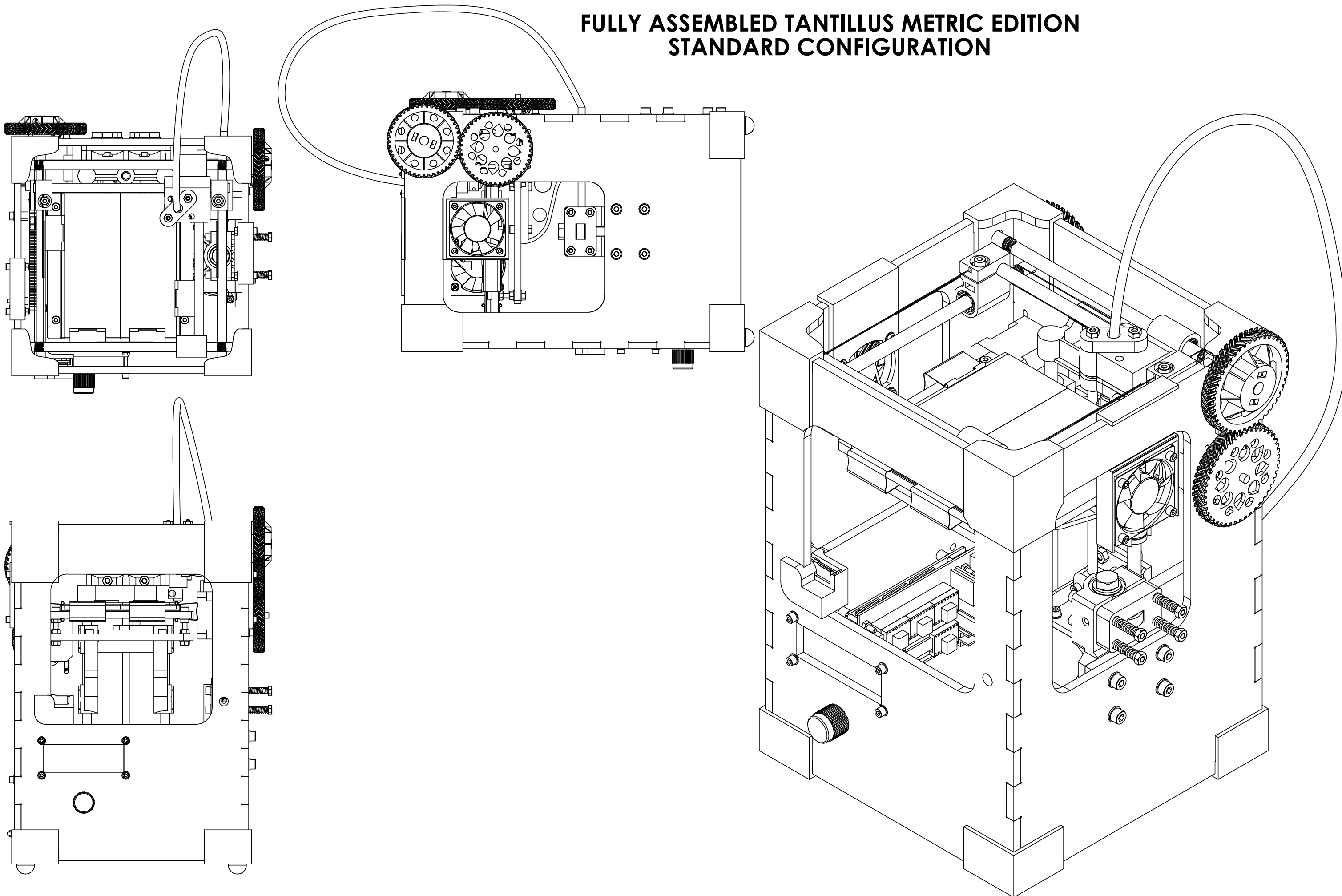


FULLY ASSEMBLED TANTILLUS METRIC EDITION
STANDARD CONFIGURATION



	NAME	DATE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS	TITLE:	REV	A3
DRAWN	WWFP	11/2012		Tantillus Metric Edition SW2012	A	
CHECKED					DO NOT SCALE DRAWING	SHEET 1 OF 14

IMPORTANT ASSEMBLY NOTES

REFER TO ww.tantillus.org FOR MOST UP TO DATE STEP BY STEP BUILD GUIDE
SUPPORT CAN BE FOUND AT forums.reprap.org/list.php?279
ALL WORK IN THESE DRAWINGS IS DERIVED FROM SUBLIMES ORGINAL TANTILLUS DESIGN

- DO NOT CHAMFER ENDS OF DRIVE RODS UNTIL YOU HAVE USED TO THEM TO REAM OUT PRINTABLE BEARINGS
- NEVER UNPLUG A STEPPER MOTOR FROM A POWERED POLULU DRIVER
- DO NOT CLIP IN TOP CORNERS UNLESS AT A STAGE WHERE YOU NEED TO
- USE DRILL ROD OR SILVER STEEL FOR DRIVE SHAFTS, CHROME PLATED HARD BEARING ROD WILL REQUIRE HOLES TO BE EDM/SPARKED INTO THEM DUE TO HARDNESS
- FLATS ON DRIVE SHAFTS AND STEPER MOTOR SHAFTS WILL PREVENT SLIPAGE AND IS HIGHLY RECOMENDED
- STAINLESS STEEL THREADED ROD IS RECOMENDED FOR Z AXIS LEAD SCREW, HOWEVER USE STEEL NUTS AS STAINLESS NUTS WILL BIND/PICK UP (GALLING) ON STAINLESS SHAFT
- 3M BLUE MASKING TAPE (2090) IS USED ON BED AS PLA/ABS STICKS WELL TO IT (KAPTON TAPE IS ONLY USED ON HEATED BEDS)

	NAME	DATE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS	TITLE:	REV	A3
DRAWN	WWFP	11/2012		Tantillus Metric Edition SW2012	A	
CHECKED				SCALE:1:5	DO NOT SCALE DRAWING	SHEET 2 OF 14

OVER ALL STANDARD BOM

LASER CUT PARTS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Rear Panel	Laser Cut 6mm Acrylic	1
2	Left Panel	Laser Cut 6mm Acrylic	1
3	Front Panel	Laser Cut 6mm Acrylic	1
4	Right Panel	Laser Cut 6mm Acrylic	1
5	Lower Bed	Laser Cut 6mm Acrylic	1
6	Upper Bed	Laser Cut 6mm Acrylic	1
7	Extruder Stand Off	Laser Cut 6mm Arcylic	1
8	Carriage middle	Laser Cut 3mm Acrylic	1

3D PRINTED PARTS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
9	Z lift	3D Printed from PLA	1
10	Corner bottom	3D Printed from PLA	4
11	Endstop_holder	3D Printed from PLA	1
12	Extruder	3D Printed From PLA	1
13	Corner_top_front_left	3D Printed from PLA	1
14	Corner_top_front_right	3D Printed from PLA	1
15	Corner_top_rear_right	3D Printed from PLA	1
16	Extruder_large_v2-SW	3D Printed From PLA	1
17	Extruder_idler	3D Printed From PLA	1
18	Corner_top_rear_left	3D Printed from PLA	1
19	Z_lower_bracket	3D Printed from PLA	1
20	Z_upper_bracket	3D Printed from PLA	1
21	XY_end_right	3D Printed from PLA	2
22	printable-lm8uu-v3	3D Printed from PLA	4
23	XY_end left	3D Printed from PLA	2
24	Extruder_motor_mount_v2	3D Printed From ABS (Recomended)	1
25	Z_arm_1	3D Printed from PLA	1
26	Z_arm_2	3D Printed from PLA	1
27	Motor_Gear	3D Printed from PLA	2
28	Carriage top	3D Printed from PLA	1
29	Upper gear-SW	3D Printed from PLA	2
30	Carriage bottom	3D Printed from PLA	1
31	Z-coupler	3D Printed from PLA	2
32	Extruder_small_v2 (4mm)-SW	3D Printed From PLA	1
33	50mm_fanmount (LC)	3D Printed From PLA	2
34	Bowden clamp	3D Printed From PLA	1
35	Z_motor_bracket	3D Printed From PLA	1
36	Encoder knob	3D Printed From PLA	1
37	SD Card Reader Holder	3D Printed Optional Extra	1

ELECTRONICS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
38	ArduinoMEGA2560		1
39	RAMPS PCBA		1
40	Pololu Driver PCB		4
41	LCD Panel (approximation)	16 X 2	1
42	Fan	40mm Spaced Holes, 10mm Thick	2
43	Microswitch	Z-Axis Endstop Switch	1
44	stepper-motor-nema17	WanTai 42BYGHW609 Recomended	4
45	Encoder		1
46	SD Card Reader		1

OTHER REQUIRED PARTS

DESCRIPTION	QTY.
Small Cable Ties (150mm x 4mm)	18
Thermistor	1
90 Watt Power Supply (15V @5/6A)	1
Barrel Connector for Power Supply (Optional)	1
PTFE Tubing - 6mm OD, 3mm ID or 1/4" OD, 1/8" ID	800mm

RODS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
47	Z Axis Leadscrew	Made From M6 S/S Threaded Rod	1
48	Z_axis_bar 8mm		2
49	XY_cross_bar		2
50	XY_idler_bar 8mm		2
51	XY_drive_bar M8		2
52	Extruder Idler Bar	Make from Centreless Ground Silver Steel or Drill Rod	1

FASTNERS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
53	Grub Screw M4 X 6		8
54	Socket Cap Screw, M3 X 10		15
55	Socket Cap Screw, M3 X 12		2
56	Socket Cap Screw, M3 X 16		8
57	Socket Cap Screw, M3 X 20		5
58	Socket Cap Screw, M3 X 35		3
59	Socket Cap Screw, M4 X 30		4
60	Socket Cap Screw, M3 X 40		1
61	Socket Cap Screw, M3 X 50		1
62	Socket Cap Screw, M4 X 16		9
63	Socket Cap Screw, M4 X 20		4
64	Socket Cap Screw, M4 X 55		4
65	Socket Cap Screw, M5 X 16		12
66	Socket Cap Screw, M5 X 25		4
67	Washer M3		31
68	Washer M4		20
69	Washer M5		19
70	Washer M8		4
71	Nut M3		18
72	Nut M4		41
73	Nut M5		16
74	Nut M6		4
75	Nut M8		2

MISCELLANEOUS

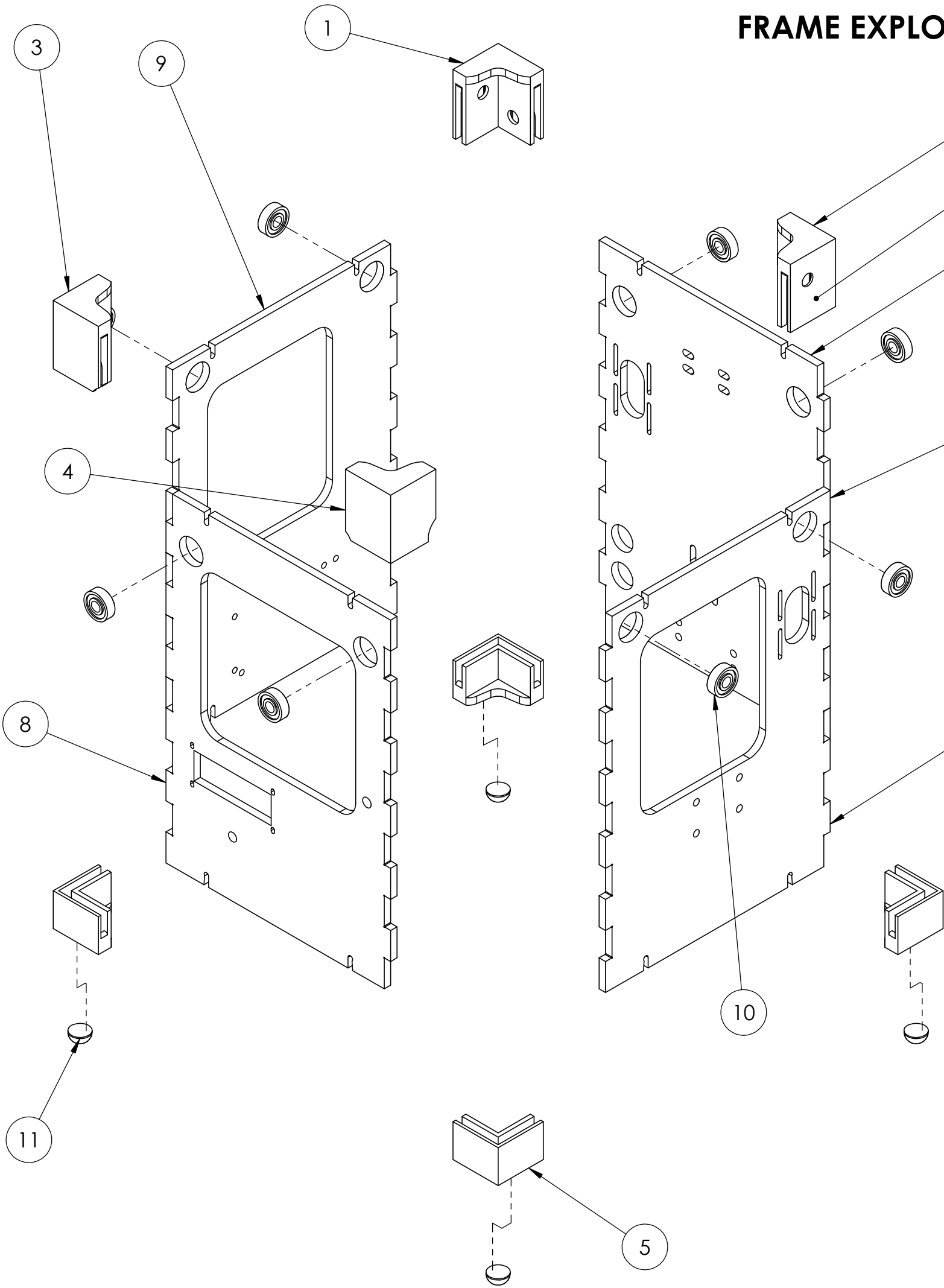
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
76	608_bearing		11
77	LM8UU		6
78	LM8SUU		2
79	Hobbed Bolt M8 x 105		1
80	Rubber Feet		4
81	Spring Compression 6.5mm ID		1
82	Glass Plattern		1
83	Bulldog Clip		4
84	Masking Tape		2
85	Silicon Tube		1
86	Spring Compression 4.5mm ID		4
87	Bowden Tube		1
88	Cable	Spectra Braided Line 65lb or Stainless Leader (8m total required)	2
89	Cable mirrored	Spectra Braided Line 65lb or Stainless Leader (8m total required)	2
90	J-Head MK-IV-B - Nozzle Holder - 36.5mm long	Best to order whole pre-assembled head from hotends.com	1
91	Hot End - J Head MK-IV-B	Choose your nozzle Diameter	1
92	Plastic Clearance Standoff	Can be replaced with silicone tube	4

	NAME	DATE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS	TITLE:	REV	A3
DRAWN	WWFP	11/2012		Tantillus Metric Edition SW2012	A	
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FRAME EXPLODED VIEW

DO NOT CLIP TOP CORNERS
ON TILL X/Y DRIVE
SYSTEM IS INSTALLED

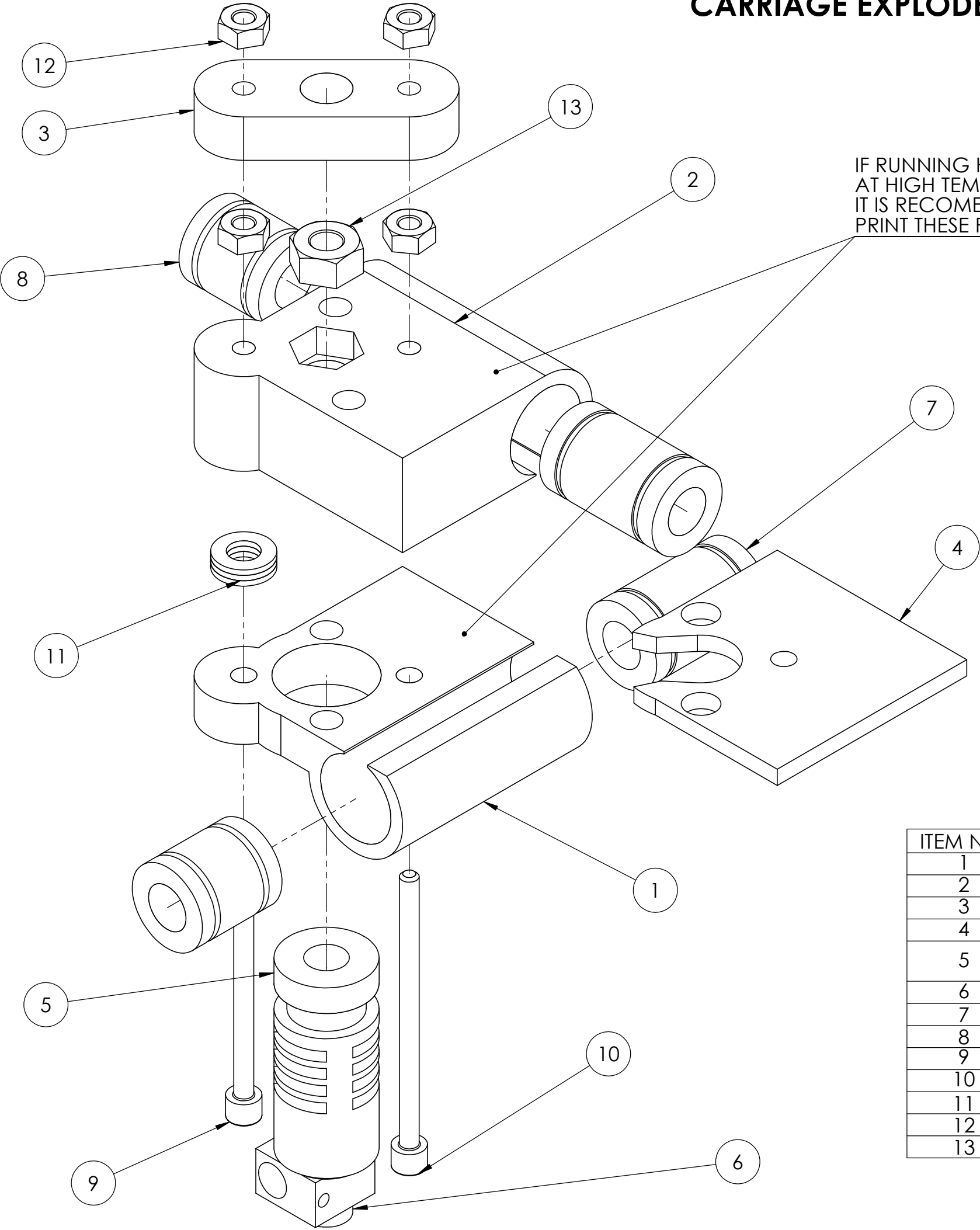
LIGHTLY CHAMFER EDGES OF
LASER CUT PANNELS WHERE CORNERS
CLIP ON IF INTERNAL RADIUS ARE PRESENT
ON CORNERS FROM PRINTING PROCESS



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Corner_top_rear_left	3D Printed from PLA	1
2	Corner_top_rear_right	3D Printed from PLA	1
3	Corner_top_front_left	3D Printed from PLA	1
4	Corner_top_front_right	3D Printed from PLA	1
5	Corner_bottom	3D Printed from PLA	4
6	Rear Panel	Laser Cut 6mm Acrylic	1
7	Right Panel	Laser Cut 6mm Acrylic	1
8	Front Panel	Laser Cut 6mm Acrylic	1
9	Left Panel	Laser Cut 6mm Acrylic	1
10	608_bearing		8
11	Rubber Feet		4

	NAME	DATE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS	TITLE: Tantillus Metric Edition SW2012		REV A	A3
DRAWN	WWFP	11/2012					
CHECKED						DO NOT SCALE DRAWING	SHEET 4 OF 14

CARRIAGE EXPLODED VIEW

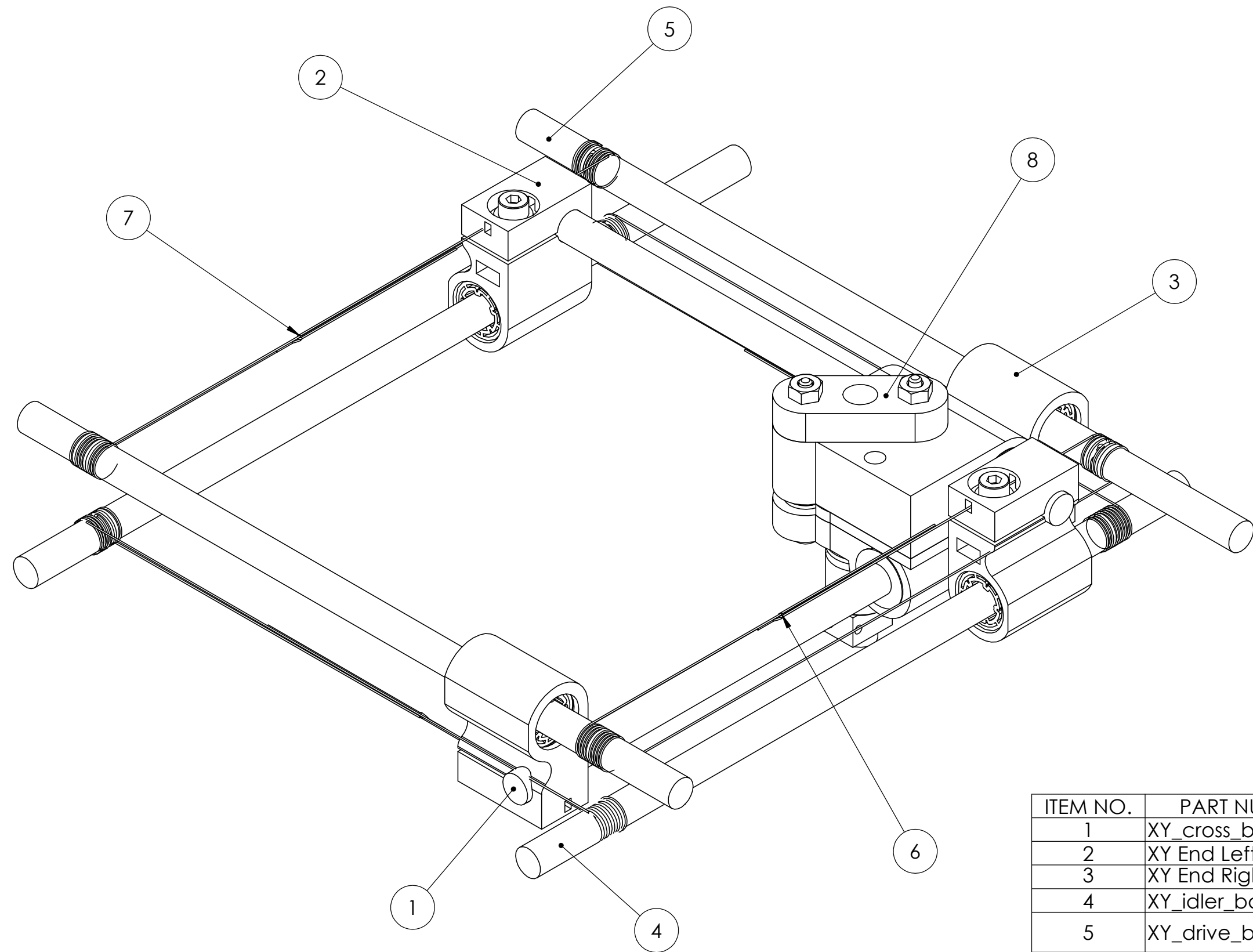


IF RUNNING HOT END
AT HIGH TEMPERATURES (>200oC)
IT IS RECOMENDED TO
PRINT THESE PARTS FROM A HIGHER Tg MATERIAL THAN PLA AND/OR FAN COOL THEM

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Carriage bottom	3D Printed from PLA	1
2	Carriage top	3D Printed from PLA	1
3	Bowden clamp	3D Printed From PLA	1
4	Carriage middle	Laser Cut 3mm Acrylic	1
5	J-Head MK-IV-B - Nozzle Holder - 36.5mm long	Best to order whole pre-assembled head from hotends.com	1
6	Hot End - J Head MK-IV-B	Choose your nozzle Diameter	1
7	LM8UU		2
8	LM8SUU		2
9	Socket Cap Screw, M3 X 40		1
10	Socket Cap Screw, M3 X 50		1
11	Washer M5		3
12	Nut M4		4
13	Nut M6		1

	NAME	DATE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS	TITLE: Tantillus Metric Edition SW2012		REV A	A3
DRAWN	WWFP	11/2012					
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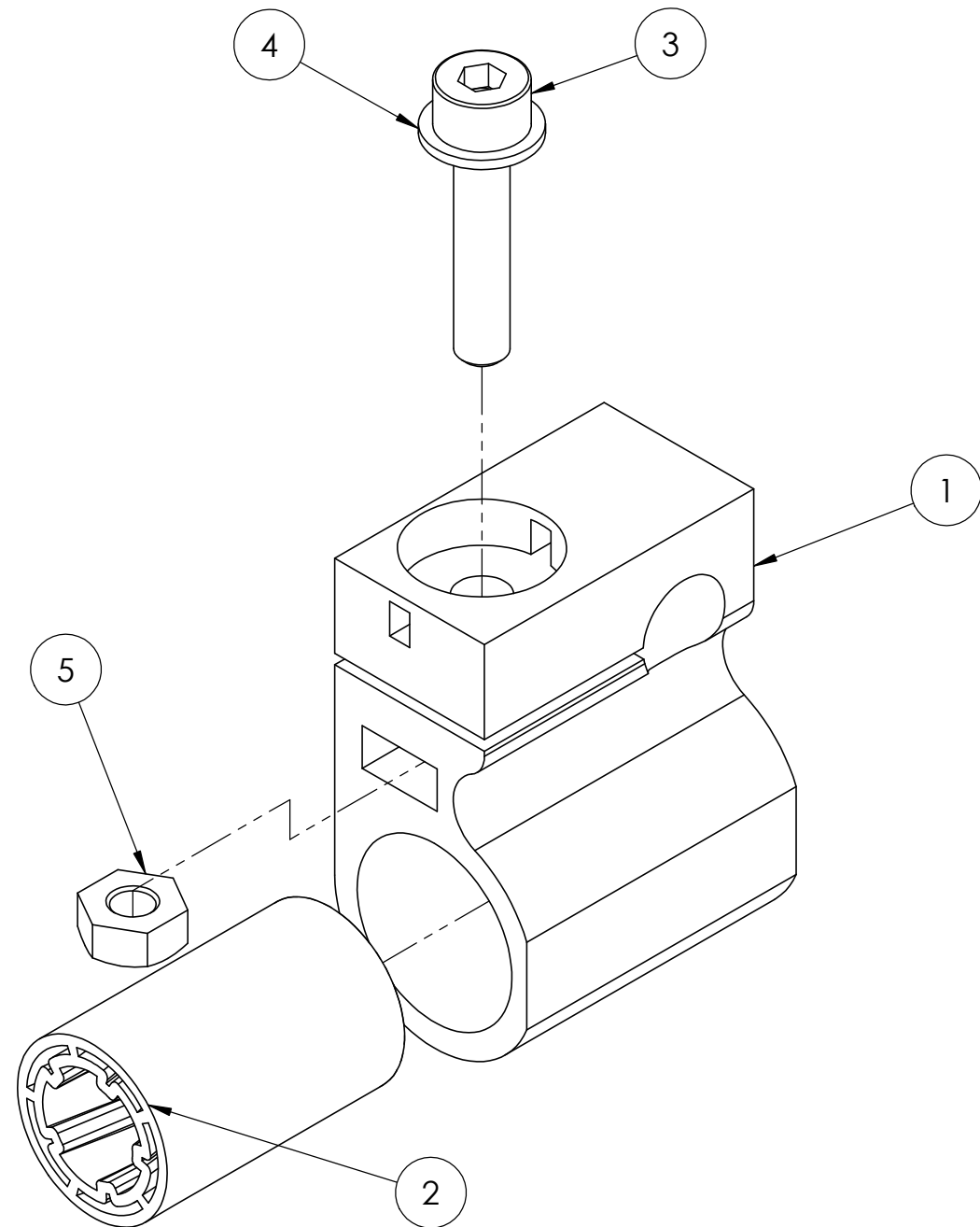
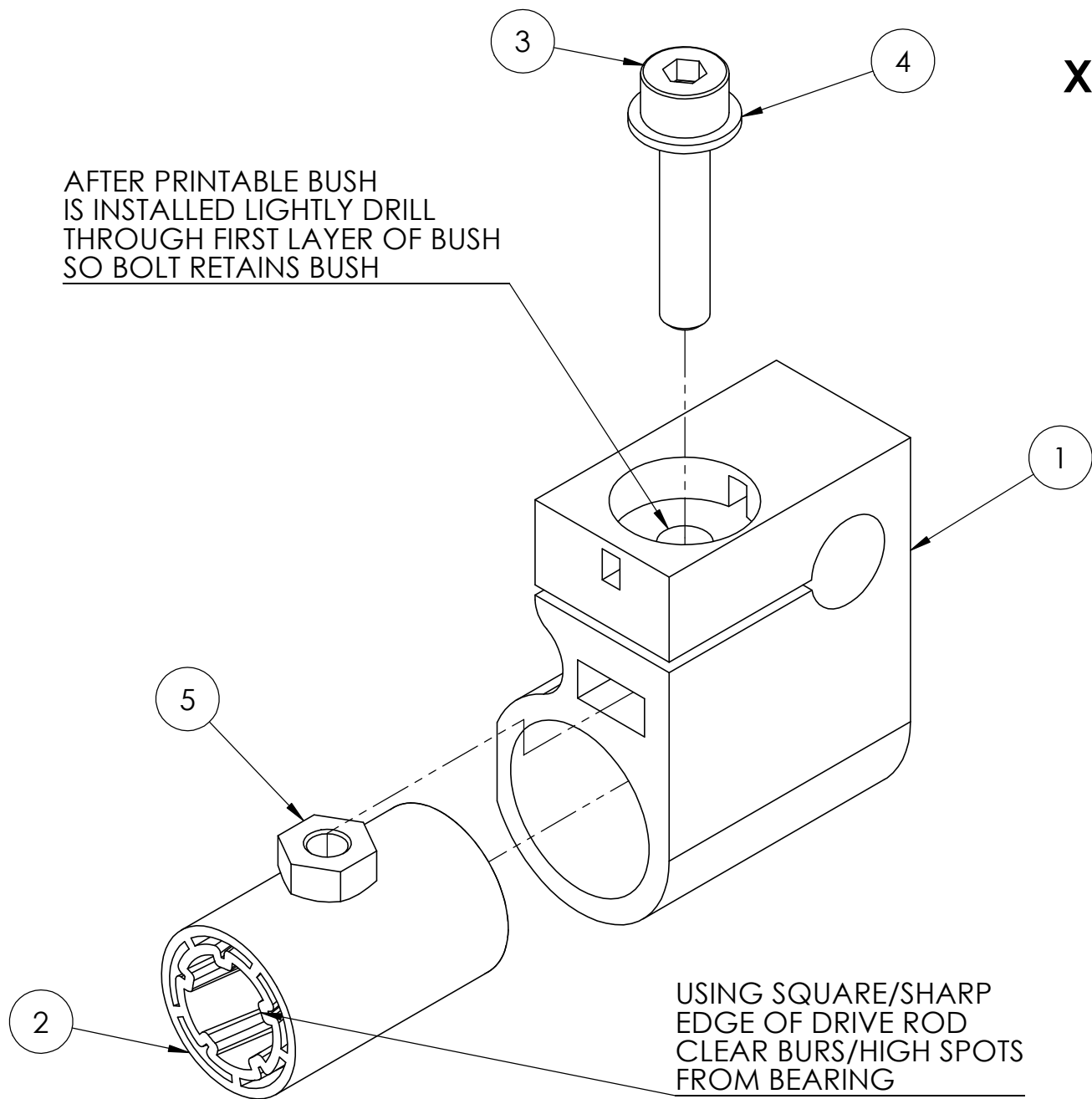
HEAD DRIVE



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	XY_cross_bar		2
2	XY End Left		2
3	XY End Right		2
4	XY_idler_bar_8mm		2
5	XY_drive_bar_M8		2
6	Cable	Spectra Braided Line 65lb or Stainless Leader (8m total required)	2
7	Cable mirrored	Spectra Braided Line 65lb or Stainless Leader (8m total required)	2
8	Carriage		1

	NAME	DATE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS	TITLE: Tantillus Metric Edition SW2012		REV A	A3
DRAWN	WWFP	11/2012					
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X/Y ENDS

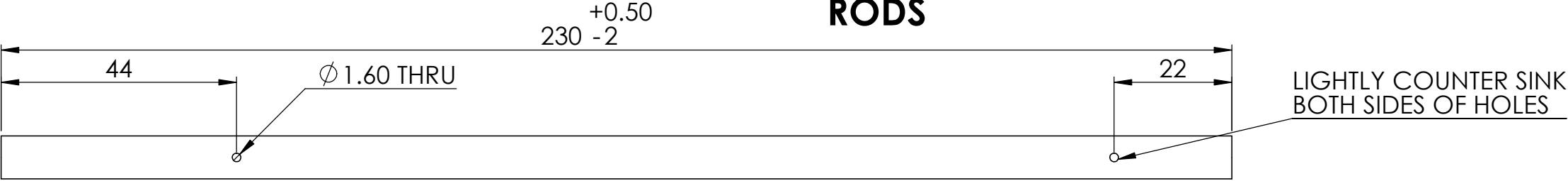


TWO OF EACH ASSEMBLIES ARE REQUIRED

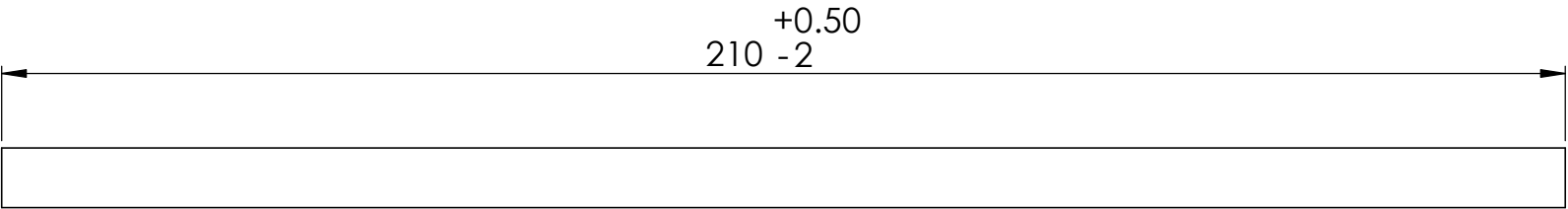
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	XY_end_left	3D Printed from PLA	1
2	printable-lm8uu-v3	3D Printed from PLA	1
3	Socket Cap Screw, M4 X 20		1
4	Washer M4		1
5	Nut M4		1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	XY_end_right	3D Printed from PLA	1
2	printable-lm8uu-v3	3D Printed from PLA	1
3	Socket Cap Screw, M4 X 20		1
4	Washer M4		1
5	Nut M4		1

RODS

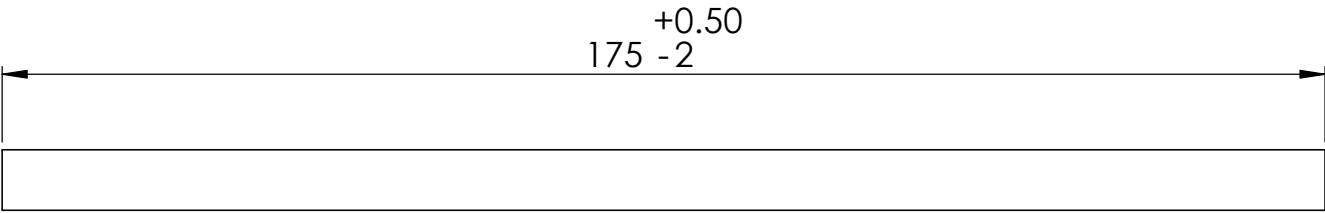


X/Y DRIVE BAR - 2 REQUIRED

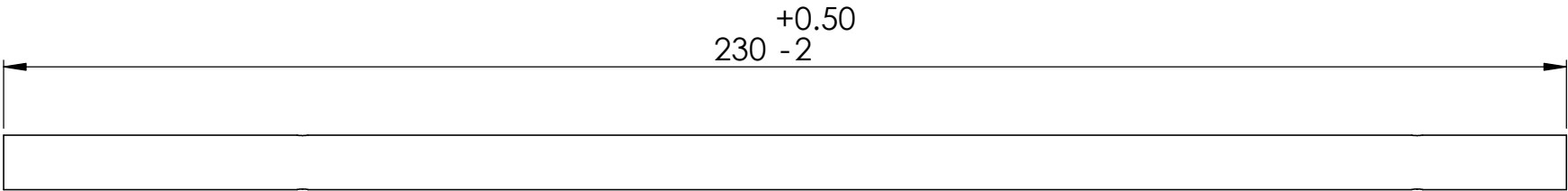


X/Y IDLER BAR - 2 REQUIRED

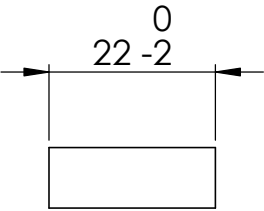
ALL BARS TO BE MADE FROM 8.00mm CENTRELESS GROUND SILVER STEEL/DRILL ROD. IT IS POSSIBLE TO MAKE THEM FROM HARDEND CHROMED SHAFT HOWER HOLES IN X/Y DRIVE BAR WILL HAVE TO BE SMALL HOLE EDM DRILLED DUE TO HARDNESS



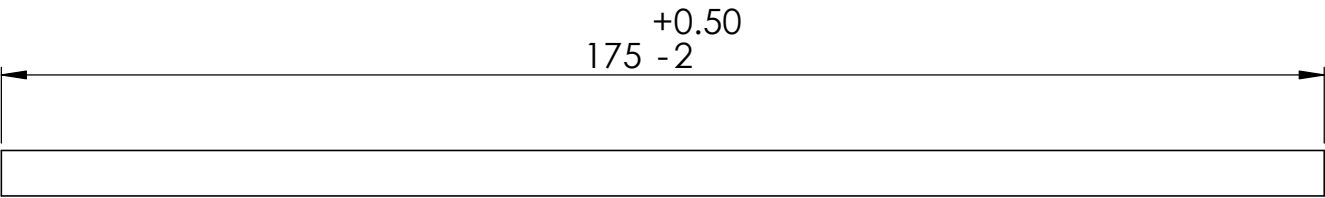
X/Y CROSS BAR - 2 REQUIRED



Z DRIVE BAR - 2 REQUIRED



EXTRUDER IDLER BAR - 1 REQUIRED

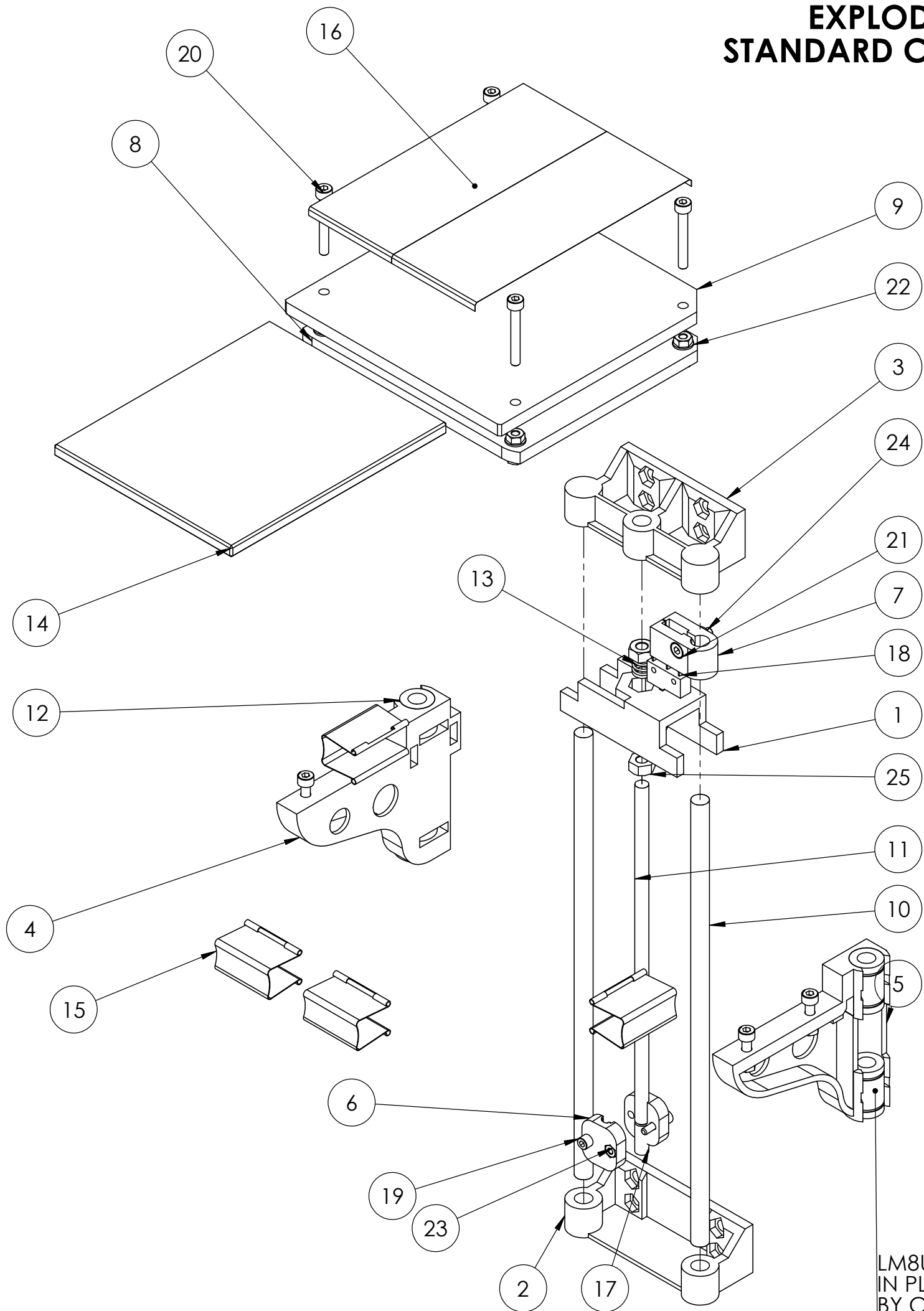


Z AXIS LEADSCREW TO BE MADE FROM STAINLESS STEEL THREADED ROD. NOT REQUIRED FOR Z-AXIS CABLE SYSTEM

Z AXIS LEADSCREW - 1 REQUIRED

	NAME	DATE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS	TITLE: Tantillus Metric Edition SW2012		REV A	A3
DRAWN	WWFP	11/2012					
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EXPLODED Z AXIS
STANDARD CONFIGURATION

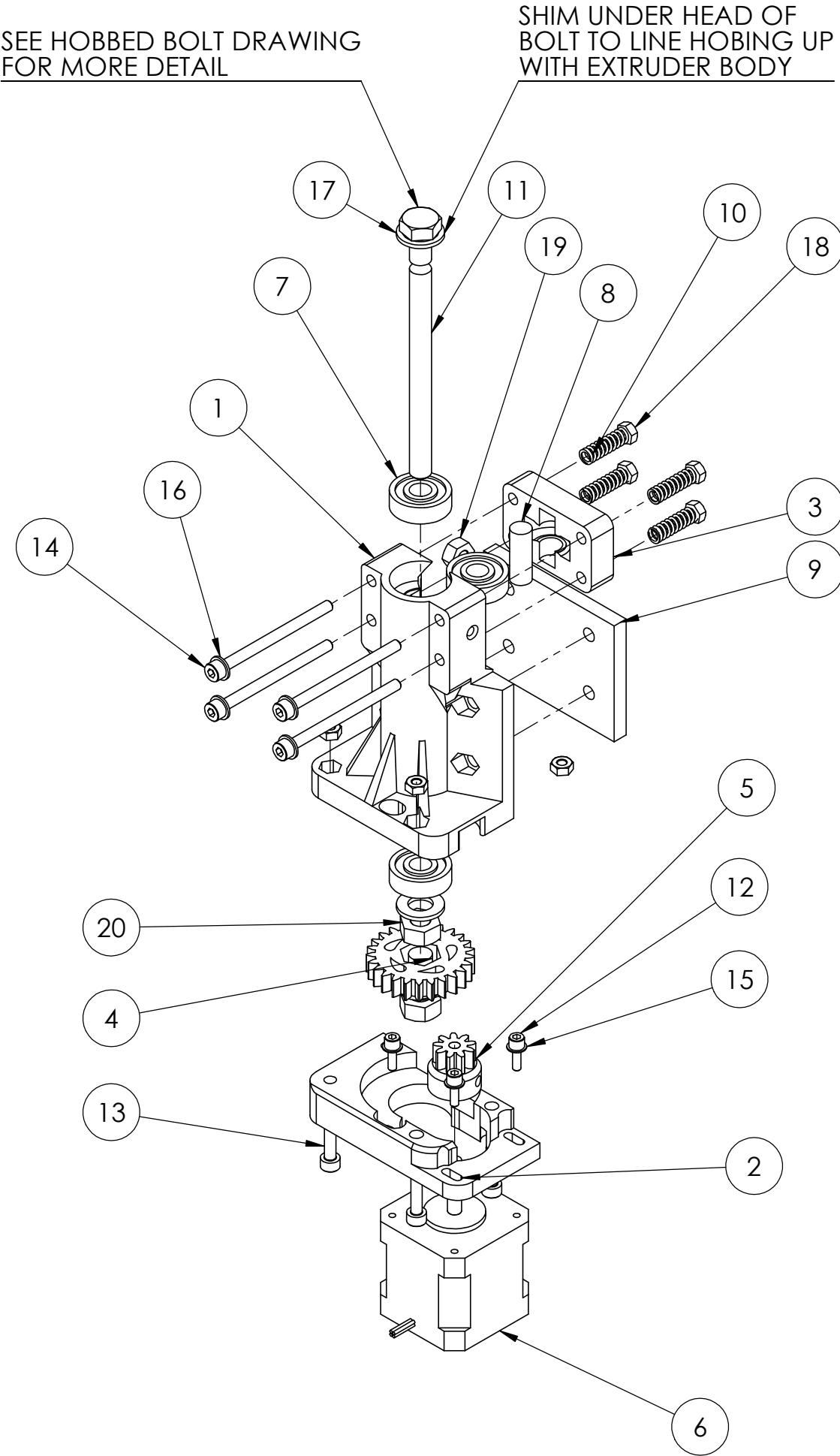


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Z_lift	3D Printed from PLA	1
2	Z_lower_bracket	3D Printed from PLA	1
3	Z_upper_bracket	3D Printed from PLA	1
4	Z_arm_1	3D Printed from PLA	1
5	Z_arm_2	3D Printed from PLA	1
6	Z-coupler	3D Printed from PLA	2
7	Endstop_holder	3D Printed from PLA	1
8	Lower Bed	Laser Cut 6mm Acrylic	1
9	Upper Bed	Laser Cut 6mm Acrylic	1
10	Z_axis_bar_8mm		2
11	Z Axis Leadscrew	Made From M6 S/S Threaded Rod	1
12	LM8UU		4
13	Spring Compression 6.5mm ID		1
14	Glass Plattern		1
15	Bulldog Clip		4
16	Masking Tape		2
17	Silicon Tube		1
18	Microswitch	Z-Axis Endstop Switch	1
19	Socket Cap Screw, M3 X 12		2
20	Socket Cap Screw, M4 X 30		4
21	Socket Cap Screw, M4 X 16		5
22	Washer M4		12
23	Nut M3		2
24	Nut M4		17
25	Nut M6		2

LM8UU ARE HELD
IN PLACE
BY CABLE TIES

	NAME	DATE		TITLE:	REV	A3
DRAWN	WWFP	11/2012	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS	Tantillus Metric Edition SW2012	A	
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				DO NOT SCALE DRAWING		SHEET 9 OF 14

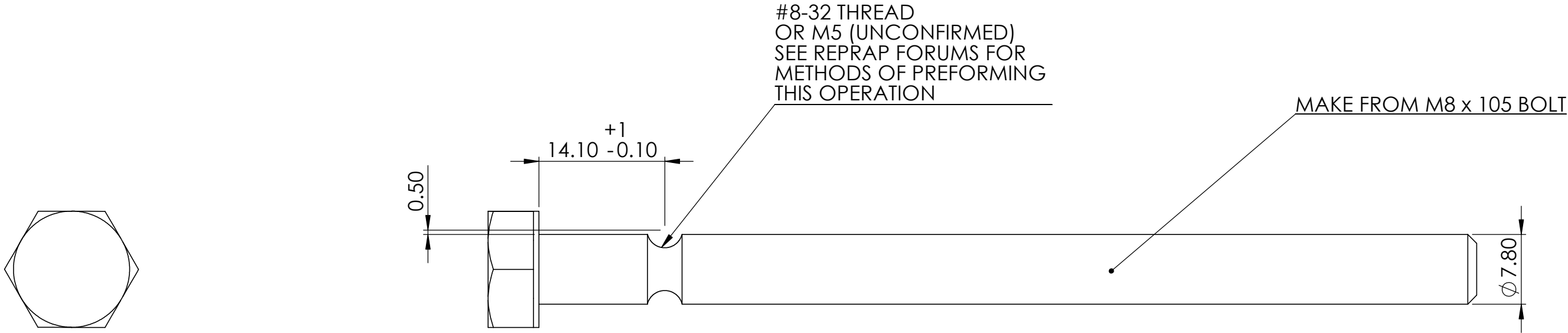
STANDARD EXTRUDER ASSEMBLY



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Extruder	3D Printed From PLA	1
2	Extruder_motor_mount_v2	3D Printed From ABS (Recomended)	1
3	Extruder_idler	3D Printed From PLA	1
4	Extruder_large_v2-SW	3D Printed From PLA	1
5	Extruder_small_v2_(4mm)-SW	3D Printed From PLA	1
6	stepper-motor-nema17	WanTai 42BYGHW609 Recomendend	1
7	608_bearing		3
8	Extruder Idler Bar	Make from Centreless Ground Silver Steel or Drill Rod	1
9	Extruder Stand Off	Laser Cut 6mm Arcylic	1
10	Spring Compression 4.5mm ID		4
11	Hobbed Bolt M8 x 105		1
12	Socket Cap Screw, M3 X 10		3
13	Socket Cap Screw, M4 X 16		4
14	Socket Cap Screw, M4 X 55		4
15	Washer M3		3
16	Washer M4		4
17	Washer M8		2
18	Nut M4		8
19	Nut M6		1
20	Nut M8		2

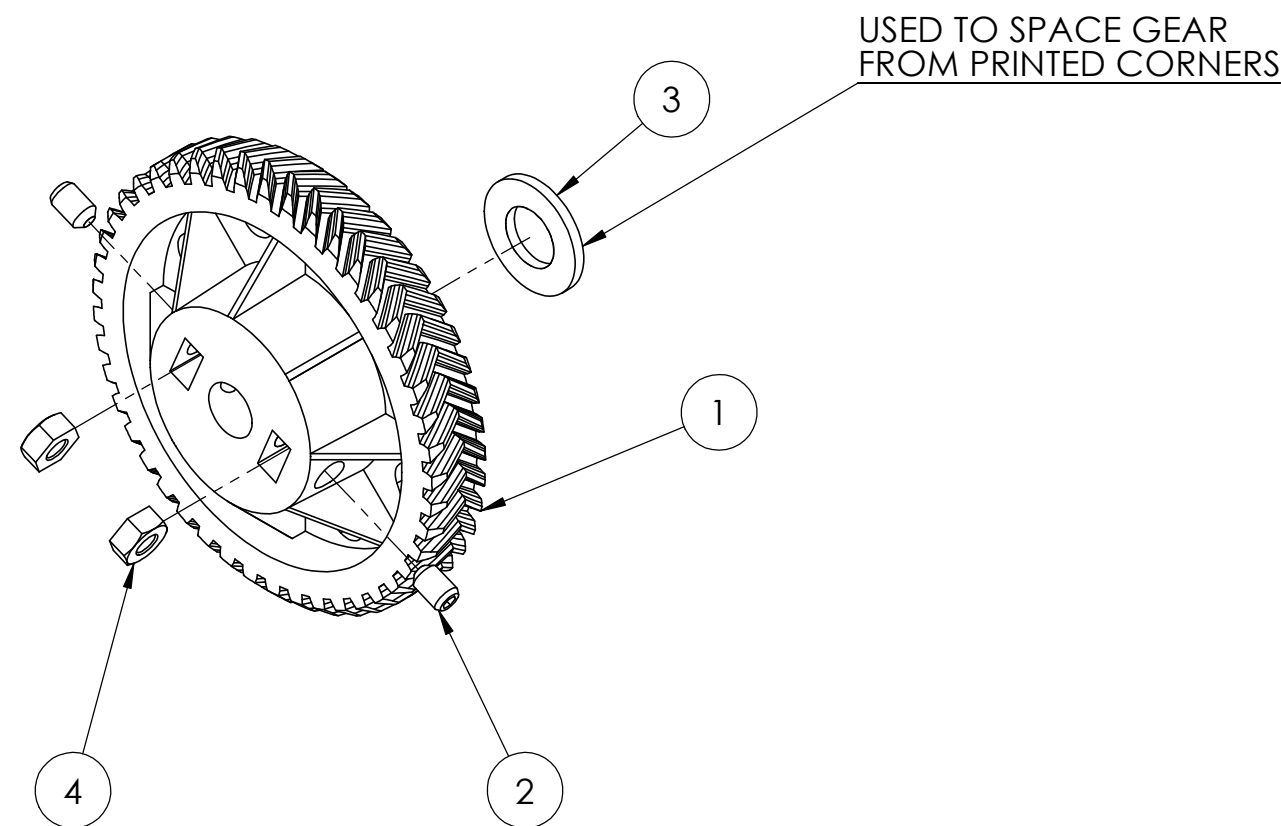
	NAME	DATE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS	TITLE: Tantillus Metric Edition SW2012		REV A	A3
DRAWN	WWFP	11/2012					
CHECKED						DO NOT SCALE DRAWING	SHEET 10 OF 14

HOBBED BOLT DETAIL

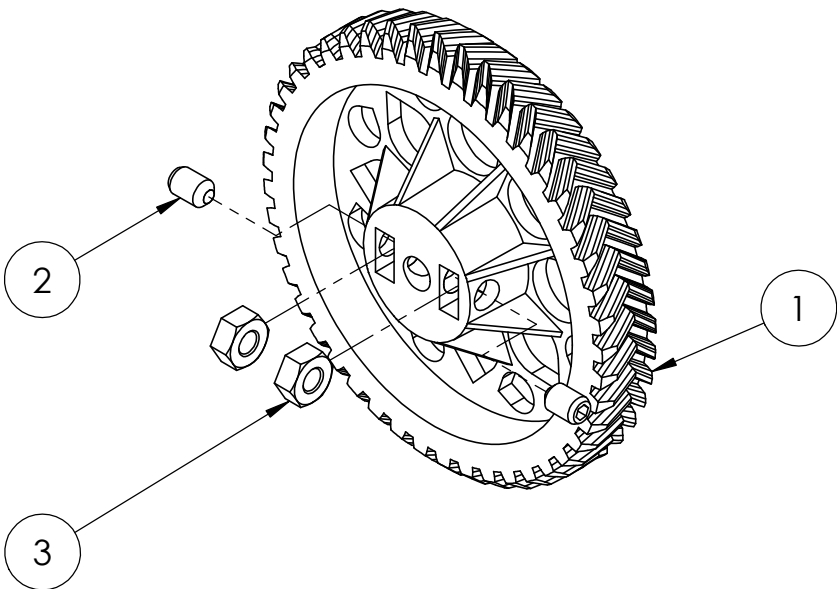


	NAME	DATE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS	TITLE: Tantillus Metric Edition SW2012		REV A	A3
DRAWN	WWFP	11/2012					
CHECKED						DO NOT SCALE DRAWING	SHEET 11 OF 14

X/Y DRIVE GEAR ASSEMBLIES
TWO OFF ASSEMBLIES REQUIRED OF EACH



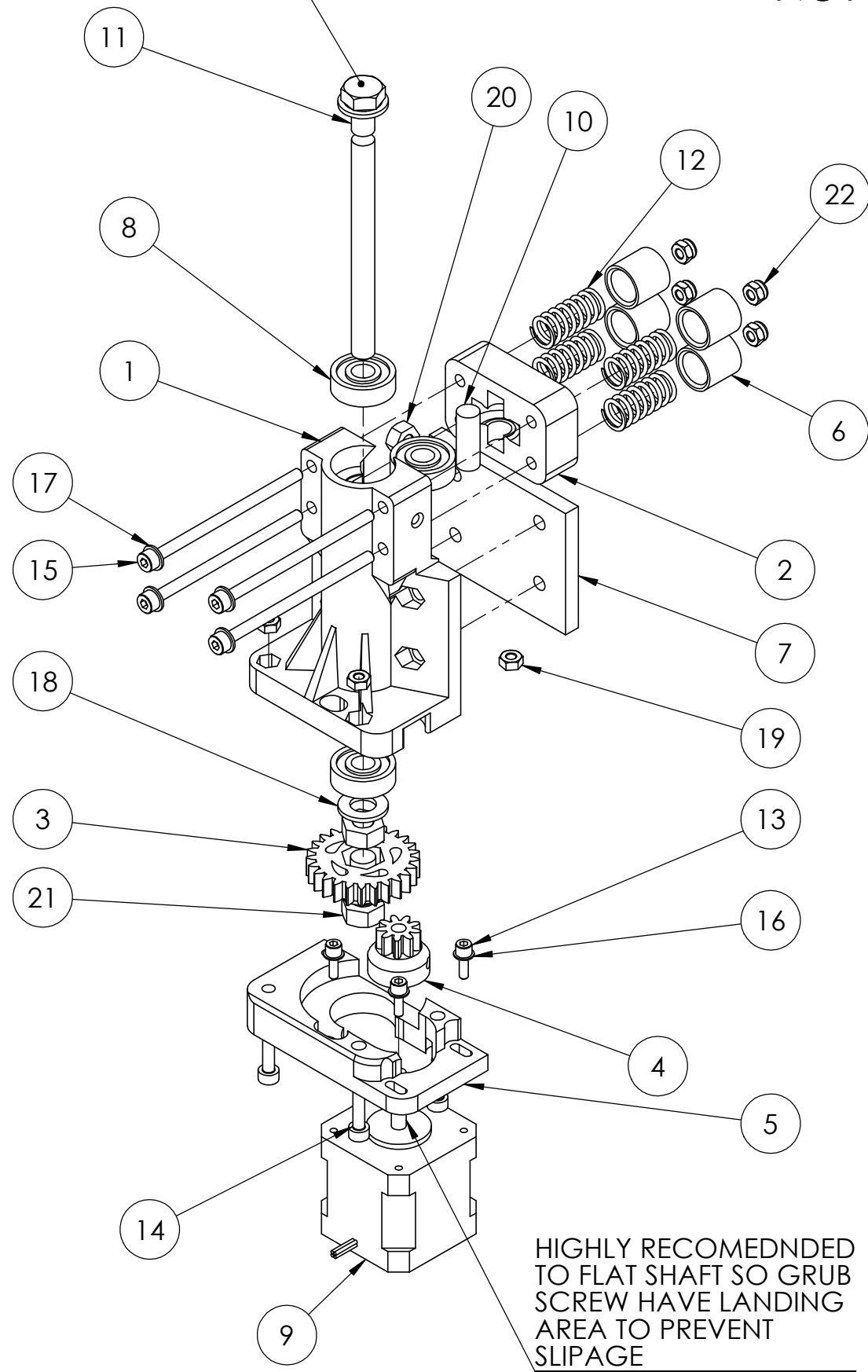
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Upper gear-SW	3D Printed from PLA	1
2	Grub Screw M4 X 6		2
3	Washer M8		1
4	Nut M4		2



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Motor_Gear	3D Printed from PLA	1
2	Grub Screw M4 X 6		2
3	Nut M4		2

SEE HOBBED BOLT DRAWING
FOR MORE DETAIL

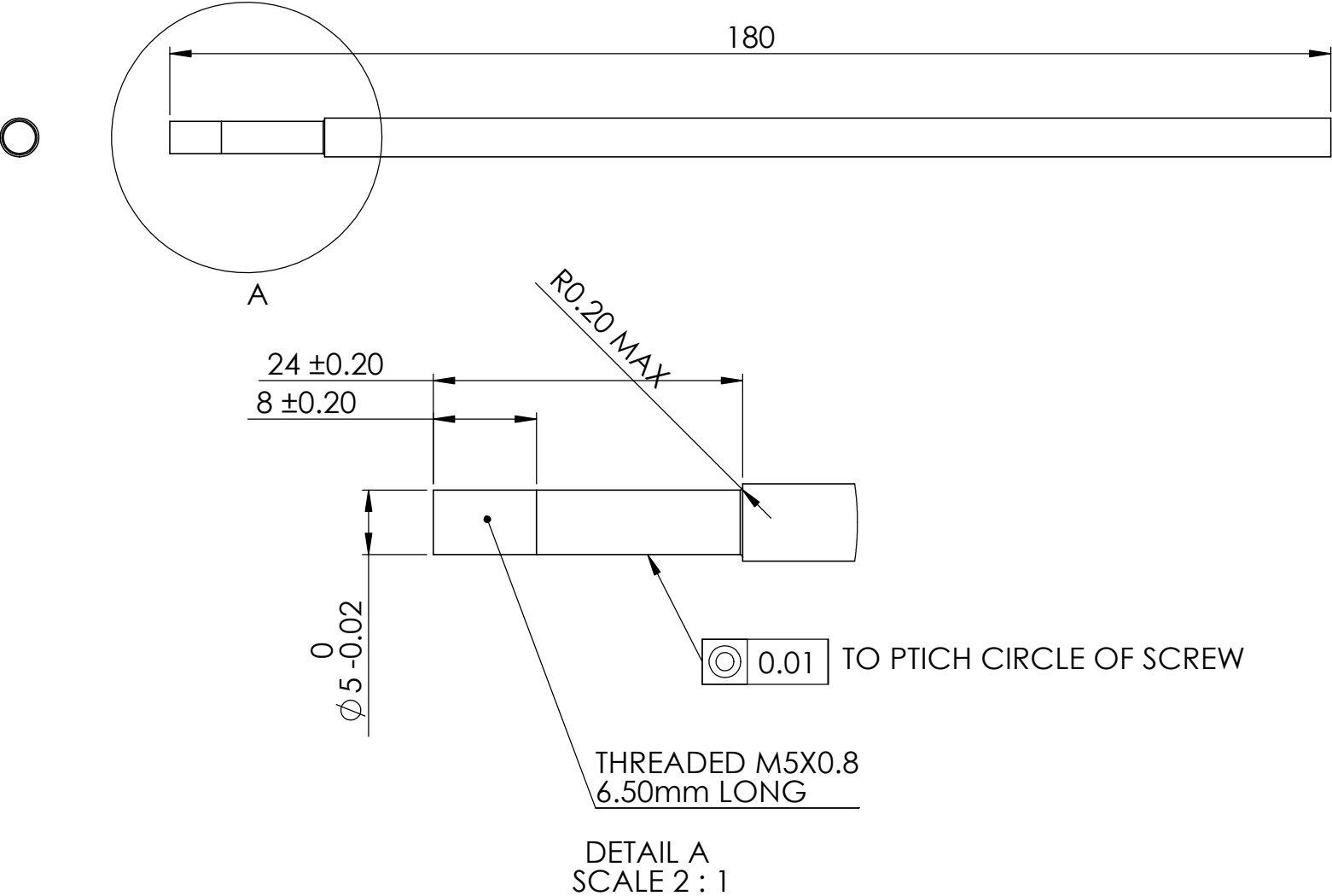
EXTRUDER - DIE SPRING HACKED VARIANT
CAUTION NOT STANDARD
NOT INCLUDED IN STANDARD BOM



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Extruder	3D Printed From PLA	1
2	Extruder idler	3D Printed from PLA	1
3	Extruder_large_v2-SW	3D Printed From PLA	1
4	Extruder_small_v2_(5mm)-SW	3D Printed from PLA	1
5	Extruder_motor_mount_v2	3D Printed From ABS (Recomended)	1
6	Cup Die Spring	3D Printed from PLA	4
7	Extruder Stand Off	Laser Cut 6mm Arcylic	1
8	608_bearing		3
9	stepper-motor-nema17	WanTai 42BYGHW609 Recomend	1
10	Extruder Idler Bar	Make from Centreless Ground Silver Steel or Drill Rod	1
11	Hobbed Bolt M8 x 105		1
12	Die Spring	IEM5008	4
13	Socket Cap Screw, M3 X 10		3
14	Socket Cap Screw, M4 X 16		4
15	Socket Cap Screw, M4 X 70		4
16	Washer M3		3
17	Washer M4		4
18	Washer M8		2
19	Nut M4		4
20	Nut M6		1
21	Nut M8		2
22	Nylock Nut M4		4

	NAME	DATE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS	TITLE: Tantillus Metric Edition SW2012		REV A	A3
DRAWN	WWFP	11/2012					
CHECKED						DO NOT SCALE DRAWING	SHEET 13 OF 14

END MACHINING FOR BALL SCREW TBI PART NUMBER SFK00601



CAUTION UNTESTED
BALL SCREW HACK FOR Z AXIS
DO NOT USE

	NAME	DATE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS	TITLE: Tantillus Metric Edition SW2012	REV A	A3
DRAWN	WWFP	11/2012				
CHECKED					DO NOT SCALE DRAWING	SHEET 14 OF 14