

Pi3-2014

Instruction Manual

Document No MANUAL-WBS-Pi3-2014-DIY-REV01

Mechanical

3D LabteK Model

Content

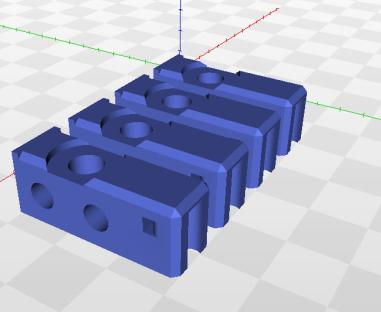
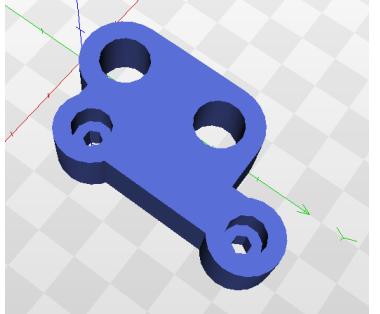
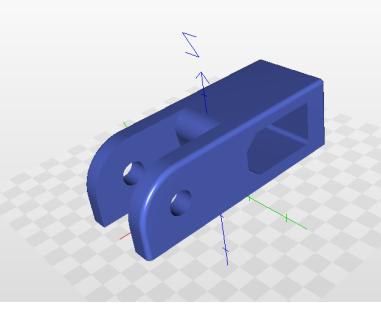
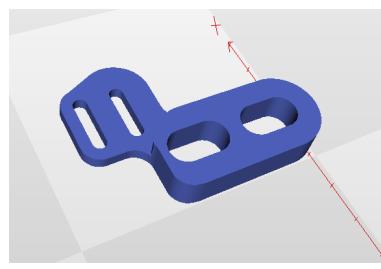
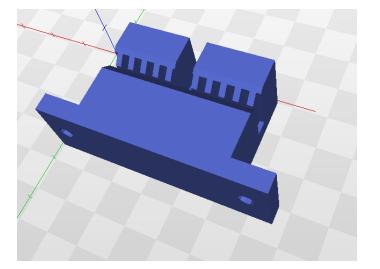
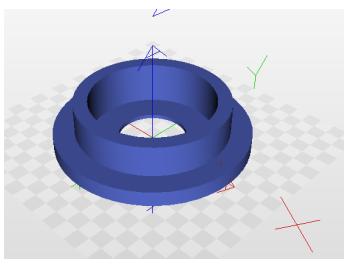
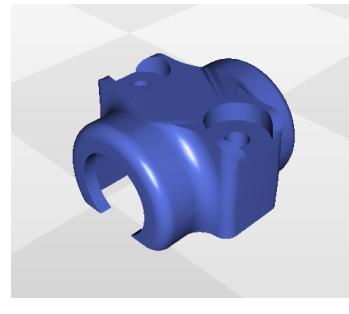
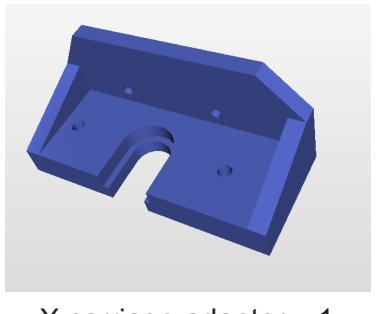
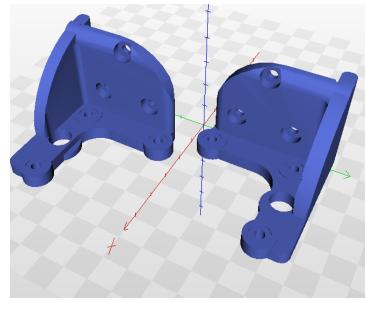
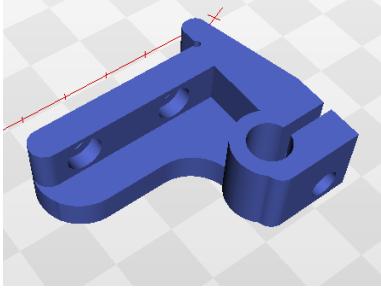
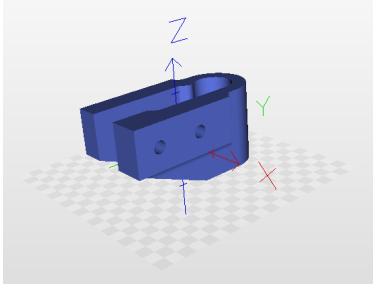
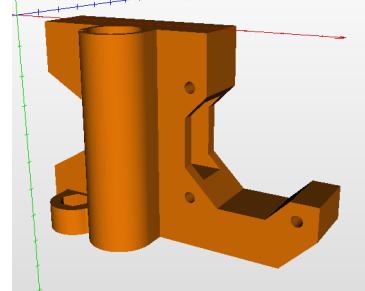
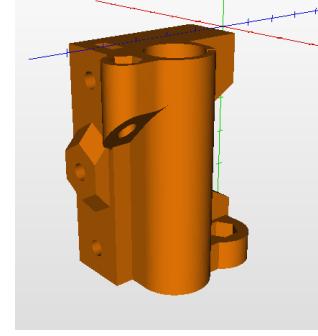
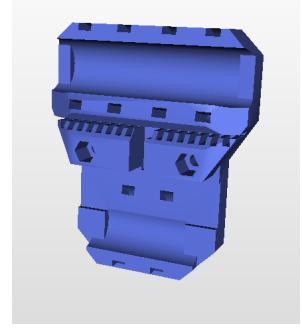
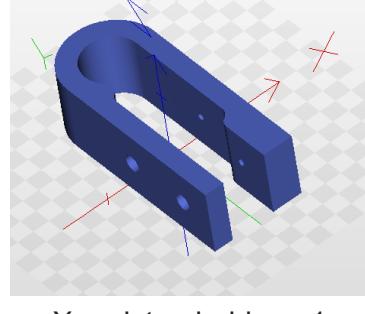
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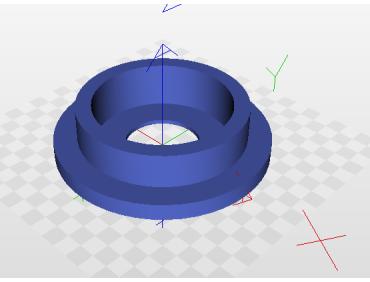
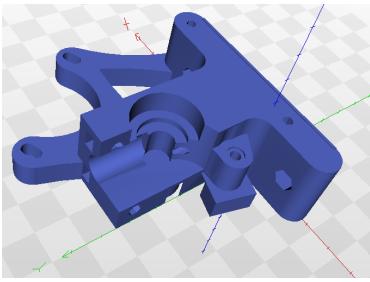
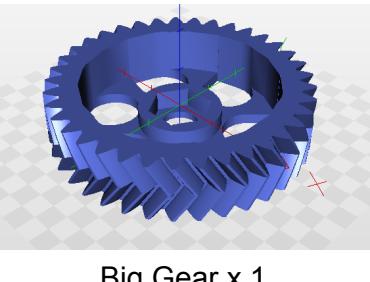
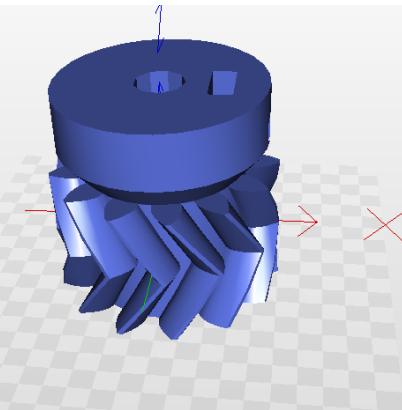
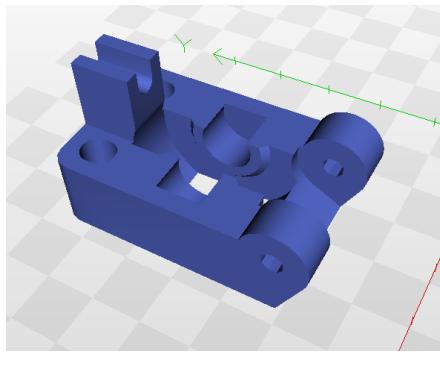
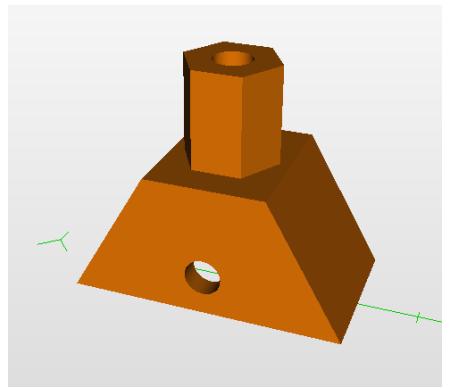
This manual is intended to be used for assembly the mechanical parts of your Prusa i3-2014

Although many information about this printer model are available on-line, we would like to warn about the information you are going to collect.

Unfortunately there are so many variation around the original project that not every solution available on internet is suitable for all the variation.

In case of doubt you can contact us at the following mail
3d.labtek@gmail.com

 Y corner x4	 Y motor x 1	 Y Idler x 1
 Y endstop holder x 1	 Y belt tensioner x 1	 Y 624 bearing guide x 2
 Y LM8UU Holder x 3	 X carriage adapter x 1	 Z bottom motor x 2
 Z top x 2	 Z end stop holder x 1	 X end motor x 1
 X end Idler x 1	 X carriage x 1	 X endstop holder x 1

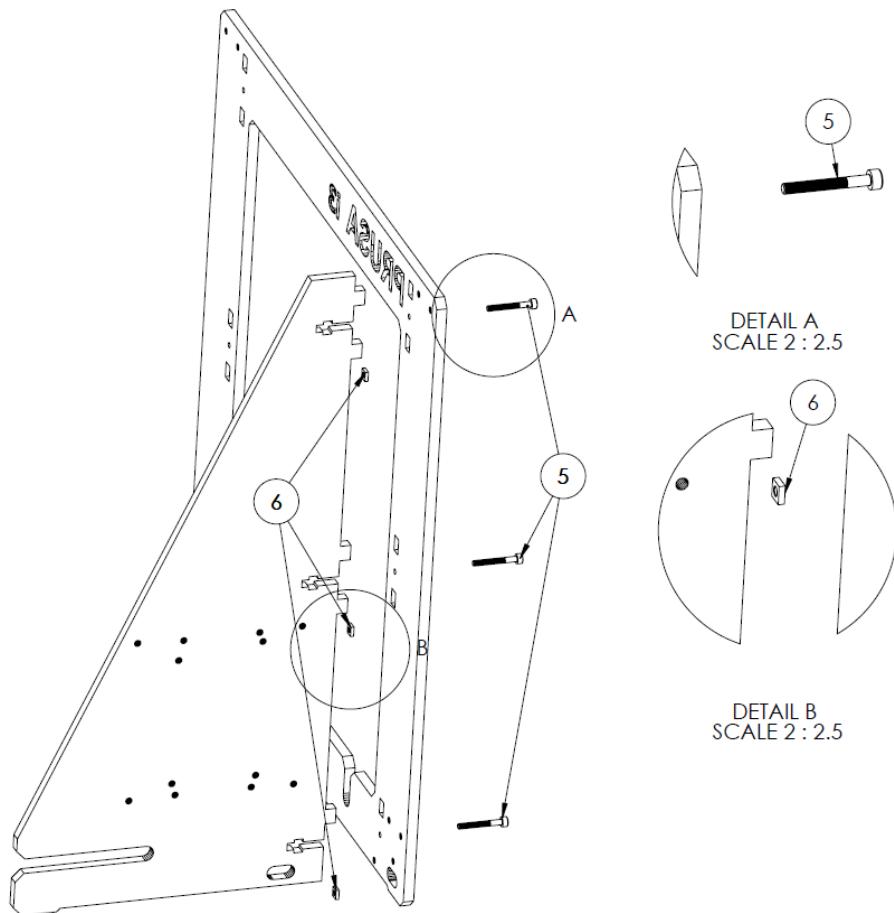
 X 624 bearing guide x 2	 Gerg Extruder V3 x 1	 Big Gear x 1
 small gear x1	 Idler bearing x 1	 X-Belt Tensioner

FRAME ASSEMBLY ||1.1

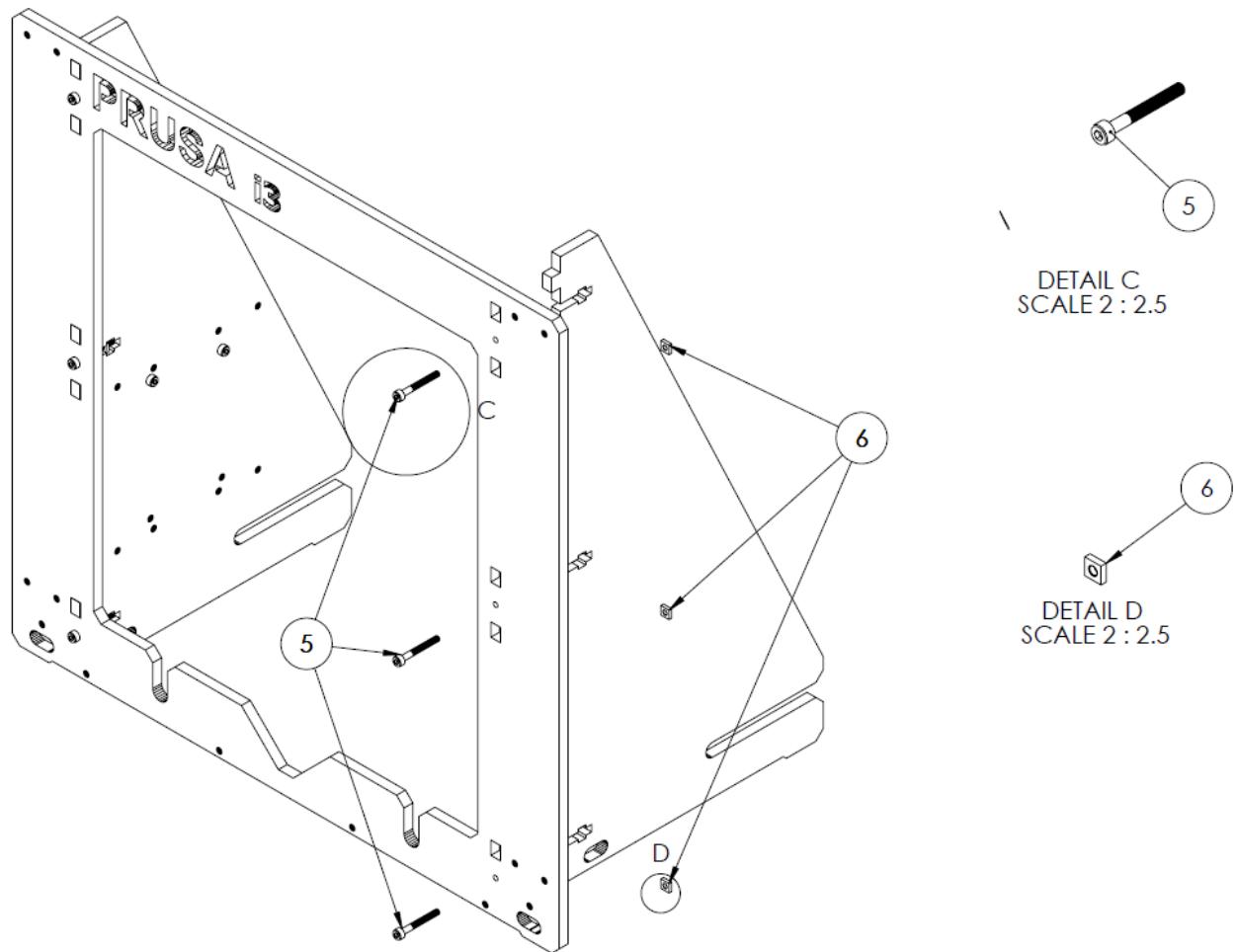
Skip the Frame Steps if you have a standard single plate Aluminum frame.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	spacer 15mm		4
2	telaio esterno reinforced		1
3	rinforzo board side		1
4	rinforzo-2		1
5	DIN 912 M3 x 25 --- 18S		6
6	Square nut DIN 562 M3 -N		6
7	DIN 912 M3 x 10 --- 10S		4

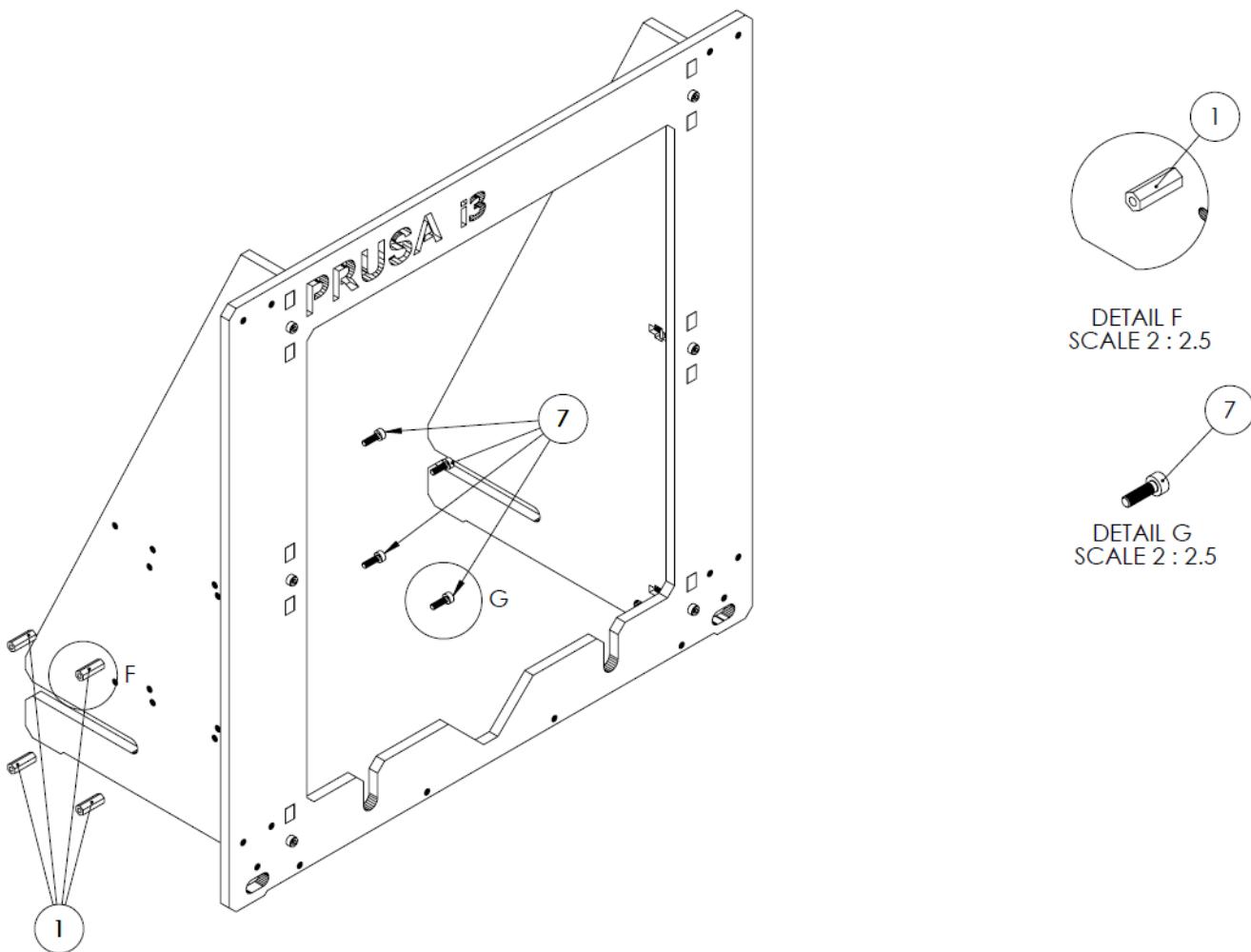
STEP 1



Install the reinforcement with the electronic controller fixing holes on the left side of the frame.
Refer to the image balloon to identify the component used in the above BOM



Install the second reinforcement on the right side of the frame.

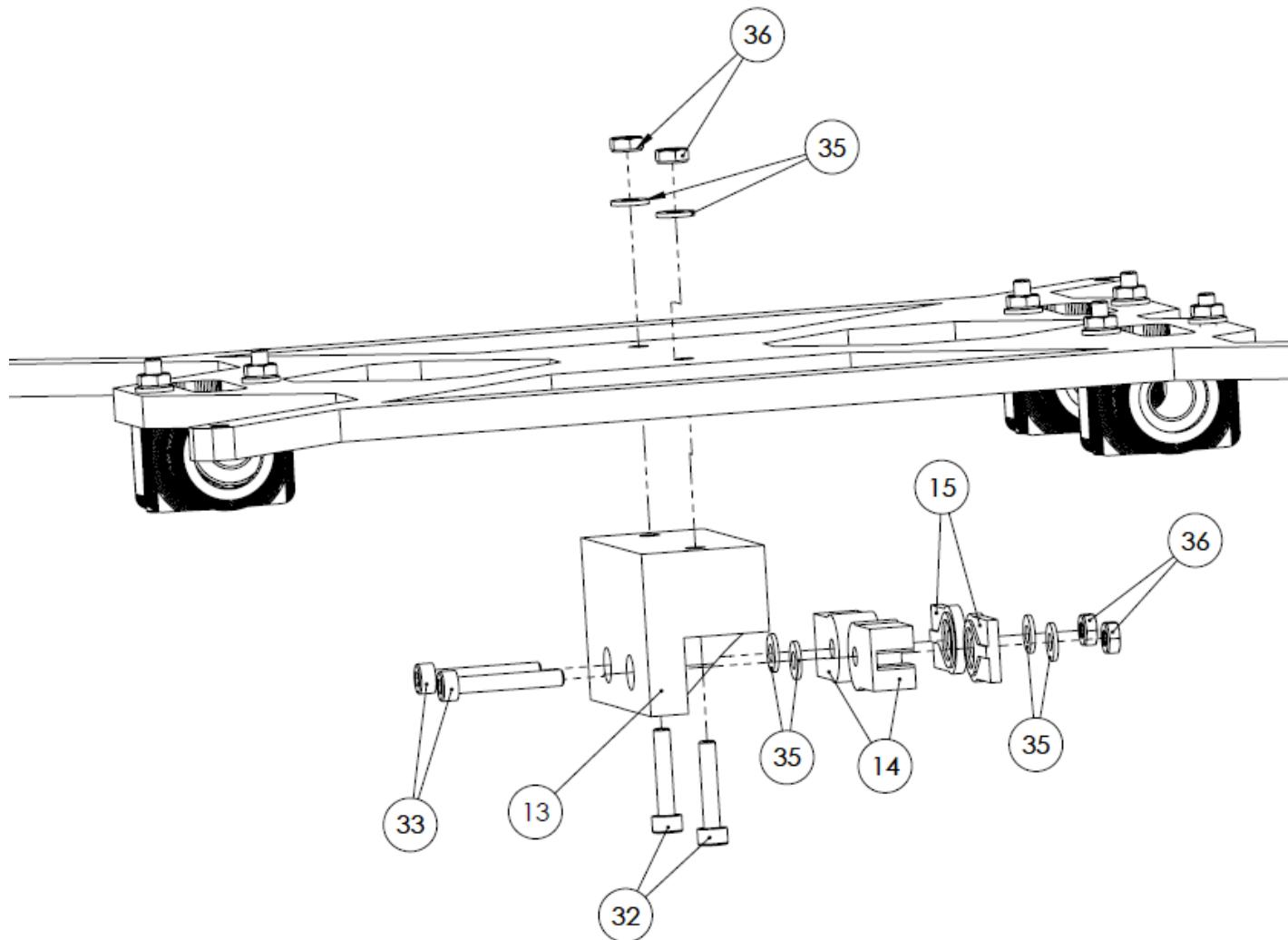


Install the Spacer in the holes that best fit your Electronics Controller

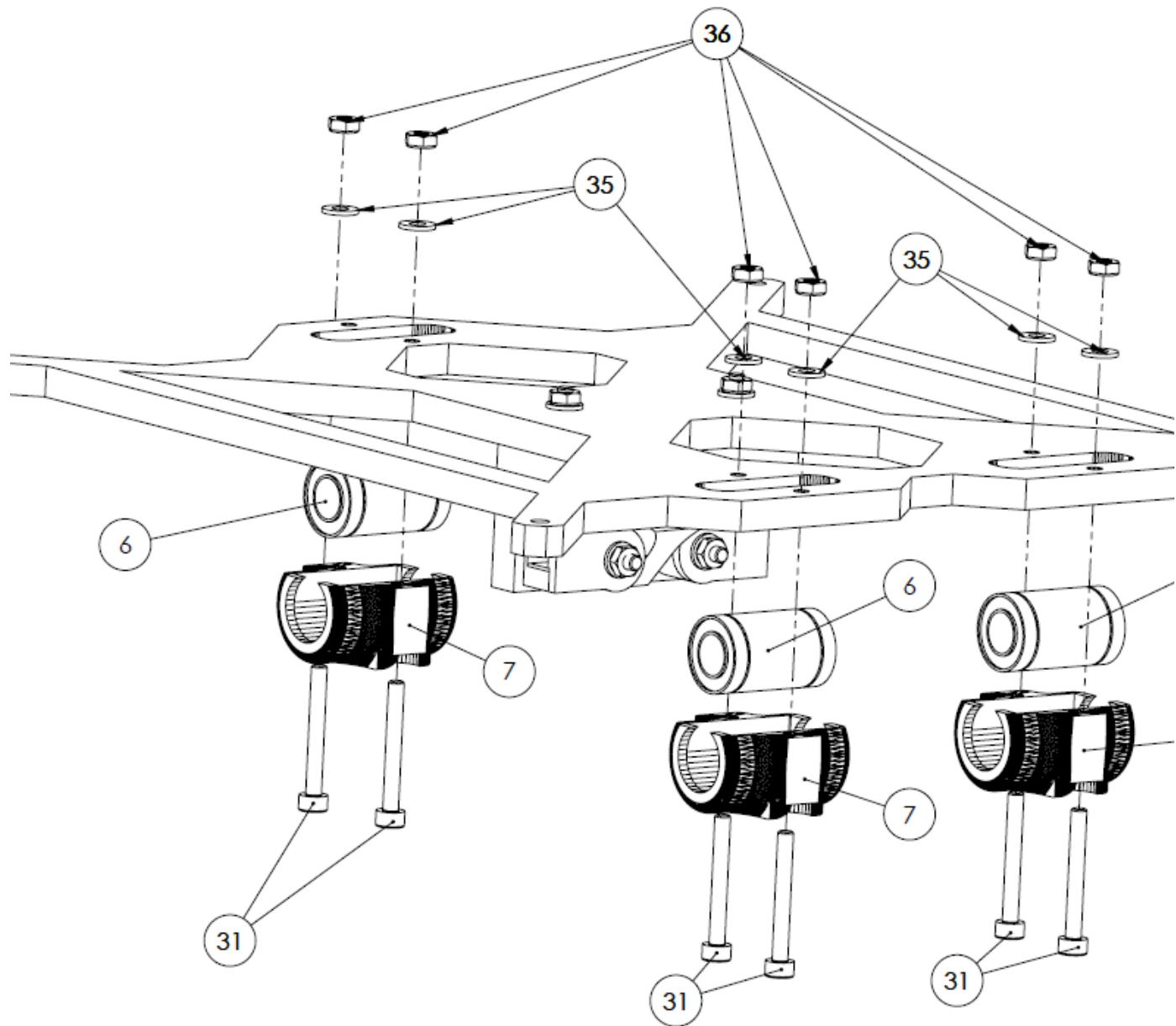
Y Axis ASSEMBLY ||1.2

ITEM NO.	PART NUMBER	QTY.	ITEM NO.	PART NUMBER	QTY.
1	Y-corner FRAME B	4	29	DIN 6902-C11	12
2	M10X450	2	30	Hexagon Nut ISO 4034 - M10 - N	14
3	Y-SMOOTHROD-410	2	31	DIN 912 M3 x 25 --- 18N	6
4	M8X285	1	32	DIN 912 M3 x 16 --- 16N	2
5	M8X225	3	33	DIN 912 M3 x 20 --- 20N	2
6	LM8UU	3	34	DIN 912 M3 x 8 --- 8N	3
7	Y Bushing-3D LabteK.SLDPRT-sdw	3	35	DIN 6902-C3.2	12
8	Ycarriage	1	36	Hexagon Nut ISO 4032 - M3 - W - N	10
9	16-Y idler-608-rev3-3DLBK	1	37	DIN 912 M3 x 10 --- 10C	4
10	624z	2	38	DIN 914 - M3 x 6-N	1
11	nema 17	1			
12	gt2 pulley	1			
13	Y-BELTHOLDER-REV4	1			
14	Part5^Belt Holder	2			
15	Part6-belt pusher	2			
16	YEnd-Stop-rev2	1			
17	Belt1-2^Pi3-2014-Y-Carriage	1			
18	LIMITS SWITCHES	1			
19	Y-MOTOR REV 02^Pi3-2014	1			
20	DIN 912 M2 x 16 --- 16S	2			
21	DIN 6902-C2.75	2			
22	Hexagon Nut ISO 4032 - M2 - W - S	2			
23	Hexagon Nut ISO 4032 - M4 - W - N	2			
24	DIN 6902-C4.55	1			
25	DIN 912 M4 x 25 --- 25N	1			
26	DIN 912 M4 x 12 --- 12N	1			
27	DIN 6902-C7.4	26			
28	Hexagon Nut ISO 4034 - M8 - N	26			

Please Note that having the single plate frame the position 4of the BOM will have the same dimension of the position 5

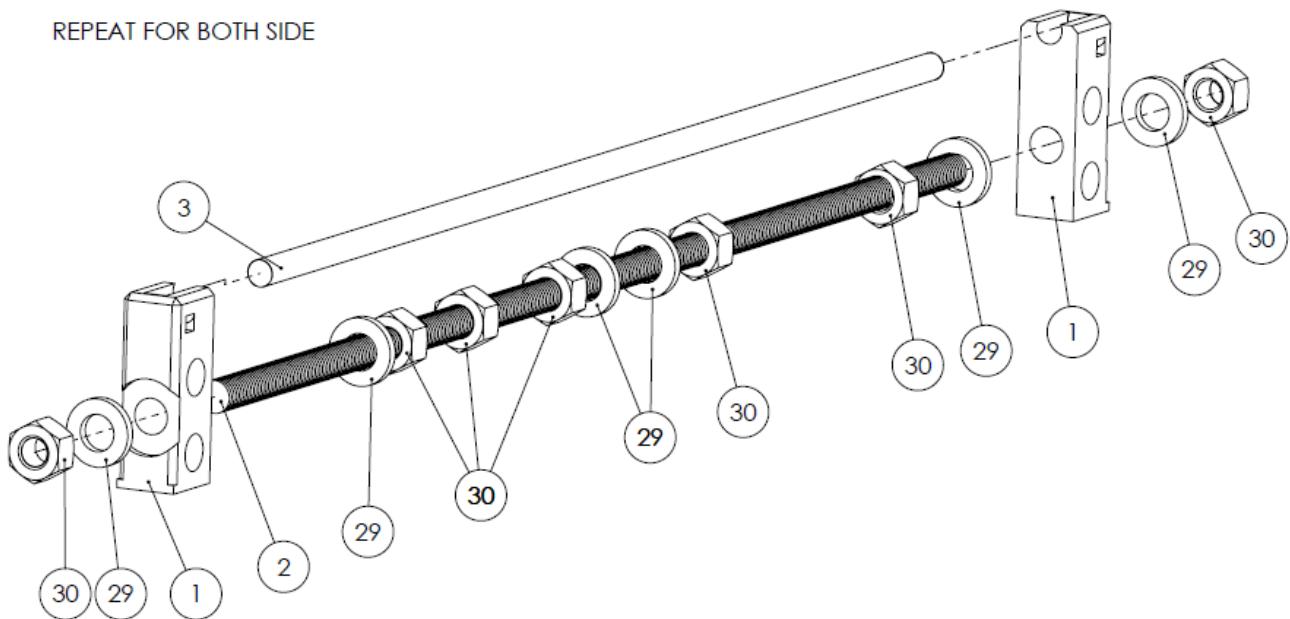


Install the Y Belt Holder under the Y Carriage, place in position also the belt trap (18-19)



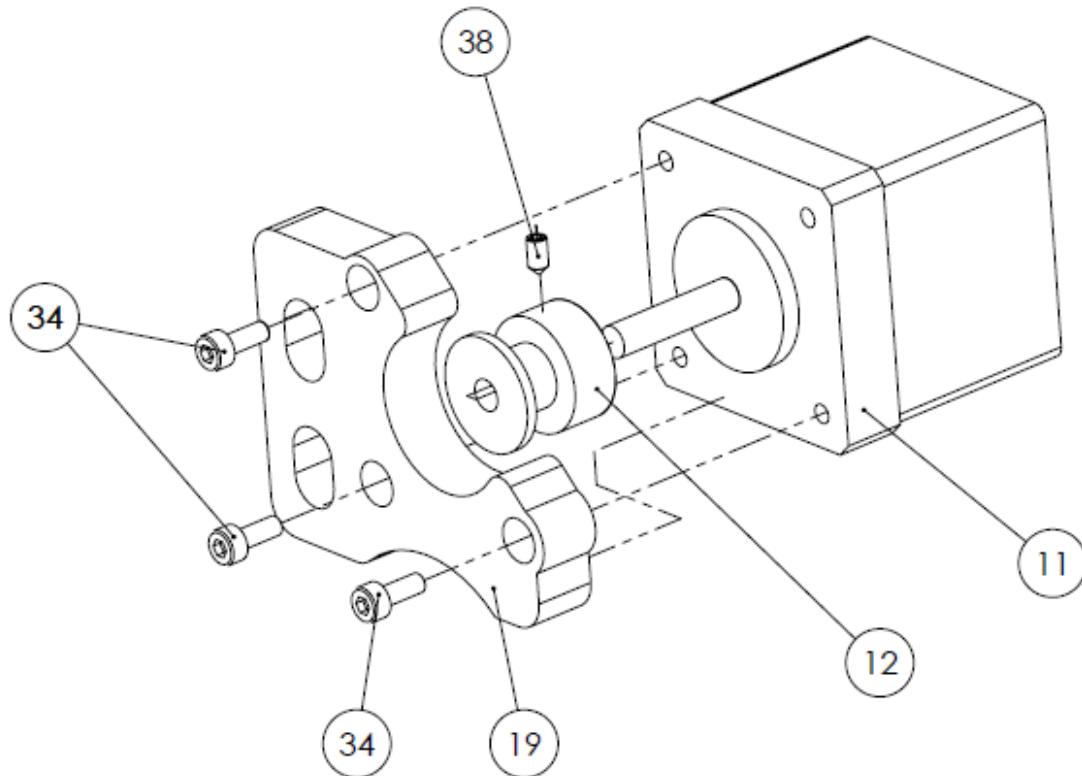
Install the LM8UU using the Y Bushing (7) on the bottom side of the Y Carriage (12)

REPEAT FOR BOTH SIDE



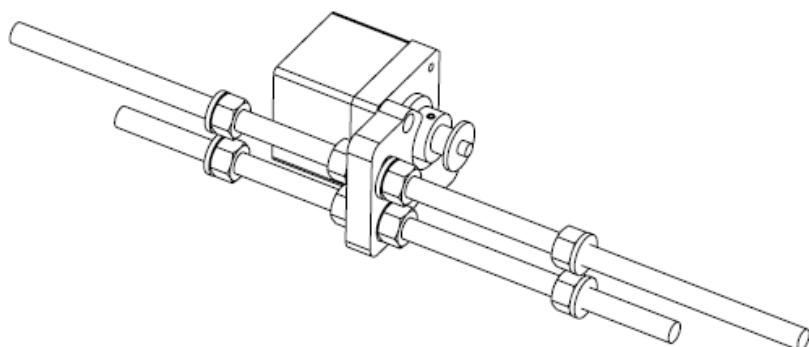
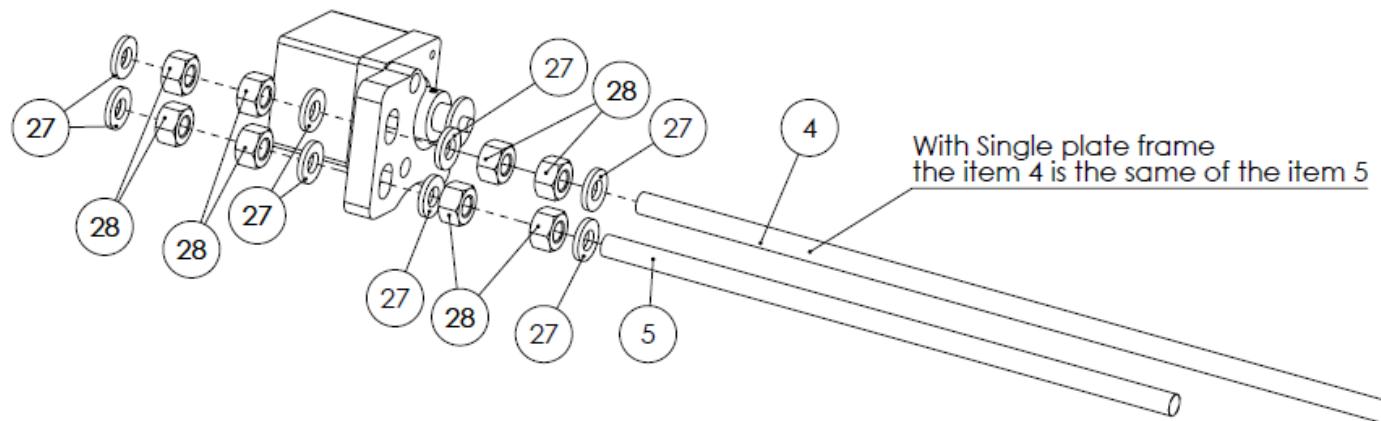
Install The M10 Threaded Rod (2) into the Y Corner (1) and set also the required M10 Nut almost in the center of the Rod They will be used to Fix the Y Axis to the frame

Repeat this Operation for both side of the Y Carriage, do not Fix the smooth rod on top using the cable ties yet.



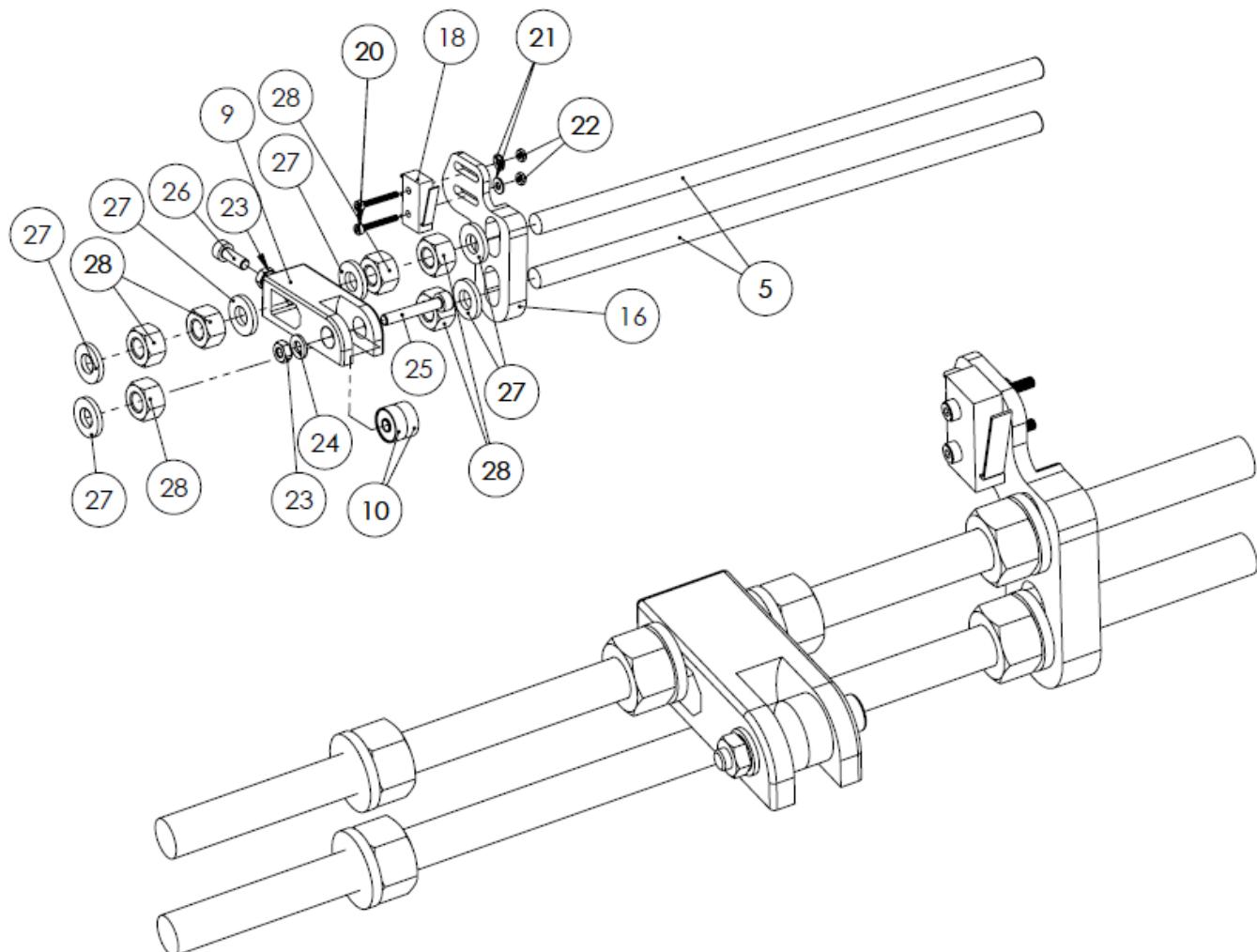
Install the Belt Pulley (12) On the Nema 17 Motor (11) using the grub screw (38) supplied with the pulley.

Install the Motor bracket (19) on the Nema 17 Motor

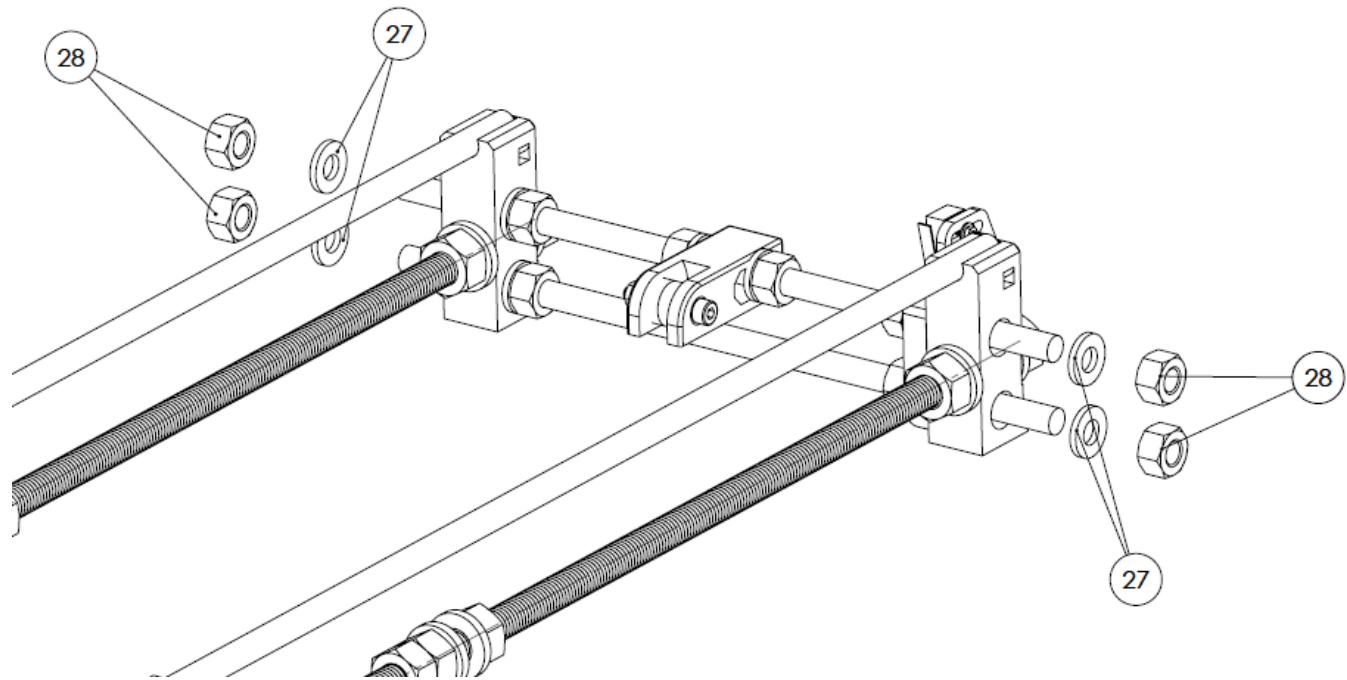


Install the M8 Threaded rod (4-5) on the motor bracket.

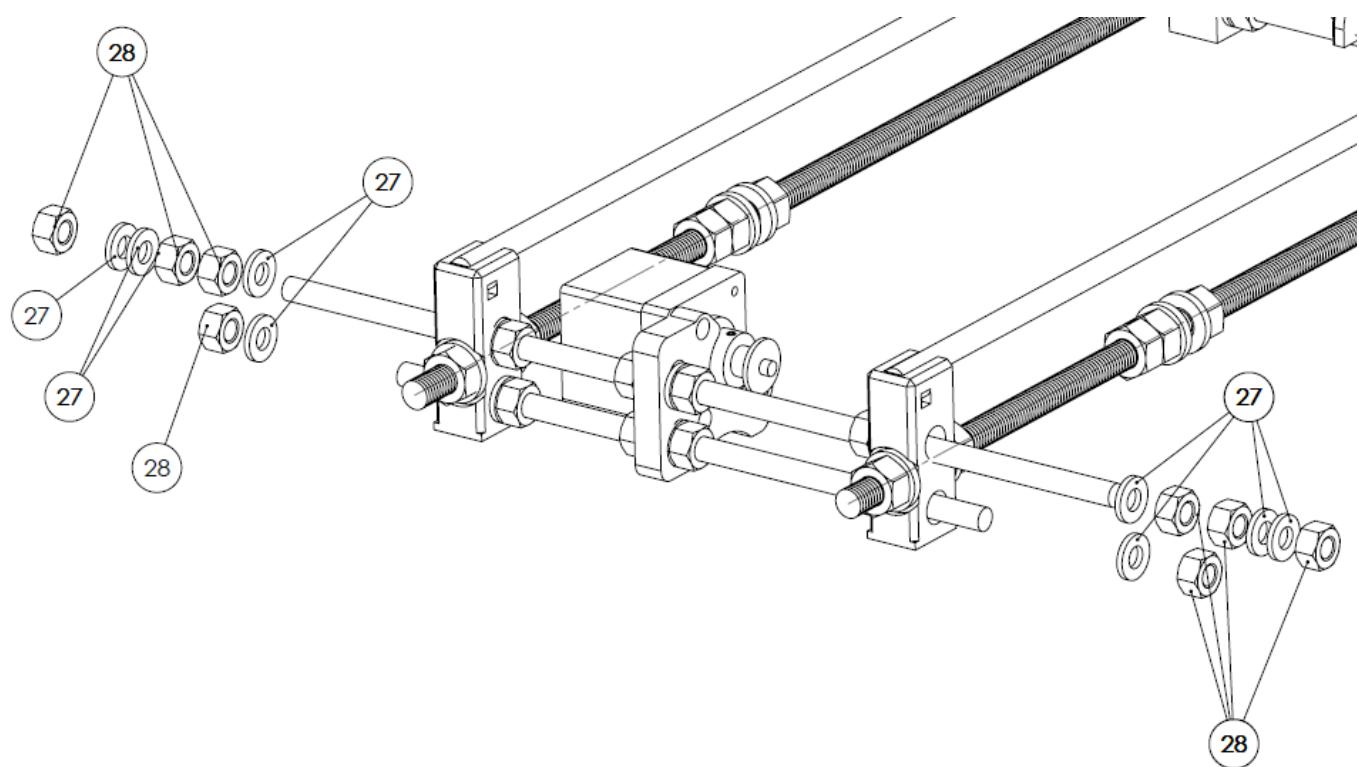
Do not tight the M8 Nuts of the bars,



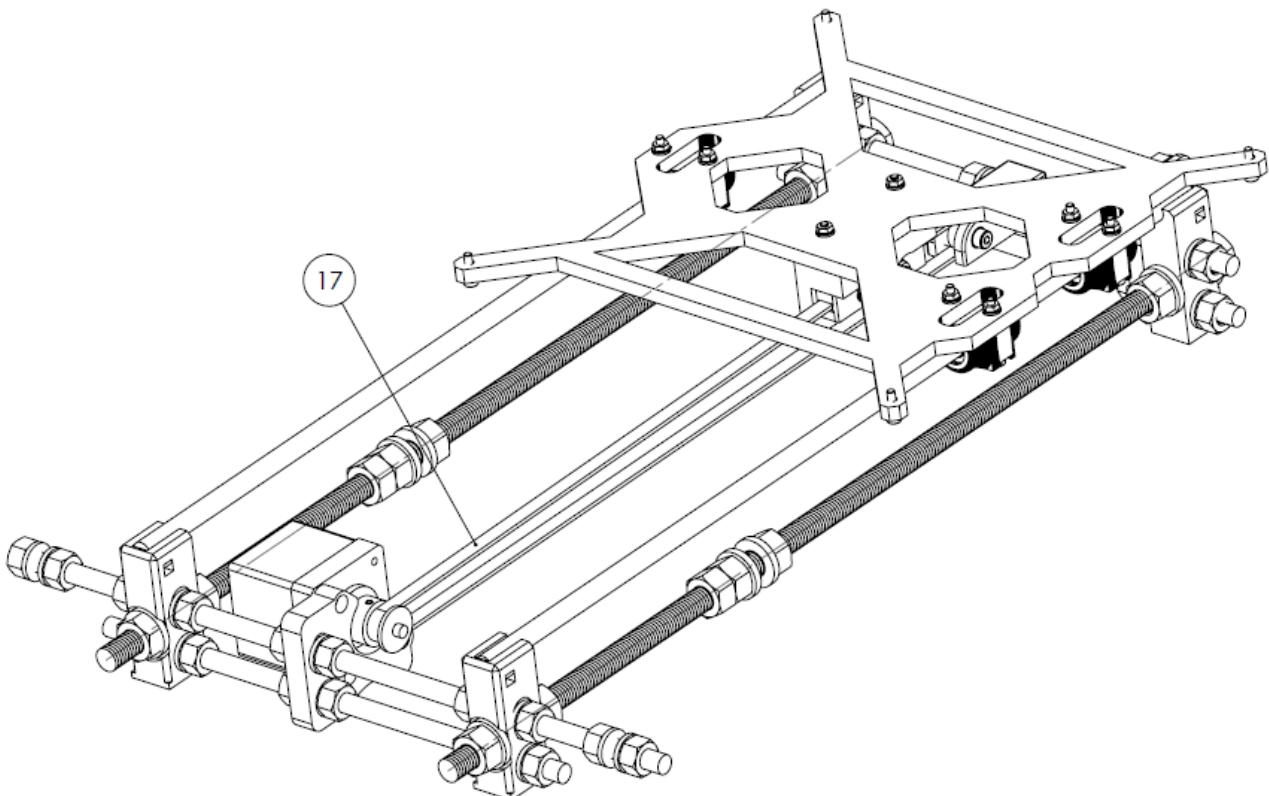
On the front side of the machine install the remaining M8 Threaded rod (5) on
the Y endstop holder (16) and the Y Belt idler(9)
the Limits switch (18) can be installed now or after the completion of the
Y-axis.



Install the previous step on the Y Corner but do not tight the nuts as all the parts must be aligned.



Install the motor side on the Y corner leave the M8 nuts loose until the Y carriage it is not in position



Slide the Y carriage into the Y smooth Rod (3) and place the smooth rods in the Y corners both side.

Tight all the M8 Nuts on the right side.

Slide the Y-Carriage in front and set the M8 Nuts of the Front left side,

Slide the Y carriage on the rear and set the M8 Nuts on the rear left side.

The carriage must run smooth from front to rear, if you note some extra force needed to complete the stroke it means that the M8 Nuts should be adjusted to keep the same distance like in the other side.

Dismante the belt trap on the Y belt holder (motor side) and fix the belt inside, put back in position and let the belt reach the motor pulley, this is the time to center the pulley with the belt holder and tight the M8 Nuts of the motor bracket.

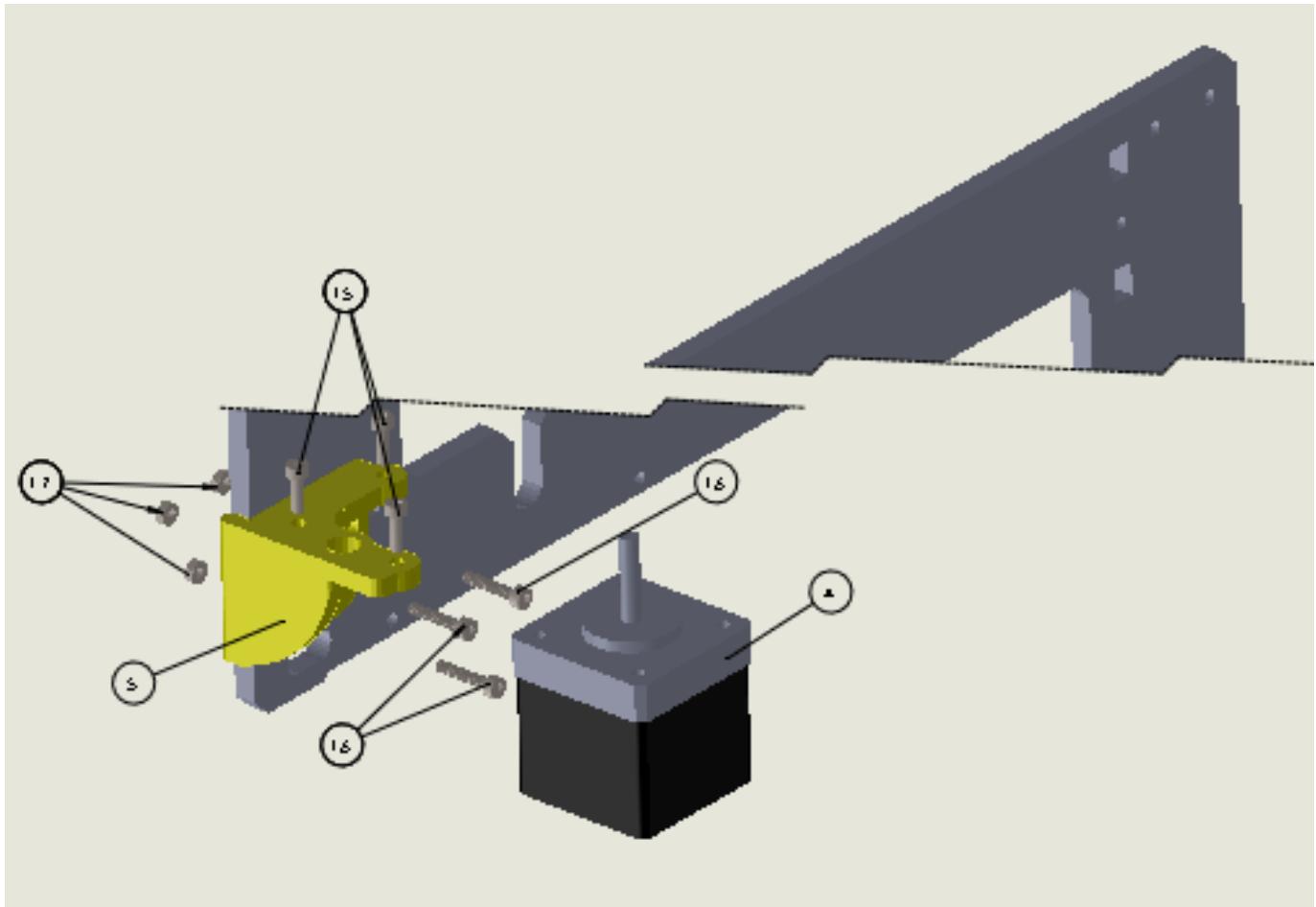
Pass the belt below the Y carriage up to the Y idler, and back to the Y carriage, release the tensioner of the idler, dismantle the belt trap from the belt holder and fix the belt inside.

Before to tight the belt be sure that the Y-IDler is centered with the Bel holder. tight the belt and set the Y Axis apart for the moment.

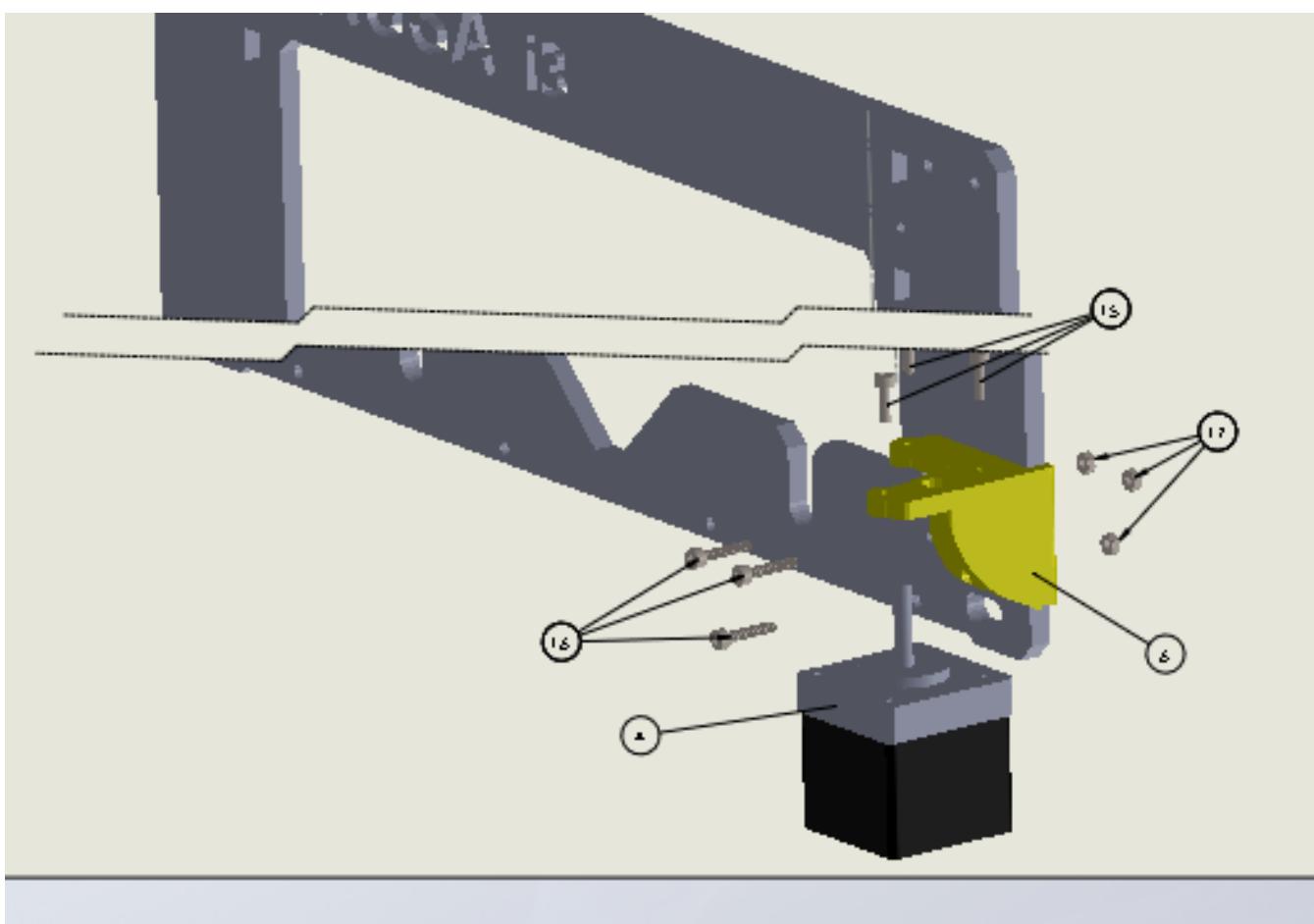
Please note that in the BOM there are 4 M3x10 bolts (37) that will be used to fix the heat bed.

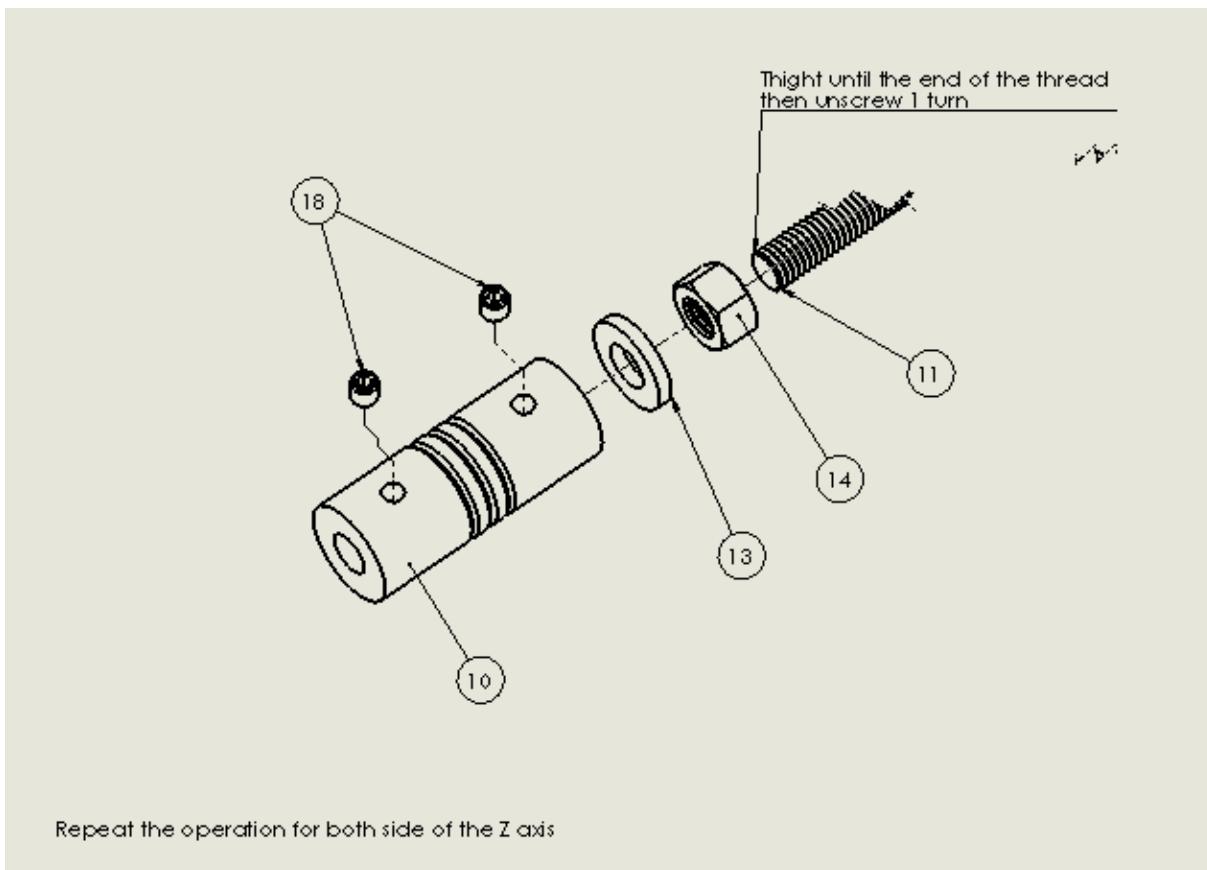
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	telai o estemo reinforced		1
2	rinforzo board side		1
3	rinforzo-2		1
4	nema 17		2
5	18-z-axis Bottom (repaired) left		1
6	18-z-axis Bottom (repaired) right		1
7	18-z-axis TO PREWORK LEFT		1
8	18-z-axis TO PREWORK right		1
9	Z-SMOOTHROD-325		2
10	Z-Coupler		2
11	M5x30S		2
12	Hexagon Nut ISO 4034 - M5 - N		2
13	DIN 6902-C5.5		2
14	Hexagon Nut ISO 4032 - M5 - D - S		2
15	DIN 912 M3 x 10 --- 10N		7
16	DIN 912 M3 x 16 --- 16S		12
17	Hexagon Nut ISO 4032 - M8 - W - N		13
18	DIN 914 - M3 x 4-N		4

ZAxis ASSEMBLY ||1.3

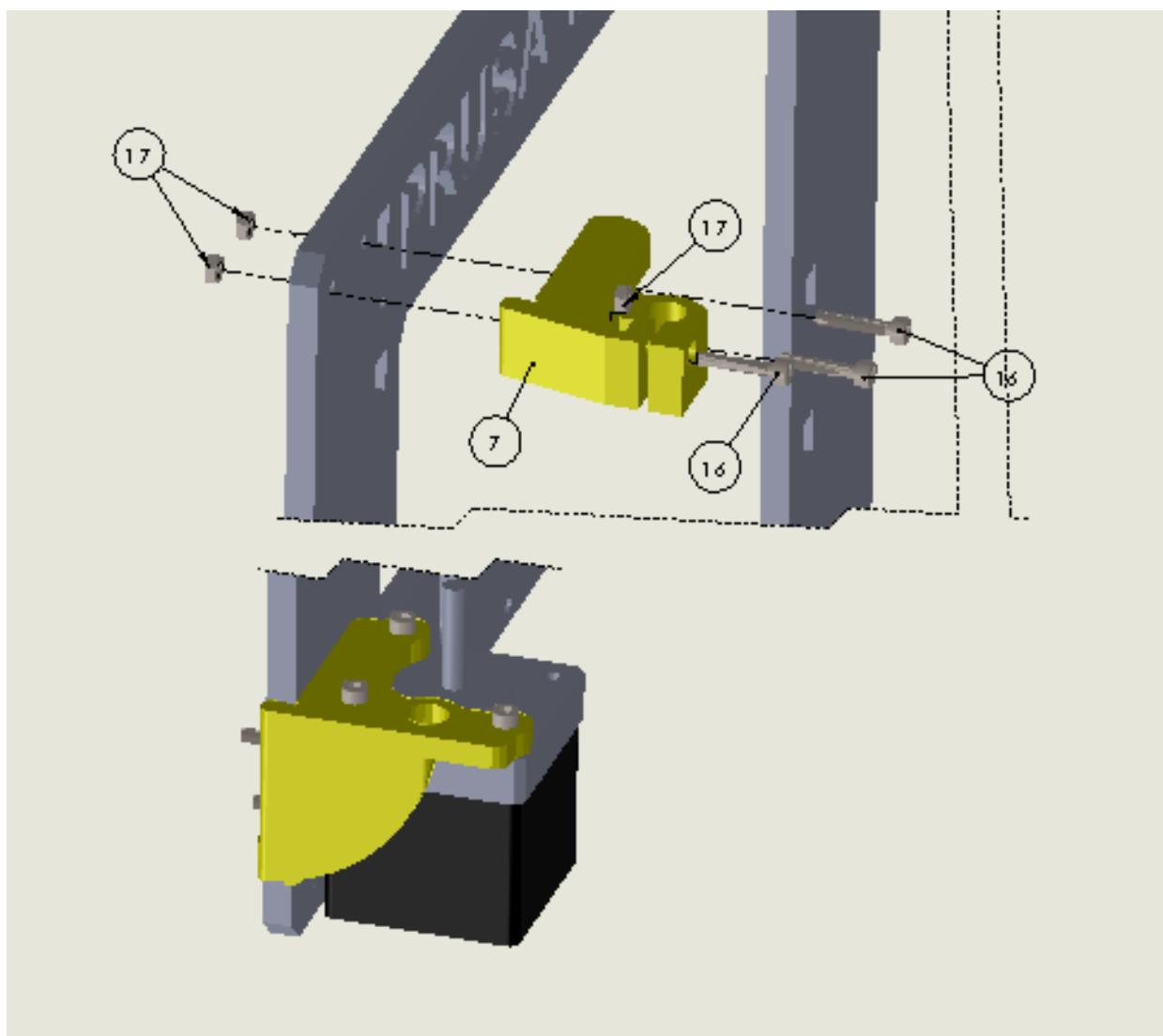


Install the Left Z-bottom (11) on the frame
Install the Motor on the Z bottom repeat for the right side

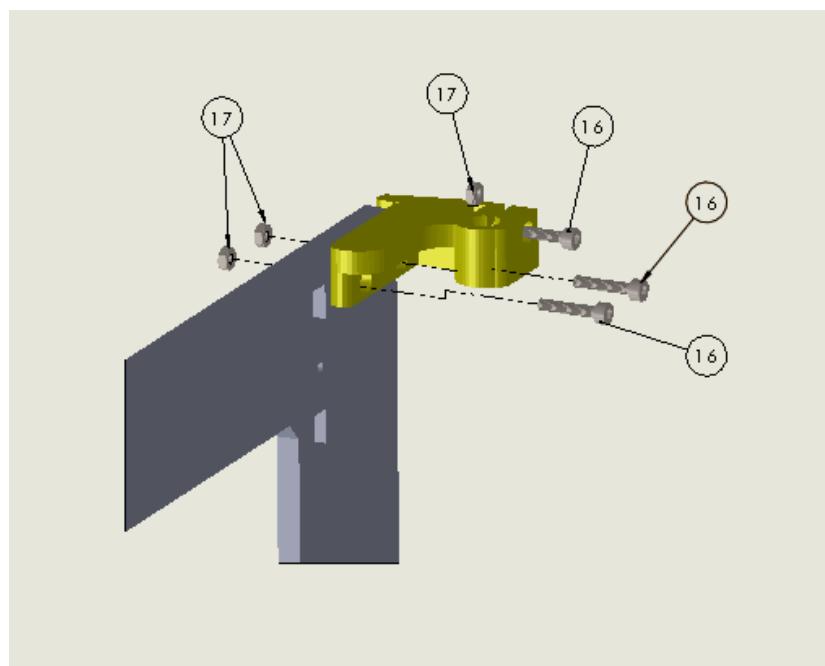


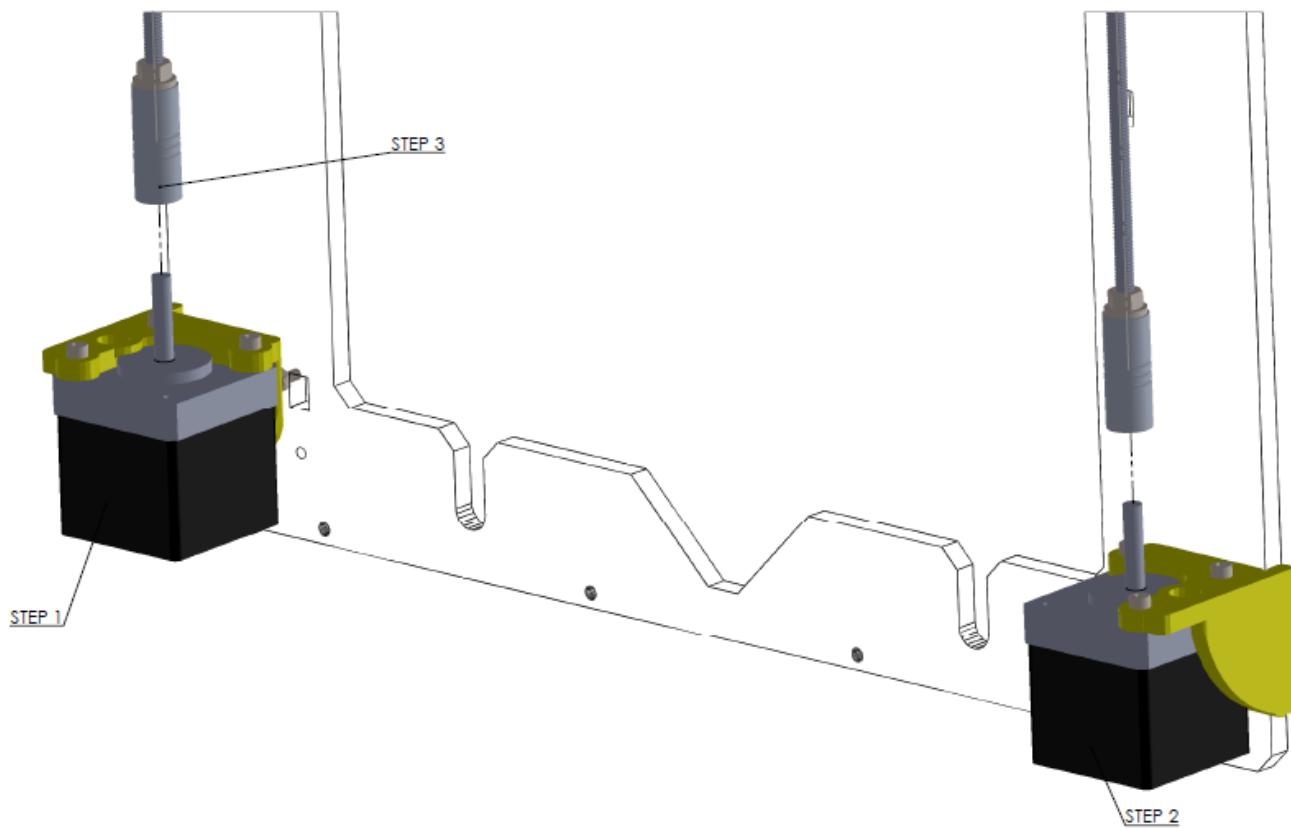


Install the Z axis Coupler (17) on the M5 threaded rod (18)
Set the grub screws on the Z axis coupler body but do not tight.



Install the Z top on the frame on the left side but do not tight the bolt needed to trap the Z smooth rod. Repeat for the right side

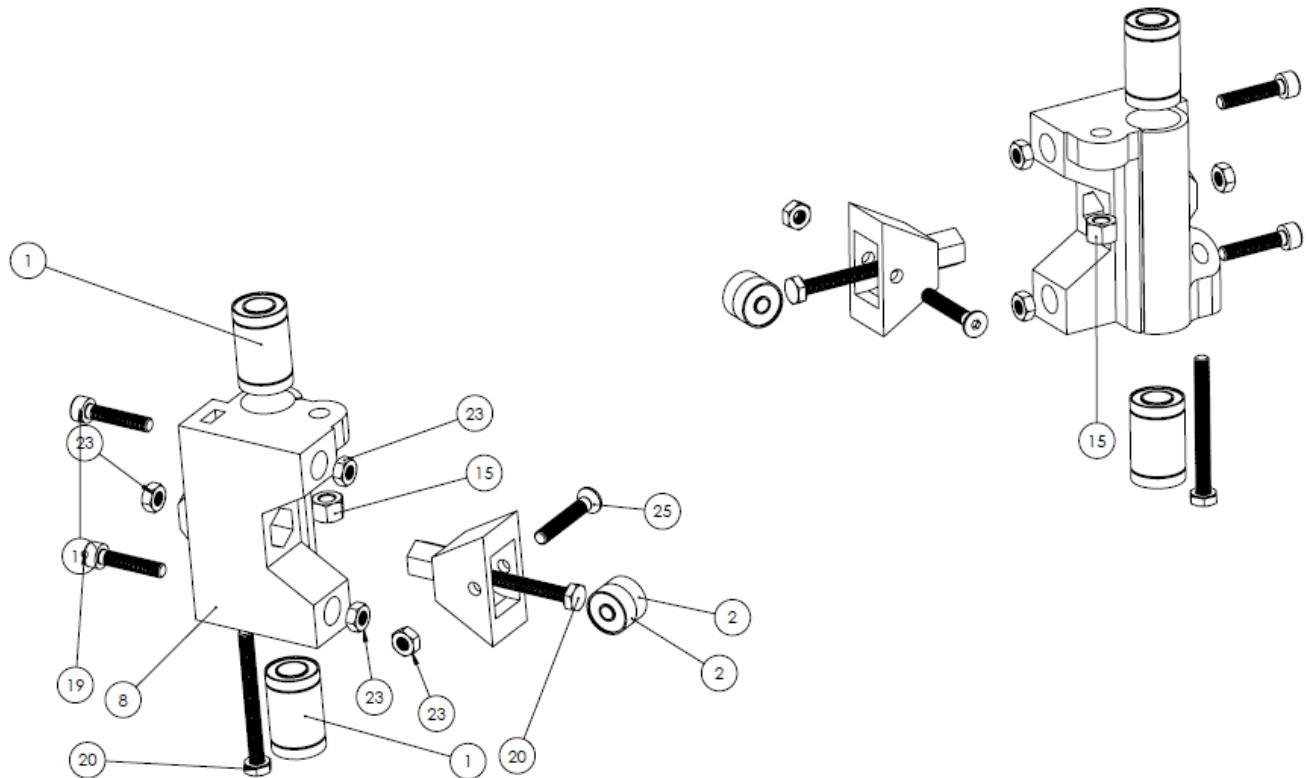


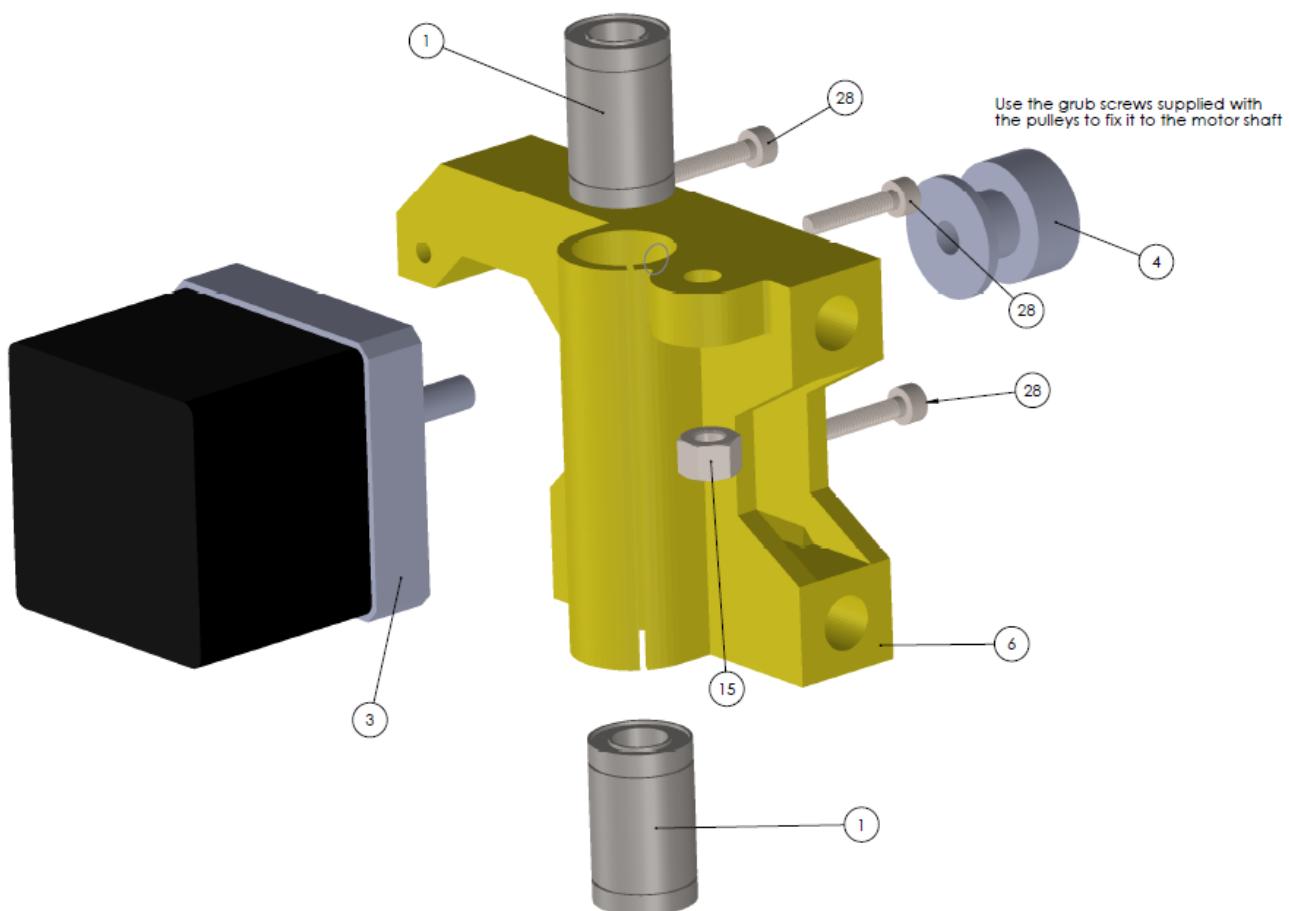


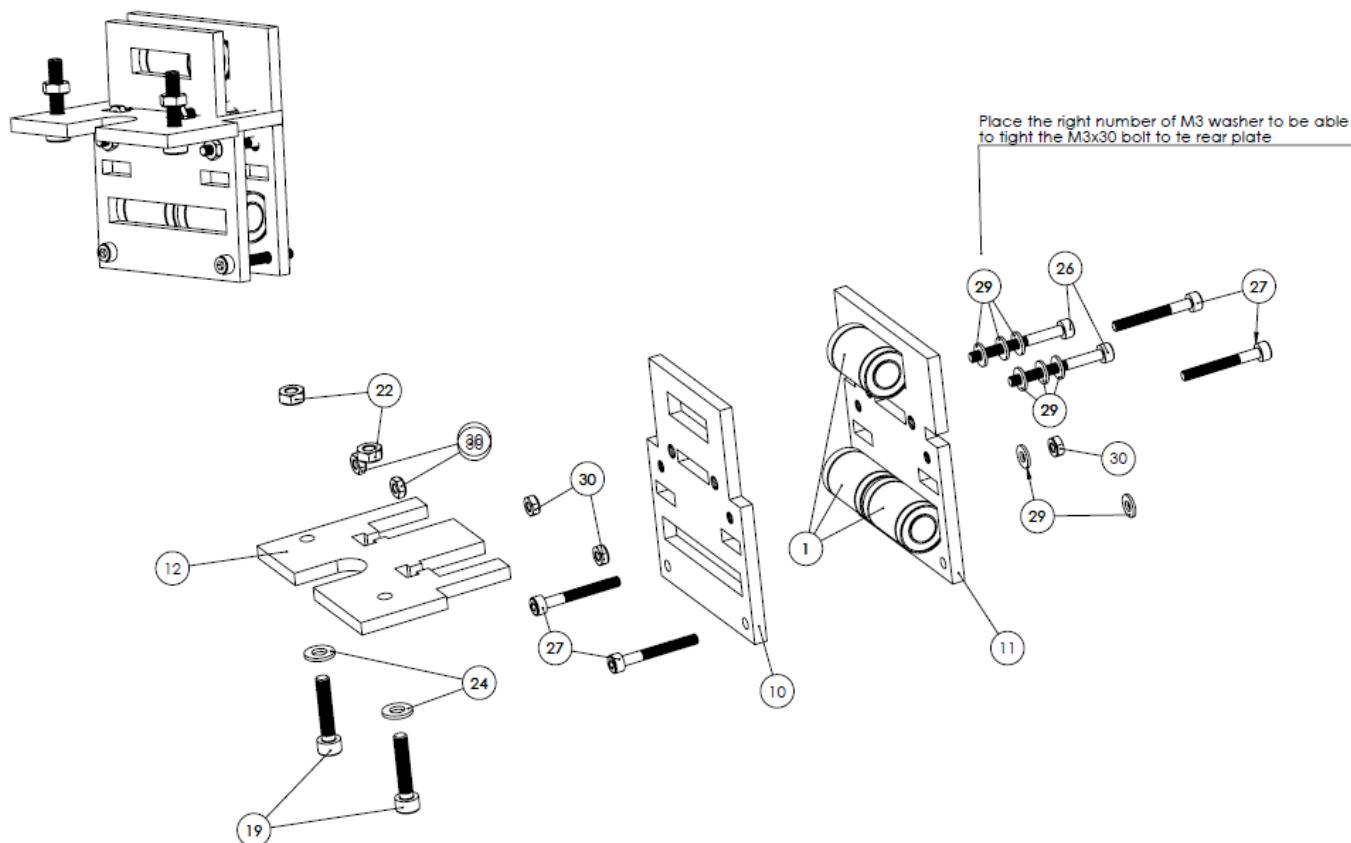
Install the M5 Threaded rod on the motor but do not tight the motor side grub sceew yet.

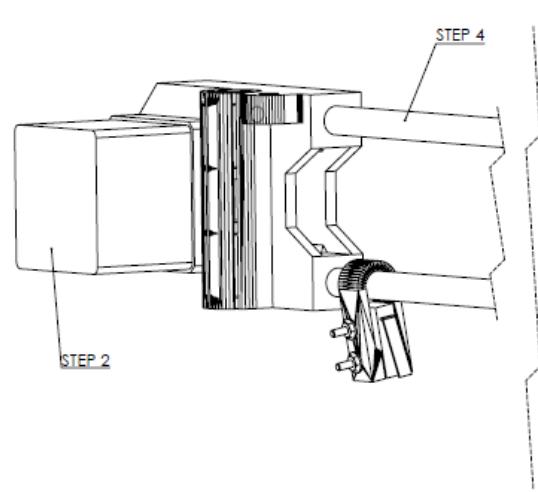
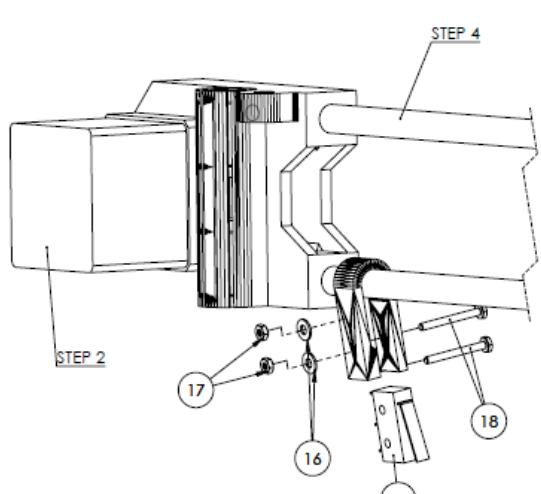
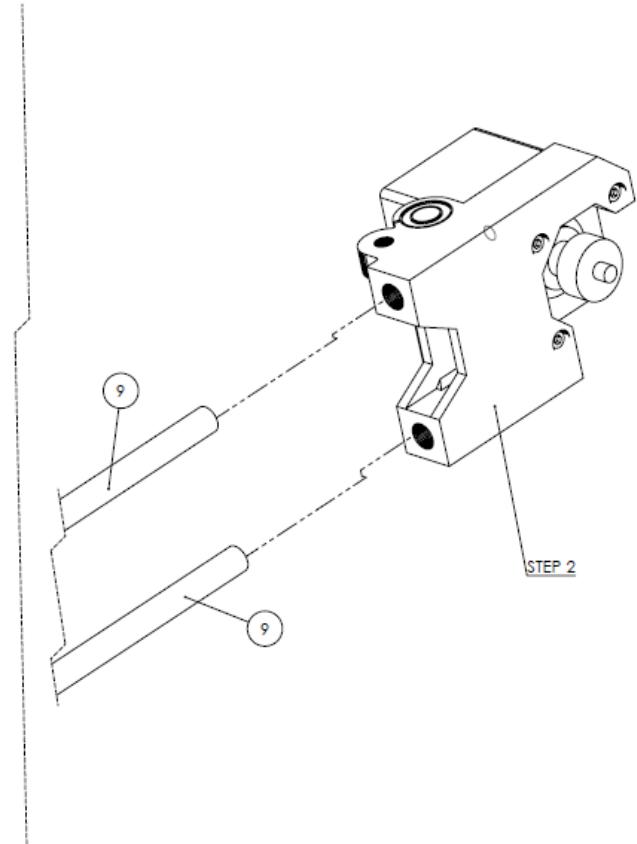
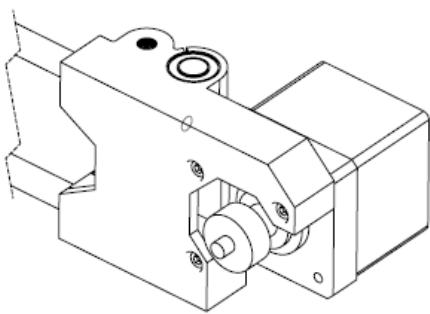
X-AXIS ASSEMBLY ||1.2

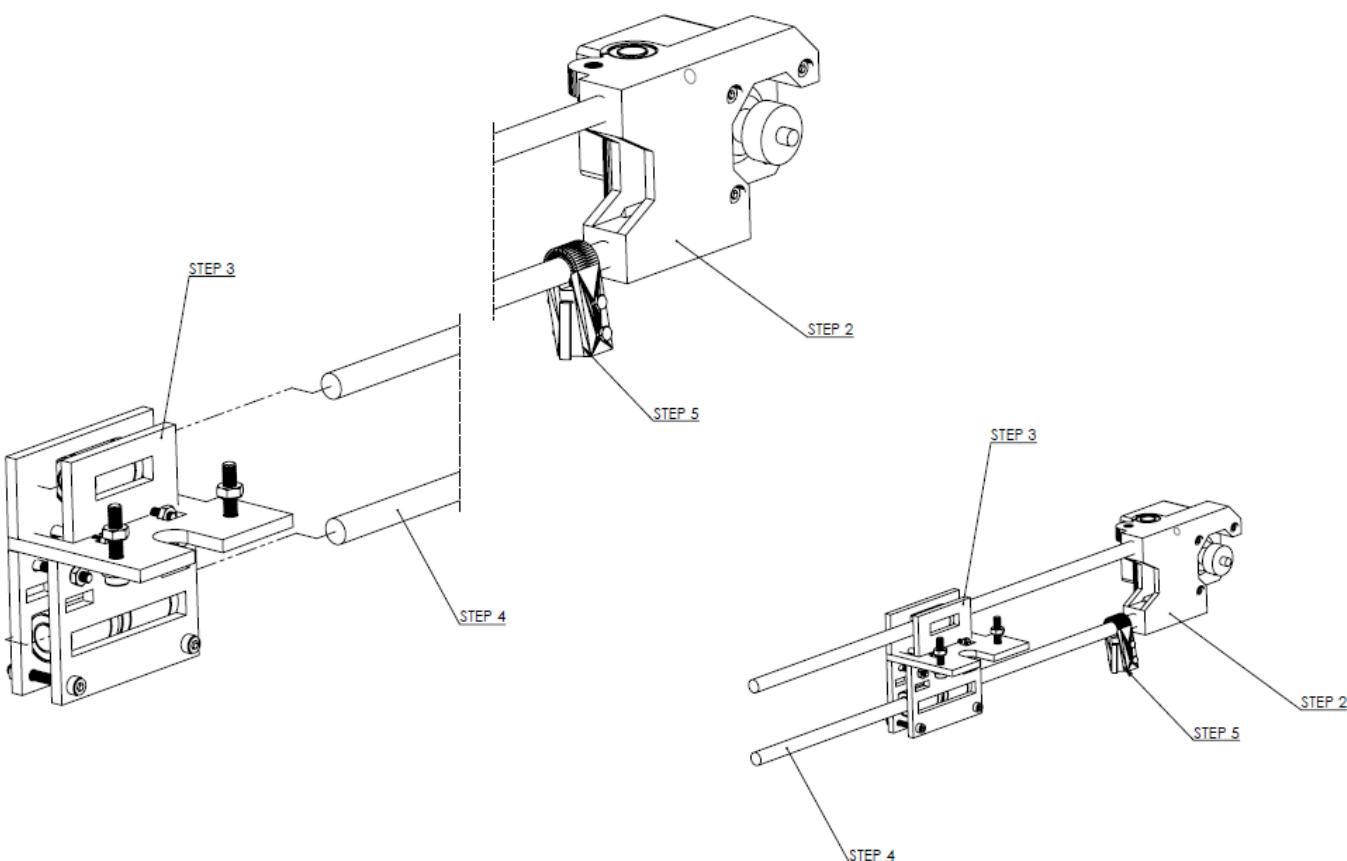
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	LMBUU		7
2	624z		2
3	nema 17		1
4	gt2 pulley		1
5	LIMITS SWITCHES		1
6	X_motor-rev02		1
7	x-end-idler-rev03		1
8	x-end-idler-rev02		1
9	X-SMOOTHROD-370		2
10	X-CARR-FRONT-REV00		1
11	X-CARR-REAR-REV00		1
12	X-CARR-BASE-REV00		1
13	Belt2-10MP13-2014-X-carriage		1
14	8-Prusa_i3_Endstop		1
15	Hexagon Nut ISO 4034 - M5 - N		2
16	DIN 6902-C2.75		2
17	Hexagon Nut ISO 4032 - M2 - W - S		2
18	ISO 4017 - M2 x 20-N		2
19	DIN 912 M4 x 20 — 208		4
20	ISO 4017 - M4 x 40-S		2
21	Hexagon Nut ISO 4032 - M4 - W - S		1
22	Hexagon Nut ISO 4032 - M4 - W - N		2
23	Hexagon Nut ISO 4032 - M4 - D - S		4
24	DIN 6902-C4.55		2
25	ISO 10642 - M4 x 25 — 208		1
26	DIN 912 M3 x 30 — 168		2
27	DIN 912 M3 x 25 — 168		4
28	DIN 912 M3 x 16 — 168		3
29	DIN 6902-C3.2		8
30	Hexagon Nut ISO 4032 - M3 - W - N		5

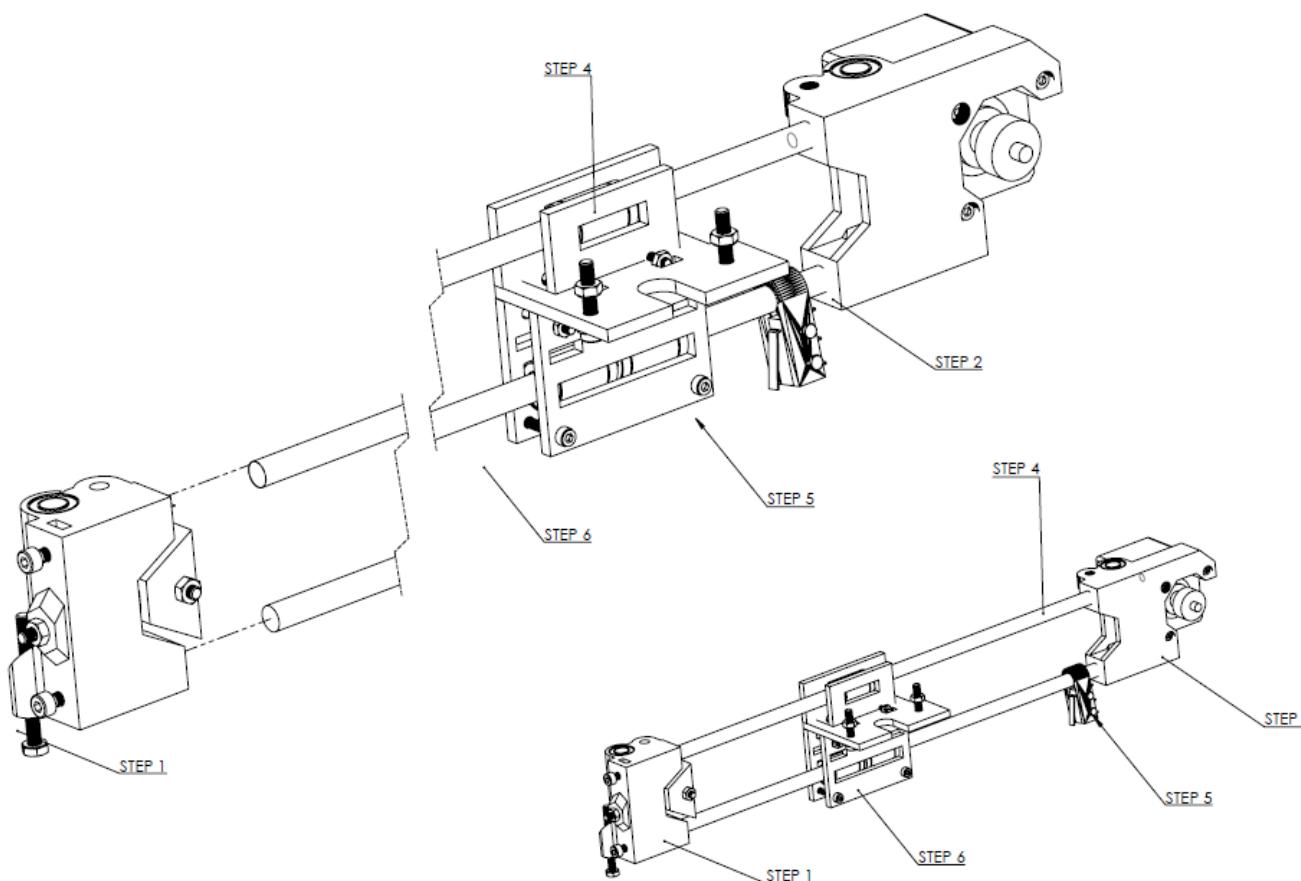






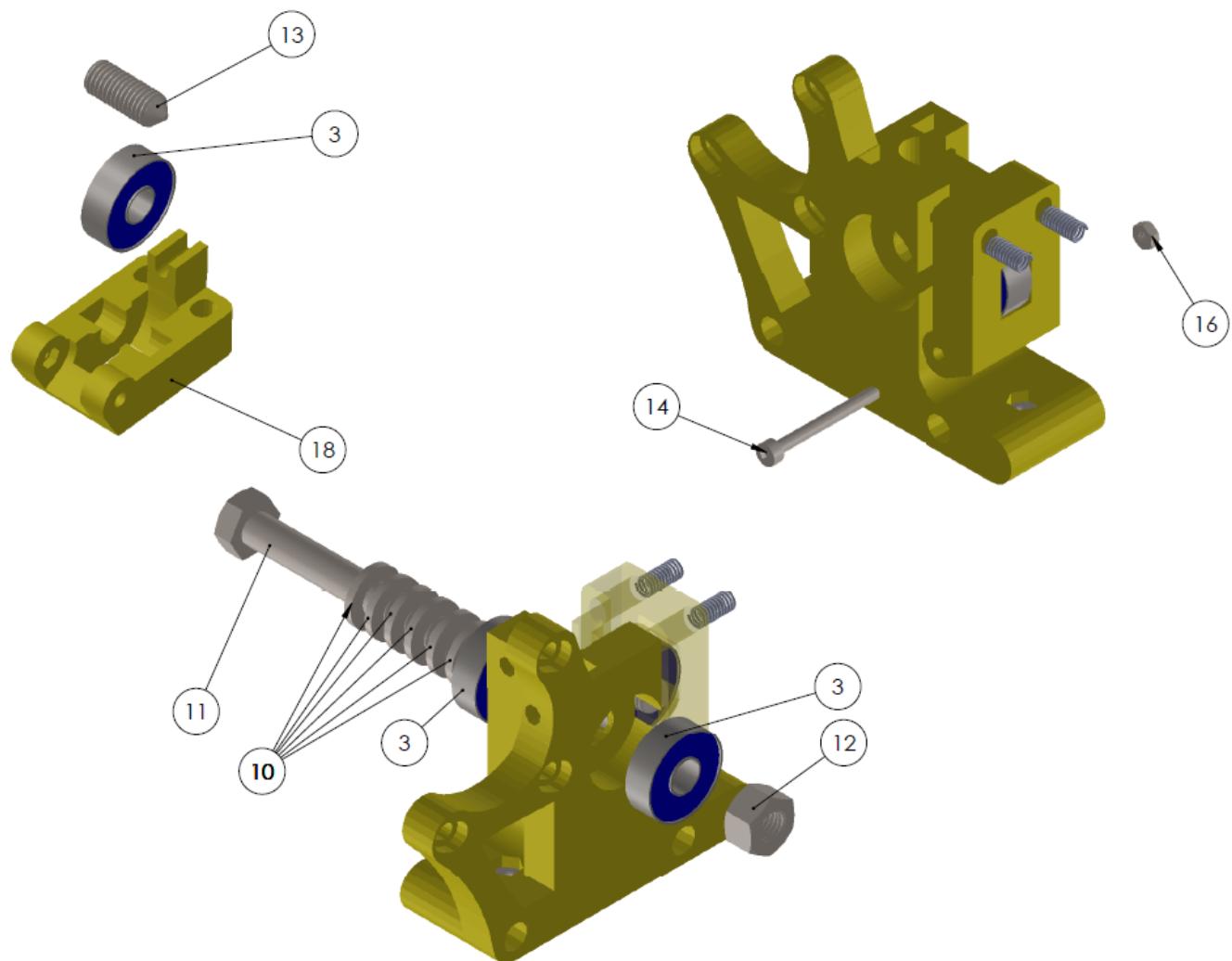


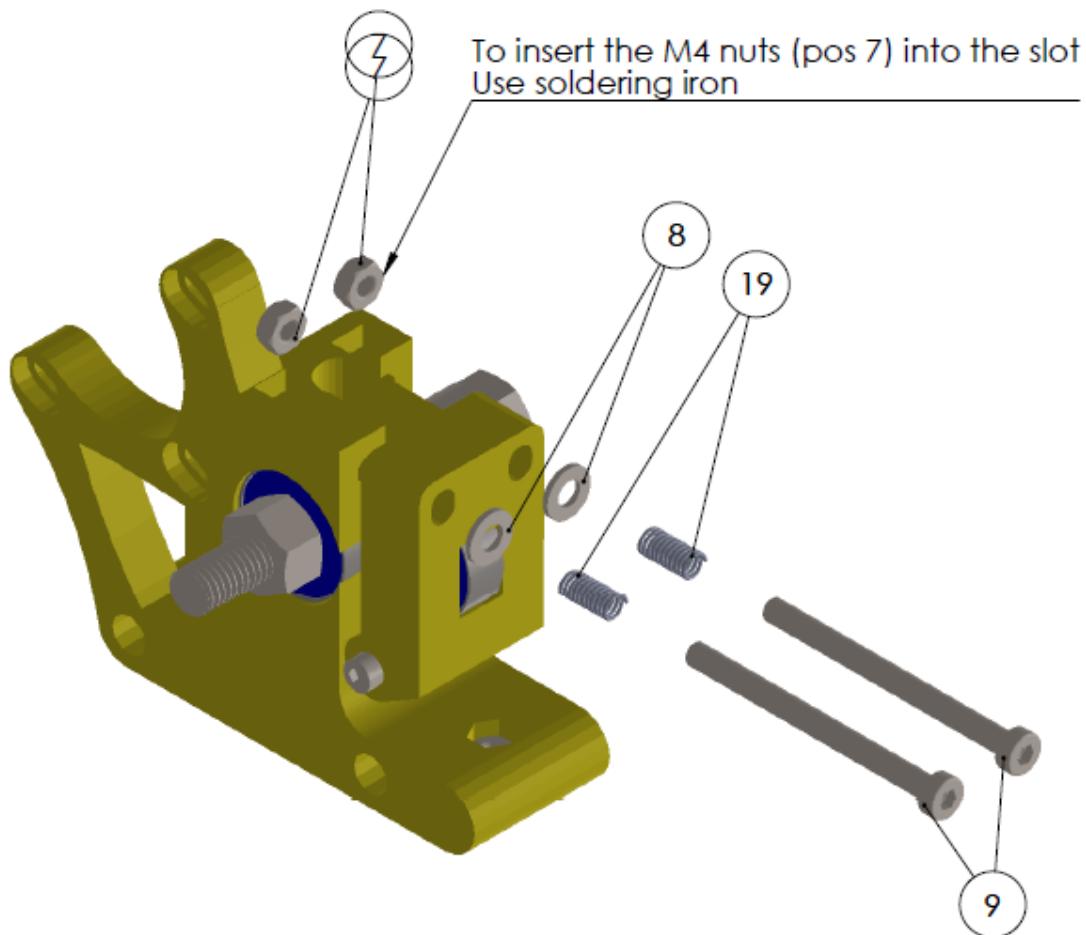




EXTRUDER ASSEMBLY ||1.4

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	nema 17		1
2	Greg's V3		1
3	608Z		3
4	4-gear-big		1
5	5-gear-small		1
6	DIN 912 M3 x 10 --- 10N		3
7	Hexagon Nut ISO 4032 - M4 - W - N		4
8	DIN 6902-C4.55		2
9	DIN 6912 - M4 x 50 --- 19C		2
10	DIN 6902-C7.4		6
11	ISO 4015 - M8 x 60 x 22-S		1
12	Hexagon Nut ISO 4034 - M8 - S		2
13	DIN 914 - M8 x 20-S		1
14	DIN 912 M3 x 30 --- 18N		1
15	Hexagon Nut ISO 4032 - M3 - D - N		1
16	Hexagon Nut ISO 4032 - M3 - D - S		1
17	DIN 914 - M3 x 6-N		1
18	6-gregs-wade-v3-only-idler (repaired)		1
19	Spring 10x5		2





CUT THE SPRING (19) at the proper length

Use Soldering Iron to insert the M3 Nut Into the small gear slot

