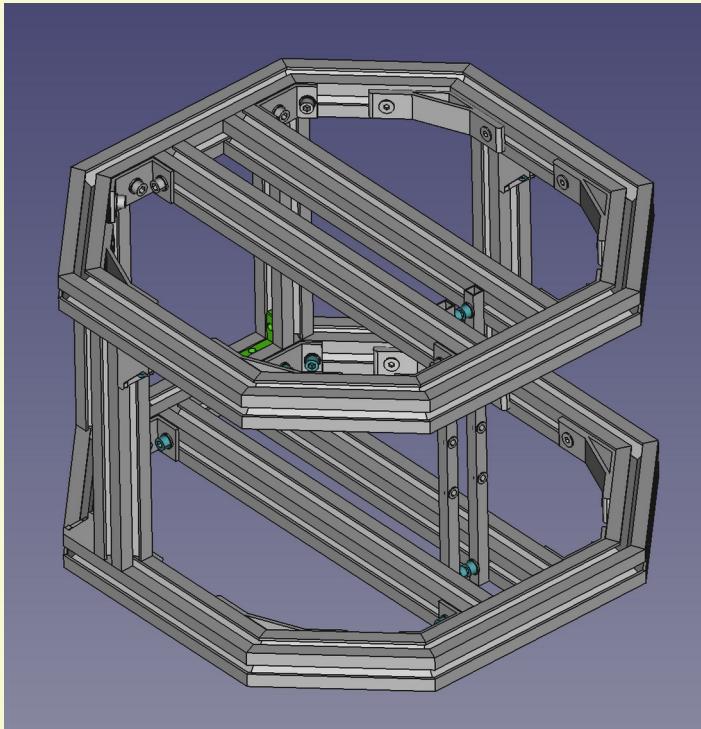


AMR

Assembly - Mechanical

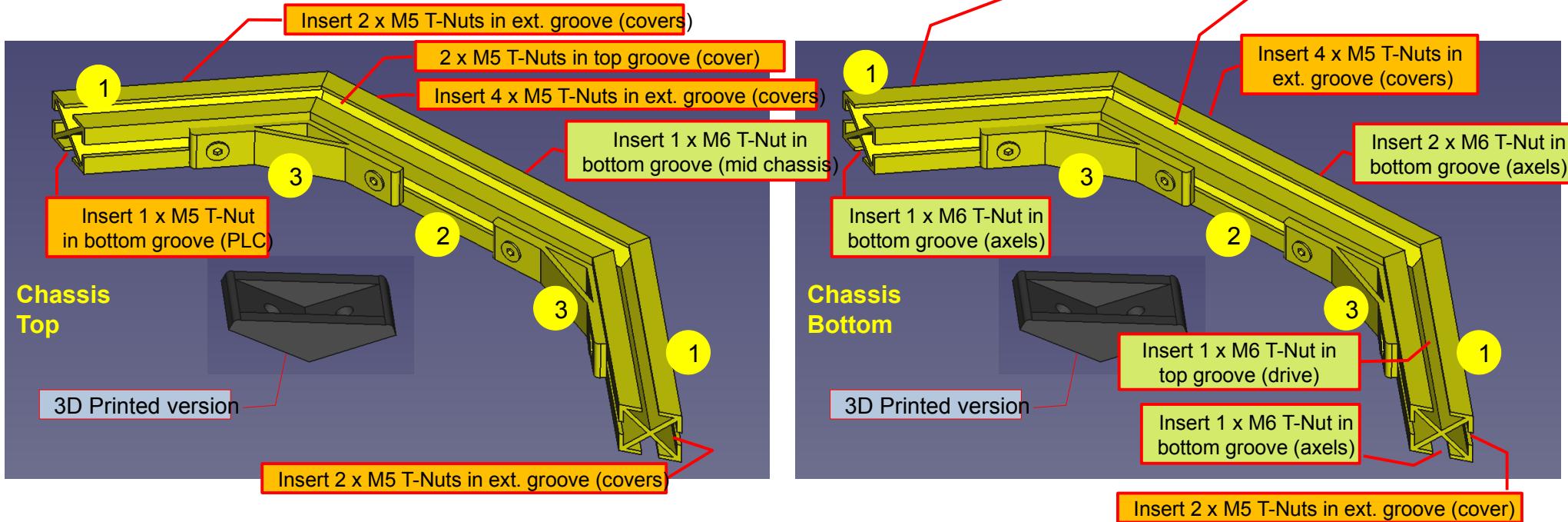
Assembly Part 1. Chassis

- Chassis Top
- Chassis Bottom
- Chassis Middle

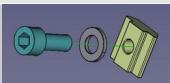


Set A

Number of units to assemble: 2 + 2

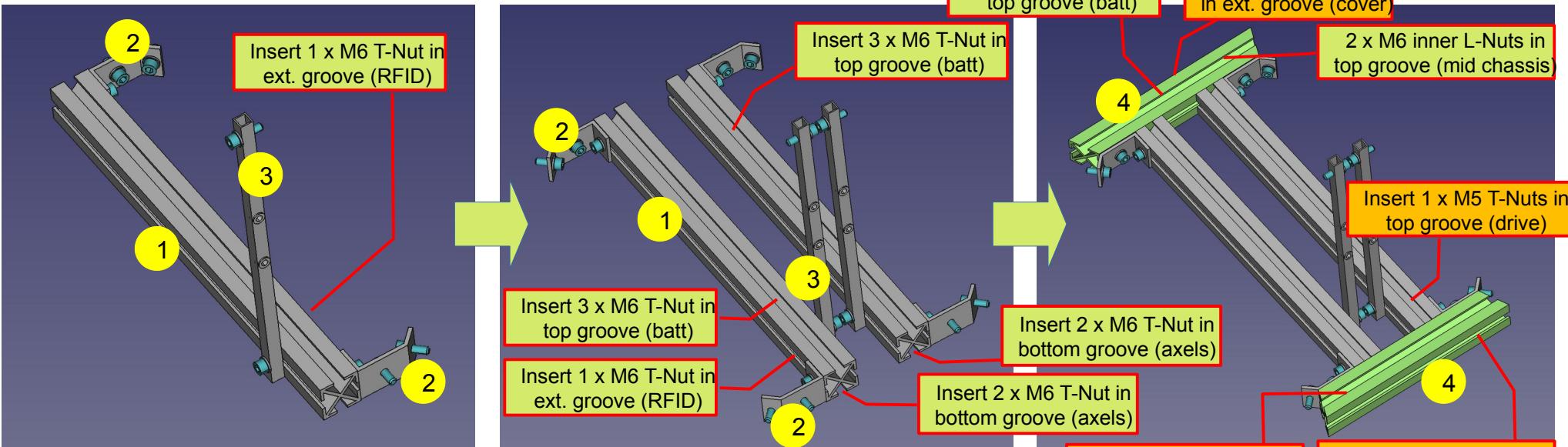


#	Part Num.	Part Name	Notes
1	P0165	30x30 138mm profile 22,5deg cut	
2	P0160	30x30 204mm profile 22,5deg cut	
3	P0011	135 degree bracket	Use Screw_M6x14_ISO4762 with M6 washers and T-Nuts

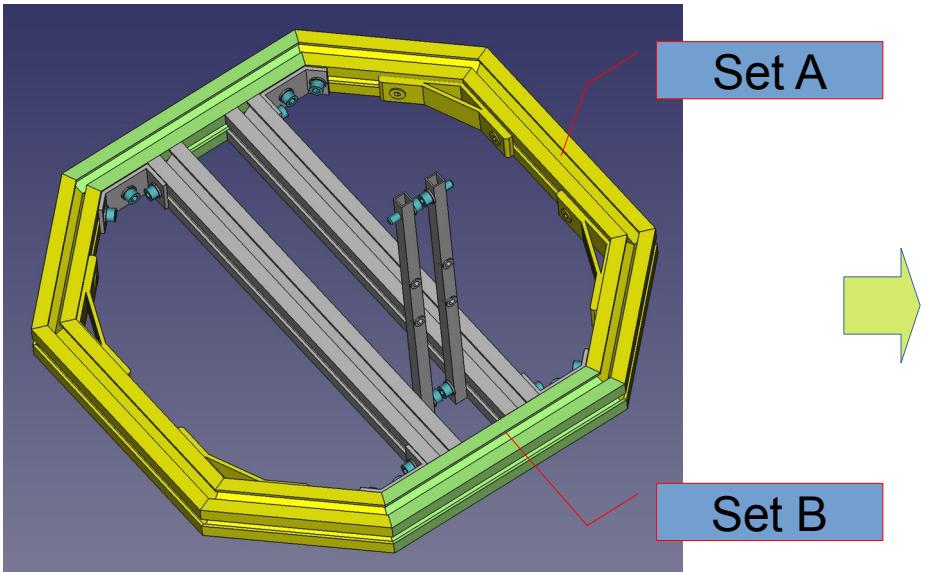


Set B

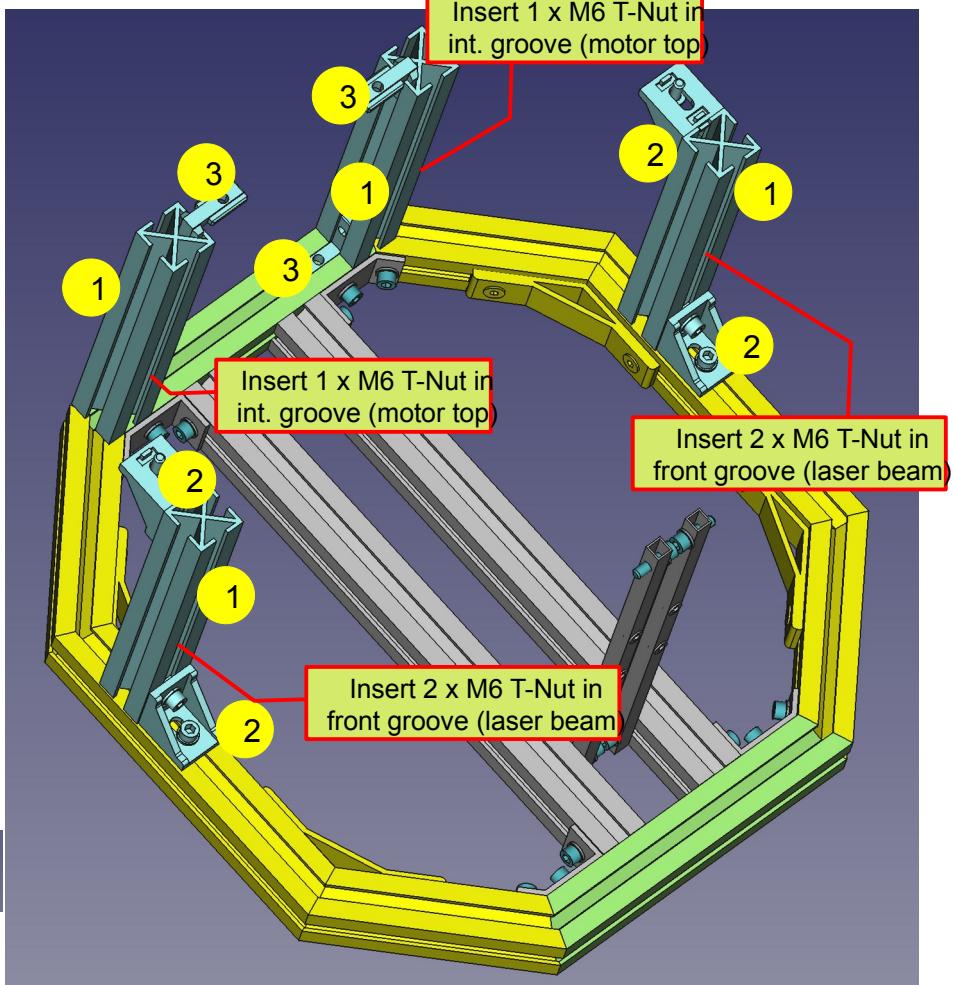
Number of units to assemble: 1



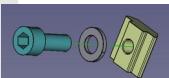
#	Part Num.	Part Name		
1	P0155	30x30 339 mm profile flat cut		
2	P0016	135deg_small_braket M6 3holes		Use Screw_M6x14_ISO4762 with M6 washers and T-Nuts
3	P0215	Alu Profile square 10x10x1 259mm with holes		Insert threaded rivet M5 and use Screw_M6x20_ISO4762 with M6 washers and T-Nuts
4	P0165	30x30 138mm profile 22,5deg cut		Use Screw_M6x14_ISO4762 with M6 washers and T-Nuts

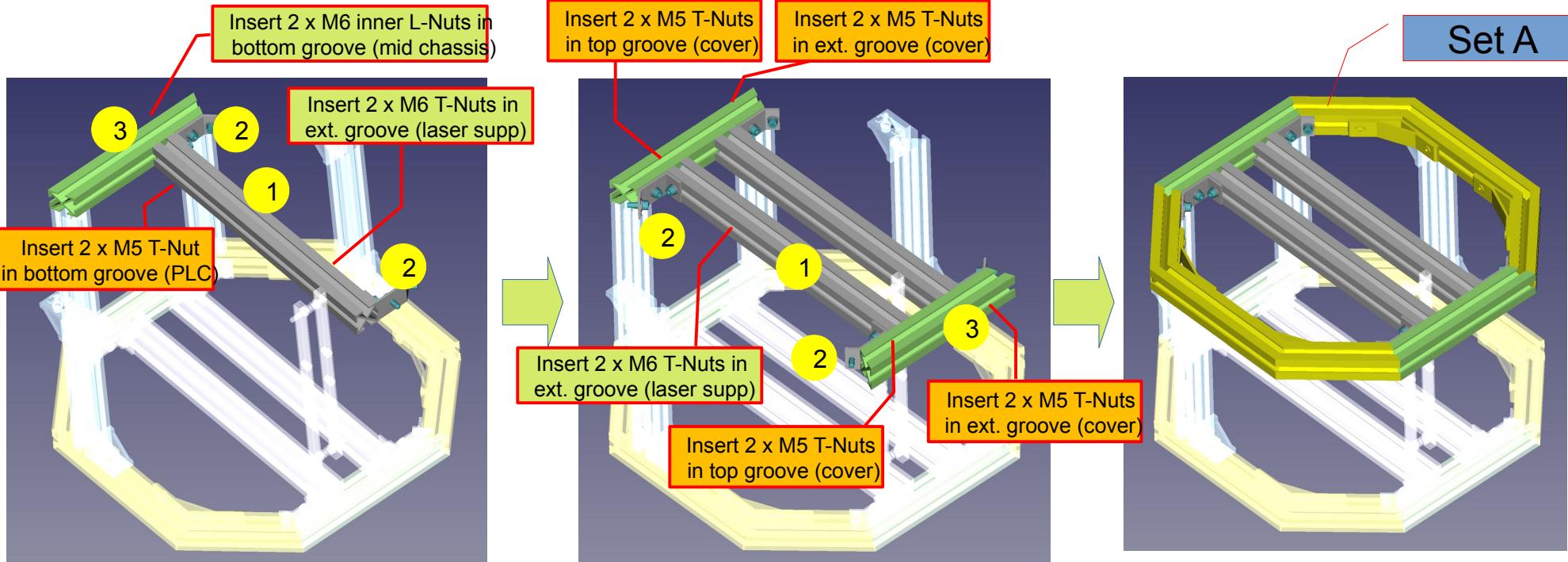


Set B



#	Part Num.	Part Name	Notes
1	P0170	30x30_200mm profile flat cut	
2	P0021	90 degree bracket	Use Screw_M6x14_ISO4762 with M6 washers and T-Nuts
3	P0070	30x30 inner corner L nut	Use Screws for inner corner L nut

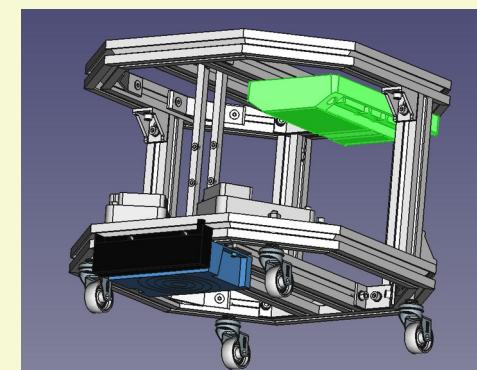
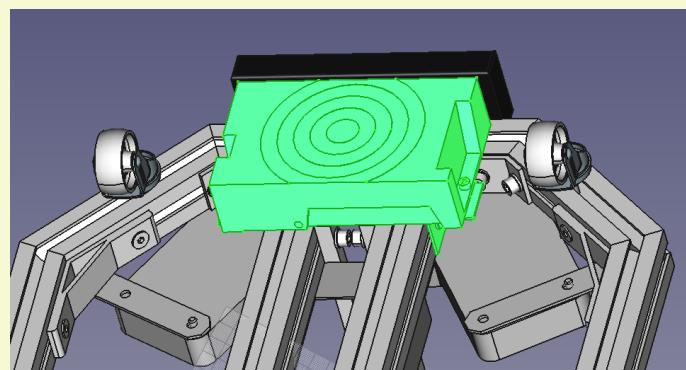
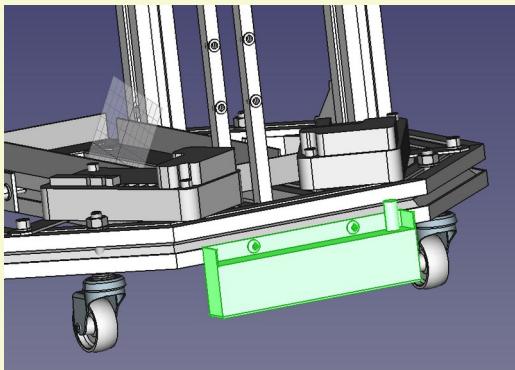
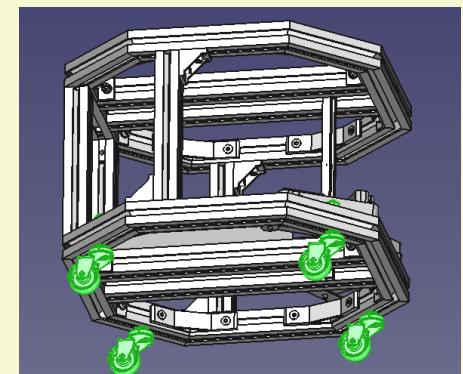
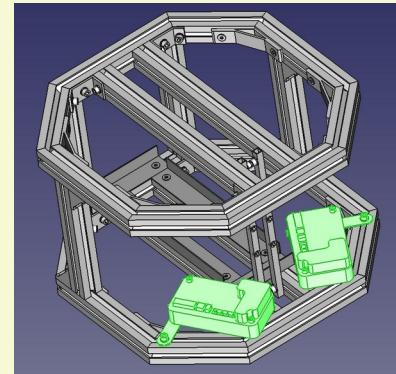
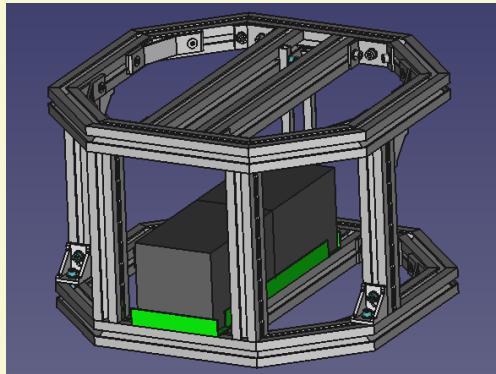




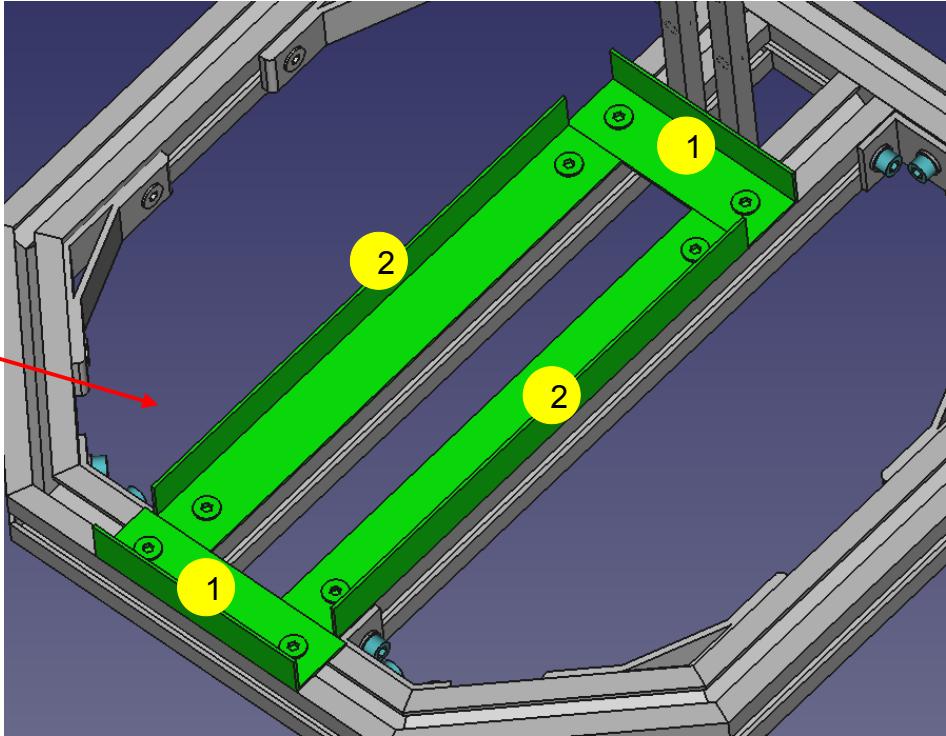
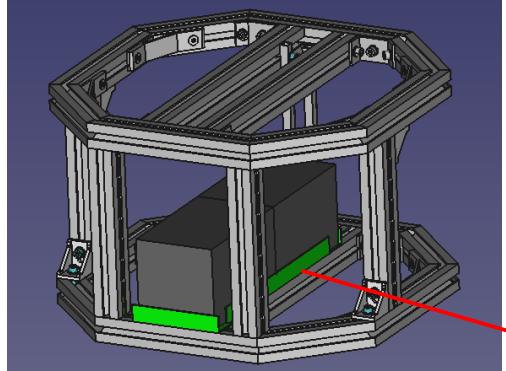
#	Part Num.	Part Name	Notes
1	P0155	30x30 339 mm profile flat cut	
2	P0016	135deg_small_braket M6 3holes	Use Screw_M6x14_ISO4762 with M6 washers and T-Nuts
3	P0165	30x30 138mm profile 22,5deg cut	Use Screw_M6x14_ISO4762 with M6 washers and T-Nuts

Assembly Part 2

- Batteries support
- Drives set
- Caster wheels set
- Magnetic Sensor set
- RFID Set
- PLC Set

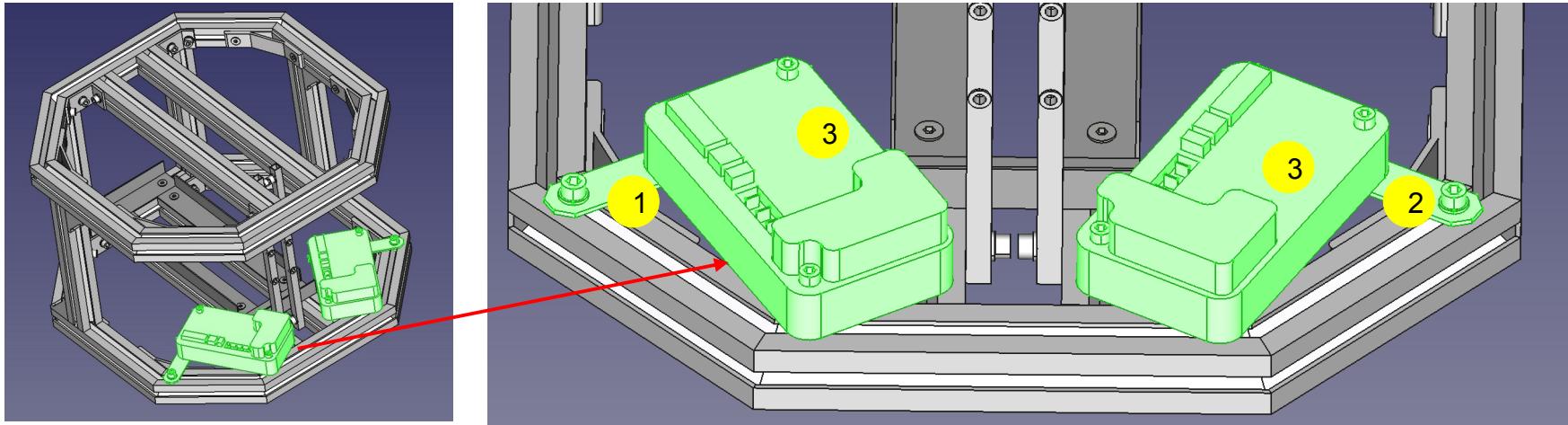


Battery Support



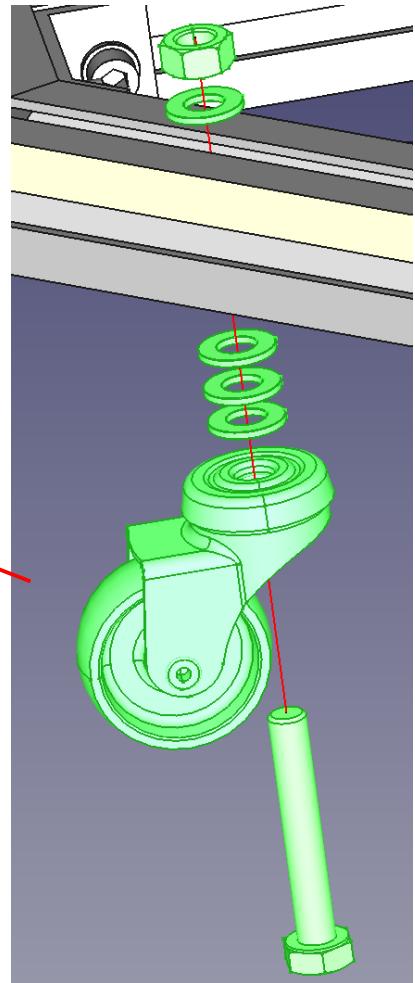
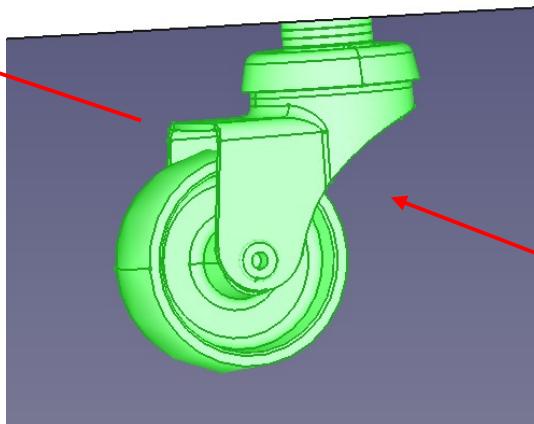
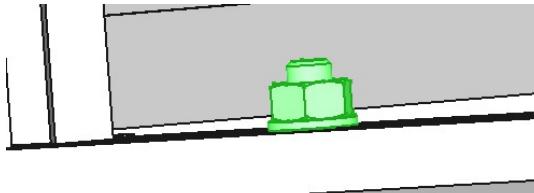
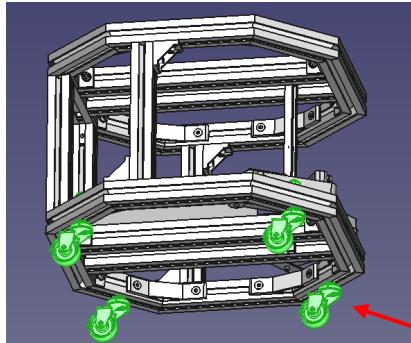
#	Part Num.	Part Name	Notes
1	P0230	Aluminum Profile L shape 30x20x1,5 98mm	Use Screw_M6x14_CS with M6 T-Nuts
2	P0220	Aluminum Profile L shape 30x20x1,5 250mm	Use Screw_M6x14_CS with M6 T-Nuts

Driver set



#	Part Num.	Part Name	Notes
1	P0415	Drive support	Threaded rivet M5 in end hole, Screw_M6x14_ISO4762 with M6 washers and T-Nuts in first hole
2	P0415	Drive support	Threaded rivet M5 in mid hole, Screw_M6x14_ISO4762 with M6 washers and T-Nuts in first hole
3	P0535	PG Driver	Screw_M5x30_ISO4762

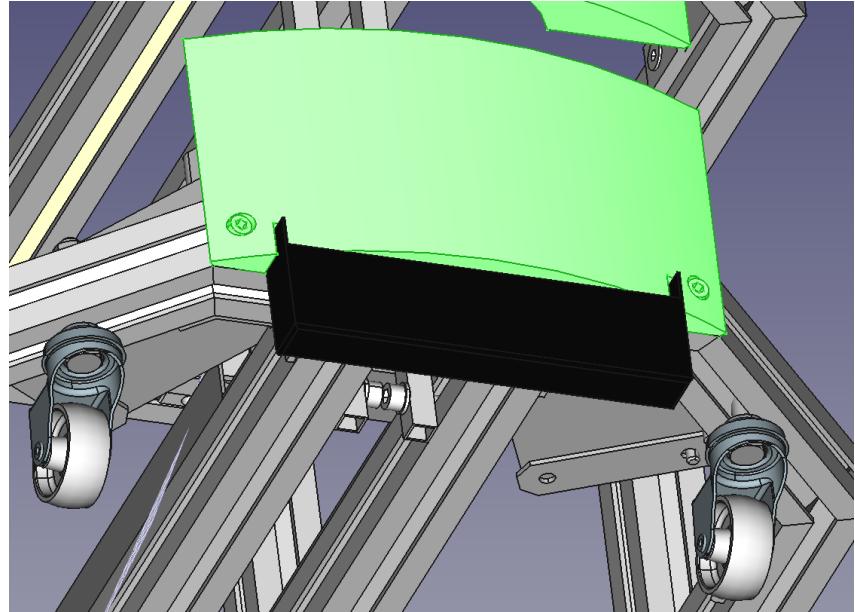
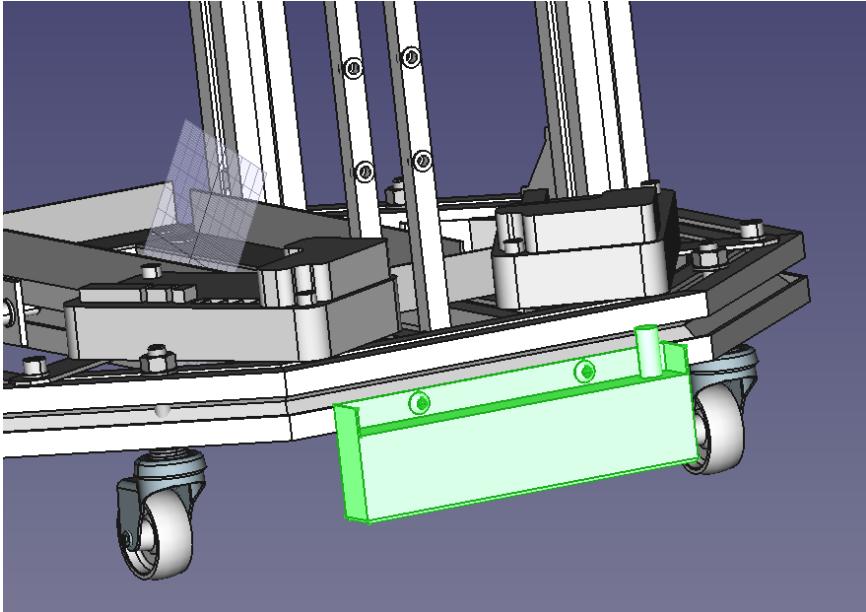
Caster wheels set



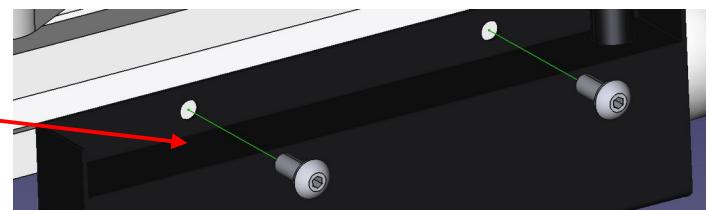
P0420 Caster wheels ALEX SERIE B-BP 3-0006

Use Screw_M8x50 HEX HEAD with three M8 washers as spacers (about 5mm in total between caster wheel and frame) and one M8 washer + Nut to fix it to the frame

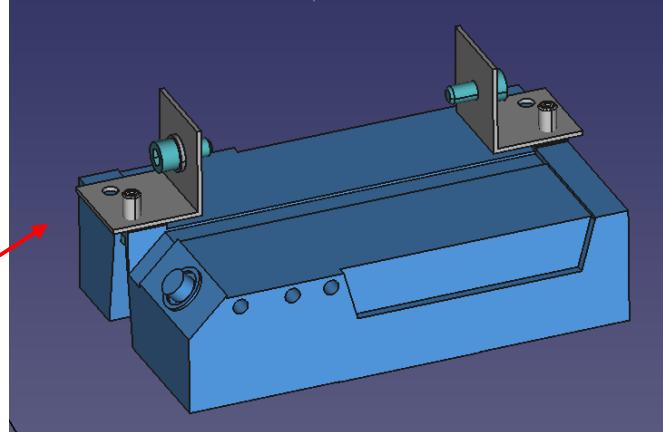
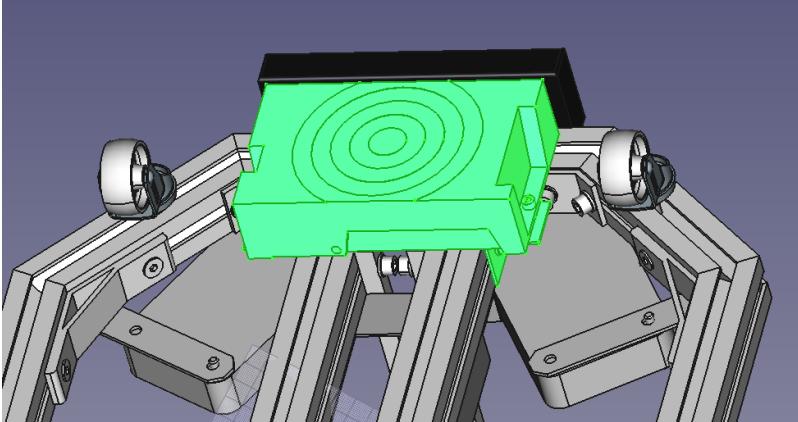
Magnetic Sensor set



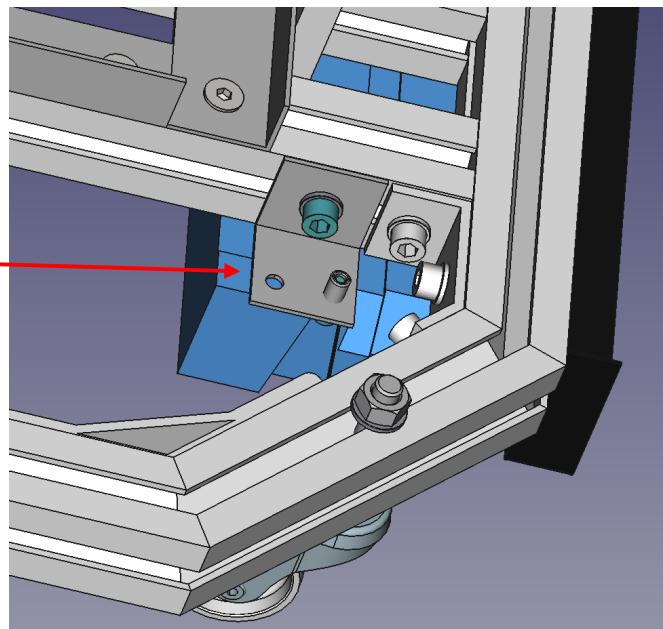
1. Put the sensor on the beam as shown in left figure using P0310 part to centre the sensor as shown in right figure
2. Mark the 2 holes of the sensor on the beam
3. Make two 4,5mm holes on them and thread them to get M5 threaded holes
4. Use Screw_M5x12 BHCS to fix the sensor to the beam



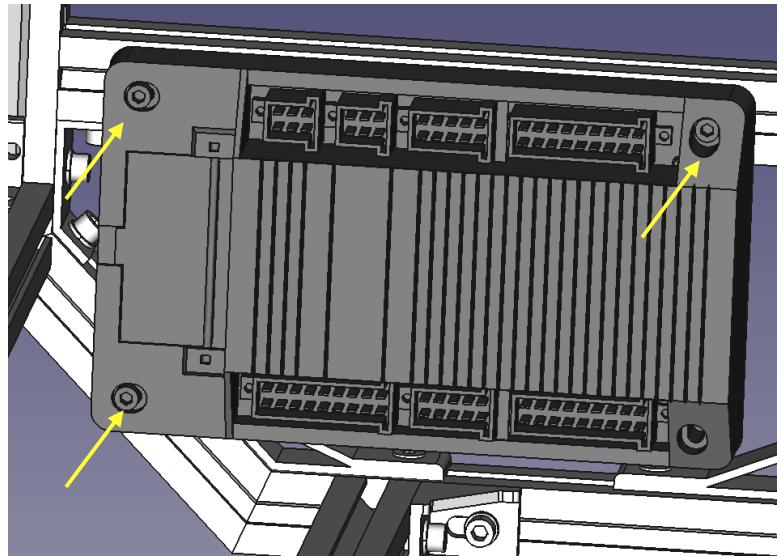
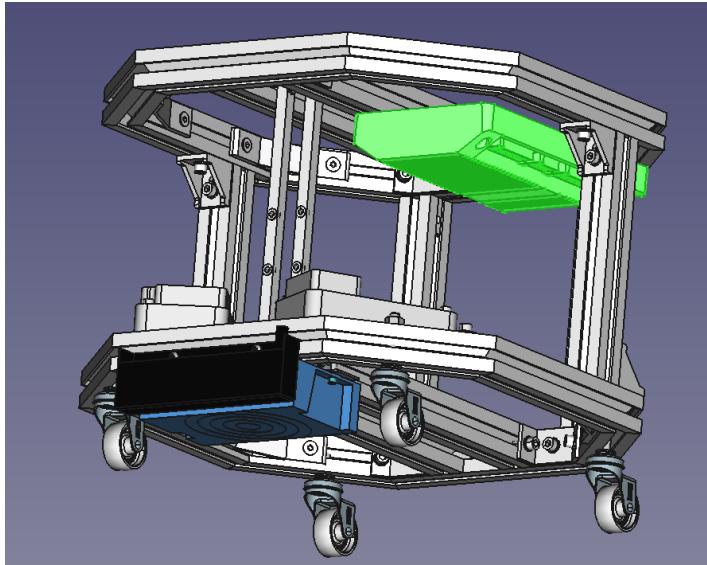
RFID Set



- 1) Use P0425 (Bracket RFID). There are two.
- 2) Attach brackets to RFID sensor using
Screw_M4x12_ISO4762
- 3) Attach RFID Set (sensor+brackets) to frame using
Screw_M6x14_ISO4762, M6 washer and T-Nut



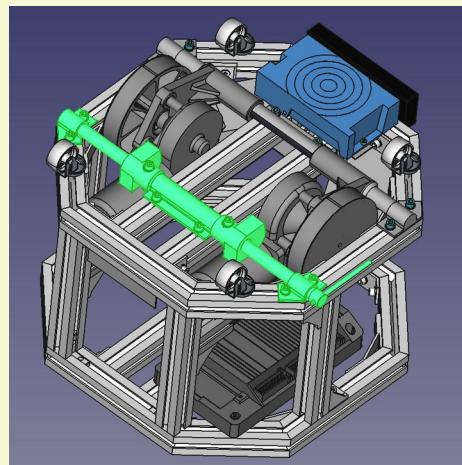
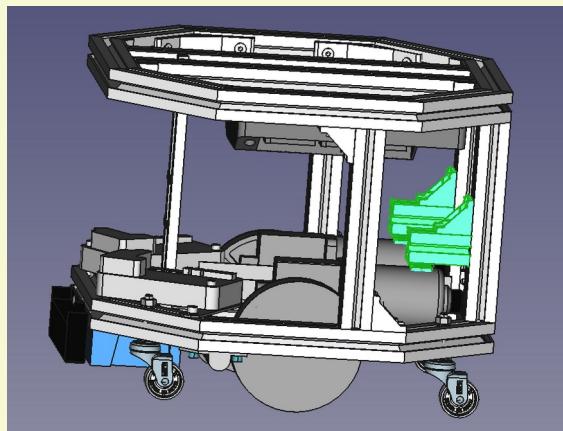
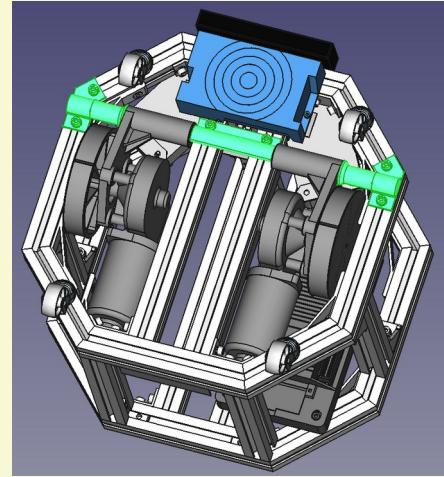
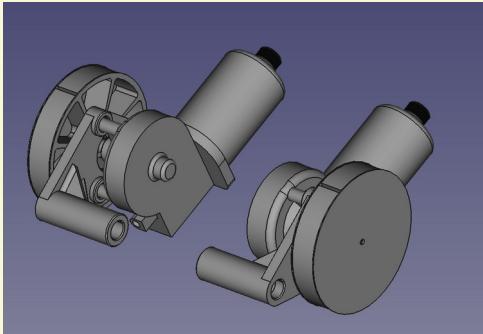
PLC Set



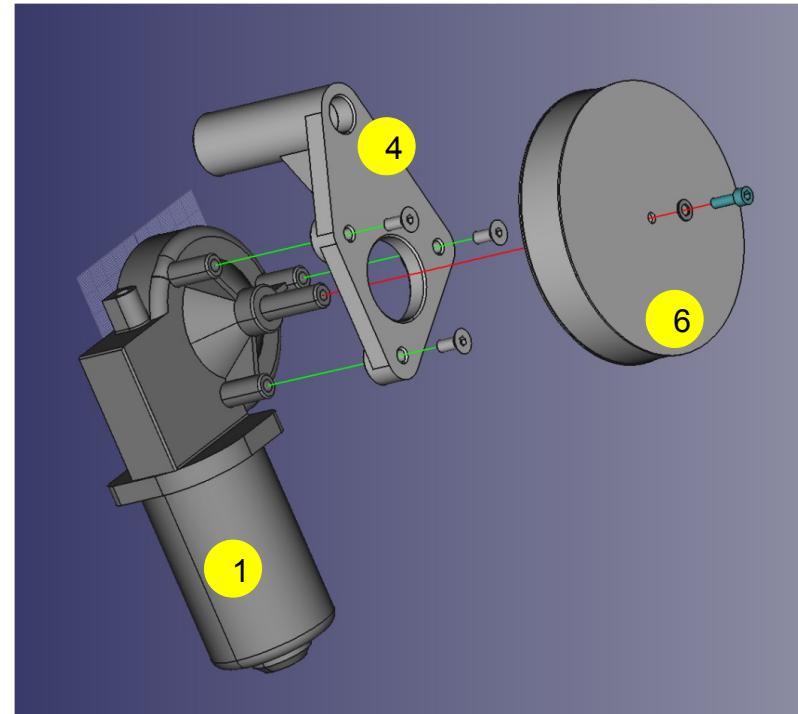
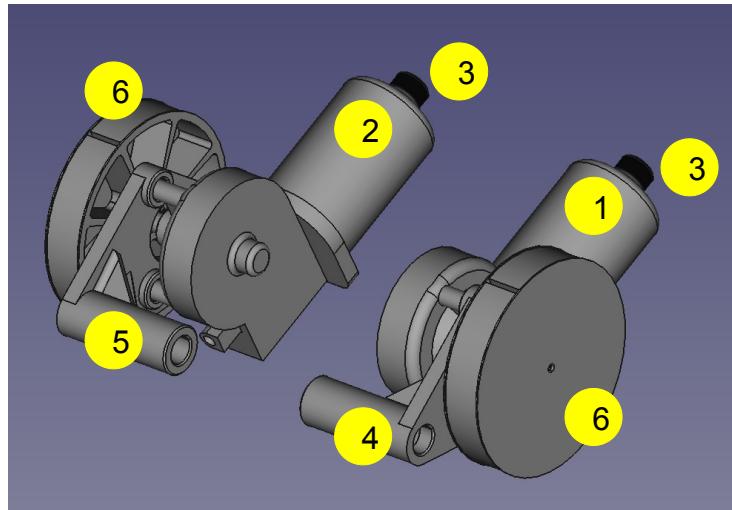
PLC is attached to inner part of “Chassis Top” by using three Screw_M5x30_ISO4762 with M5 T-Nut

Assembly Part 3

- Motors+Encoders
- Balancing axel set
- Set limit motors Top
- Clutch set

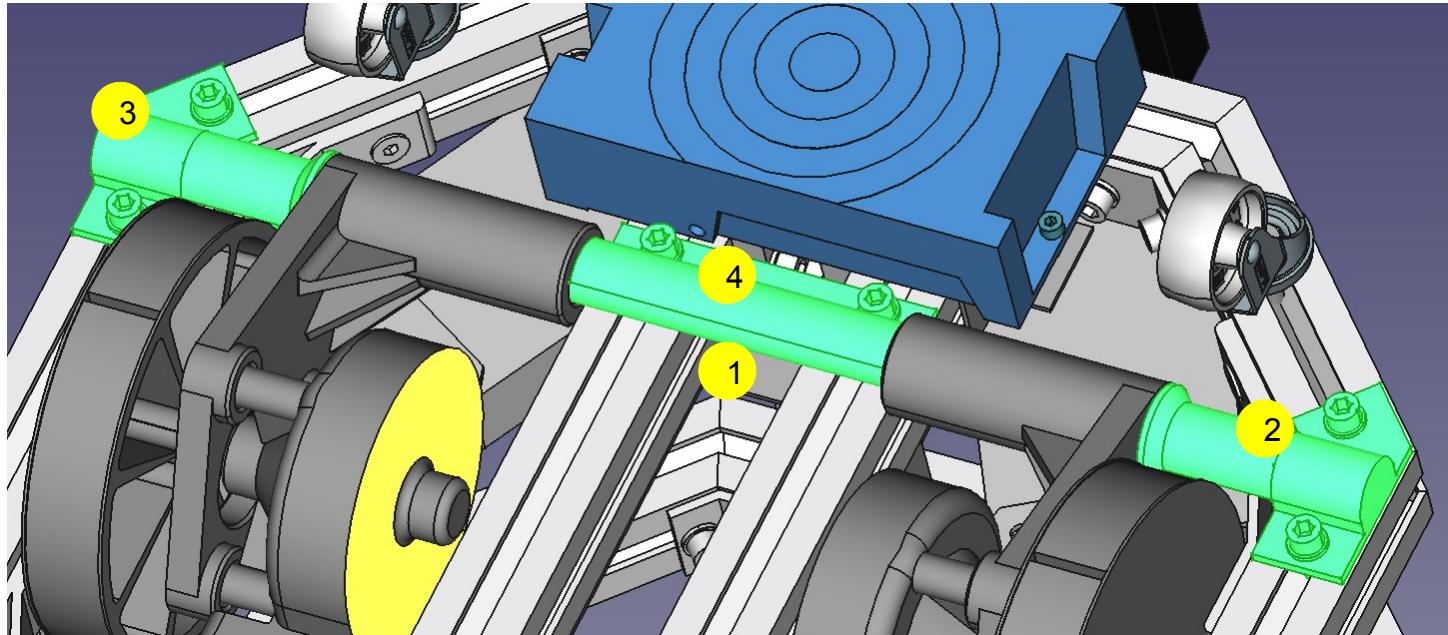
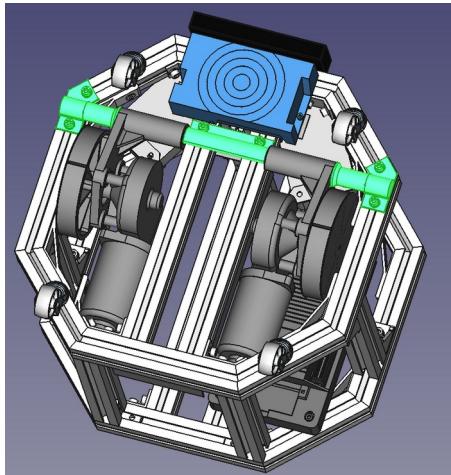


Motors+Encoders

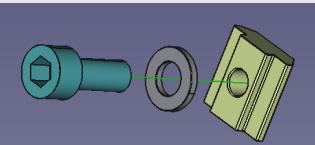


#	Part Num.	Part Name	Notes
1	P0455	Motor_Nidec_404_385_right side	
2	P0460	Motor_Nidec_404_385_left side	
3	P0470	Encoder	Attach to motors
4	P0290	AGV_Soporte_motor_D	Use Screw_M6x14_CS (countersunk)
5	P0295	AGV_Soporte_motor_I	Use Screw_M6x14_CS (countersunk)
6	P0300	AGV_Rueda	Put rubber band 22mm wide (P0385). Use Screw_M5x16_ISO4762 with M5 washer

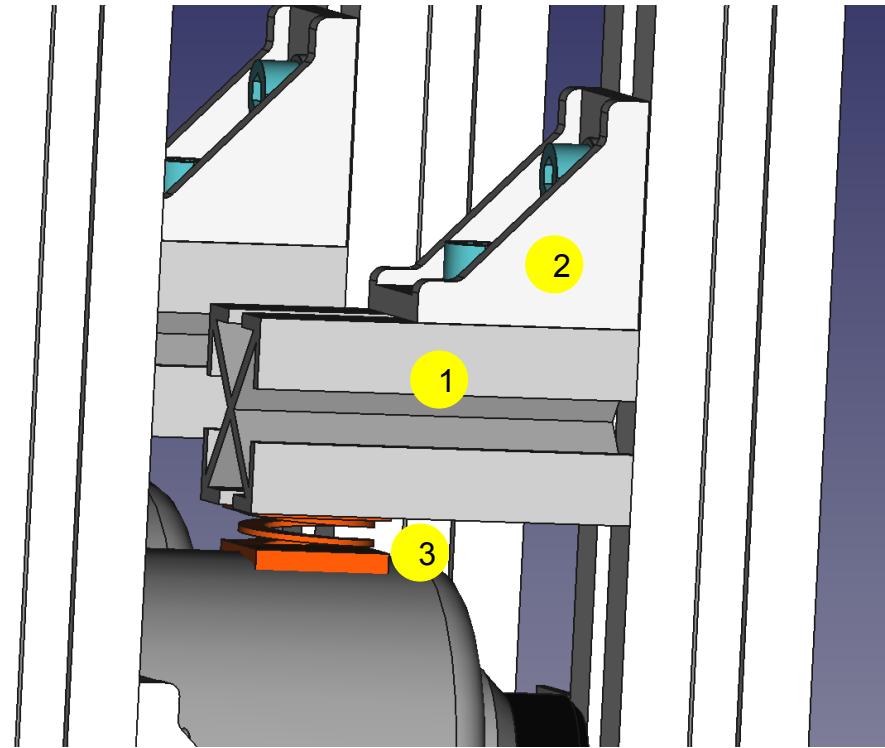
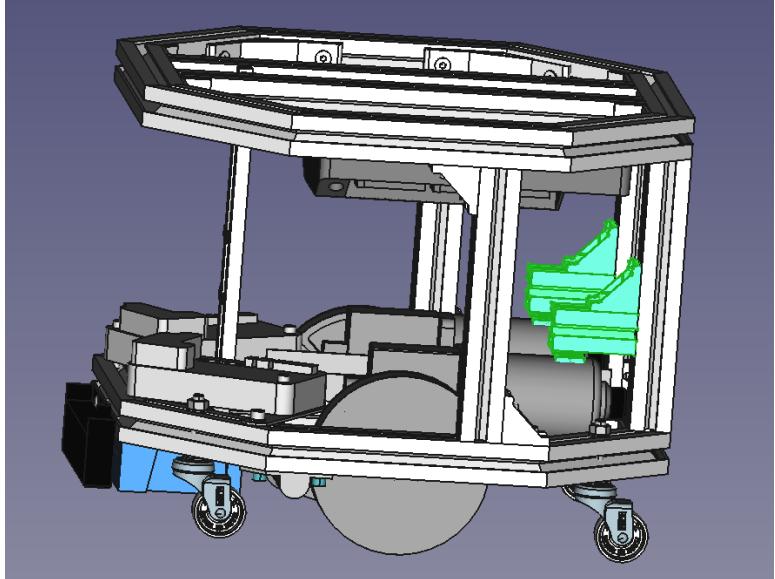
Balancing axel set

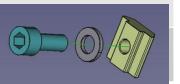


#	Part Num.	Part Name	Notes
1	P0435	Balancing axle (tube 390x16mm)	
2	P0250	16mm axle corner clamp side a long	Use Screw_M6x14_ISO4762 with M6 washers and T-Nuts
3	P0255	16mm axle corner clamp side b long	Use Screw_M6x14_ISO4762 with M6 washers and T-Nuts
4	P0260	Axel clamp	Use Screw_M6x14_ISO4762 with M6 washers and T-Nuts

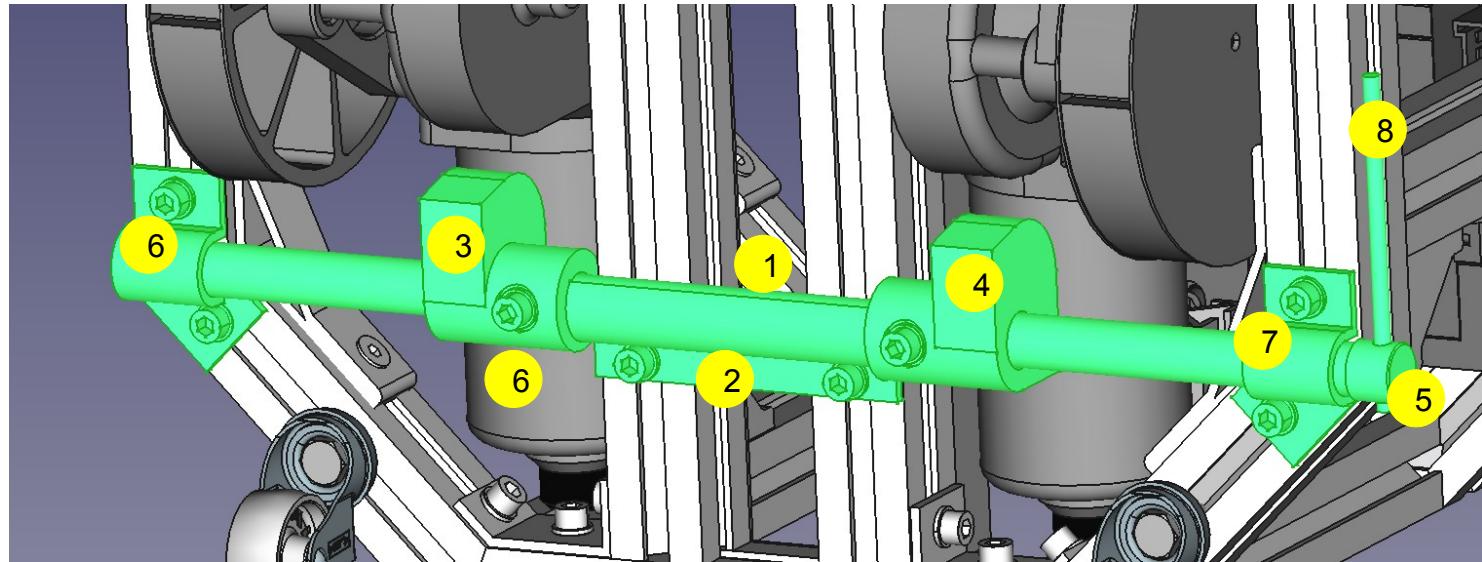
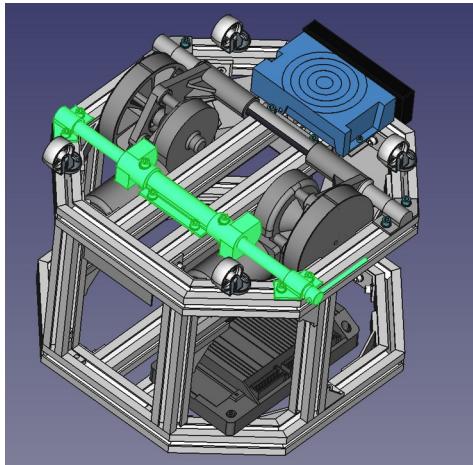


Set limit motors Top

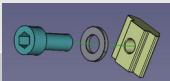


#	Part Num.	Part Name	Notes
1	P0175	30x30_60mm profile flat cut	
2	P0021	90 degree bracket	Use Screw_M6x14_ISO4762 with M6 washers and T-Nuts
3	P0446	Spring	

Clutch set

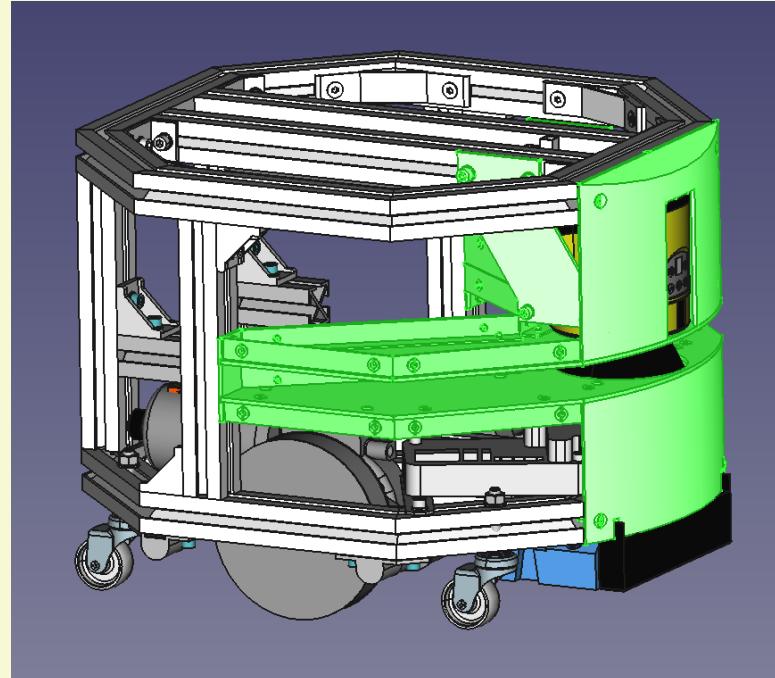


#	Part Num.	Part Name	Notes
1	P0430	Clutch axle (tube 410x16mm)	
2	P0260	Axel clamp	Use Screw_M6x14_ISO4762 with M6 washers and T-Nuts
3	P0265	Clutch-cam A	Use Screw_M6x35_ISO4762 with 2 x M6 washers and Nut
4	P0270	Clutch-cam B	Use Screw_M6x35_ISO4762 with 2 x M6 washers and Nut
5	P0275	Clutch axle cap	
6	P0280	Clutch axle clamp A	Use Screw_M6x14_ISO4762 with M6 washers and T-Nuts
7	P0285	Clutch axle clamp B	Use Screw_M6x14_ISO4762 with M6 washers and T-Nuts
8	P0390	Clutch lever (100x5mm bar)	

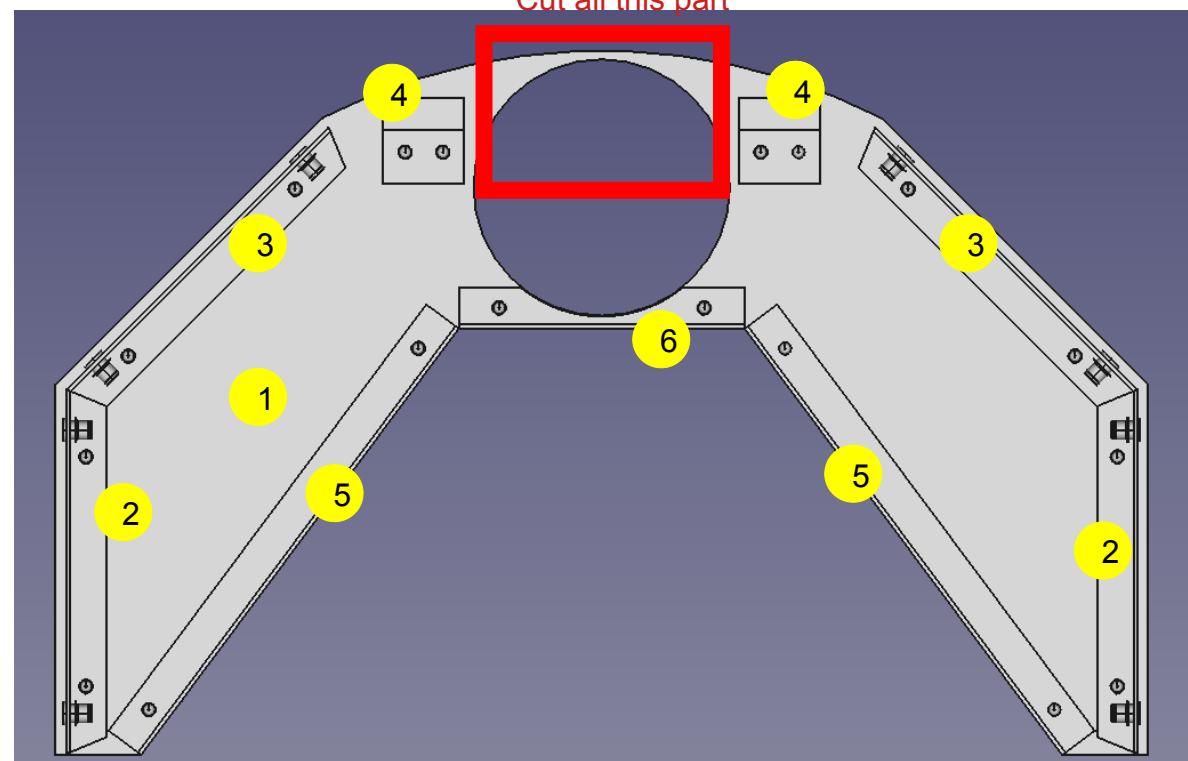
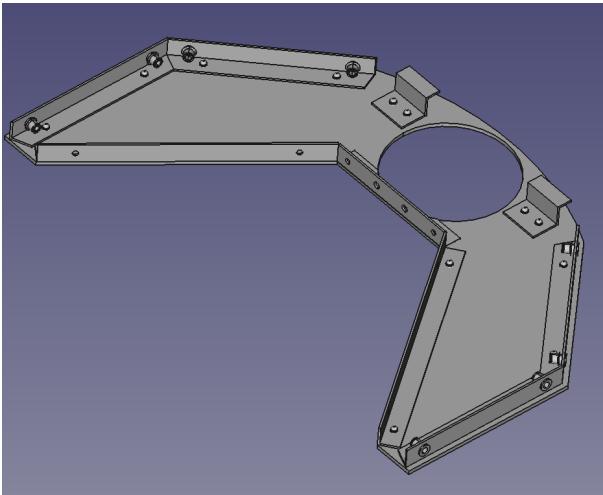


Assembly Part 4

- Laser beam area – Inside
- Laser beam area – Bottom
- Laser beam area – Top
- Front Cover Set
- Laser Set

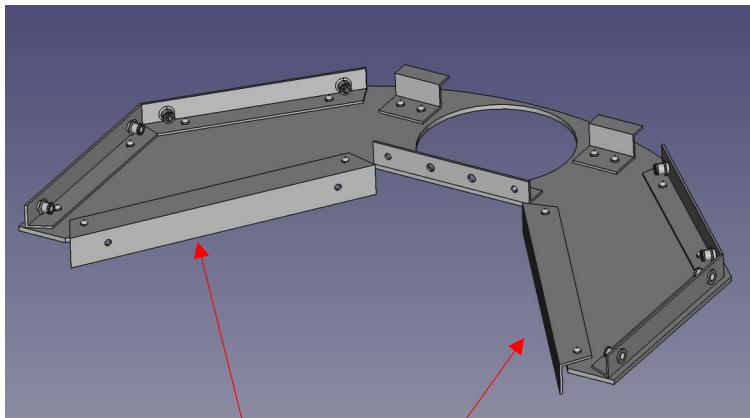


Laser beam area – Top

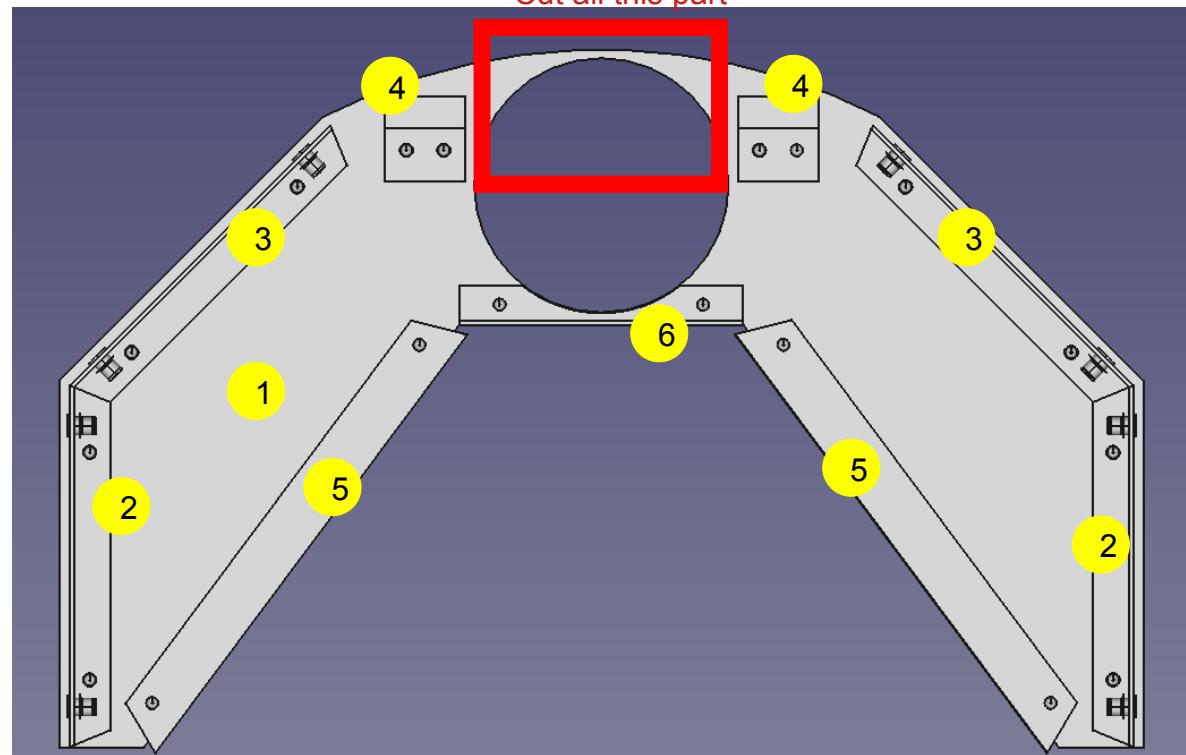


#	Part Num.	Part Name	Notes
1	P0375	PVC 3mm piece: laser beam area sheet	
2	P0190	Alu Profile L shape 15x15x1,5 135mm 22,5deg	Use 4,2mm aluminum rivets inserted from P0375 side
3	P0195	Alu Profile L shape 15x15x1,5 137,5mm 22,5deg	Use 4,2mm aluminum rivets inserted from P0375 side
4	P0411	Bracket front laser	Use 4,2mm aluminum rivets inserted from P0375 side
5	P0200	Alu Profile L shape 15x15x1,5 197mm	Use 4,2mm aluminum rivets inserted from P0375 side
6	P0185	Alu Profile L shape 15x15x1,5 106mm	Use 4,2mm aluminum rivets inserted from P0375 side

Laser beam area – Bottom

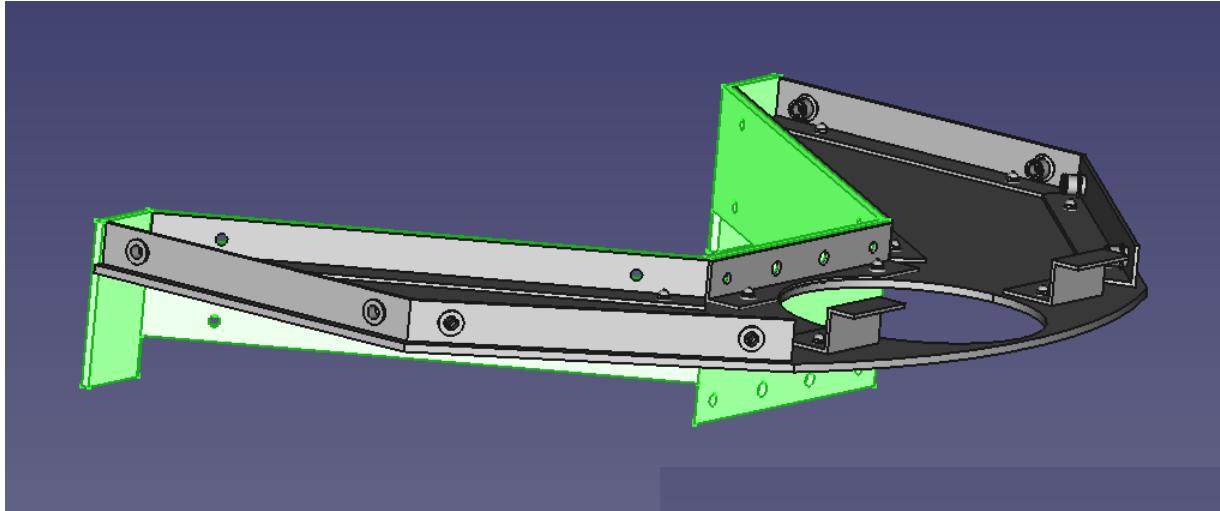


Note the orientation of L-profiles
P0205 in opposite to the rest

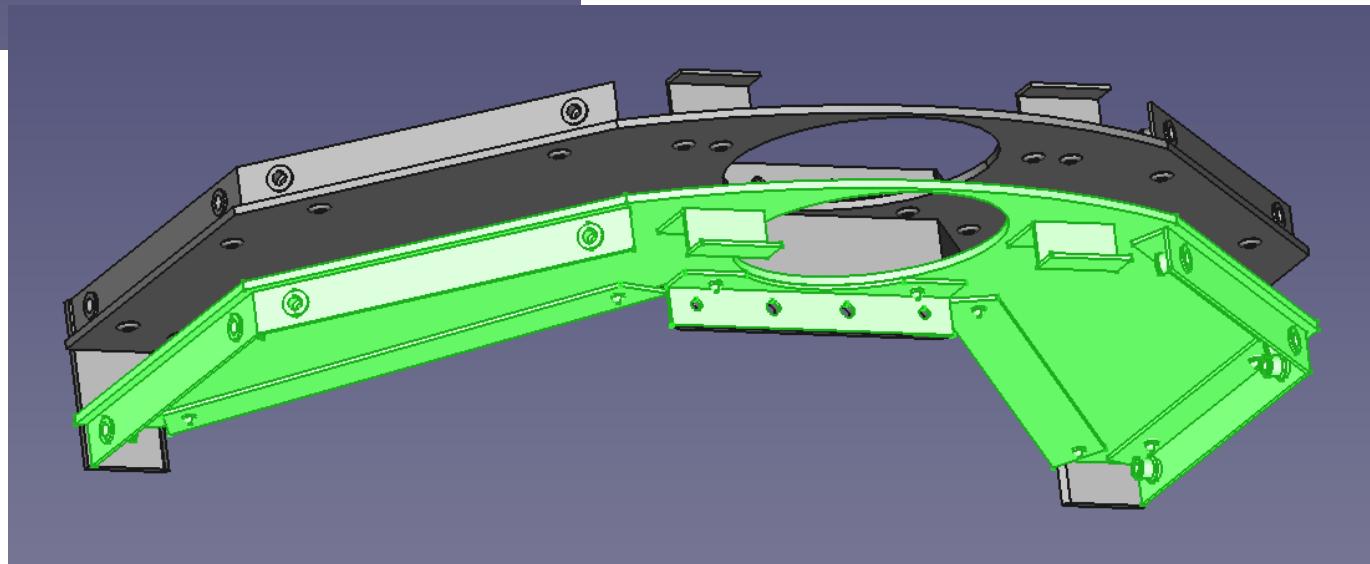


#	Part Num.	Part Name	Notes
1	P0375	PVC 3mm piece: laser beam area sheet	
2	P0190	Alu Profile L shape 15x15x1,5 135mm 22,5deg	Use 4,2mm aluminum rivets inserted from P0375 side
3	P0195	Alu Profile L shape 15x15x1,5 137,5mm 22,5deg	Use 4,2mm aluminum rivets inserted from P0375 side
4	P0411	Bracket front laser	Use 4,2mm aluminum rivets inserted from P0375 side
5	P0205	Aluminum Profile L shape 20x20x1,5 195mm 22,5deg	Use 4,2mm aluminum rivets inserted from P0375 side
6	P0185	Alu Profile L shape 15x15x1,5 106mm	Use 4,2mm aluminum rivets inserted from P0375 side

Join the three parts

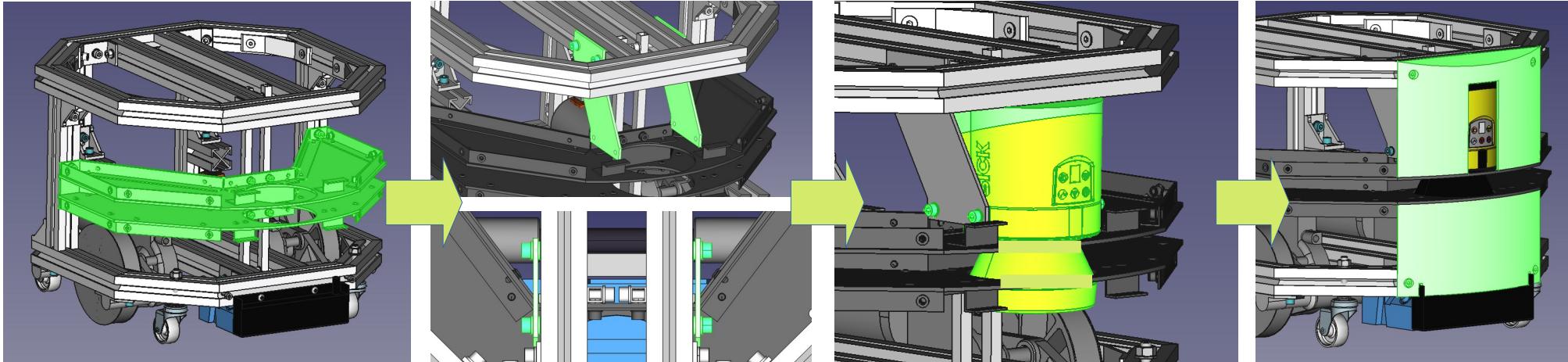


Join **Laser beam area – Top** with **Laser beam area – Inside** using 4,2mm aluminum rivets from the side of **Laser beam area – Inside**

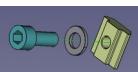


Join **Laser beam area – Bottom** with **Laser beam area – Inside** using 4,2mm aluminum rivets from the side of **Laser beam area – Inside**

Laser beam area block + Laser Set + Front Cover Set



Install **Laser Beam Area Block** (assembled previously) with:

- a) 4 Screw_M5x12_CS in centre 
- b) 4 Screw_M6x14_ISO4762 in sides with M6 T-nut 

All with washer.

Install **P0325 Laser Support** with 4 Screw_M6x14_ISO4762 + M6 washers at both sides of the piece: One in the side of the screw head and another between the Laser Support and the aluminum beam. Use M6 T-Nuts too.

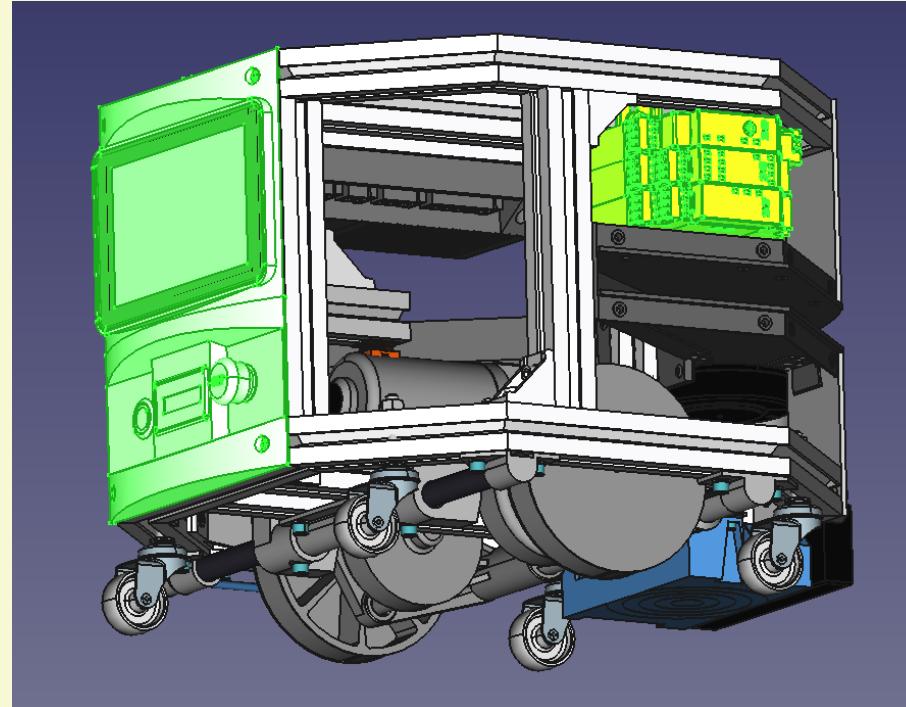
Insert **P0465 Sick s300 safety laser** through the front and attach to Laser support sheets with Screw_M5x12_ISO4762 + M5 washers

Install:

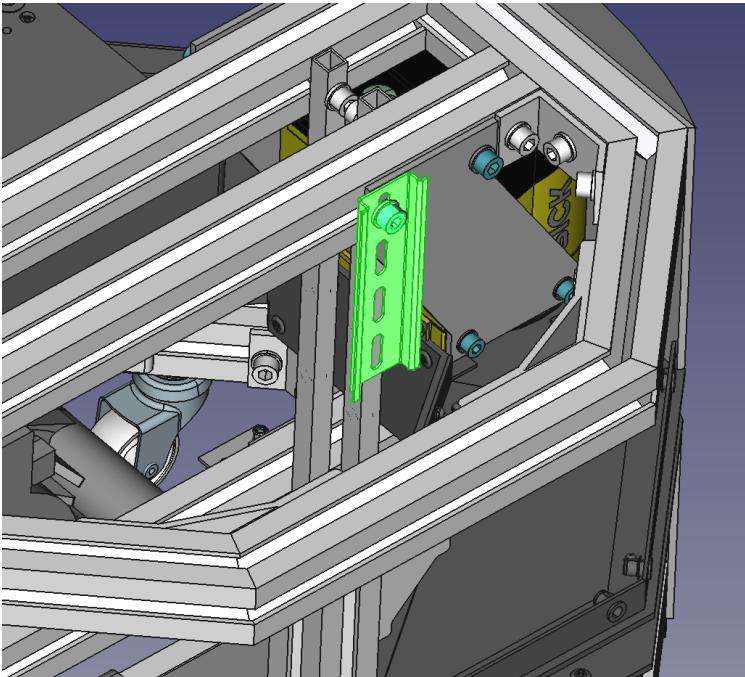
- a) **P0305Front Top Cover**
- b) **P0310- Front Bottom Cover** with Screw_M5x12_ISO4762 and M5 T-Nut

Assembly Part 5

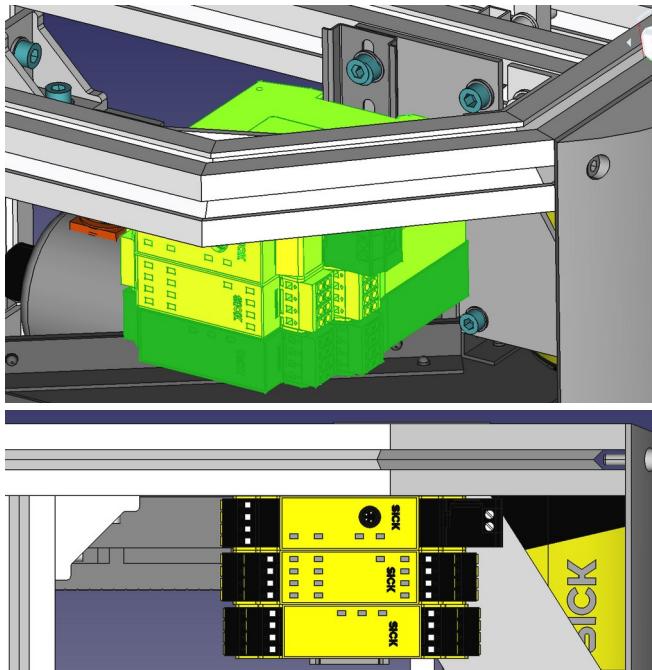
- Flexisoft Set
- Back Cover Set



Flexisoft Set

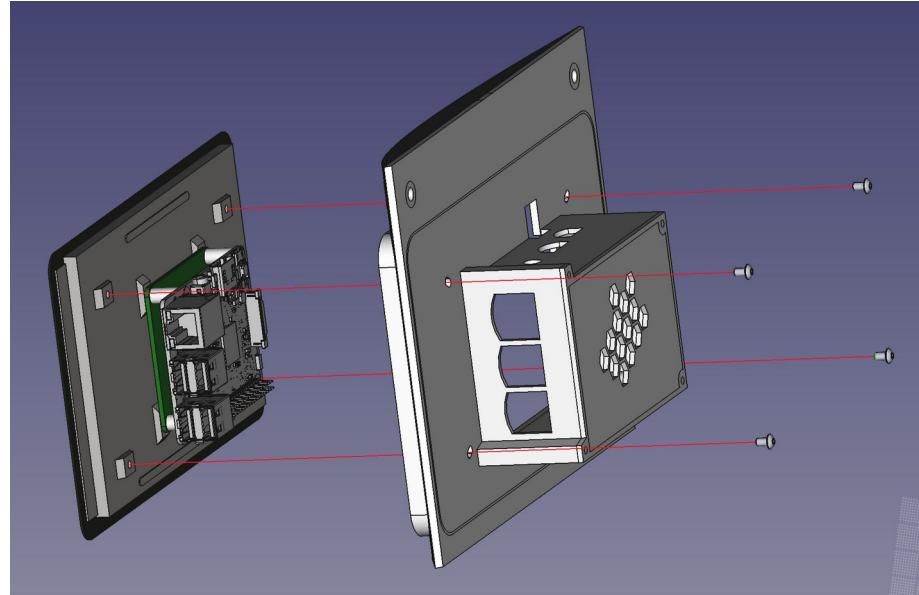
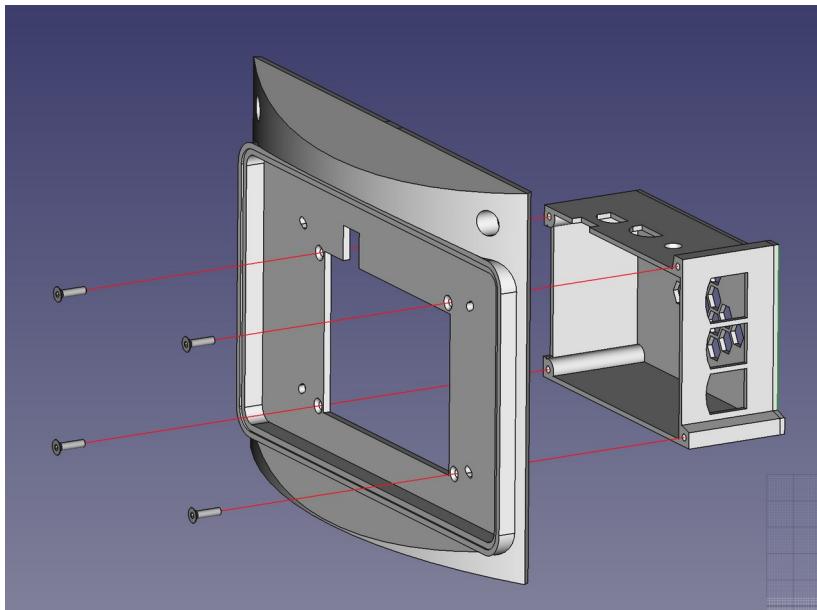


Install **P0445 DIN Rail 120mm**
using Screw_M6x14_ISO4762 + M6 washers
from the Laser Support



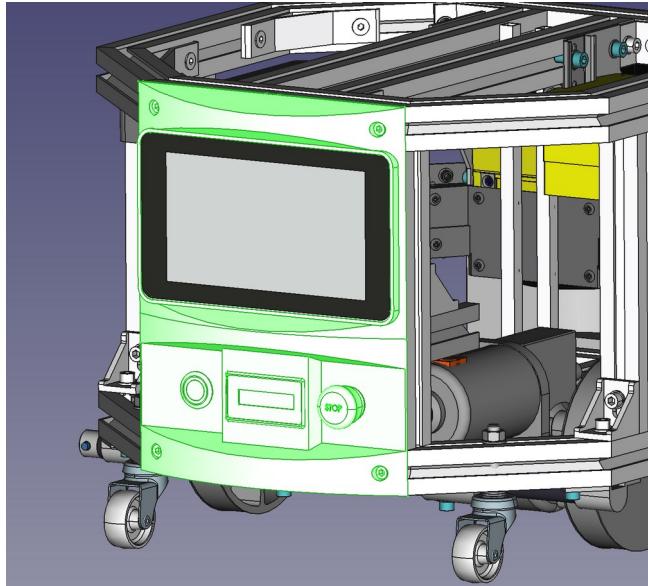
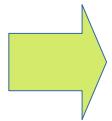
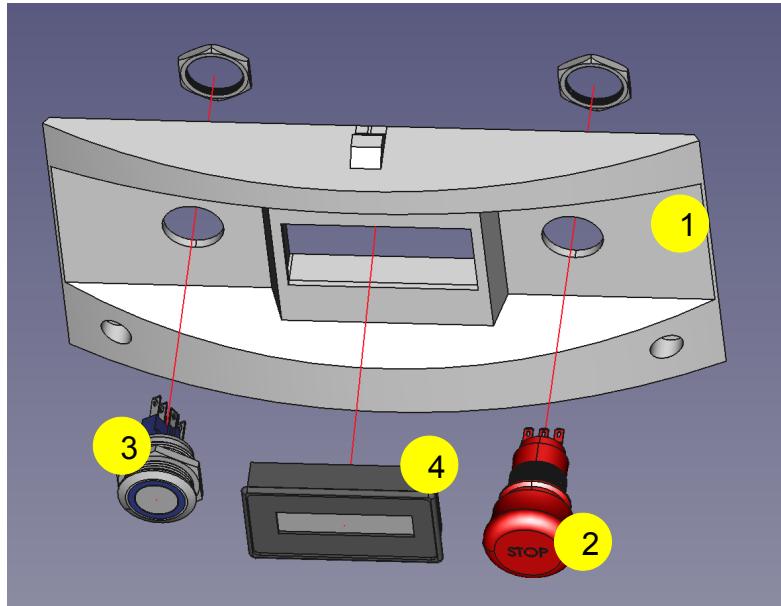
Install **P0450 Flexisoft modules**
It may be necessary to put another screw
at the bottom of the DIN rail to prevent the
Flexisoft modules move out of it.
Note the position of the Flexisoft modules.

Back Cover Set - Top



#	Part Num.	Part Name	Notes
1	P0315	Back top Cover	
2	P0316	RPiBox	Use Screw_M3x12_CS 
3	P0505	Raspberry Pi 3B	Assemble with P0510 following P0510 manual
4	P0510	7 inch touch screen	Assemble with P0505 following P0510 manual. Use M3x5 BHCS to attach to P0315 

Back Cover Set – Bottom and full Back Cover Set assembly to AGV

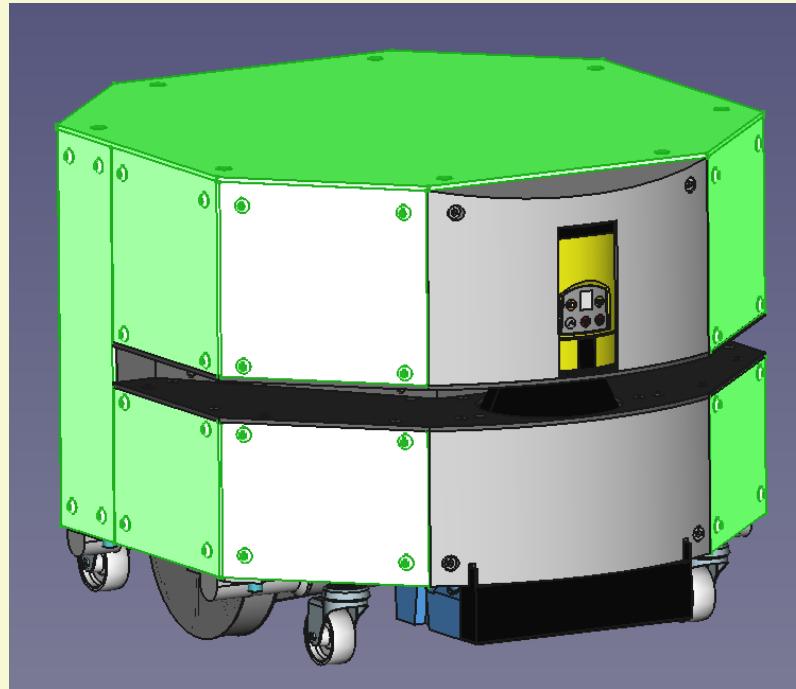


Use Screw_M5x12_ISO4762 and M5 T-Nut

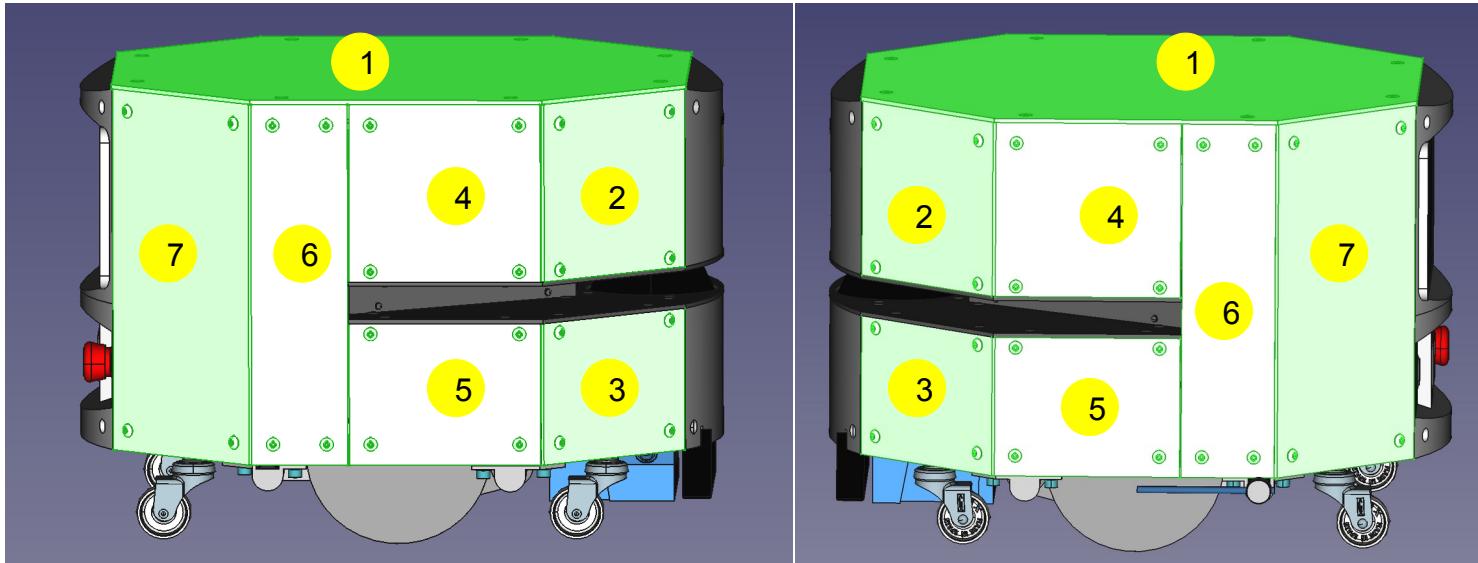
#	Part Num.	Part Name	Notes
1	P0320	Back bottom Cover	
2	P0490	Emergency stop button 19mm	
3	P0495	Momentary push button with white ring led 19mm	
4	P0500	Battery capacity display	

Assembly Part 6

- Top cover Set
- Sides cover Set



Top Cover Set – Bottom and full Back Cover Set assembly to AGV



#	Part Num.	Part Name	Notes
1	P0340	PVC 3mm piece: Top cover	Use Screw_M5x12_CS + M5 T-Nut
2	P0370	PVC 3mm piece: Front Side-Top Cover	Use Screw_M5x12_CS + M5 T-Nut
3	P0345	PVC 3mm piece: Front Side-Bottom Cover	Use Screw_M5x12_CS + M5 T-Nut
4	P0360	PVC 3mm piece: Lateral-Top Cover	Use Screw_M5x12_CS + M5 T-Nut
5	P0365	PVC 3mm piece: Lateral-Bottom Cover	Use Screw_M5x12_CS + M5 T-Nut
6	P0350	PVC 3mm piece: Lateral-Back Cover	Use Screw_M5x12_CS + M5 T-Nut
7	P0355	PVC 3mm piece: Back Side Cover	Use Screw_M5x12_CS + M5 T-Nut

