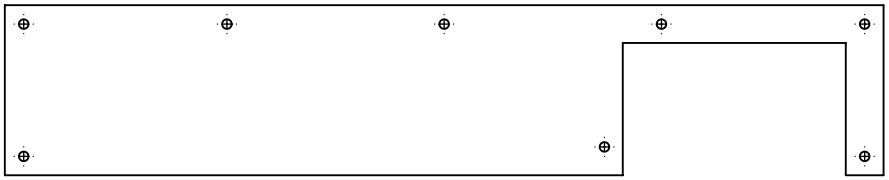


#	PART NUMBER	QTY.
1	HFSB5-2020-562-LTP-RCP-FR-AH470-AP80	4
2	HFSB5-2020-425-TPW	10
3	HBLFSNB5	16
4	HFC5-2020-Bc	4
5	2020 M5 Solid Tslot Nut	70
6	5mm x 10mm SST BSC	90
7	5mm x 16mm SST BSC	4
8	3mm x 20mm SST BSC	4
9	M3 Nylock Nut	4
10	9540k28 (Mcmaster)	4
11	Panel_Bottom_Plate	1
12	Panel_Right_Bottom	1
14	Panel_Back_Bottom	1
15	Panel_Left_Bottom	1
16	Panel_Front_Bottom	1
16	40x40x10 Axial 24V Fan	1

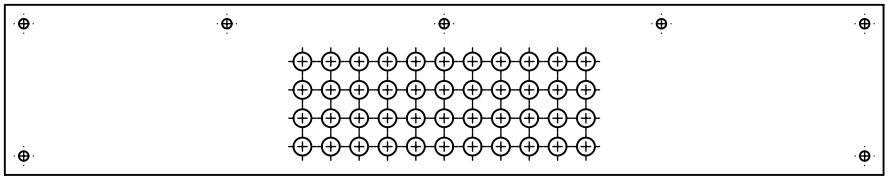


DRAWING NAME:	ES Frame and Panels			DRAWING #:	ESV25_P3
SCALE:	1:10	SHEET SIZE:	8.5" x 11"	DATE:	06-30-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOM		FINISH:		NA

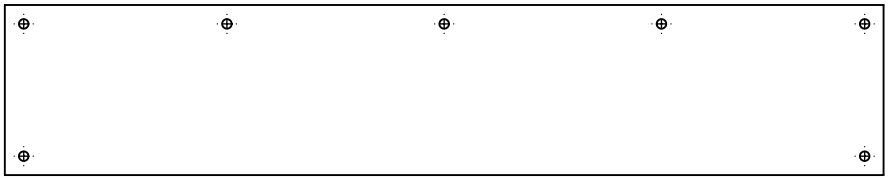
Front



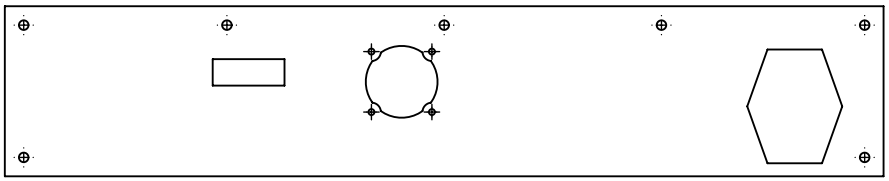
Back

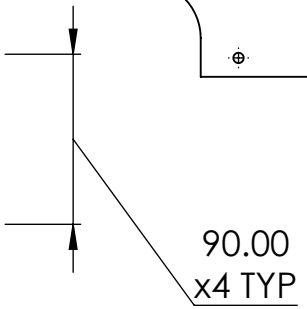


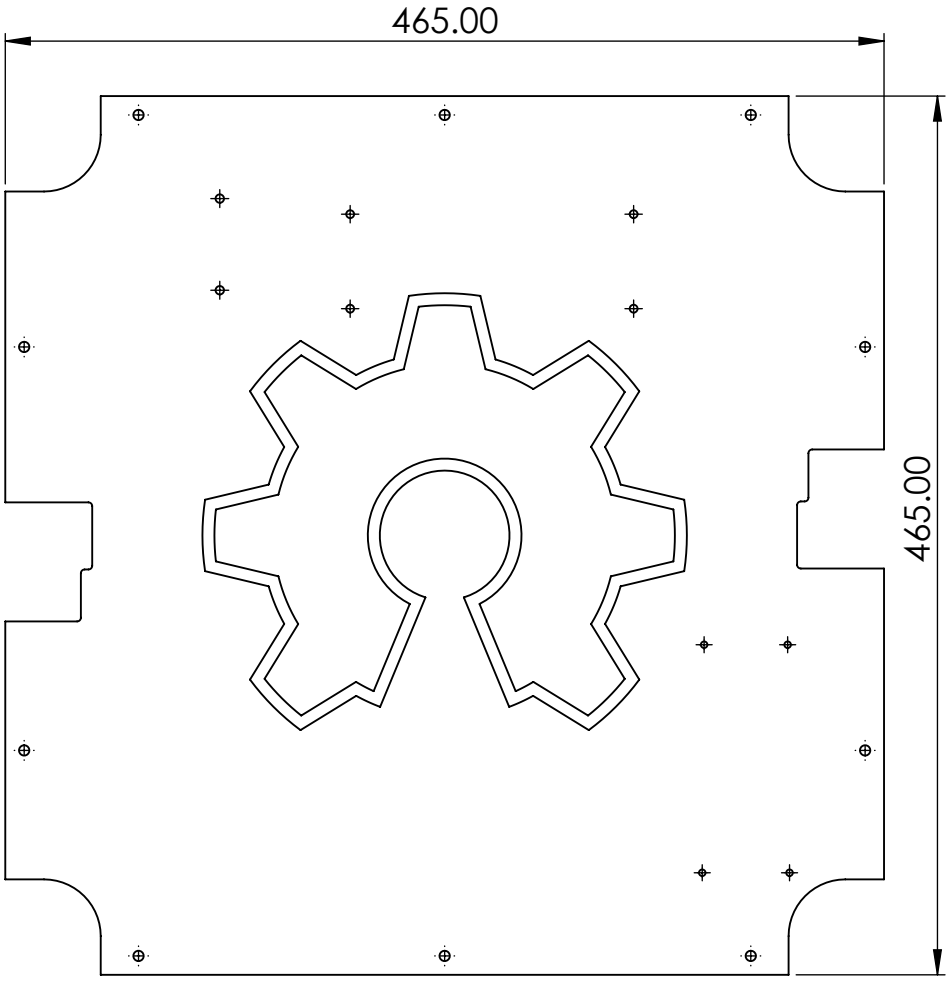
Left



Right

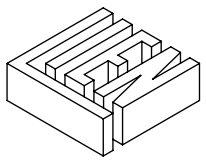




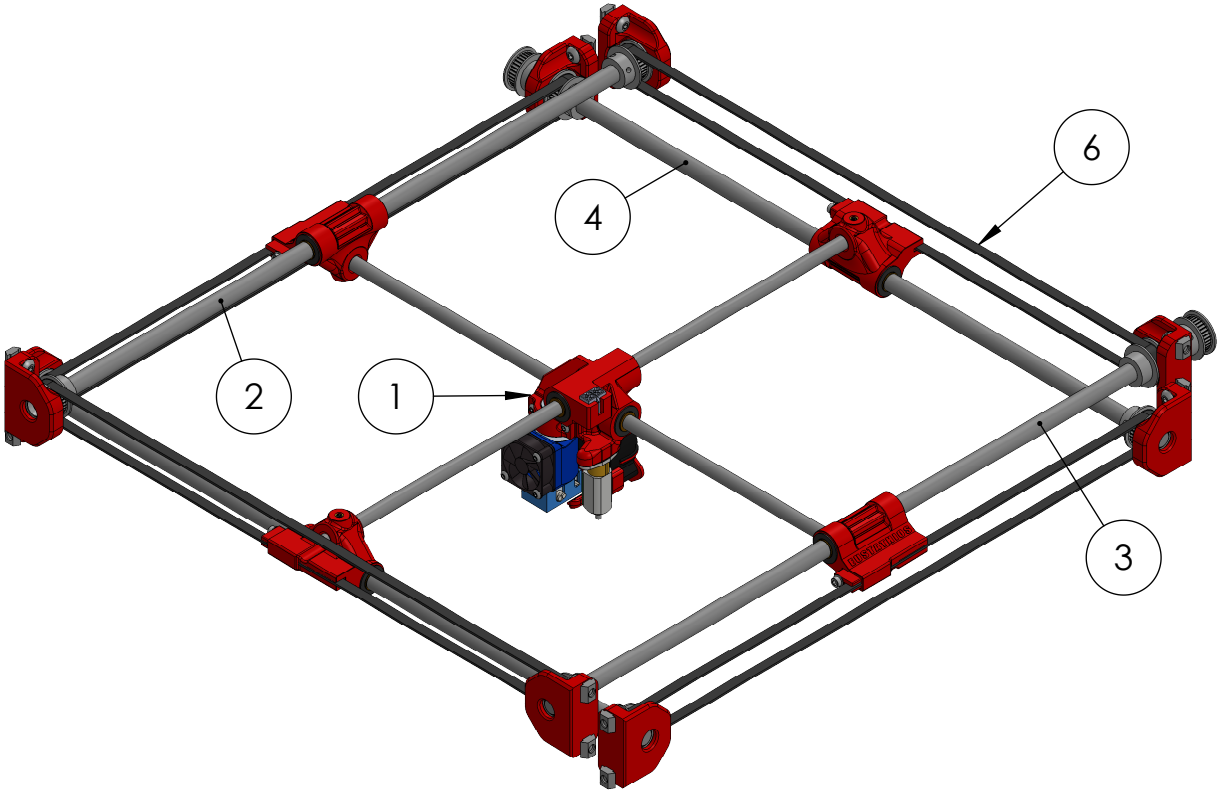


Bottom

Notes:
*Bottom = 1/4" (6mm) Panel
*Front, Back, Left Right = 1/4" (6mm) or 3/16" or (5mm) Panels
* Use DXF to cut via Laser, CNC Router, or via 1:1 template



DRAWING NAME:	ESV25 Panels			DRAWING #:	ESV25_P4
SCALE:	1:4	SHEET SIZE:	8.5" x 11"	DATE:	06-30-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	Acrylic, Lexal, or other	FINISH:			NA

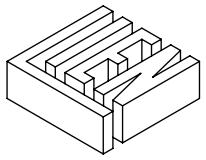


Notes:

Alignment of gantry is usually the most difficult portion of the build for new users. The lengths and squareness of cuts on the extrusion as well as any misalignment during assembly will be translated into the gantry. Bushings unlike round linear LMU bearings do not aloow for much misalignment. Please see the video I made for a G+ member who was building a Euastathios for some tips and tricks to help in assembly.

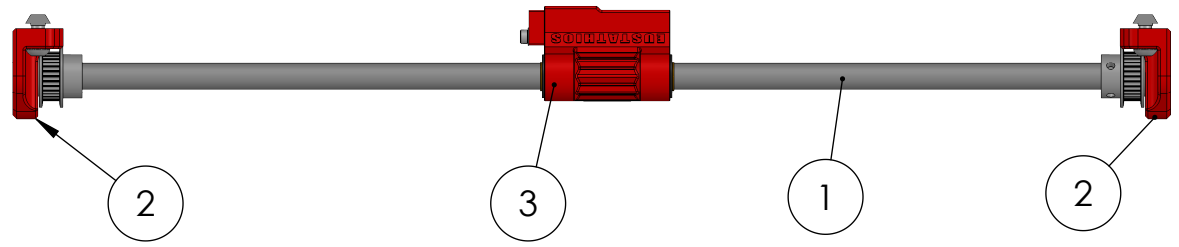
https://www.youtube.com/watch?v=7asL_QzJmGM

#	PART NUMBER	QTY.
1	BlTouch_Compact_Carriage_V2.5	1
2	XY_Axis_Side_Rod_ASMB	2
3	XY_Axis_Side_Rod_ASMB (Driven 1)	1
4	XY_Axis_Side_Rod_ASMB (Driven 2)	1
5	SFJ8-410	2
6	850mm GT2 6mm Wide Belt Open Loop	4



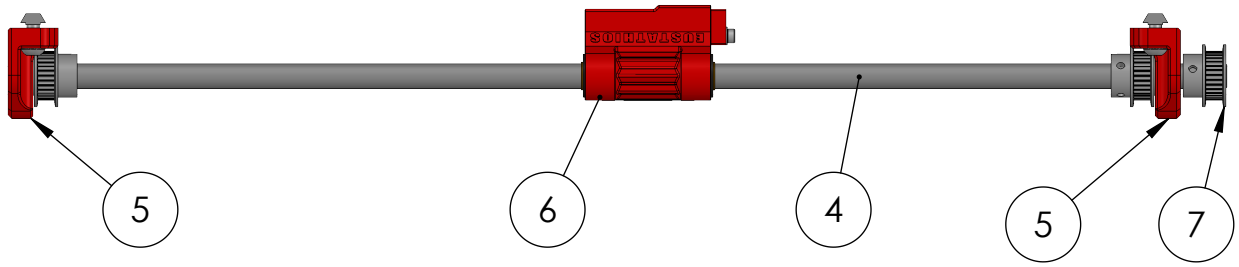
DRAWING NAME:	XY Gantry ASMB			DRAWING #:	ESV25_P5
SCALE:	1:4	SHEET SIZE:	8.5" x 11"	DATE:	06-30-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOM		FINISH:	NA	

Qty:2 - XY_Axis_Side_Rod_ASMB (Default)



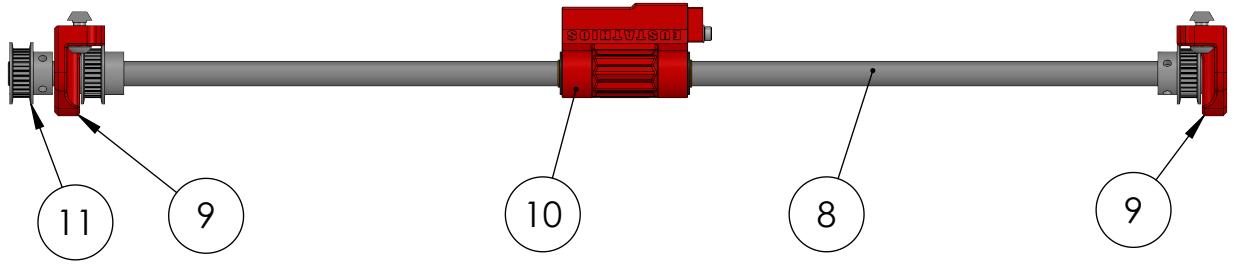
#	PART NUMBER	QTY
1	SFJ10-458	1
2	10mm_Rod_End_Bearing_Assembly	2
3	XY_Axis_Belt_Tensioner (Default)	1

Qty: 1 - XY_Axis_Side_Rod_ASMB (Driven)

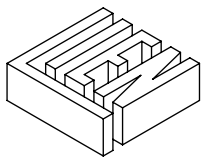


#	PART NUMBER	QTY
4	SFJ10-483	1
5	10mm_Rod_End_Bearing_Assembly	2
6	XY_Axis_Belt_Tensioner (Mirrored)	1
7	10mm_ID x 32T GT2 Pulley	1

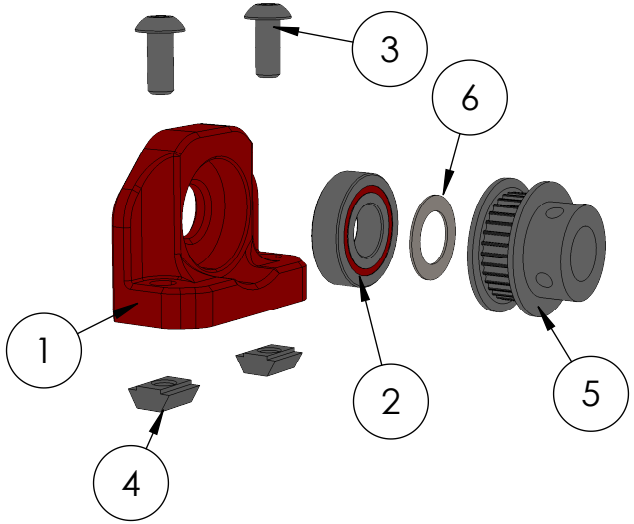
Qty: 1 - XY_Axis_Side_Rod_ASMB (Driven_Mirrored)



#	PART NUMBER	QTY
8	SFJ10-483	1
9	10mm_Rod_End_Bearing_Assembly	2
10	XY_Axis_Belt_Tensioner (Mirrored)	1
11	10mm_ID x 32T GT2 Pulley	1

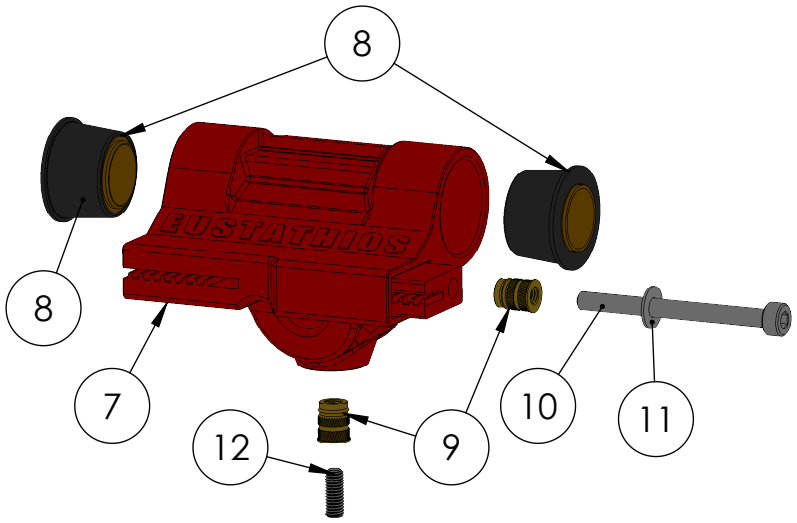


DRAWING NAME:	Side Rod Assemblies			DRAWING #:	ESV25_P6
SCALE:	1:3	SHEET SIZE:	8.5" x 11"	DATE:	06-30-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOMS		FINISH:	NA	



Qty:8 - 10mm_Rod_End_Bearing_Assembly

#	PART NUMBER	QTY
1	Bearing_Holder	1
2	6900-2RS	1
3	5mm x 12mm SST BSC	2
4	2020 M5 Solid Tslot Nut	2
5	10mm_ID x 32T GT2 Pulley	1
6	10mmx16mmx0.5mm_SHim(McMaster_90214A422)	1



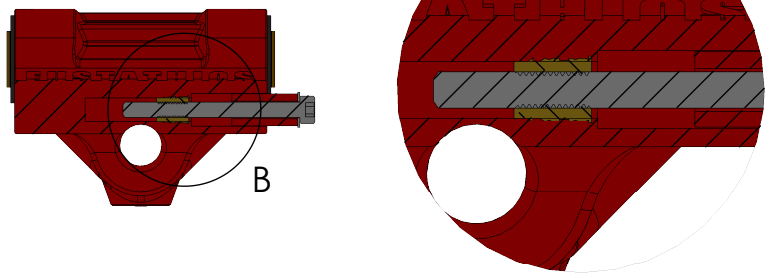
Qty:4 - XY_Axis_Belt_Tensioner

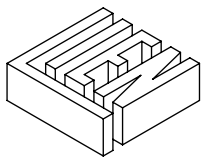
#	PART NUMBER	QTY
7	XY_Side_Carriage (Default or Mirrored)	1
8	2032N25	2
9	94180A333	2
10	3mm x 35mm SST SCS	1
11	M3 Flat Washer	1
12	92605A102	1

Notes:

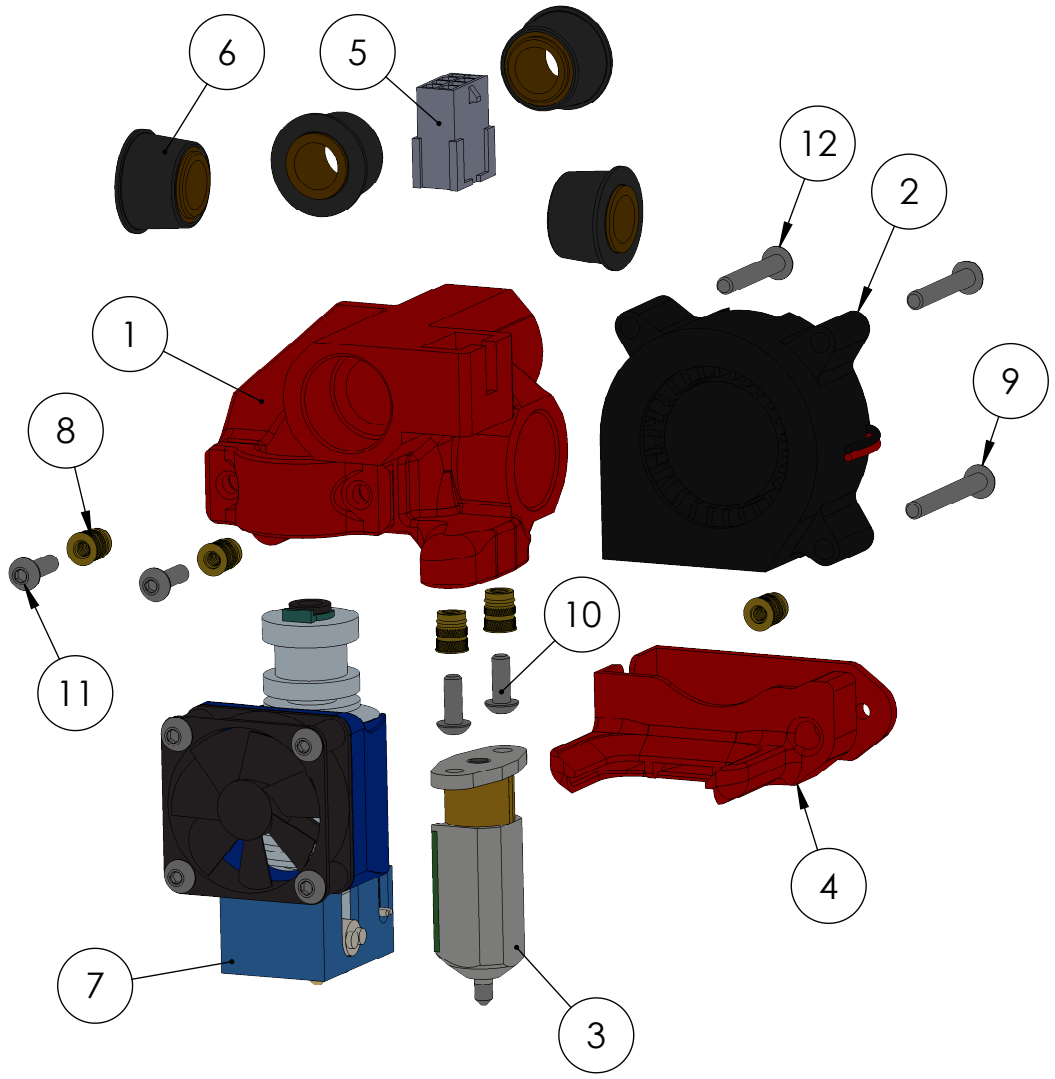
* Part# 6 on(90214A422) is critical so pulley does not rub on bearing.
* Take care pressing in Part# 8 (2032N25)bushings to avoid cracking the plastic. Should be a press fit depending on printed tolerance.
* Part# 9 (94180A333) heat set inserts to be installed with a soldering iron. Place insert onto soldering iron tip at a low temp and slowely press into the hole until flush.

Tensioner & Heat Set Insert

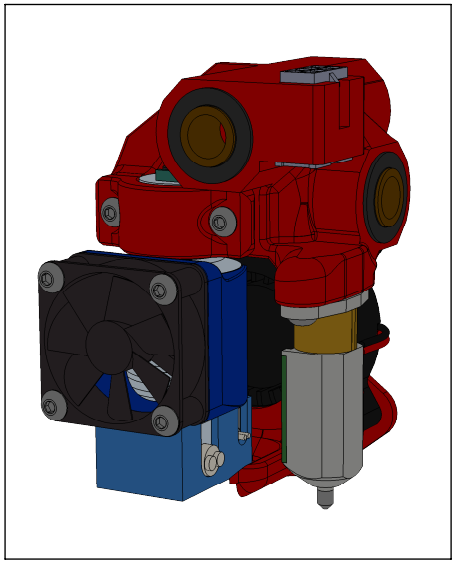




DRAWING NAME:	ESV25 REBA and XYBT			DRAWING #:	ESV25_P7
SCALE:	1:1.25	SHEET SIZE:	8.5" x 11"	DATE:	06-30-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOMS		FINISH:		NA

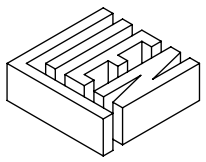


#	PART NUMBER	QTY.
1	Center Carriage With BLTouch	1
2	4020Blower_R3	1
3	BLTouch	1
4	cooling_duct_v2	1
5	430200801	1
6	2032N24	4
7	e3D V6 1.75mm Hotend Assembly	1
8	94180A333	5
9	3mm x 25mm SST BSC	1
10	3mm x 08mm SST BSC	2
11	3mm x 10mm SST BSC	2
12	3mm x 20mm SST BSC	2

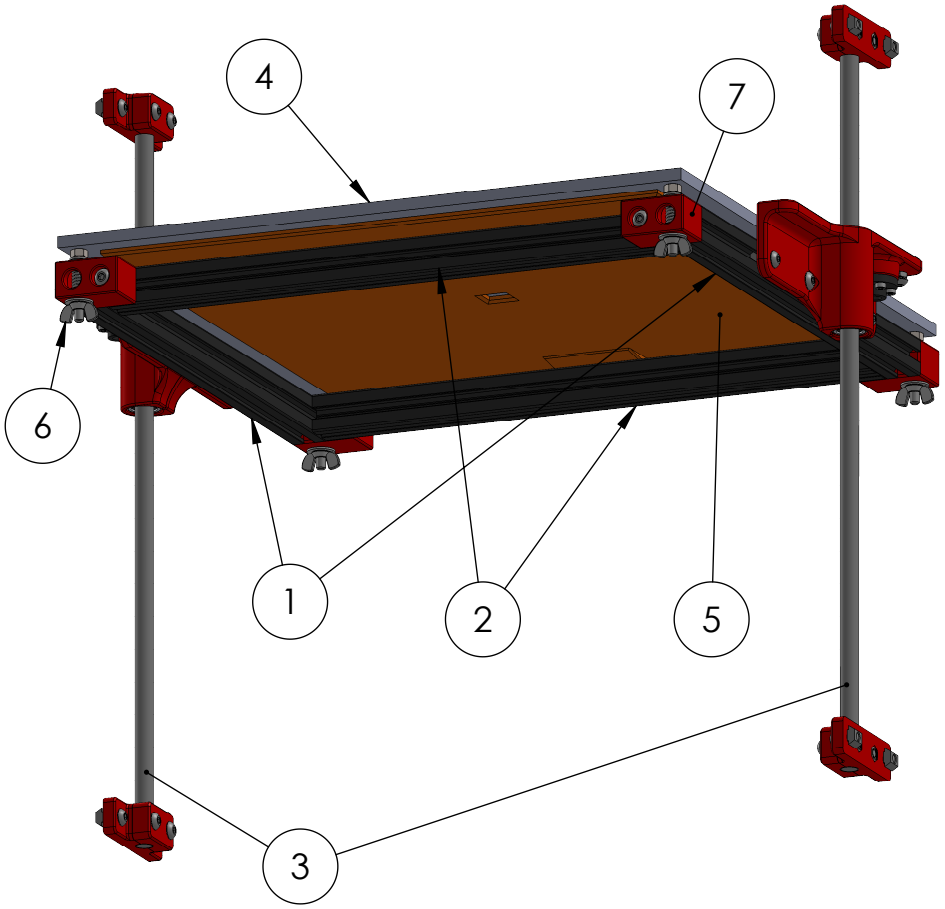


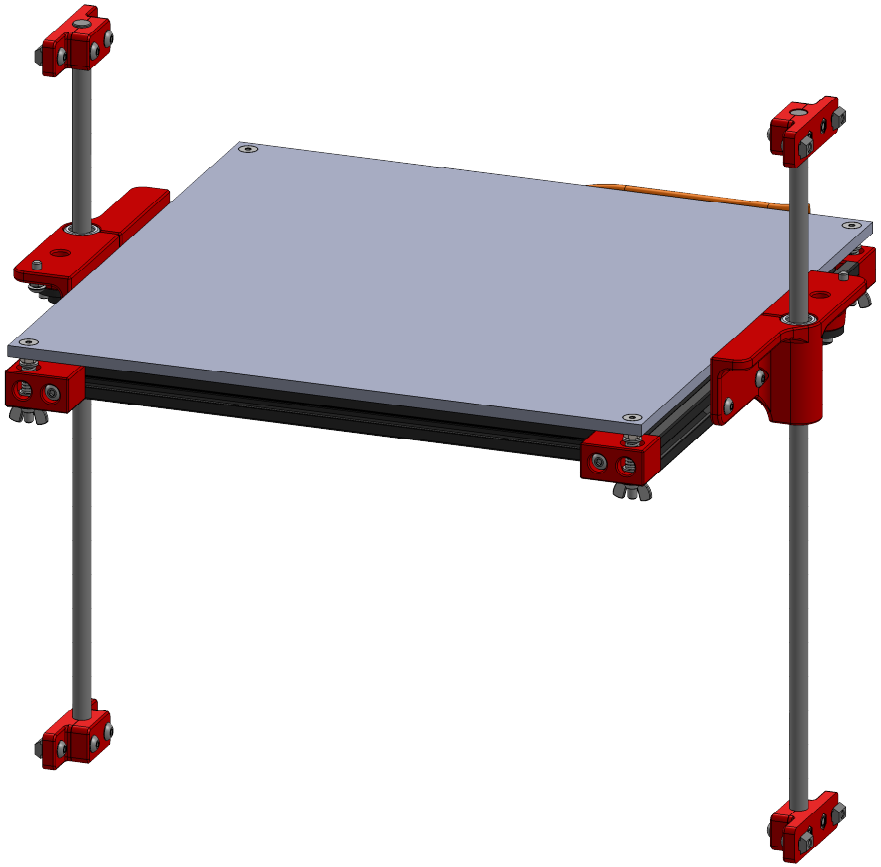
Notes:

* Take care pressing in Part# 6 (2032N24)bushings to avoid cracking the plastic. Should be a press fit depending on printed tolerance.
* Part# 9 (94180A333) heat set inserts to be installed with a soldering iron. Place insert onto soldering iron tip at a low temp and slowely press into the hole until flush.
* Part# 5 (430200801) has associated pins and mating connector (See overall printer BOM)

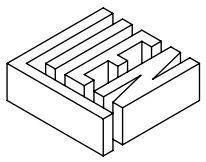


DRAWING NAME:	Center Carriage w/ BL			DRAWING #:	ESV25_P8
SCALE:	1:1.25	SHEET SIZE:	8.5" x 11"	DATE:	07-07-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOM		FINISH:	NA	



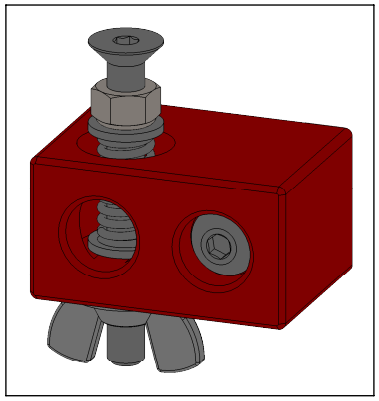


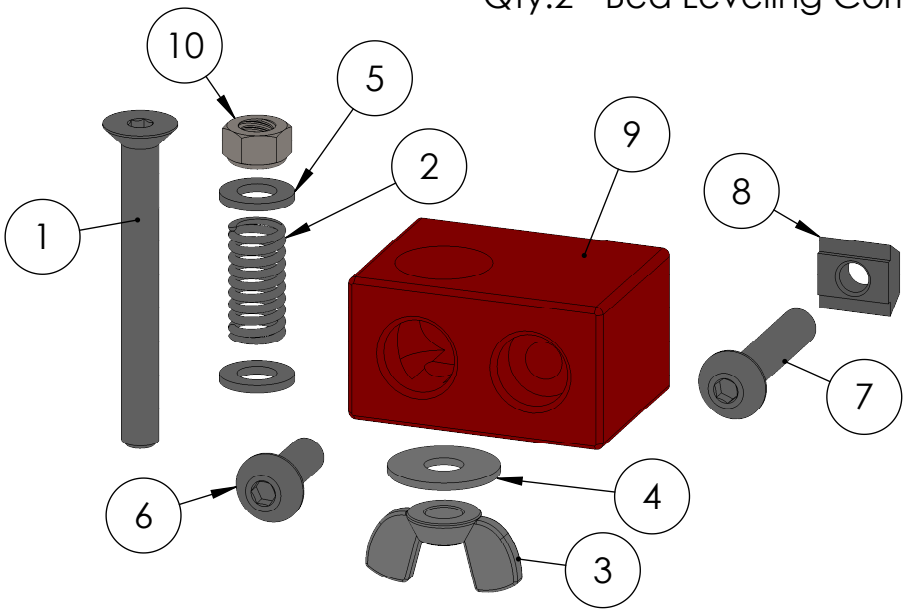
#	PART NUMBER	QTY
1	HFSB5-2020-296.5-TPW	2
2	HFSB5-2020-321	2
3	Z_Axis_Bed_Support	2
4	Aluminum_Heat_Spreader	1
5	320x320_120VAC_500W_Heated_Bed	1
6	Bed Leveling Corner	2
7	Bed Leveling Corner (Mirrored)	2



DRAWING NAME:	Z Axis and Bed			DRAWING #:	ESV25_P9
SCALE:	1:4	SHEET SIZE:	8.5" x 11"	DATE:	06-30-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOM		FINISH:	NA	

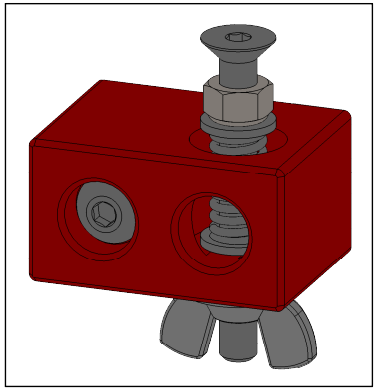
Qty:2 - Bed Leveling Corner

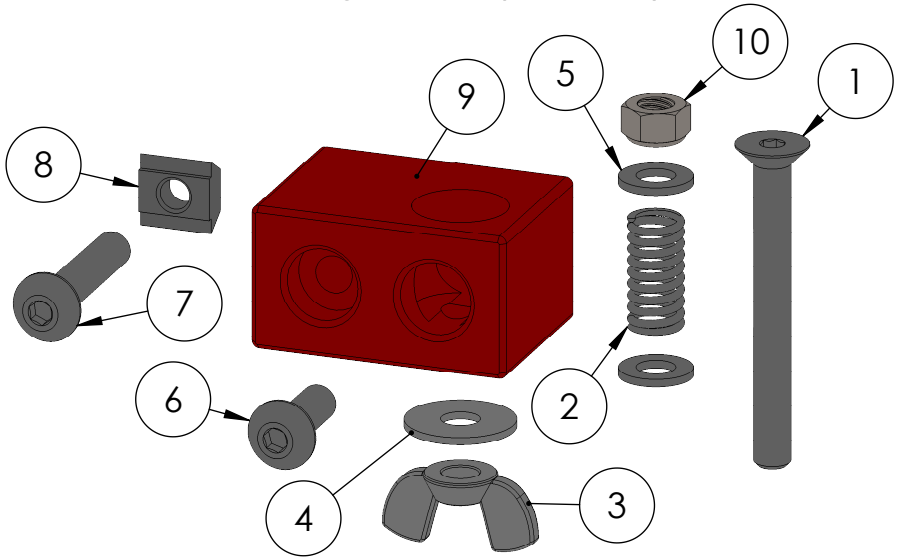




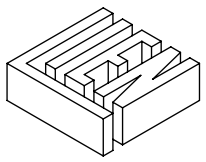
#	PART NUMBER	QTY.
1	92125A226	1
2	9002T427	1
3	94545A225	1
4	M5 Flat Fender Washer	1
5	M5 Flat Washer	2
6	5mm x 14mm SST BSC	1
7	5mm x 25mm SST BSC	1
8	2020 M5 Solid Tslot Nut	1
9	Bed Mount Block	1
10	M5 Nylock Nut	1

Qty:2 - Bed Leveling Corner (Mirrored)

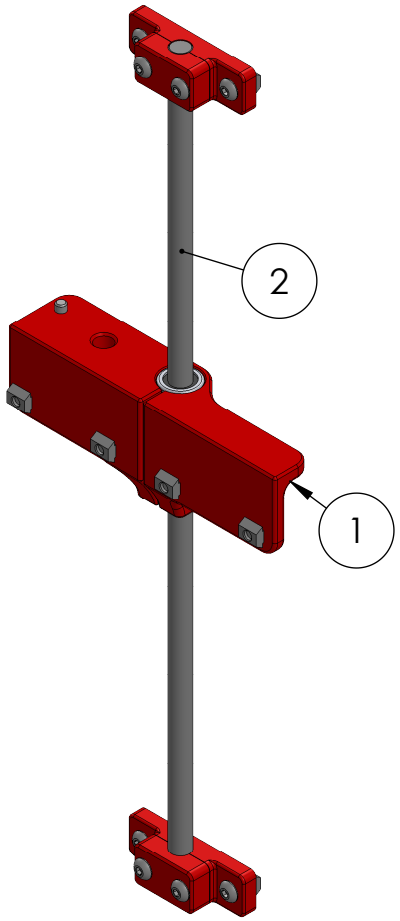




#	PART NUMBER	QTY.
1	92125A226	1
2	9002T427	1
3	94545A225	1
4	M5 Flat Fender Washer	1
5	M5 Flat Washer	2
6	5mm x 14mm SST BSC	1
7	5mm x 25mm SST BSC	1
8	2020 M5 Solid Tslot Nut	1
9	Bed Mount Block Mirrored	1
10	M5 Nylock Nut	1

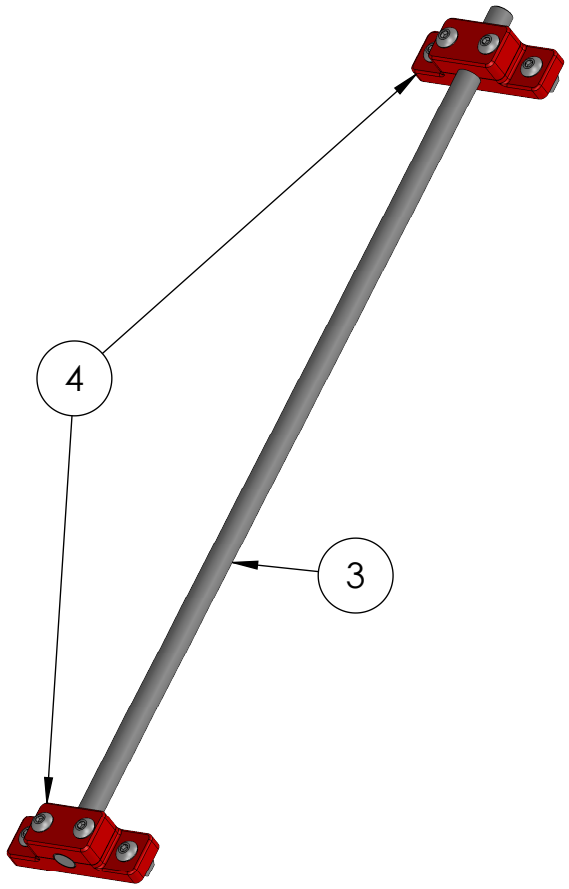


DRAWING NAME:	Bed Leveling Corners			DRAWING #:	ESV25_P10
SCALE:	1:1	SHEET SIZE:	8.5" x 11"	DATE:	06-30-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOM		FINISH:		NA



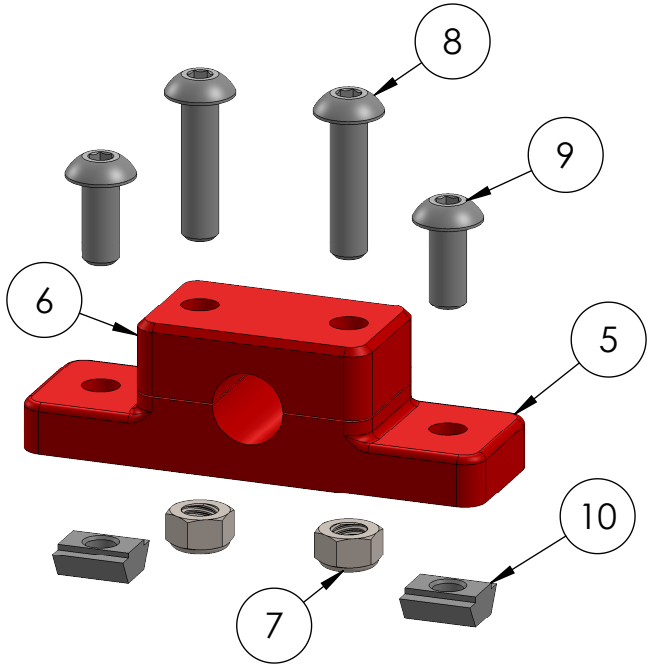
Qty:2 - Z_Axis_Bed_Support

#	PART NUMBER	QTY.
1	Bed Support ASMB	1
2	Z_Rod_And_Mounts	1



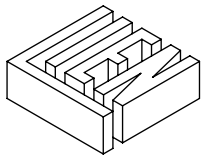
Qty:2 - Z_Rod_And_Mounts

#	PART NUMBER	QTY.
3	SFJ10-435	1
4	Z Rod Shaft Mount	2



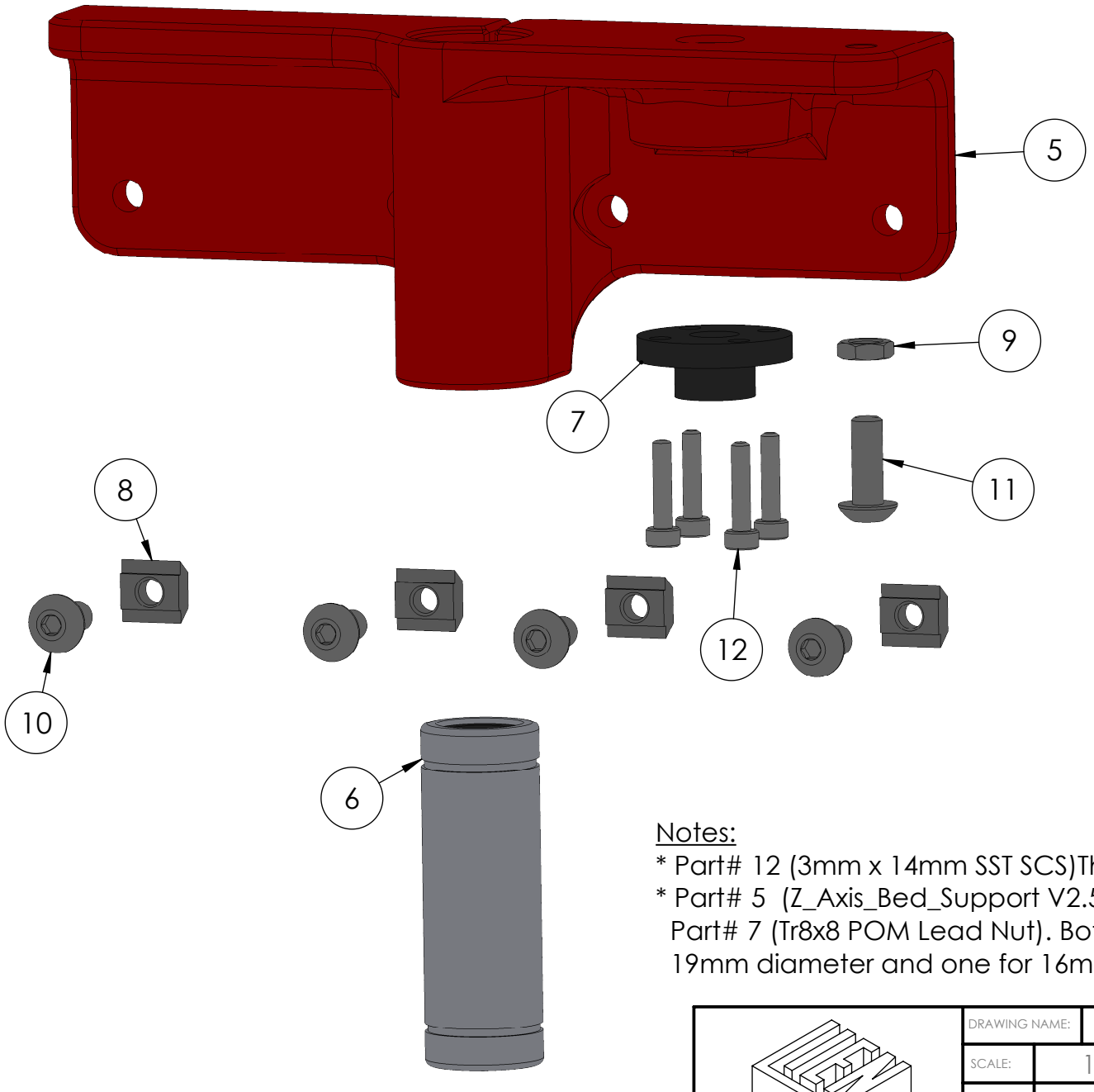
Qty:4 - Z Rod Shaft Mount 1:1 Scale

#	PART NUMBER	QTY.
5	Z_Axis_Shaft_Mount_A	1
6	Z_Axis_Shaft_Mount_B	1
7	M5 Nylock Nut	2
8	5mm x 20mm SST BSC	2
9	5mm x 12mm SST BSC	2
10	2020 M5 Solid Tslot Nut	2



DRAWING NAME:	Z Rods and Supports			DRAWING #:	ESV25_P11
SCALE:	1:3	SHEET SIZE:	8.5" x 11"	DATE:	07-09-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOM		FINISH:		NA

Qty:2 -Bed Support ASMB

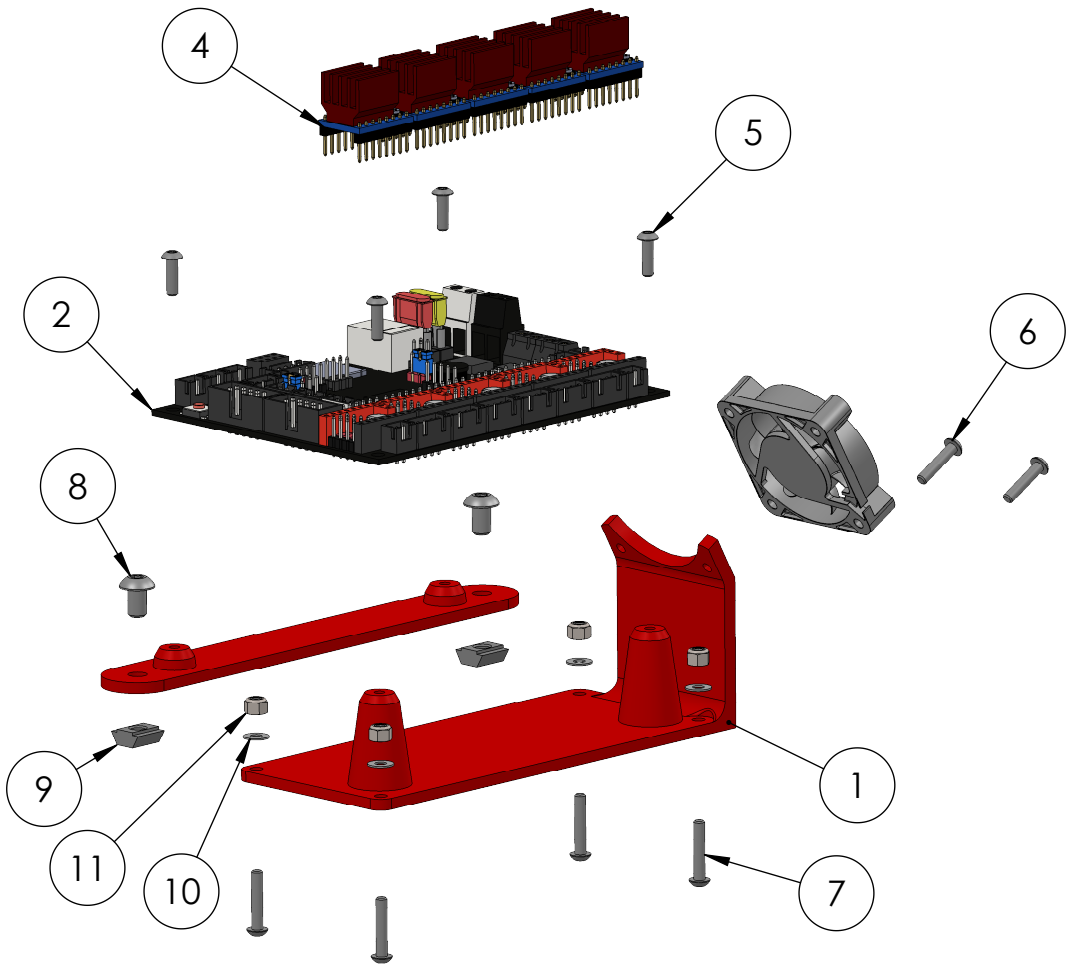


#	PART NUMBER	QTY.
5	Z_Axis_Bed_Support V2.5	1
6	LM10LUU	1
7	TR8x8 POM Lead Nut	1
8	2020 M5 Solid Tslot Nut	4
9	M5 Jam Nut	1
10	5mm x 10mm SST BSC	4
11	5mm x 14mm SST BSC	1
12	3mm x 14mm SST SCS	4

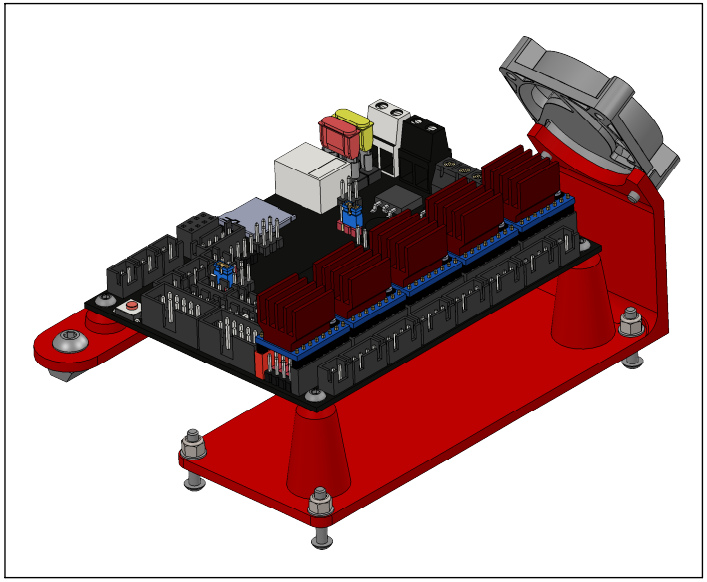
Notes:

* Part# 12 (3mm x 14mm SST SCS)Threads directly into plastic
* Part# 5 (Z_Axis_Bed_Support V2.5) has two different bolt hole layouts for Part# 7 (Tr8x8 POM Lead Nut). Both are for a 4bolt pattern but, one for 19mm diameter and one for 16mm diameter.

DRAWING NAME:	Bed Support ASMB			DRAWING #:	ESV25_12
SCALE:	1:1	SHEET SIZE:	8.5" x 11"	DATE:	07-10-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOM		FINISH:	NA	

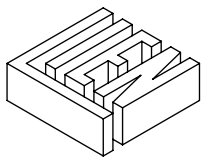


#	PART NUMBER	QTY.
1	SKR_1.3_1.4 Controller Mount	1
2	BTT_SKR_V1.4	1
3	40x40x10 Axial 24V Fan	1
4	TMC2209	5
5	3mm x 10mm SST BSC	4
6	3mm x 14mm SST BSC	2
7	3mm x 16mm SST BSC	4
8	5mm x 8mm SST BSC	2
9	2020 M5 Solid Tslot Nut	2
10	M3 Flat Washer	4
11	M3 Nylock Nut	4

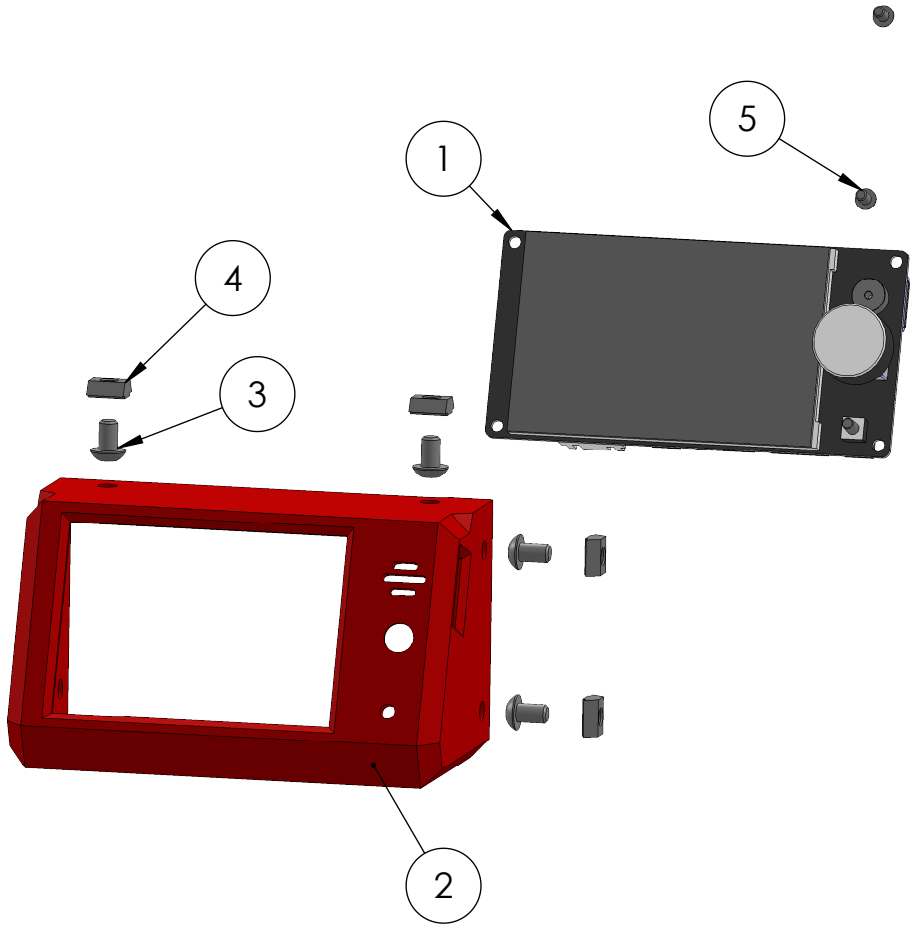


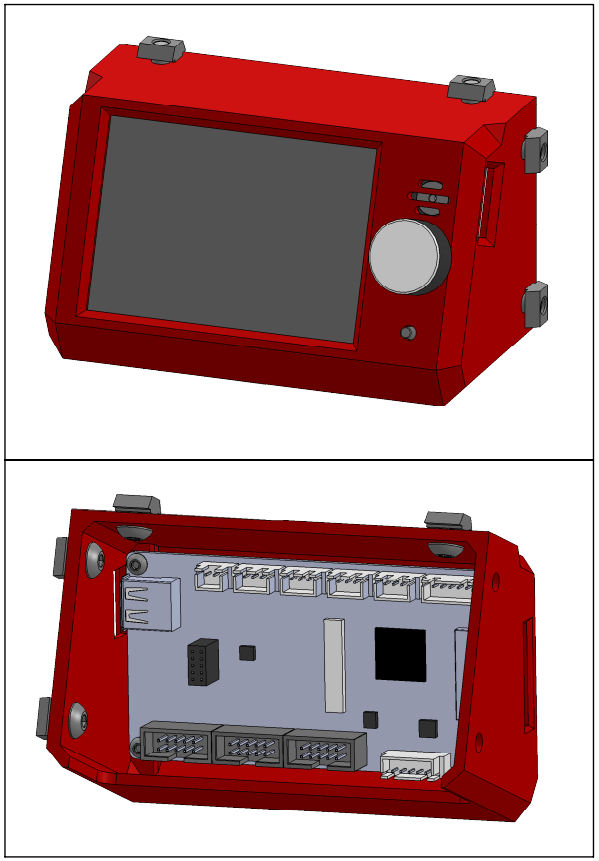
Notes:

* Part#5 and Part#6 threads directly into plastic printed part.
* Part#1 is a 2 part print, one part sits on top of 20x20 extrusion and one sits flush with bottom of printer bottom panel and bolts through it.
* Part#4 can be any driver you wish, the current recomendation is TMC 2209 due to current capacity and stealth chop functions.

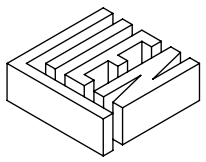


DRAWING NAME:	Printer Controller ASMB			DRAWING #:	ESV25_P13
SCALE:	1:2	SHEET SIZE:	8.5" x 11"	DATE:	07-10-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOM		FINISH:		NA



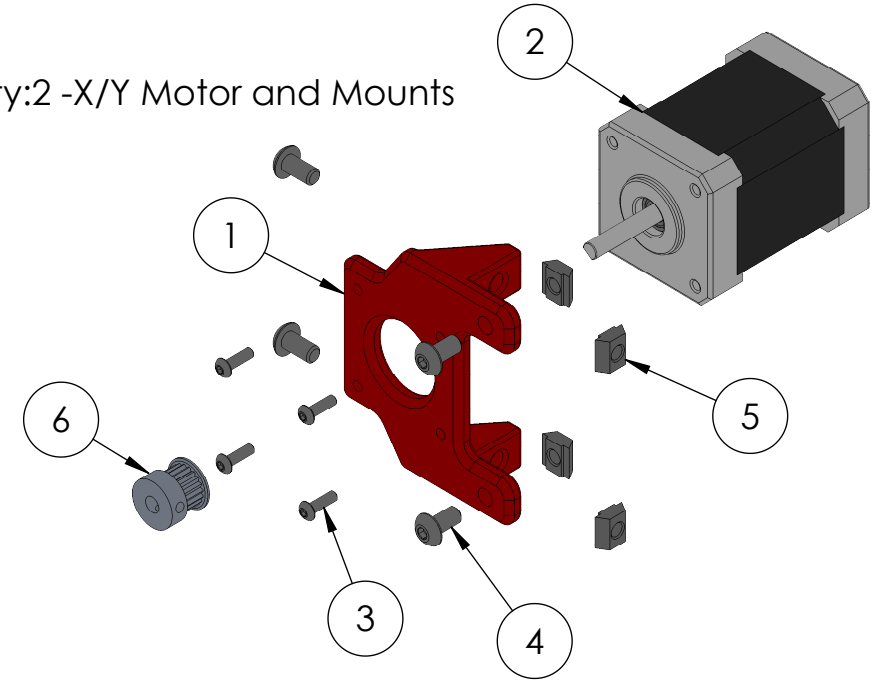


#	PART NUMBER	QTY.
1	BIGTREETECH TFT35 V3	1
2	LCD Cover BBT TFT35 V3	1
3	5mm x 8mm SST BSC	4
4	2020 M5 Solid Tslot Nut	4
5	3mm x 06mm SST BSC	4

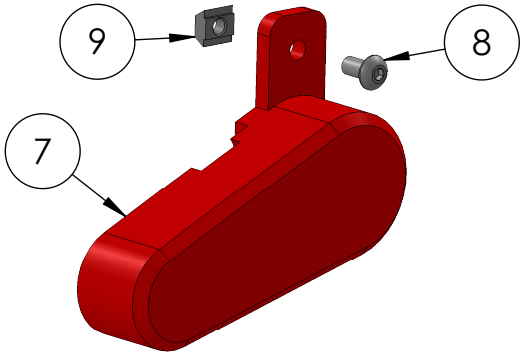


DRAWING NAME:	LCD and Cover			DRAWING #:	ESV25_P14
SCALE:	1:2	SHEET SIZE:	8.5" x 11"	DATE:	07-10-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOM		FINISH:		NA

Qty:2 -X/Y Motor and Mounts

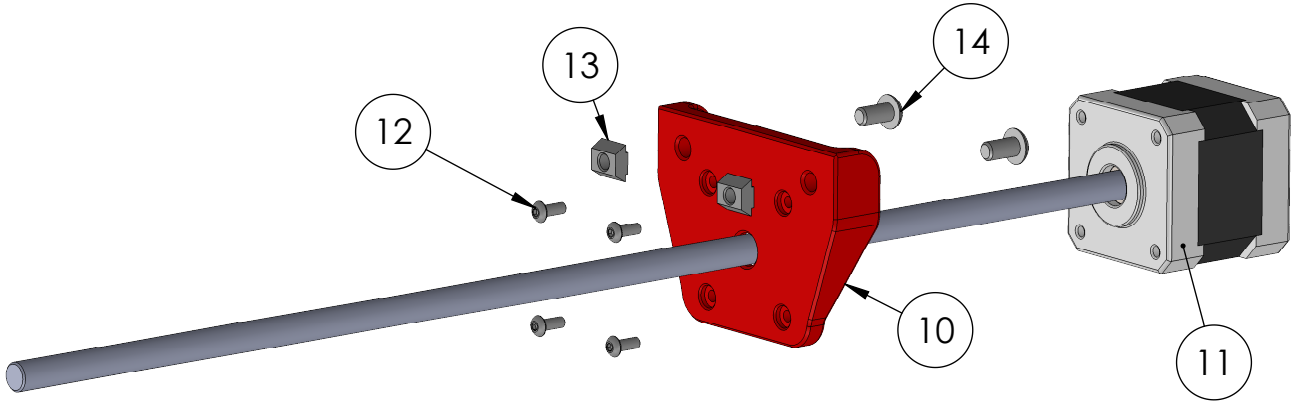


#	PART NUMBER	QTY.
1	XY_External_Motor_Mount	1
2	NEMA_17_60mm_1.5A	1
3	3mm x 10mm SST BSC	4
4	5mm x 10mm SST BSC	4
5	2020 M5 Solid Tslot Nut	4
6	GT2_Aluminum_Timing_Pulley_20_Tooth	1



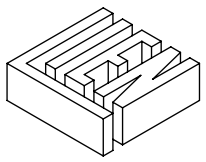
Qty:2 -X/Y Belt Covers

#	PART NUMBER	QTY.
7	Belt_Guard	1
8	5mm x 10mm SST BSC	1
9	2020 M5 Solid Tslot Nut	1



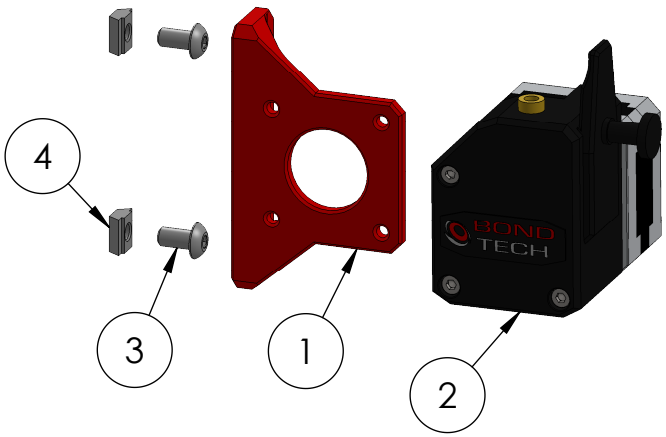
Qty:2 -Z Integrated Leadscrew Motor and Mount

#	PART NUMBER	QTY.
10	Z_Integrated_Leadscrew_Motor_Mount	1
11	380mm_TR8x8_42mm_Nema17	1
12	3mm x 08mm SST BSC	4
13	2020 M5 Solid Tslot Nut	2
14	5mm x 10mm SST BSC	2

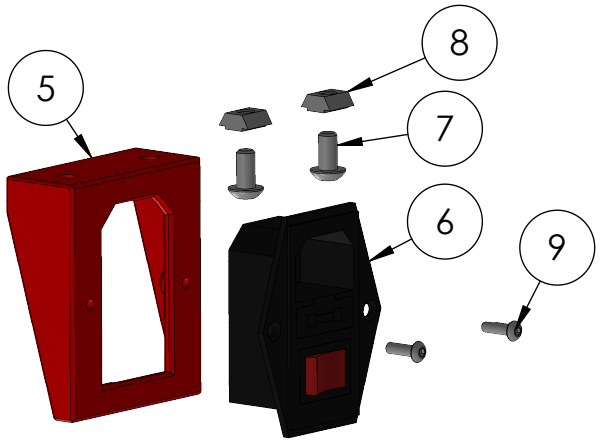


DRAWING NAME:	X/Y/X Motors & Mounts			DRAWING #:	ESV25_P15
SCALE:	1:2	SHEET SIZE:	8.5" x 11"	DATE:	07-10-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOM		FINISH:	NA	

Qty:1 -Bondtech BMG Extruder, Bondtech Motor and Mount

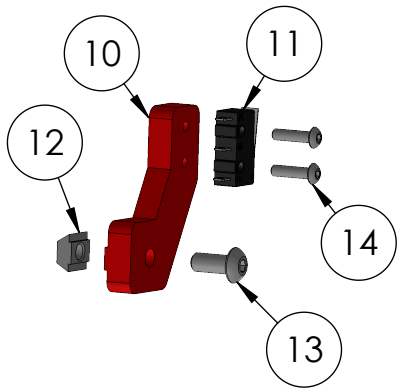


#	PART NUMBER	QTY.
1	BMG Mount	1
2	Bondtech_BMG	1
3	5mm x 10mm SST BSC	2
4	2020 M5 Solid Tslot Nut	2



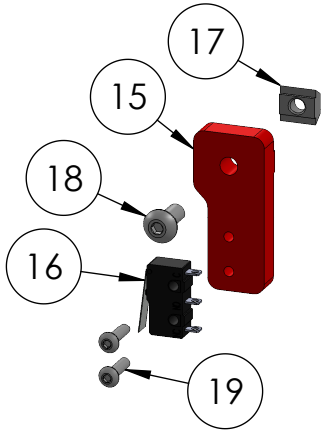
Qty:1 -Fused Power Inlet and Mount

#	PART NUMBER	QTY.
5	Outlet_Switch_Mount	1
6	Amazon_Electrical_Fused_Plug	1
7	5mm x 10mm SST BSC	2
8	2020 M5 Solid Tslot Nut	2
9	3mm x 10mm SST BSC	2



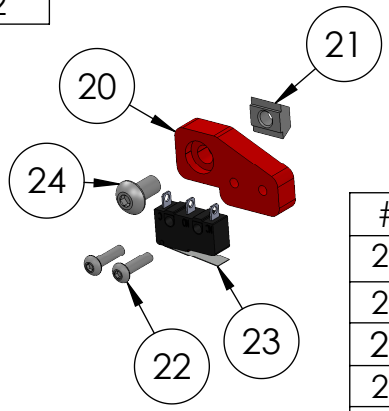
Qty:1 -Y Axis Limit Switch

#	PART NUMBER	QTY.
10	Y (New) Endstop Mount	1
11	Micro Switch Button	1
12	2020 M5 Solid Tslot Nut	1
13	5mm x 12mm SST BSC	1
14	3mm x 12mm SST BSC	2



Qty:1 -Y Axis Limit Switch

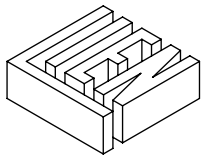
#	PART NUMBER	QTY.
15	X(NEW) Endstop Mount	1
16	Micro Switch Button	1
17	2020 M5 Solid Tslot Nut	1
18	5mm x 12mm SST BSC	1
19	3mm x 12mm SST BSC	2



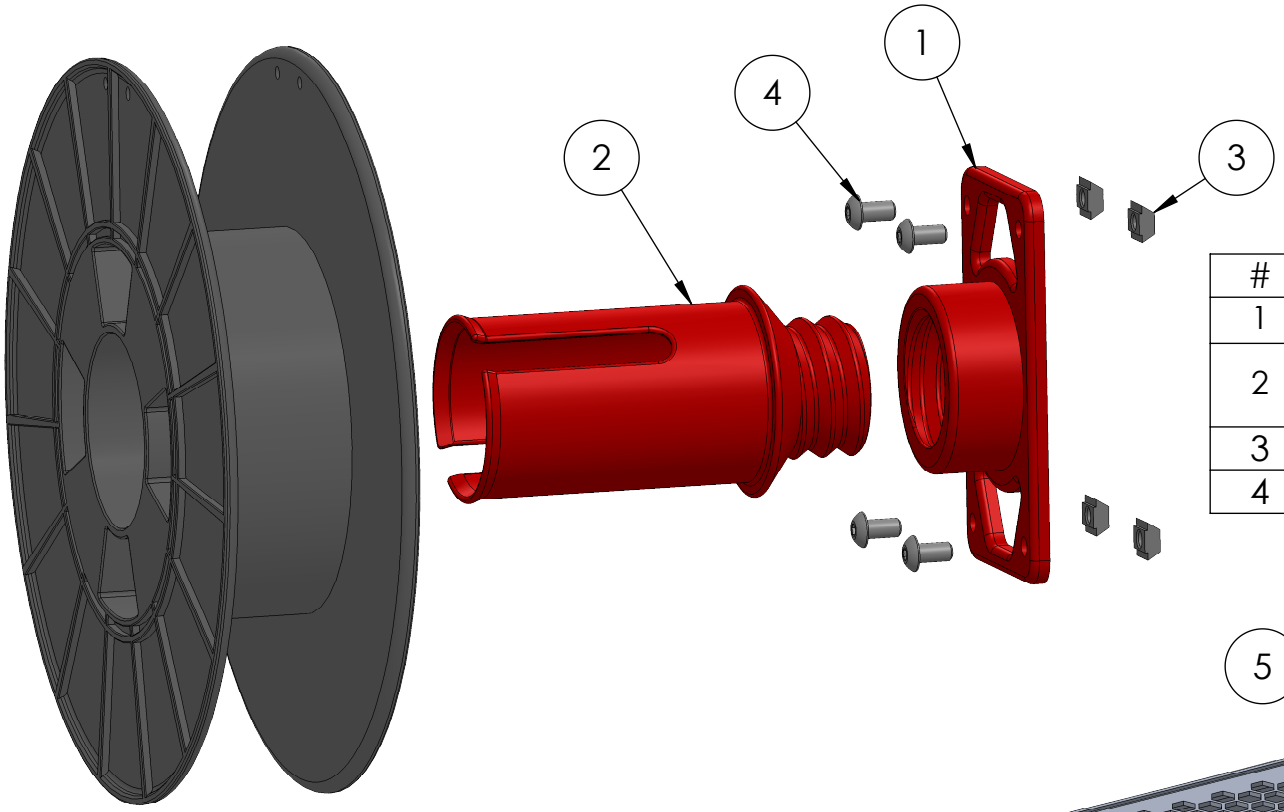
Qty:2 -Z Axis Limit Switch (Option with BL Touch)

#	PART NUMBER	QTY.
20	Z(NEW) Endstop Mount	1
21	2020 M5 Solid Tslot Nut	1
22	3mm x 12mm SST BSC	2
23	Micro Switch Button	1
24	5mm x 10mm SST BSC	1

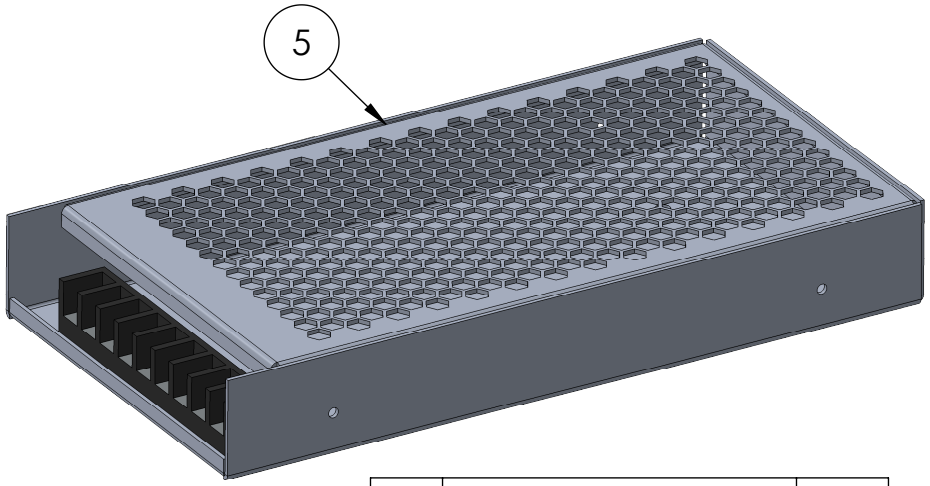
*Drill out holes in limit switch to 3mm for mounting



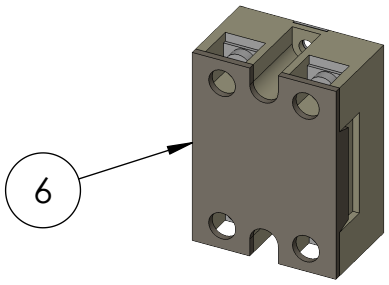
DRAWING NAME:	Misc Electronics			DRAWING #:	ESV25_P16
SCALE:	1:2	SHEET SIZE:	8.5" x 11"	DATE:	07-10-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOM		FINISH:		NA



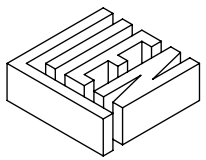
#	PART NUMBER	QTY.
1	Eustathios_Threaded_Flange	1
2	Threaded Spool Insert	1
3	2020 M5 Solid Tslot Nut	4
4	5mm x 10mm SST BSC	4



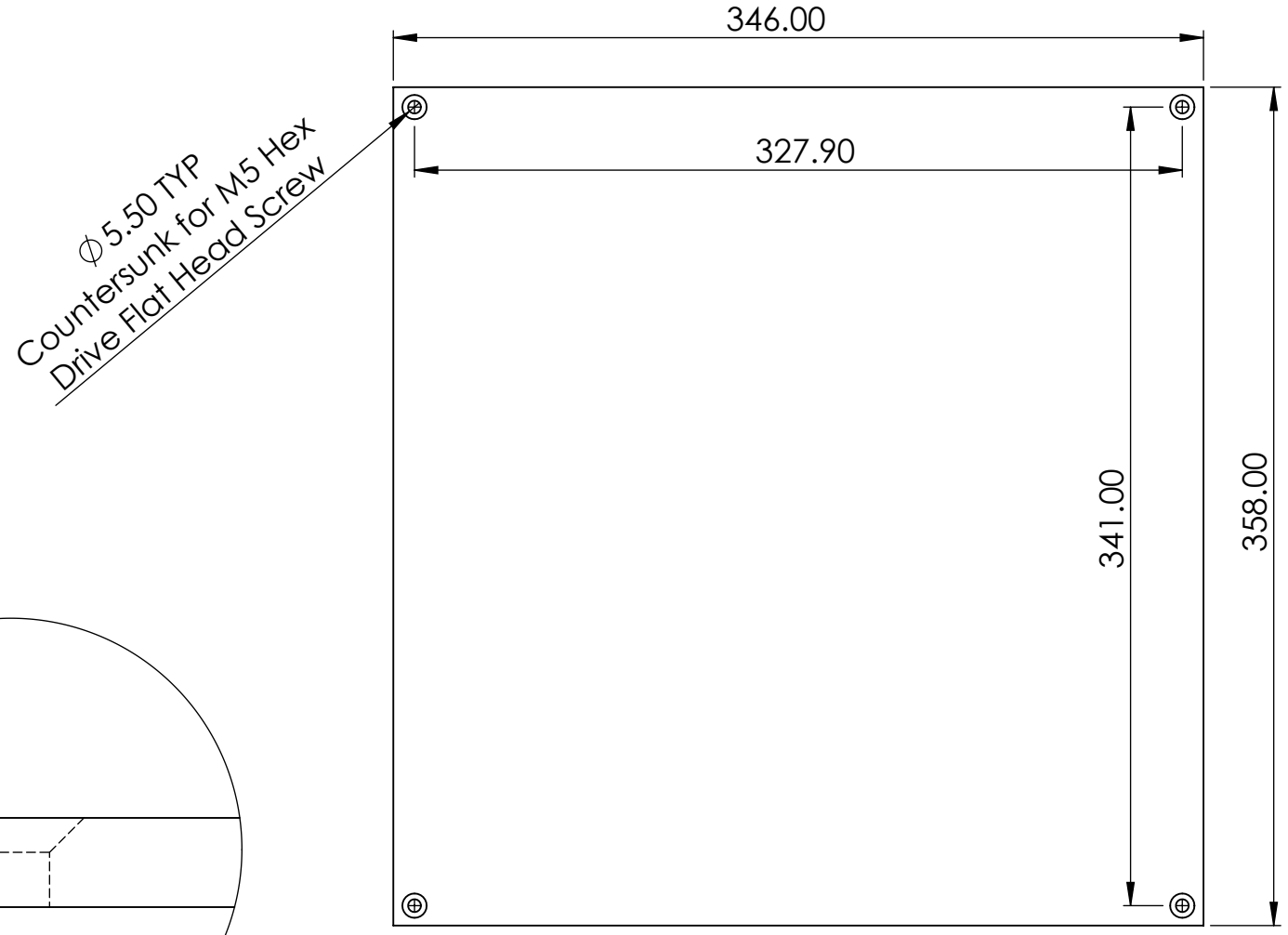
#	PART NUMBER	QTY.
5	Meanwell_LRS-200-24	1

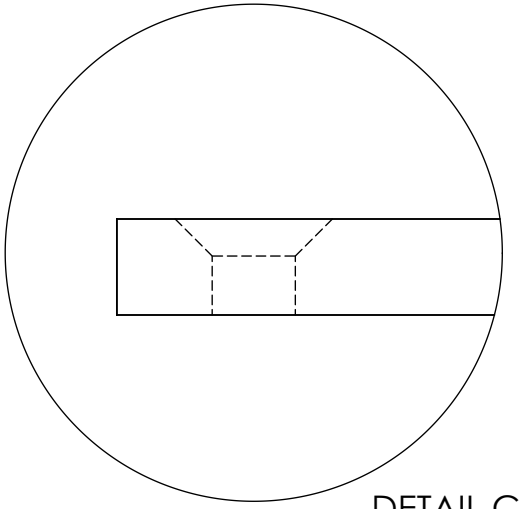


ITEM NO.	PART NUMBER	QTY.
6	Omron G3NA_220B SSR	1



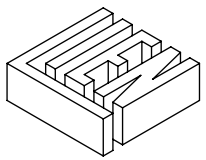
DRAWING NAME:	Spool Holder & Power			DRAWING #:	ESV25_P17
SCALE:	1:2	SHEET SIZE:	8.5" x 11"	DATE:	07-10-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOM		FINISH:		NA



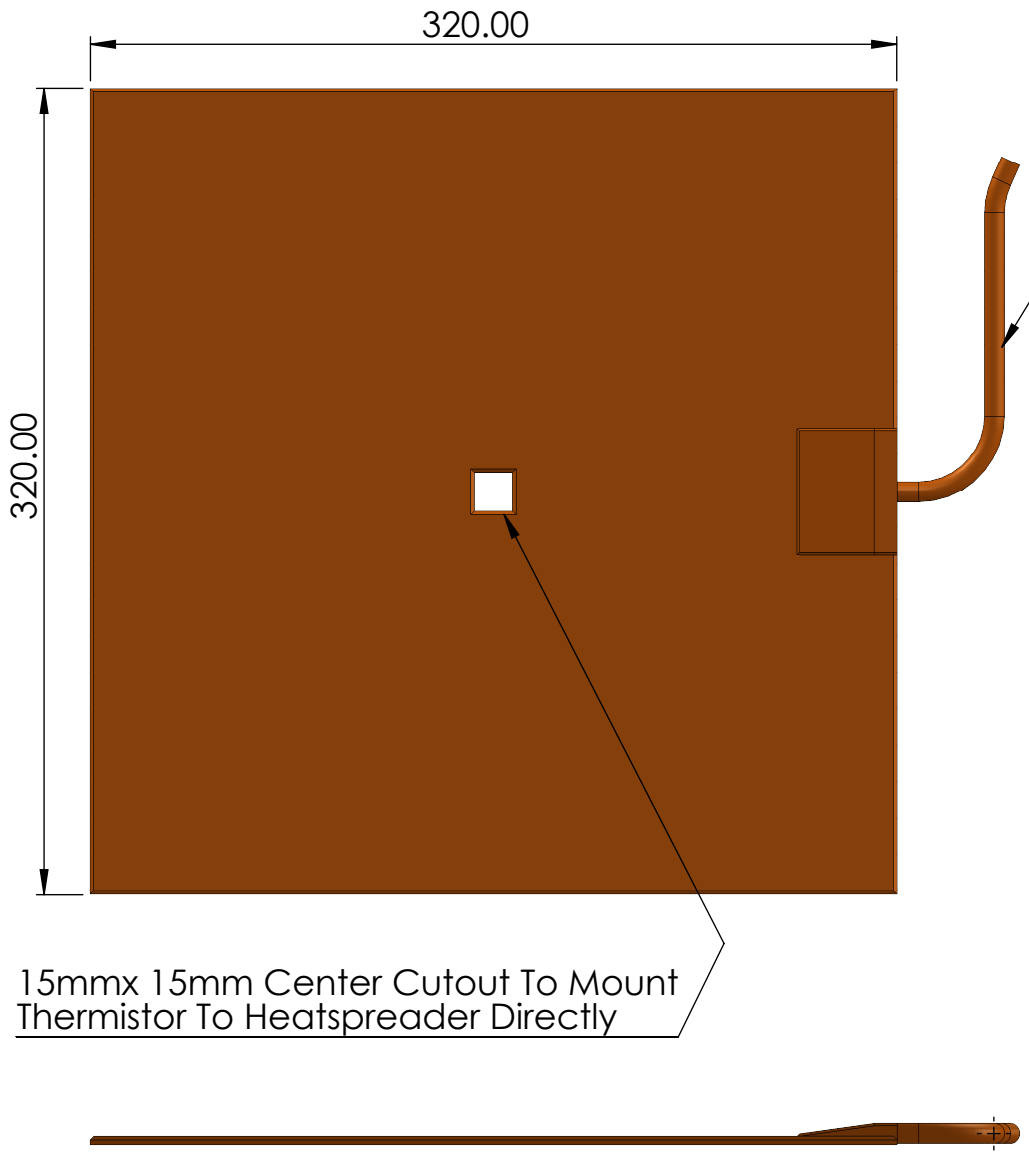


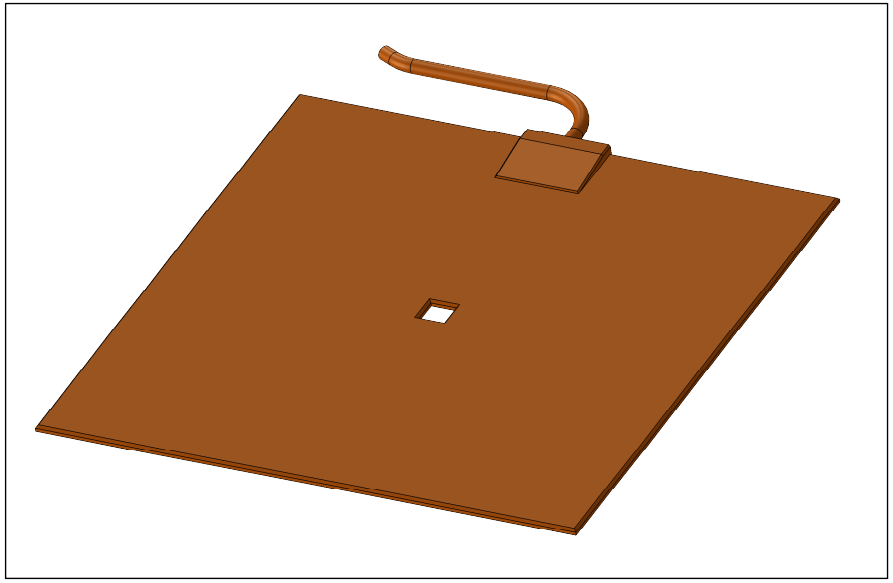
DETAIL C
SCALE 2 : 1

Note: 1/4" or 6mm Cast Aluminum Tooling Plate



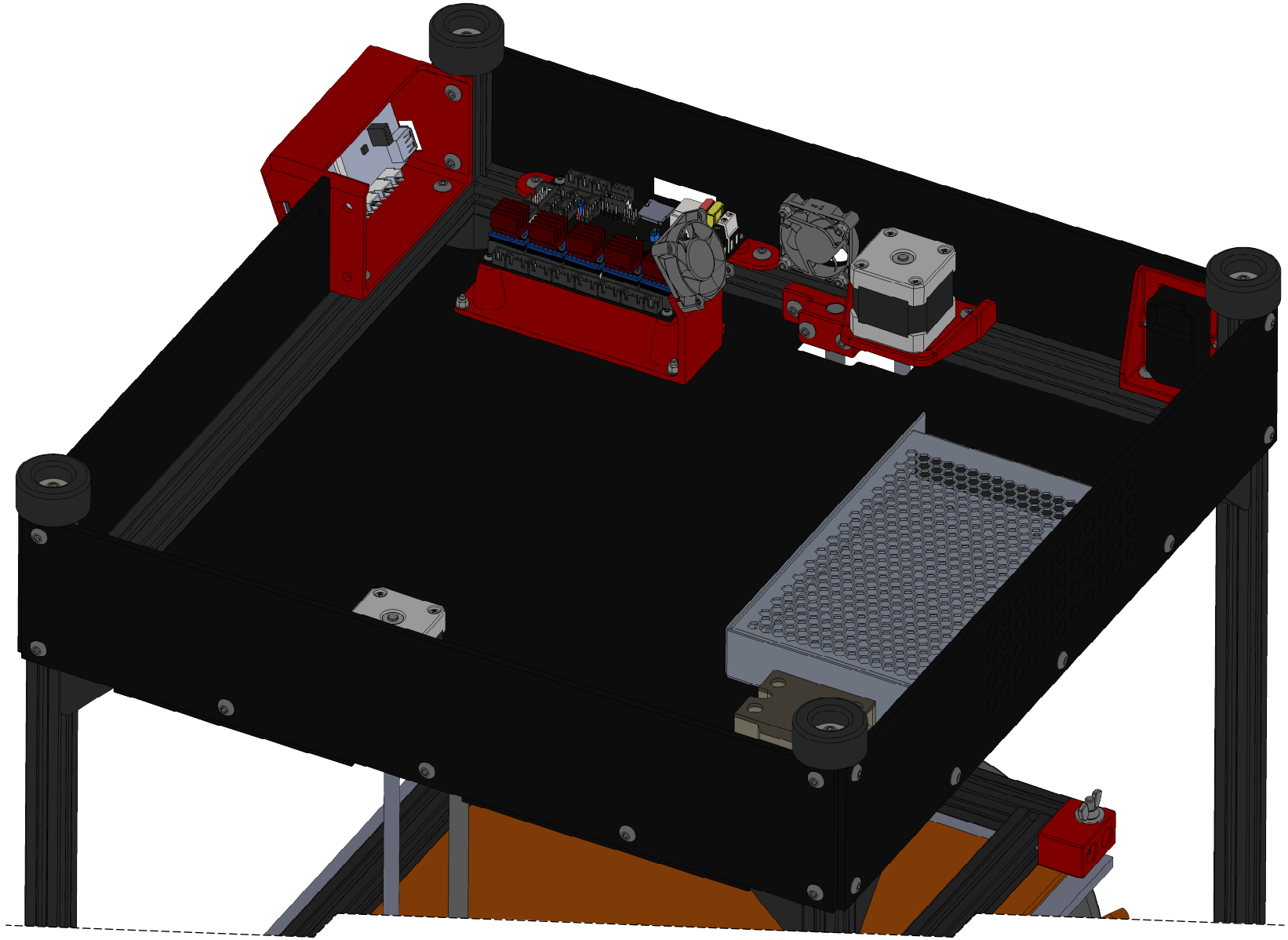
DRAWING NAME:	Heat Spreader (AL)			DRAWING #:	ESV25_P18
SCALE:	1:3	SHEET SIZE:	8.5" x 11"	DATE:	07-14-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R01
MATERIAL:	SEE BOM		FINISH:		NA





500W @ 120V silicon heater with center hole, loose thermistor able to reach hole, 320x320mm, From Alirubber on Aliexpress, or Keenovo

DRAWING NAME:	Silicon Bed Heater			DRAWING #:	ESV25_P19
SCALE:	1:3	SHEET SIZE:	8.5" x 11"	DATE:	07-14-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R01
MATERIAL:	SEE BOM		FINISH:		NA



DRAWING NAME:	Underside Detail			DRAWING #:	ESV25_P20
SCALE:	1:3	SHEET SIZE:	8.5" x 11"	DATE:	07-10-2020
DRAWN:	ECL	DIM UNITS:	mm	REVISION:	R00
MATERIAL:	SEE BOM		FINISH:	NA	