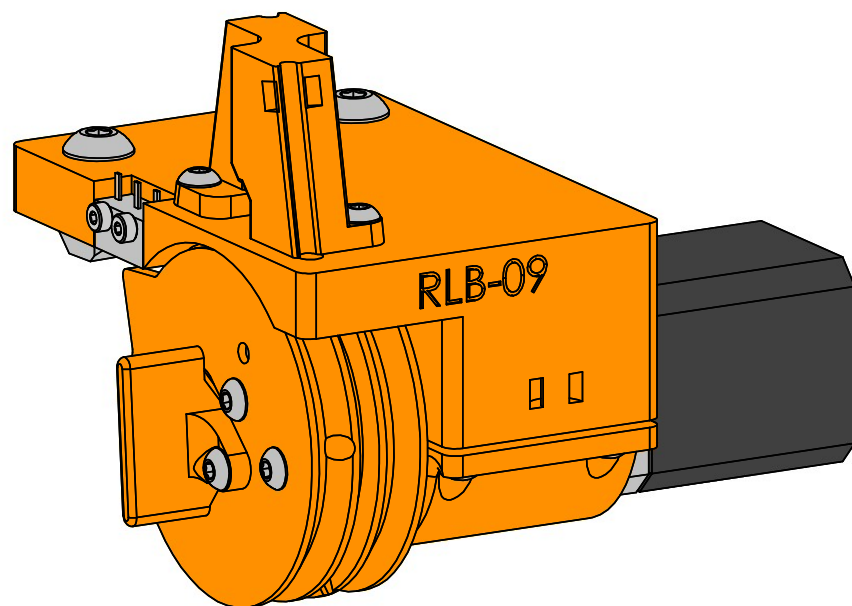


2

1

B

B



A

A

2

1

Remote Elastic Lock Assembly



Created by:
Joshua Vasquez

last edited:
6/7/2020

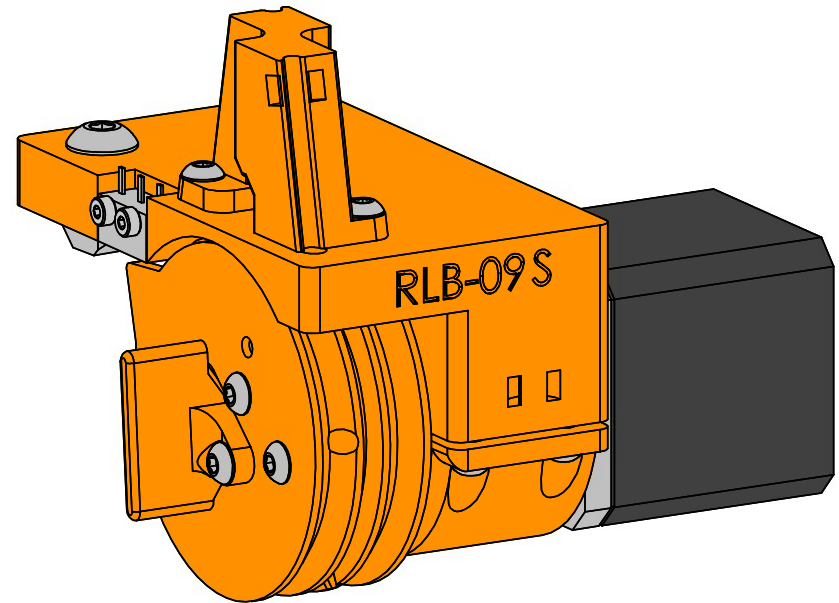
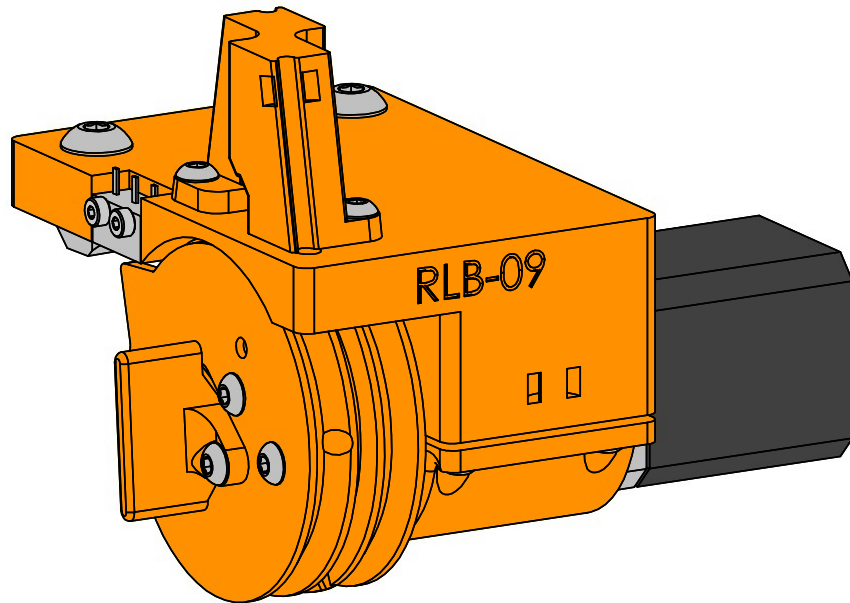
SCALE: 1:1

SHEET 1 OF 15

2

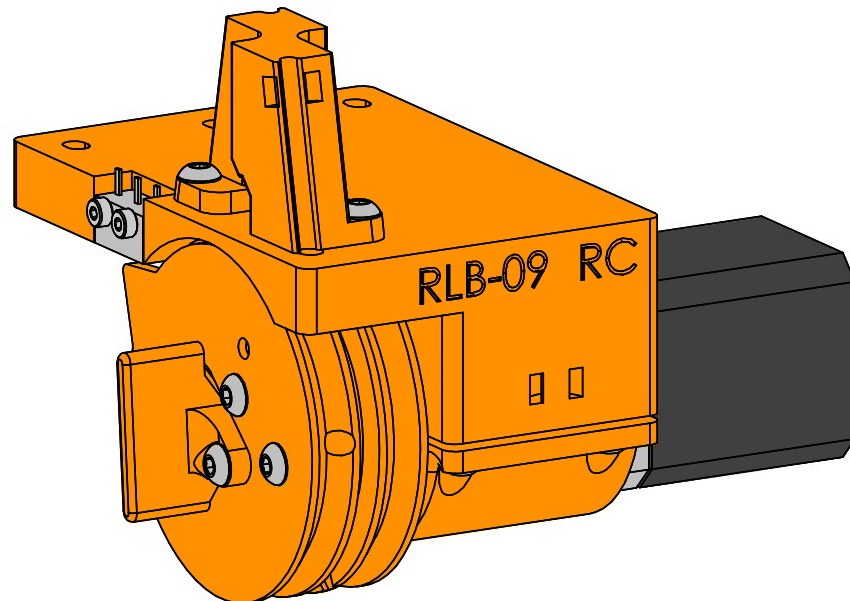
1

B



B

A



A

Note: There are three variants of this subsystem.

- RLB-09 for Jubilee
 - use an LDO motor
- RLB-09S for Jubilee
 - uses a StepperOnline motor
- RLB-09RC for the Railcore
 - uses an LDO motor

Each variant has a unique base plate. -09S uses a unique base plate and motor clip.

Variants



Created by:
Joshua Vasquez

last edited:
6/7/2020

SCALE: 1:1

SHEET 2 OF 15

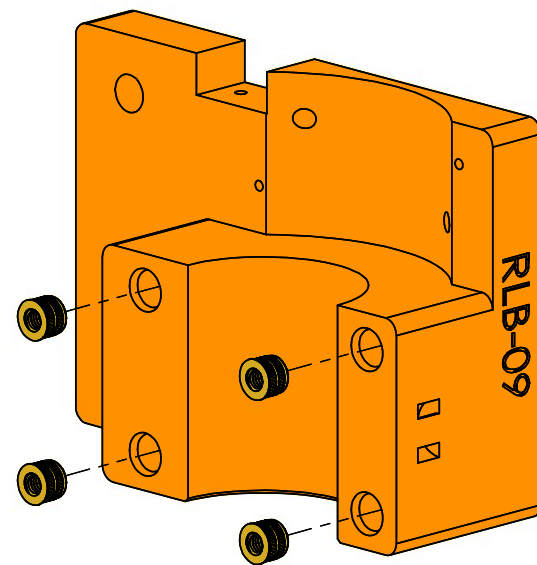
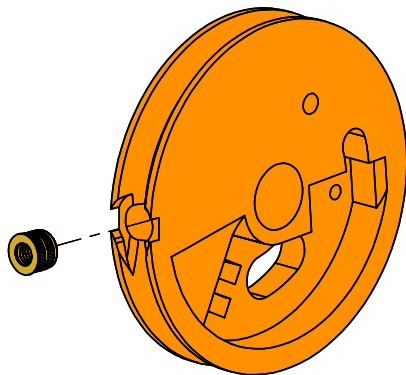
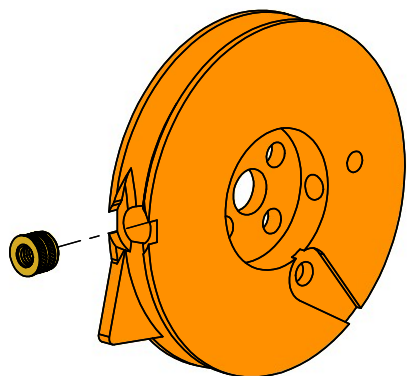
2

1

2

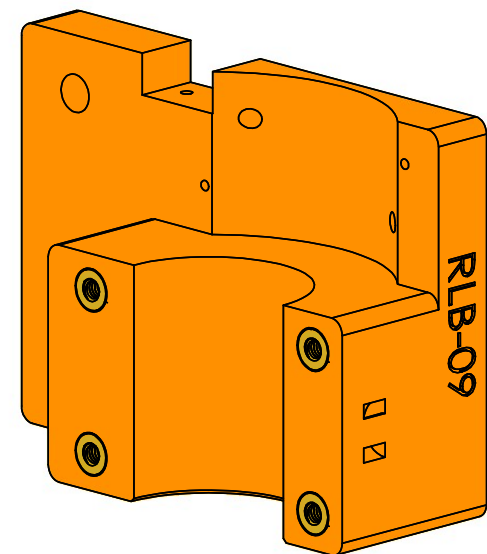
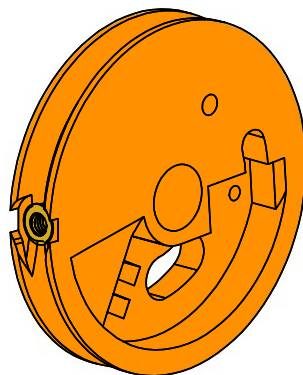
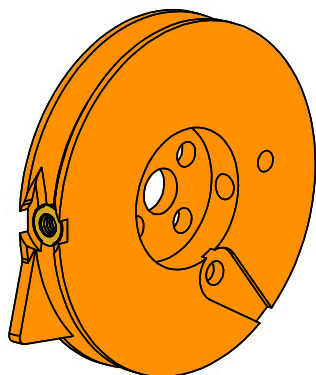
1

B



B

A



A

2

1

Parts with Inserts



Created by:
Joshua Vasquez

last edited:
6/7/2020

SCALE: 1:1

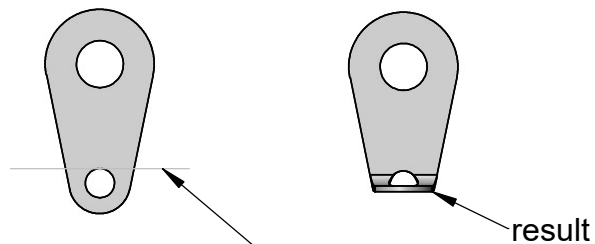
SHEET 3 OF 15

2

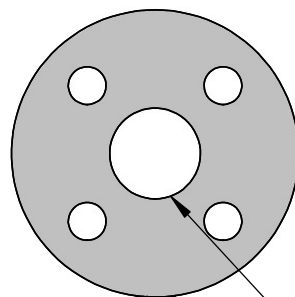
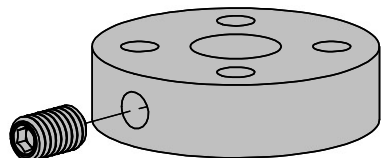
1

B

B



With a set of Needle nose pliers, bend the terminal lug upwards about 90 degrees along this line.
Do this for both terminal lugs.




Install the M3, 5mm setscrew such that it is fully inside the hub but does not stick out in the center bore.

A

A

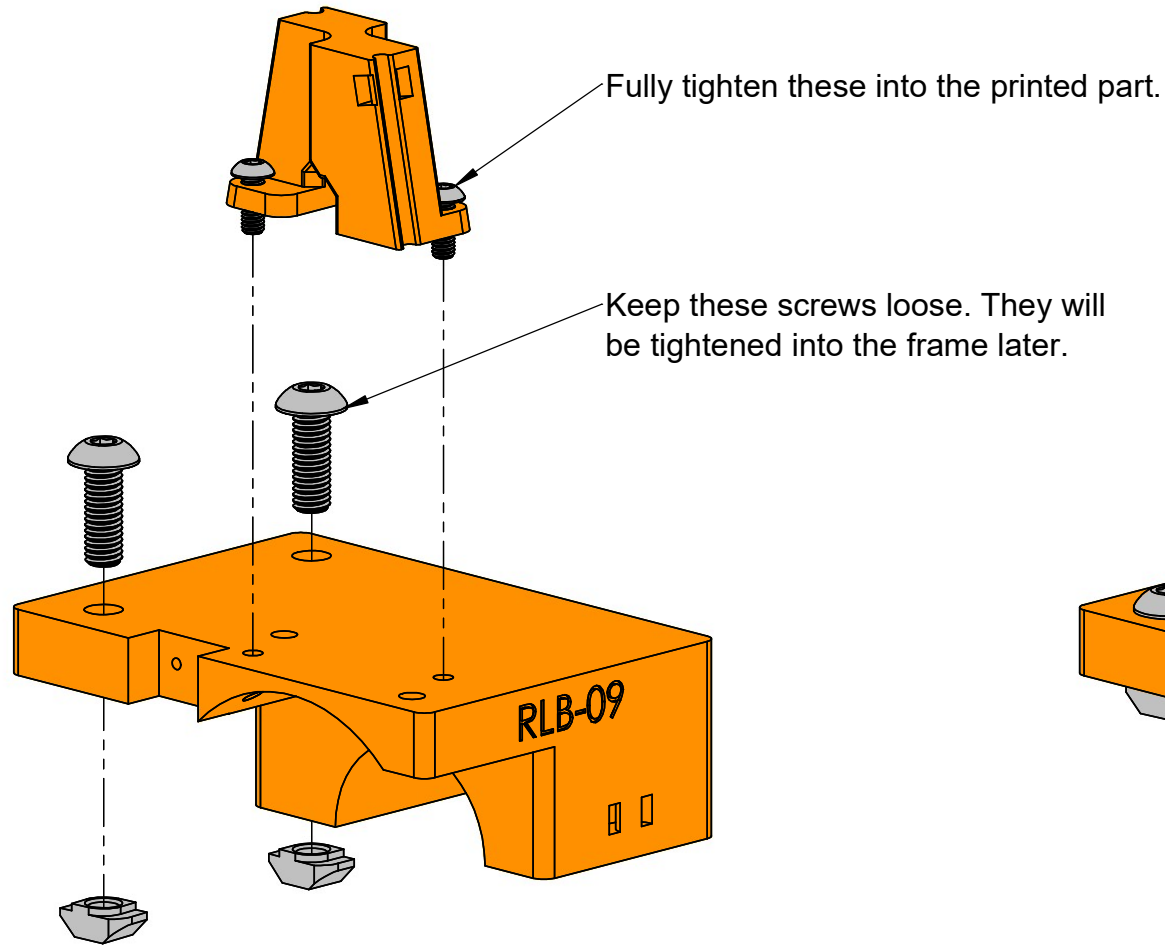
ITEM NO.	DESCRIPTION	QTY.
1	Hub, 6mm bore	1
2	M3 Set Screw, 5mm long	1
3	7328 Terminal Lug	2

Part Prep		
	Created by: Joshua Vasquez	last edited: 6/7/2020
	SCALE: 2:1	SHEET 4 OF 15

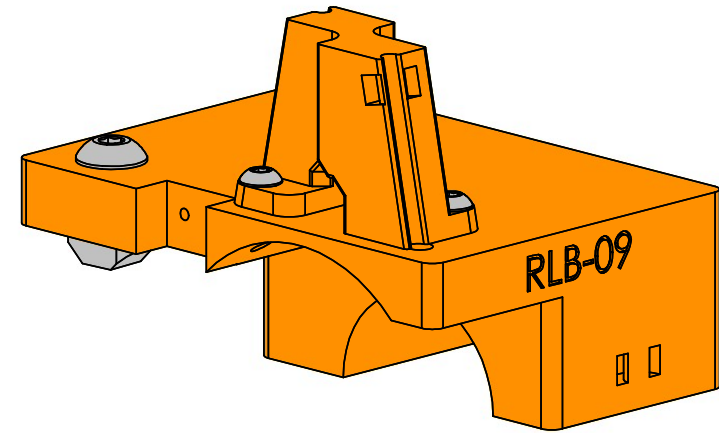
2

1

B



Exploded View



Assembled View

ITEM NO.	DESCRIPTION	
1	REL Base with Inserts	1
2	Spring Guide Anchor Block	1
3	M3 Buttonhead Screw, 8mm long	2
4	M5 Buttonhead Screw, 14mm long	2
5	M5 Drop-In T-Nut for 20x20 Extrusion	2

Base Plate Assembly



Created by:
Joshua Vasquez

last edited:
6/7/2020

SCALE: 1:1

SHEET 5 OF 15

B

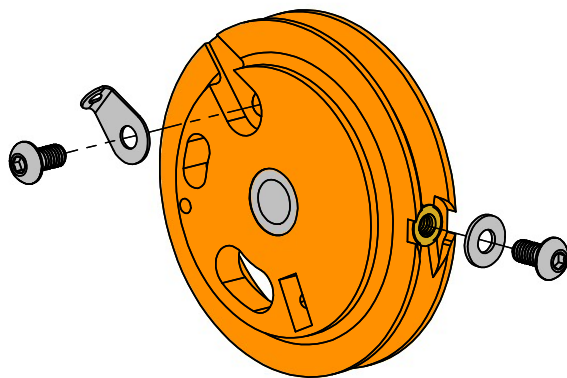
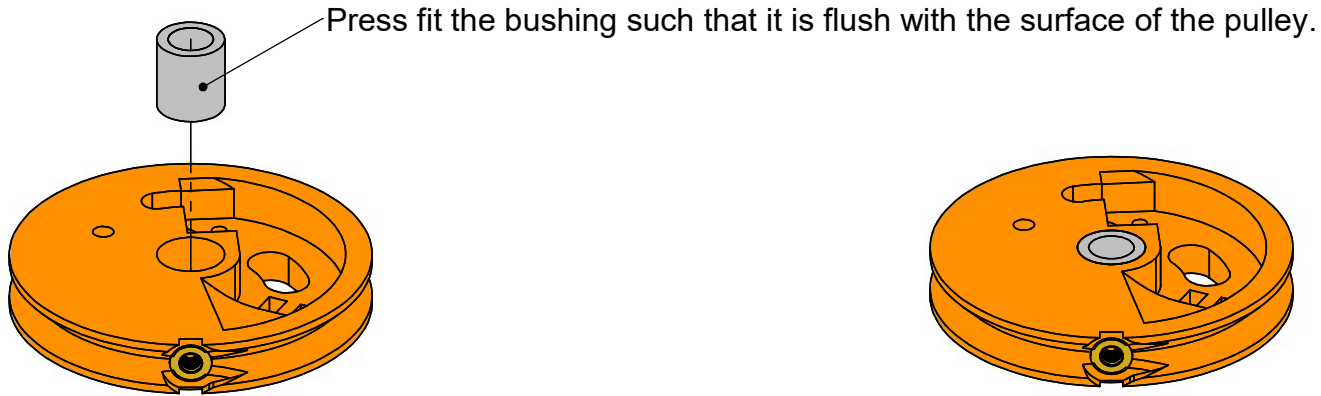
A

B

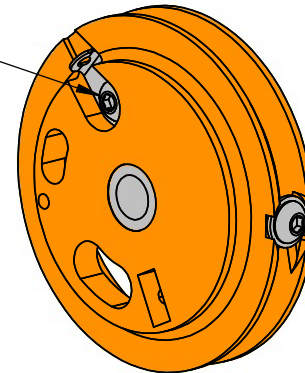
B

2

1



Fully tighten this screw.



This screw can stay loose.

A

A

ITEM NO.	DESCRIPTION	QTY.
1	Floating Half Pulley with Insert	1
2	M3 Buttonhead Screw, 6mm long	2
3	Bent M3 Solder Terminal Lug (Bend A)	1
4	Sleeve Bearing, 6mm bore, 10mm long	1
5	M3 Washer	1

Floating Half Pulley Assembly



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Joshua Vasquez

last edited:
6/7/2020

SCALE: 1:1

SHEET 6 OF 15

2

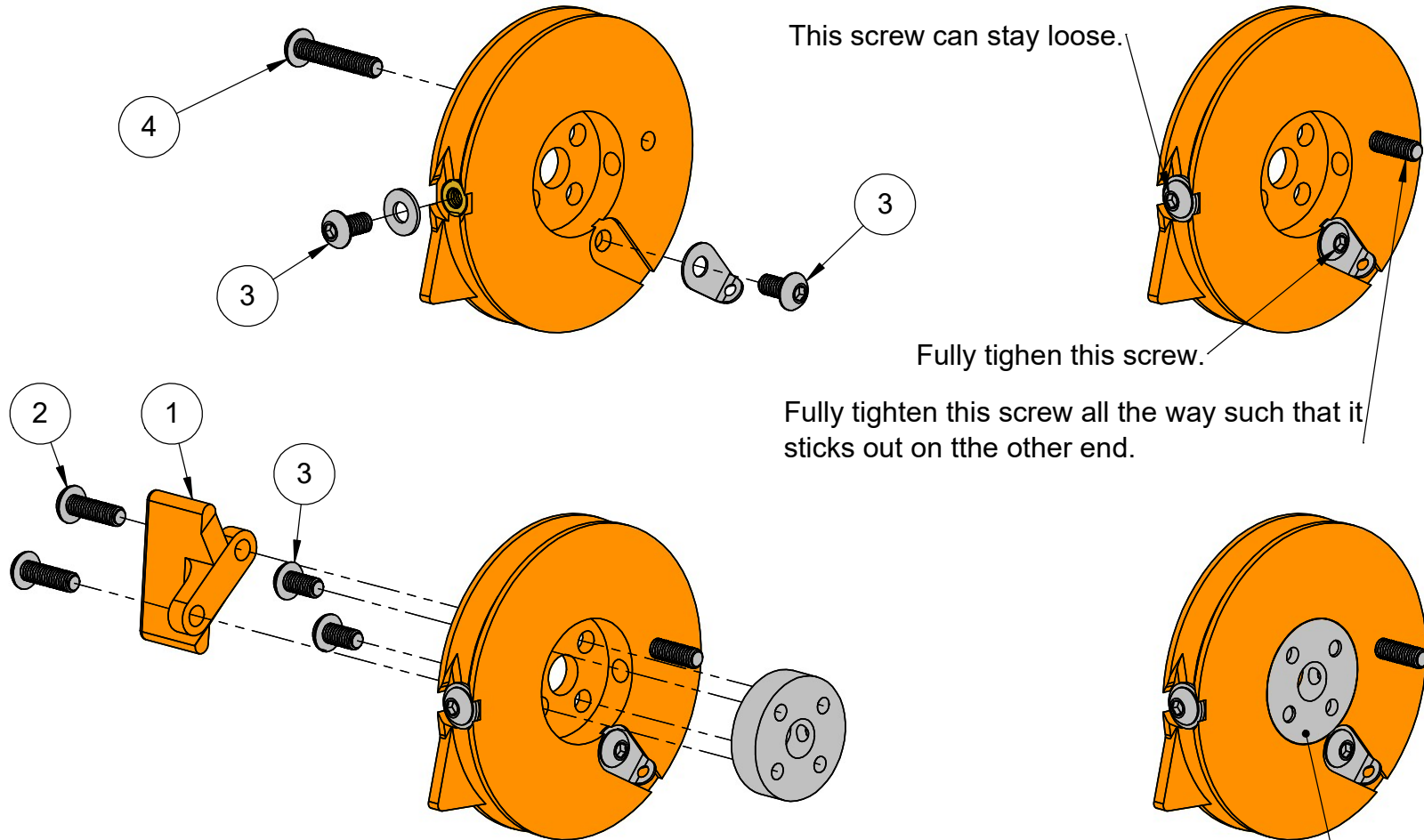
1

B

A

2

1



ITEM NO.	DESCRIPTION	QTY.
1	Knob	1
2	M3 Buttonhead Screw, 10mm long	2
3	M3 Buttonhead Screw, 6mm long	4
4	M3 Buttonhead Screw, 16mm long	1
5	M3 Washer	1
6	Bent M3 Solder Terminal Lug (Bend A)	1
7	Fixed Pulley with Insert	1
8	Hub with Set Screw	1

2

1

B

A

Fixed Half Pulley Assembly



Created by:
Joshua Vasquez

last edited:
6/7/2020

SCALE: 1:1

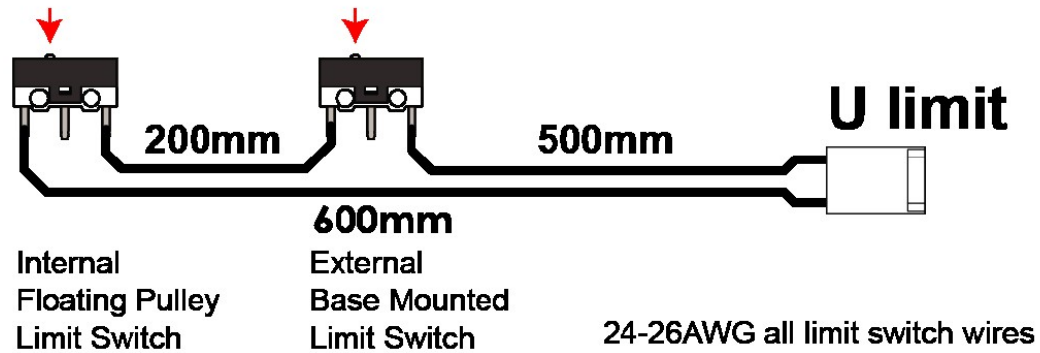
SHEET 7 OF 15

2

1

Solder together the following limit switch harness.
Optional: insulate the solder connections with heat-shrink tubing.

Note wire lengths with respect to switch buttons.
Note: the KK Connector is included in the Duet2 box.



B


B

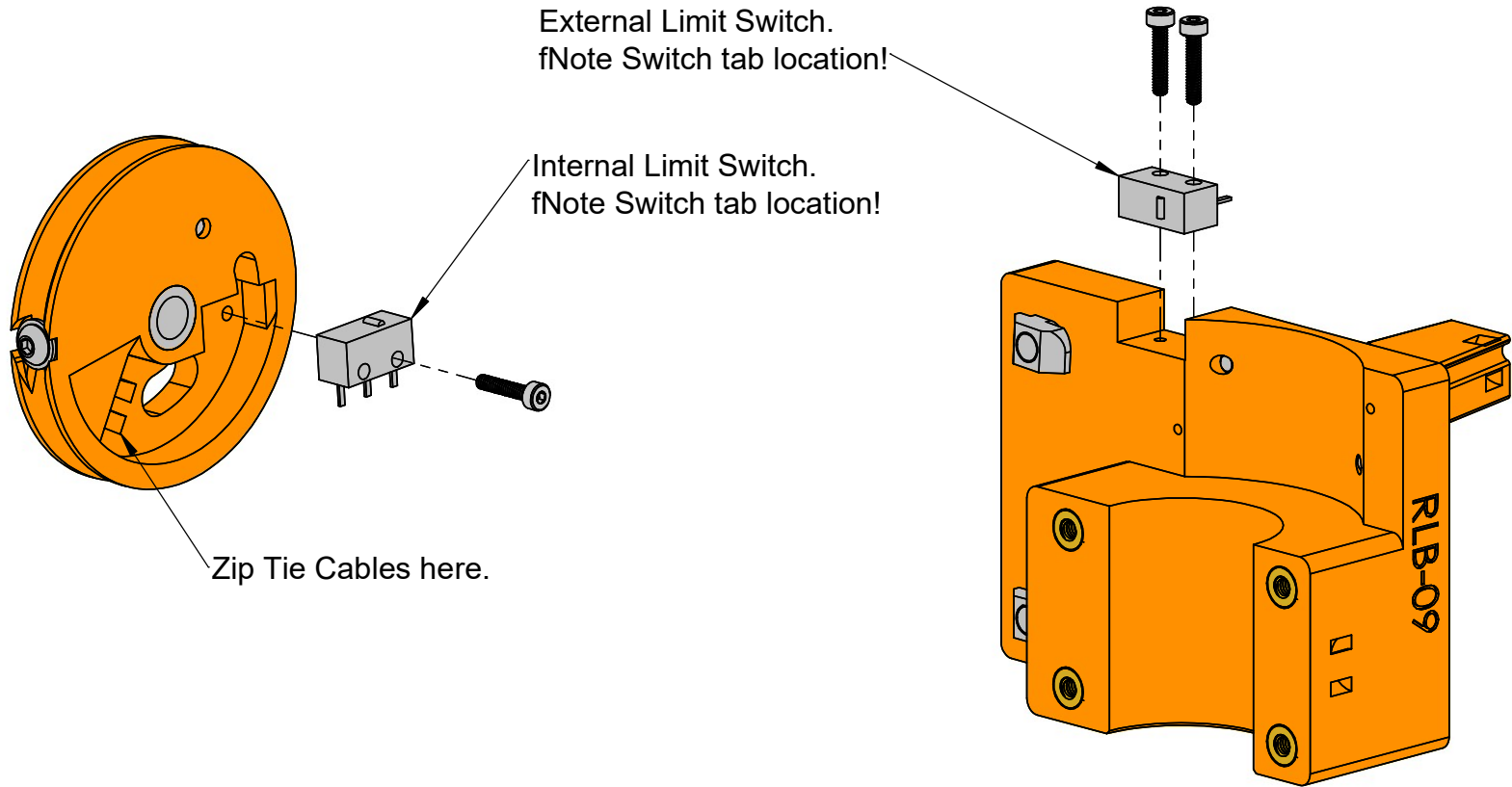
A

A


2

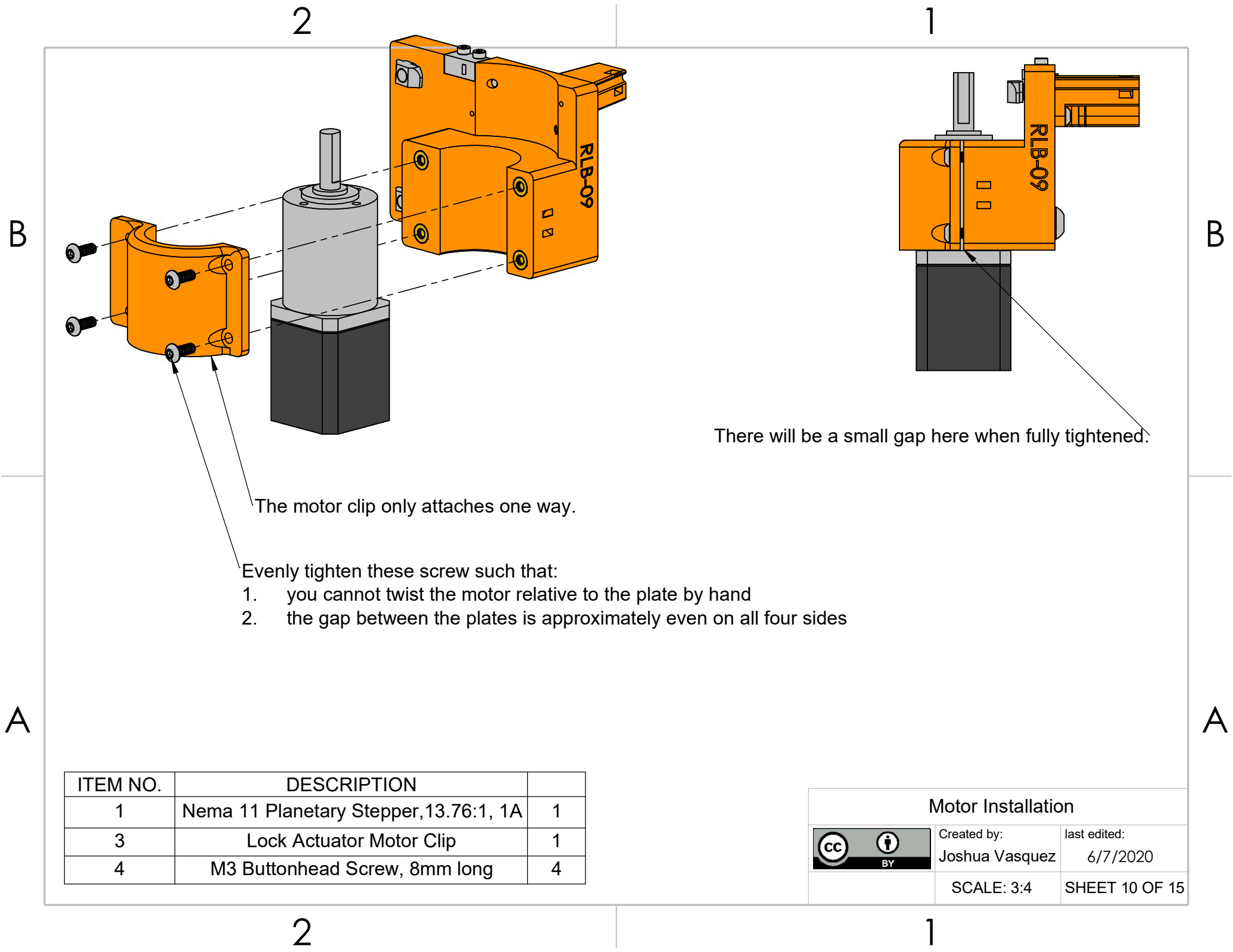
1

Wiring		
	Created by: Joshua Vasquez	last edited: 6/7/2020
	SCALE: 1:1	SHEET 8 OF 15



ITEM NO.	DESCRIPTION	QTY.
1	Floating Half Pulley with Insert	1
2	REL Base Plate with Inserts	1
3	M2 Screw, 10mm long	3
4	Mechanical Limit Switch	2

Limit Switch Installation		
	Created by: Joshua Vasquez	last edited: 6/7/2020
	SCALE: 1:1	SHEET 9 OF 15




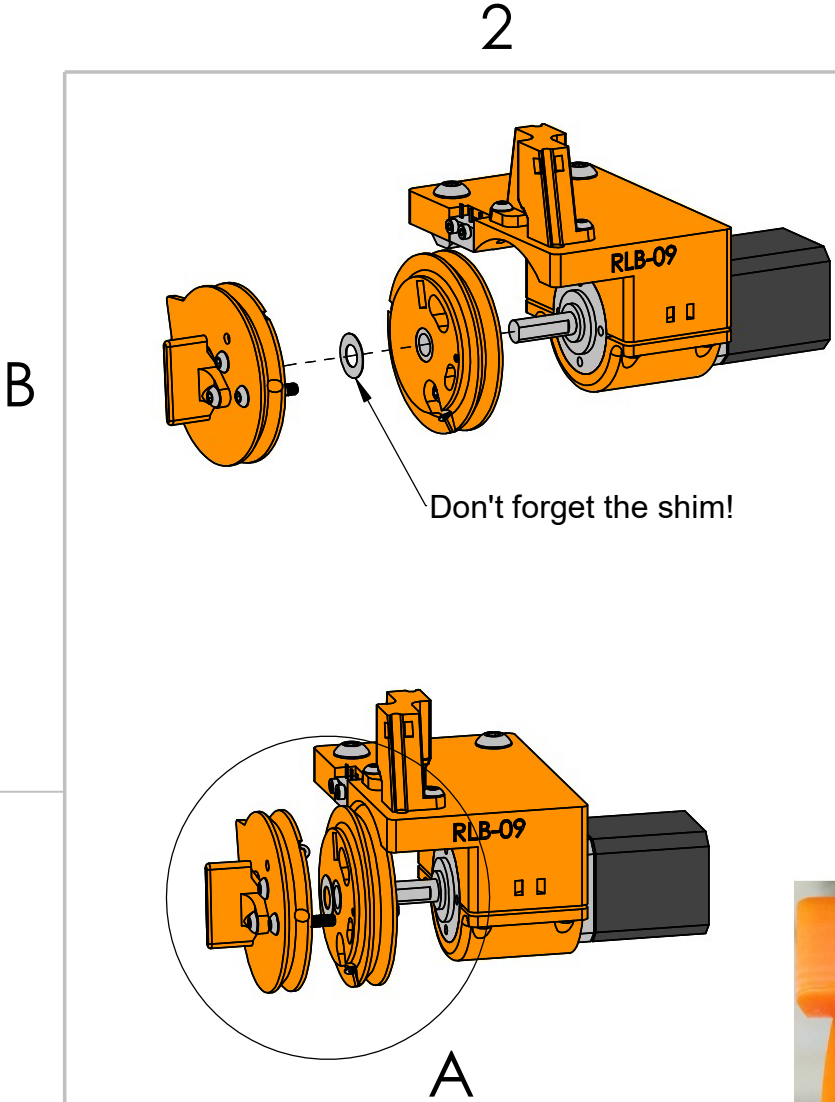
There will be a small gap here when fully tightened.

The motor clip only attaches one way.

- Evenly tighten these screw such that:
1. you cannot twist the motor relative to the plate by hand
 2. the gap between the plates is approximately even on all four sides

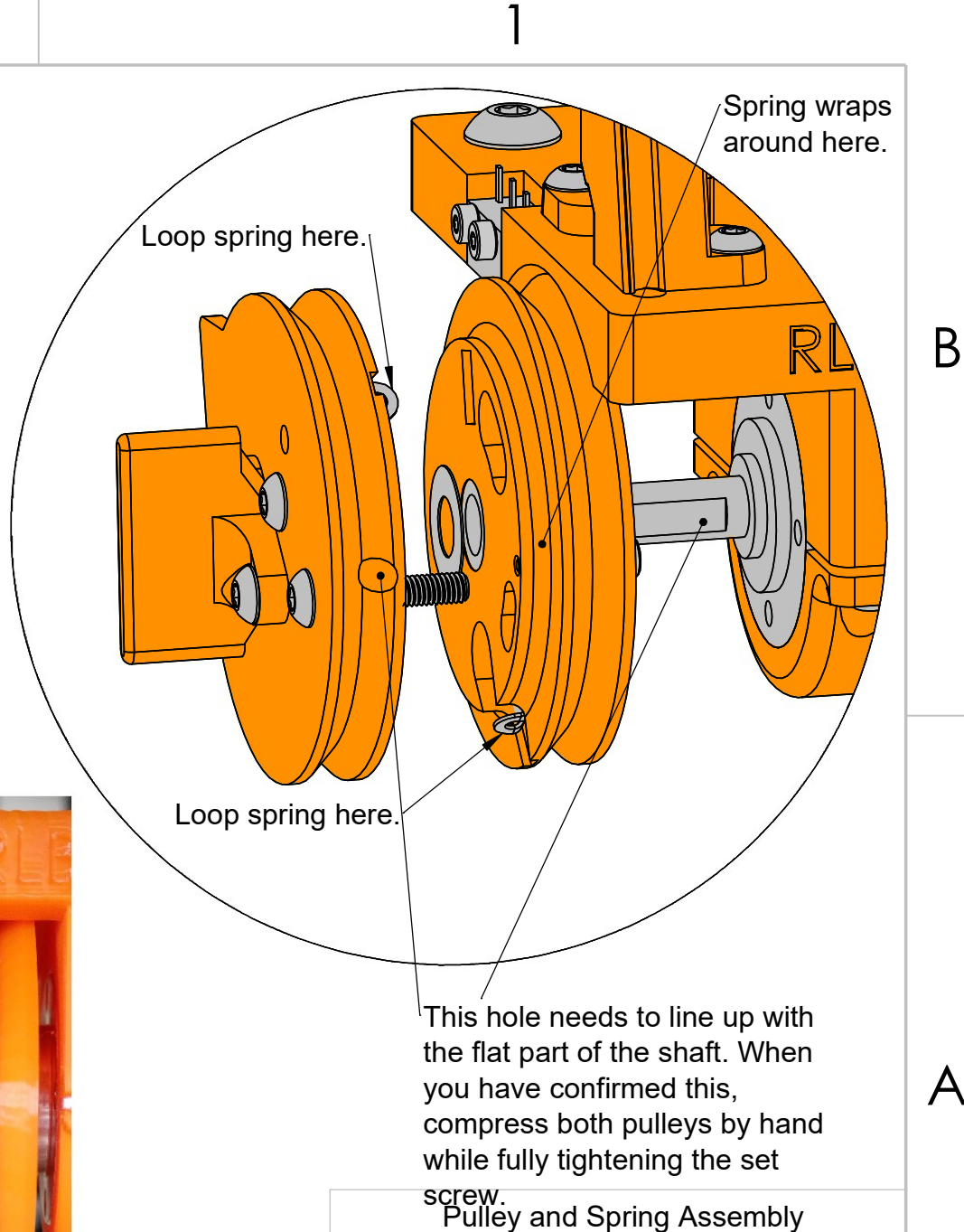
ITEM NO.	DESCRIPTION	
1	Nema 11 Planetary Stepper,13.76:1, 1A	1
3	Lock Actuator Motor Clip	1
4	M3 Buttonhead Screw, 8mm long	4

Motor Installation		
	Created by: Joshua Vasquez	last edited: 6/7/2020
	SCALE: 3:4	SHEET 10 OF 15



A

ITEM NO.	DESCRIPTION	QTY
1	Fixed Half Pulley Assembly	1
2	Floating Half Pulley Assembly	1
3	M6 Shim, 0.2mm thick	1
4	REL Extension Spring	1



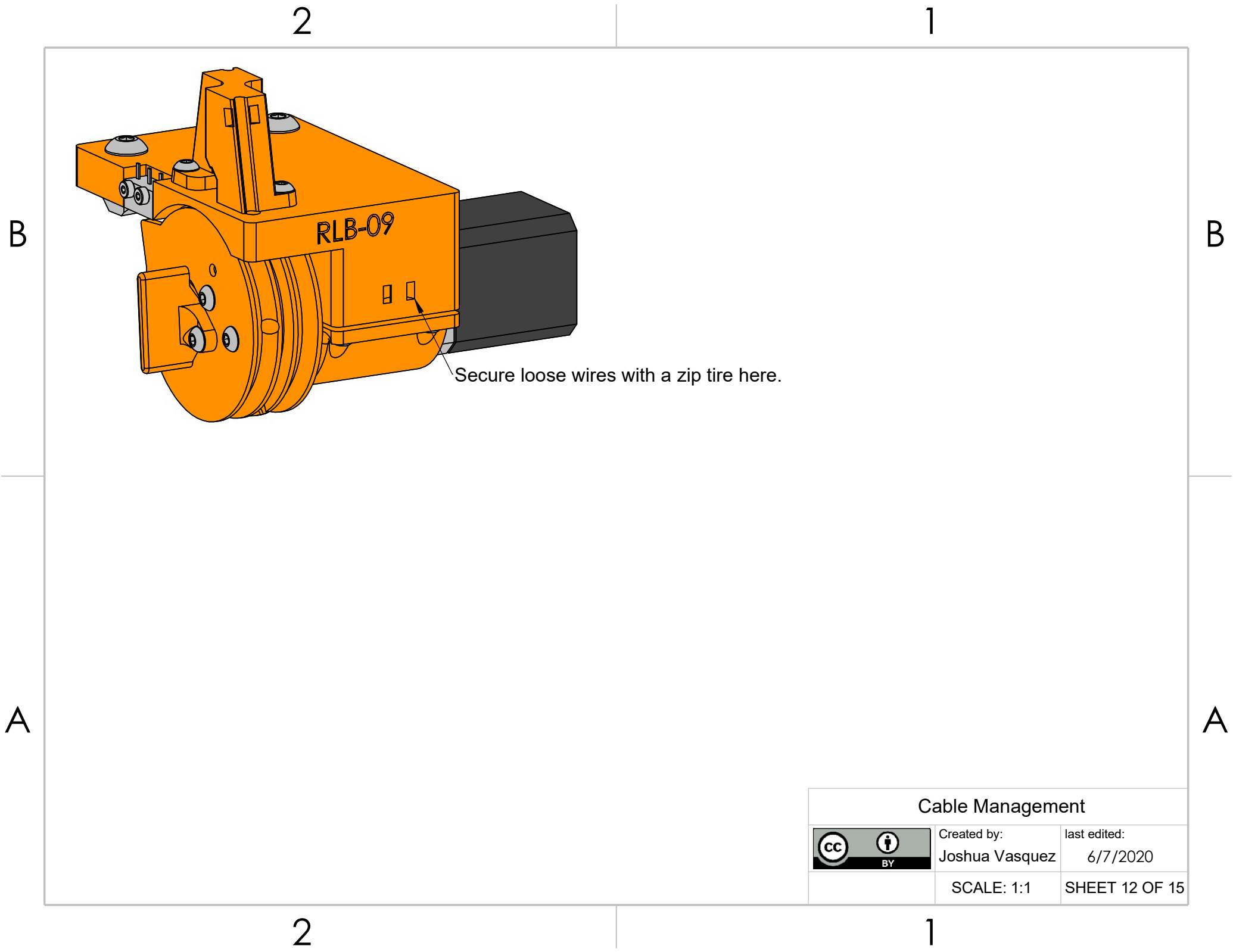
Pulley and Spring Assembly


Created by: Joshua Vasquez

last edited: 6/7/2020

SCALE: 1:2

SHEET 11 OF 15



Cable Management		
	Created by: Joshua Vasquez	last edited: 6/7/2020
	SCALE: 1:1	SHEET 12 OF 15

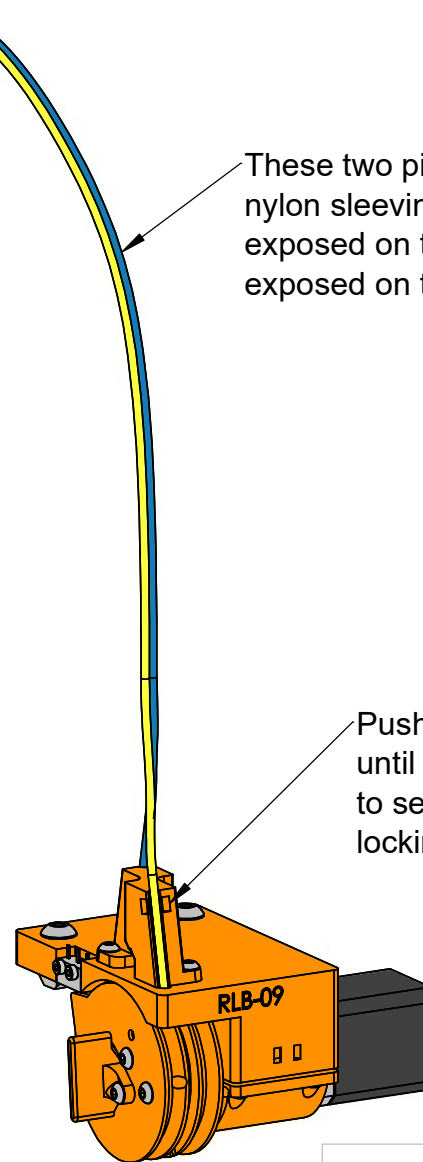
Note: this is just a schematic representation. Join these parts loosely together on a flat table following the color coding.

Note: tape the spring guide to the table for ease of assembly.

Push each spring guide into the printed part until they hard-stop at about 10mm deep.

These two pieces can be sleeved together in a nylon sleeving, but leave at least 100mm exposed on the carriage side and 150mm exposed on the Lock side.

Push each Spring Guide into the hole until it hard-stops. Then apply two zip ties to secure each spring guide at the locking side..



ITEM NO	DESCRIPTION	QTY
1	1600 mm wire rope	1
2	Carriage Pulley Assembly	1
3	Spring Guide, 600mm long	2
4	Optional: Braided Cable Sleeving 350mm long	1

Spring Guide Installation



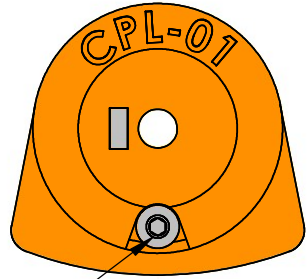
Created by:
Joshua Vasquez

last edited:
6/7/2020

SCALE: 1:2

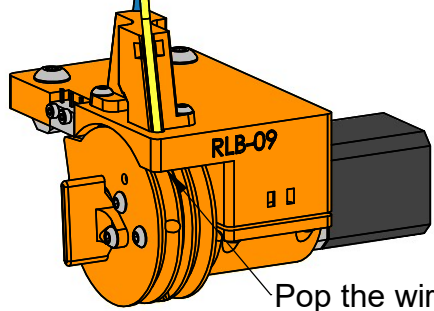
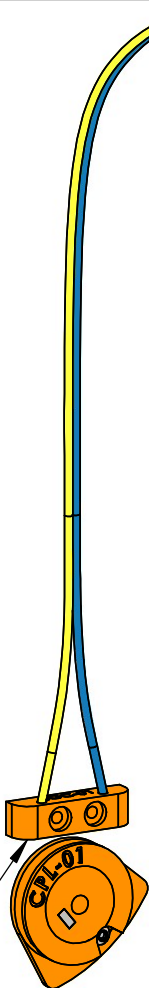
SHEET 13 OF 15

B

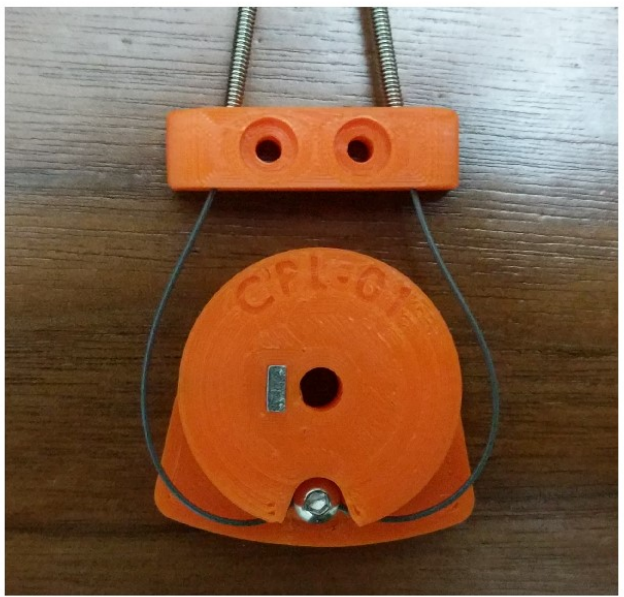


Loop the wire rope behind this screw at the halfway point and fully tighten the screw.

Tuck each loop of the wire rope into the closest hole.



Pop the wires out of each exit hole here. See the next page for cinching details.



Leave some slack on both sides of the carriage for the next step.

A

A

ITEM NO	DESCRIPTION	QTY
1	1600 mm wire rope	1
2	Carriage Pulley Assembly	1
3	Spring Guide, 600mm long	2

Wire Rope Routing



Created by:
Joshua Vasquez

last edited:
6/7/2020

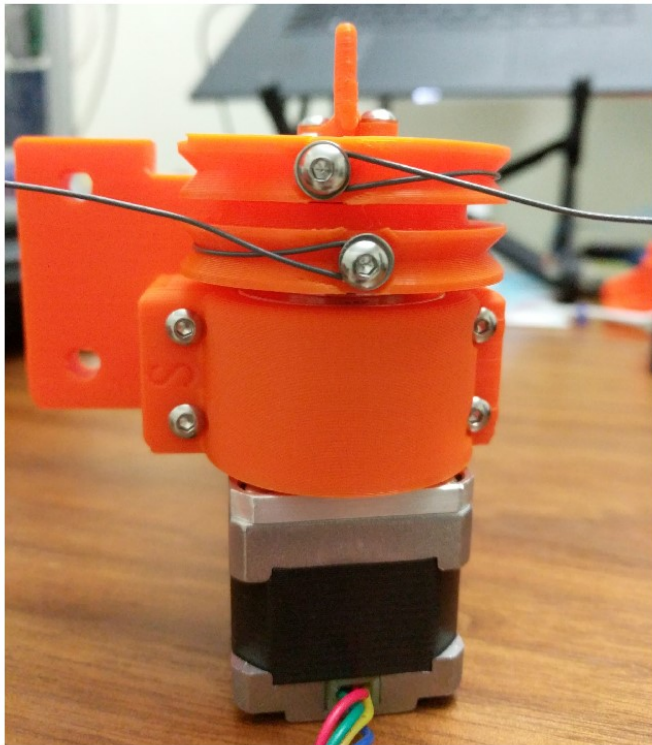
SCALE: 1:2

SHEET 14 OF 15

2

1

B



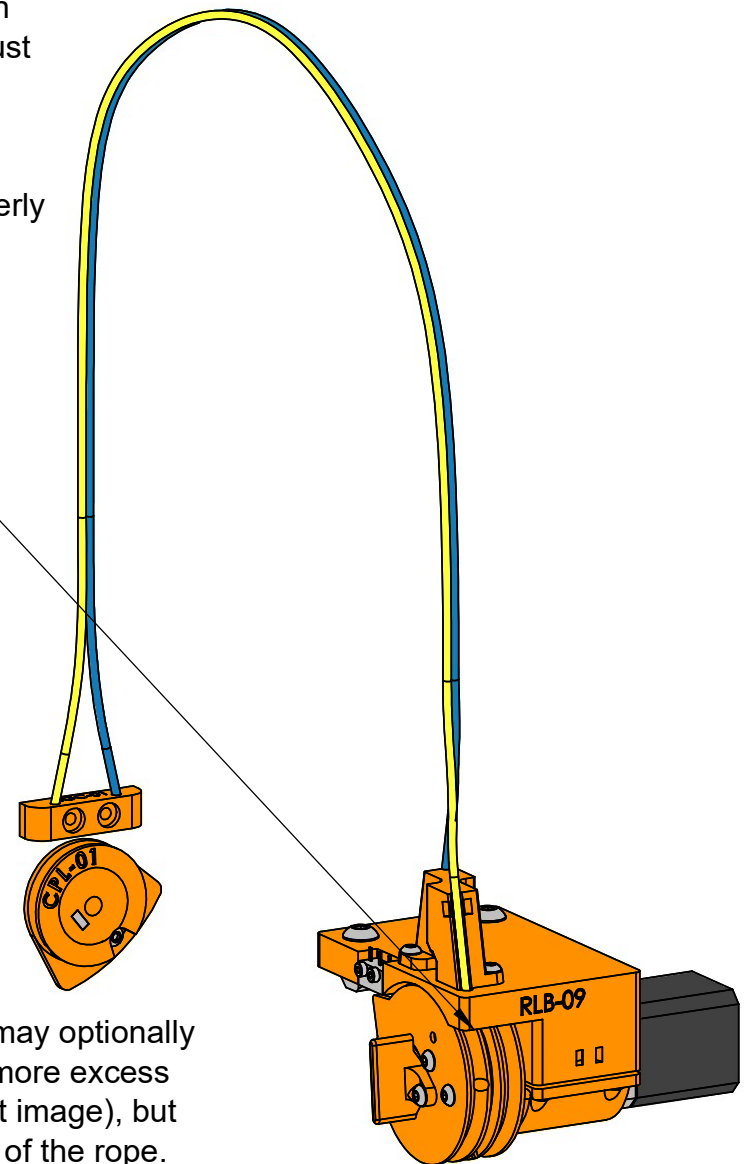
Cinch both wire rope ends down very lightly (upper left image), just enough such that the wire rope cannot pop out. The location of where they are cinched doesn't matter now as they will be properly located later.

B



A

Once the wires are cinched, you may optionally take in the slack until there is no more excess wire rope on the carriage side (left image), but do not put tension into either side of the rope. This setup makes it easier to install on the machine later.



A

Wire Rope Termination



Created by:
Joshua Vasquez

last edited:
6/7/2020

SCALE: 1:2

SHEET 15 OF 15

2

1