Table of Contents:
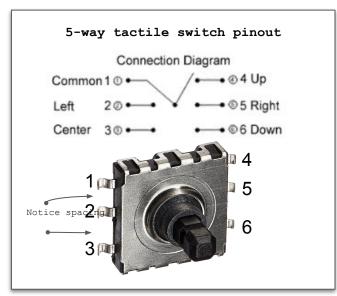
Arduino Code:
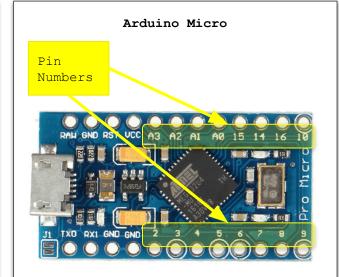
https://create.arduino.cc/editor/vince_prints/197730fc-074d-4160-bb42-757c4dfc1fe1/preview

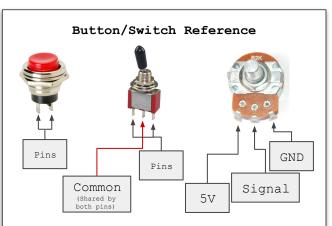| Part:	Quantity:	Link:	Reused?:
Screws			
M4 Nut	8	Amazon	All Projects
M4x30 (Socket Cap)	3	Amazon	All Projects
M4x10 (Socket Cap)	3	Amazon	All Projects
M4x18 (Socket Cap)	2	Amazon	All Projects
M3 Nut	5	Amazon	All Projects
M3x8 (Socket Cap)	11	Amazon	All Projects
M3x5 (Socket Cap)	12	Amazon	All Projects
M3x4 (Socket Cap)	6	Amazon	All Projects
M3x8 Threaded Brass Insert	6	Amazon	All Projects
M3x4 Threaded Brass Insert	8	Amazon	All Projects
M3x3 Threaded Brass Insert	6	Amazon	All Projects
M2x8 (Socket Cap)	2	Amazon	
M2x4 (Socket Cap)	3	Amazon	All Projects
M2x3 Threaded Brass Insert	5	Amazon	All Projects
Electronics			
Arduino Pro Micro	1	Amazon	Salvaged from CadetYokev1
50x70mm Perf Board	1	Amazon	All Projects
Female Pin Headers	1	Amazon	All Projects
Large Momentary Pushbutton	1	Amazon	CadetThrottle
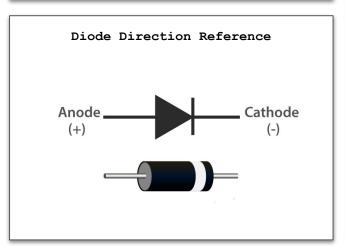
Small Momentary Pushbutton	6	Amazon	Salvaged from CadetYokev1
Two-way Momentary Toggle Switch	2	Amazon	Salvaged from CadetYokev1
5-way Navigation Switch	1	Amazon	
Potentiometer (any value)	2	Amazon	Salvaged from CadetYokev1
Diode (1N4007)	16	Amazon	
10 ft. (~3m) CAT5e Cable	1	Amazon	
RJ45 8-pin Connector and Breakout Board	3	Amazon	
RJ45 Crimmping tool	1	Amazon	
RJ45 Connectors	3	Amazon	
RJ45 Covers	3	Amazon	
Wire [1]		Amazon	All Projects
Mechanical Components			
Linear Rail (250mm, H-Type)	1	Amazon	Salvaged from CadetYokev1
Ball Bearings (608-2RS)	2	Amazon	Salvaged from CadetYokev1
3/4 in. PVC Pipe (350mm Length) [2]	1		
3/4 in. PVC Pipe (70mm Length) [3]	1		Salvaged from CadetYokev1
Exercise Band (Green)	1	Amazon	
Zip ties [4]			All Projects
Mounting Clamps [5]	2	Amazon	

[1] User Preference

[2] !!!WARNING!!! In the US, 3/4 inch (19.05mm) describes the INNER diameter of the pipe, the outer diameter is 1.05 inches (26.67mm).

[3] !!!WARNING!!! In the US, 3/4 inch (19.05mm) describes the INNER diameter of the pipe, the outer diameter is 1.05 inches (26.67mm).

[4] User Preference

[5] User Preference

5-way tactile switch pinout

Connection Diagram

Common 1 ① — ④ 4 Up
Left 2 ② — ⑤ 5 Right
Center 3 ③ — ⑥ 6 Down

4
1
5
2
Notice spacing
6
3

Arduino Micro

Pin Numbers

RAW GND RST VCC A3 A2 A1 A0 15 14 16 10
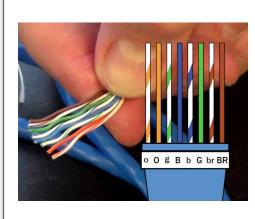
J1 TXO RX1 GND GND 2 3 4 5 6 7 8 9

CAT5e Color Reference

In this guide, color saturation will indicate spiral verses solid colors.
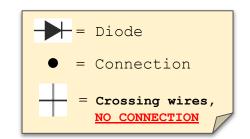
Example:

Spiral Orange:

Orange:

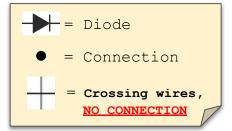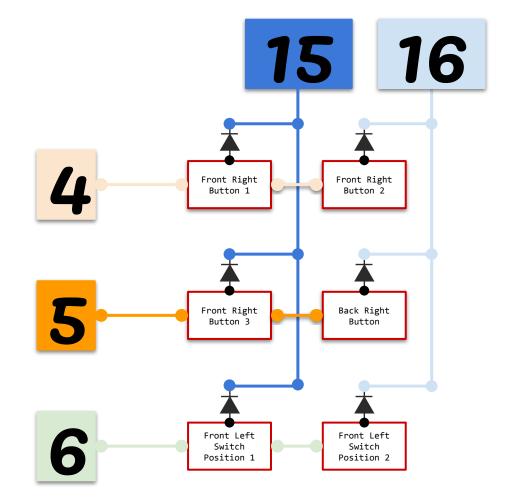## Button/Switch Reference

Pins

Common
(Shared by both pins)

Pins

5V

Signal

GND

Diode Direction Reference

Anode (+)   Cathode (-)

o O g B b G br BR

#3 (Pitch + Roll)

RJ45 Pinout
T-568B

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8

1. White Orange
2. Orange
3. White Green
4. Blue
5. White Blue
6. Green
7. White Brown
8. Brown

Pins on Arduino

5V 5V GND GND A0 A1

4 5 6 15 16

2 3 7 8 9 10 14

3

2

1
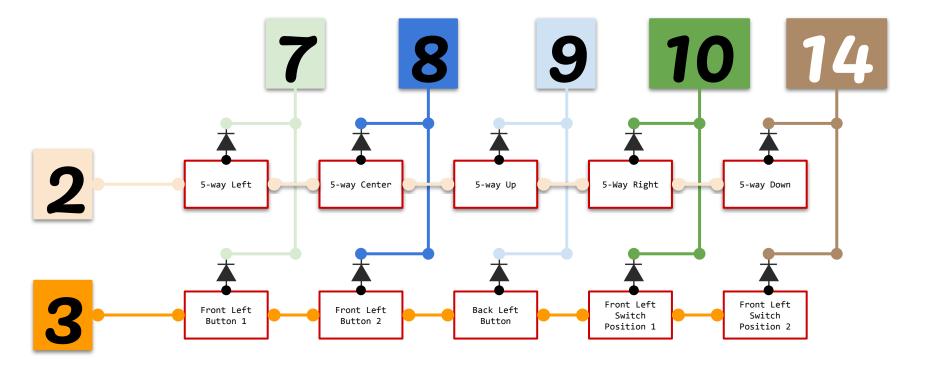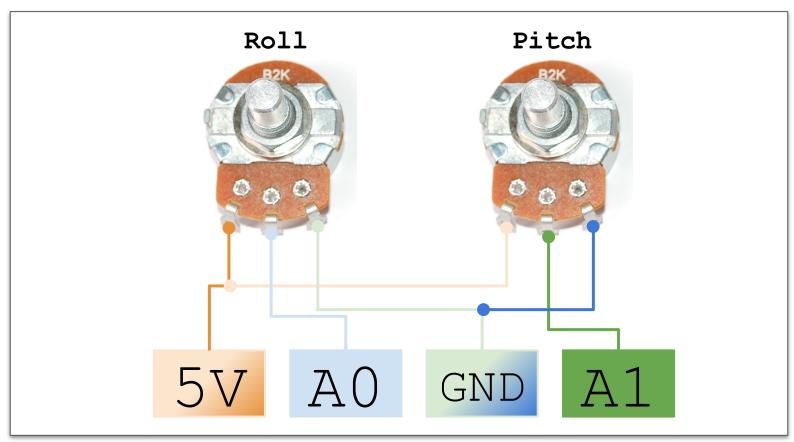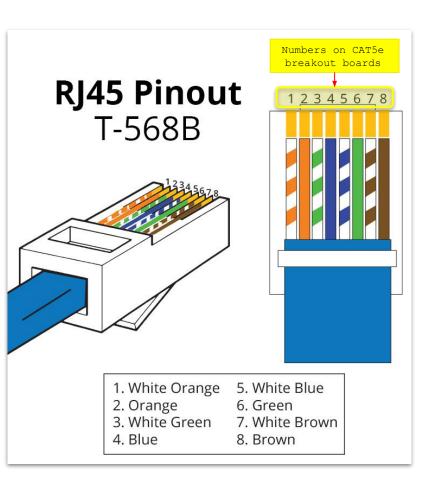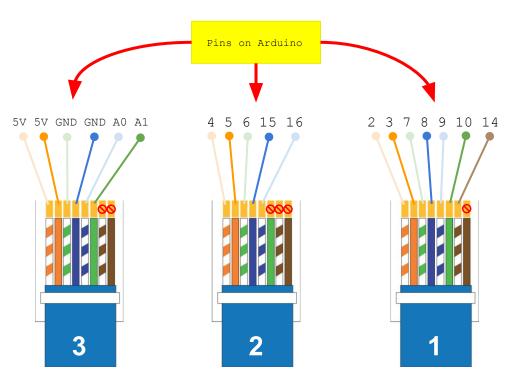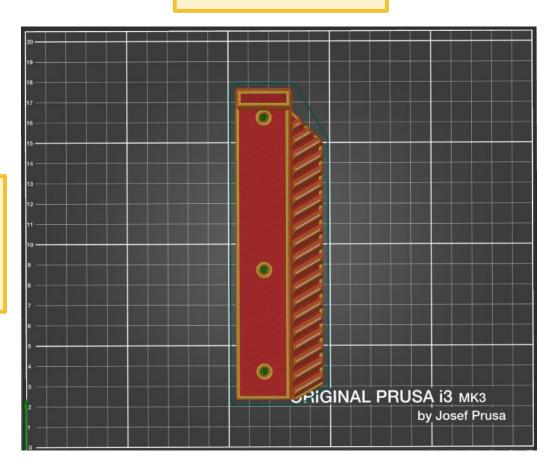
Part:	Page #:	Approximate Mass (grams):
Base_Back	11	36.15
Base_Front	12	154.57
Base_Guide	13	25.84
Centering_Collar	14	7.65
Collar_Clip	15	1.05
Console_Back	16	52.10
Console_Front	17	47.35
Controller_LB	18	84.41
Controller_LF	19	85.31
Controller_Mount	20	13.66
Controller_RB	21	84.41
Controller_RF	22	83.53
Electronics_Housing_Base	23	16.70
Electronics_Housing_Lid	24	16.14
Hat_Switch_Mount	25	0.72
Hat_Switch_Topper	26	2.65
Helical_Pitch_Gear_35R	27	29.33
Helical_Roll_Gear_14L	28	7.00
Helical_Roll_Gear_21R	29	14.19
Linear_Rail_Body	30	87.25
Linear_Rail_Mount	31	5.89
	Total Mass (grams):	855.90

Print Orientation

Base_Back (36.15g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: On build plate only

ORIGINAL PRUSA i3 MK3
by Josef Prusa

Print Orientation
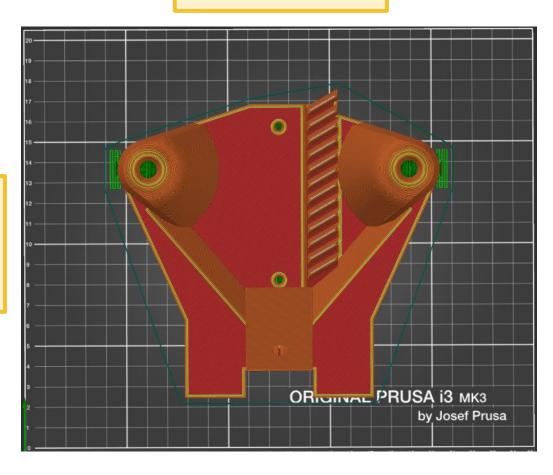
Base_Front (154.57g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: On build plate only

Print Orientation
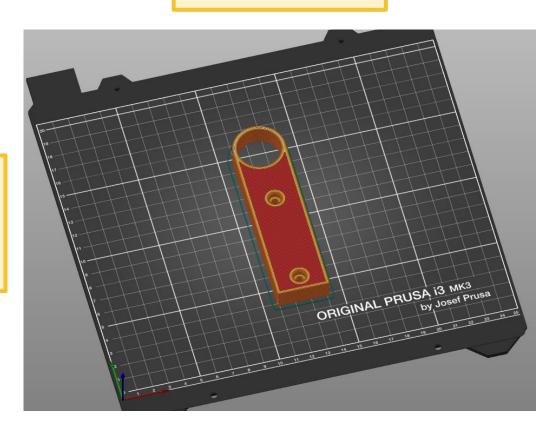
Base_Guide (25.84g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: None

Print Orientation
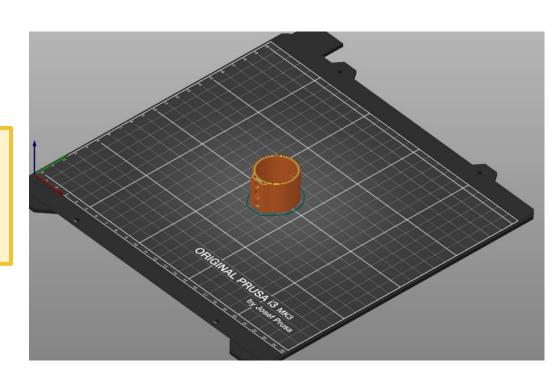
Centering_Collar (7.65g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: None

Print Orientation
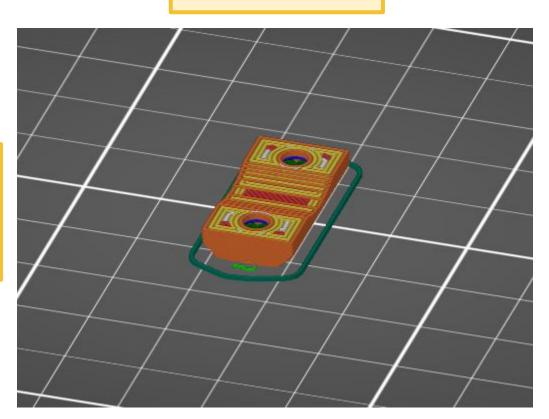
Collar_Clip (1.05g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: On build plate only

Print Orientation
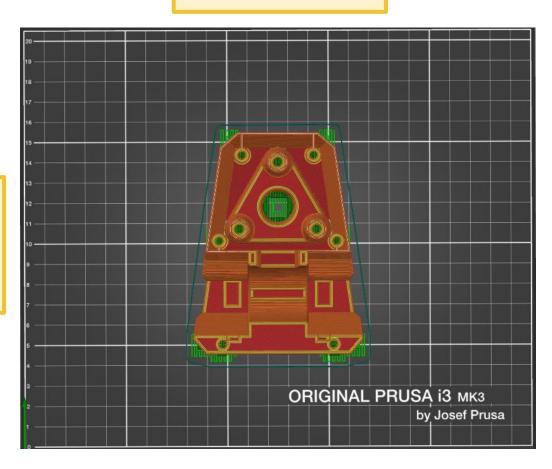
Console_Back (52.10g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: On build plate only

ORIGINAL PRUSA i3 MK3
by Josef Prusa
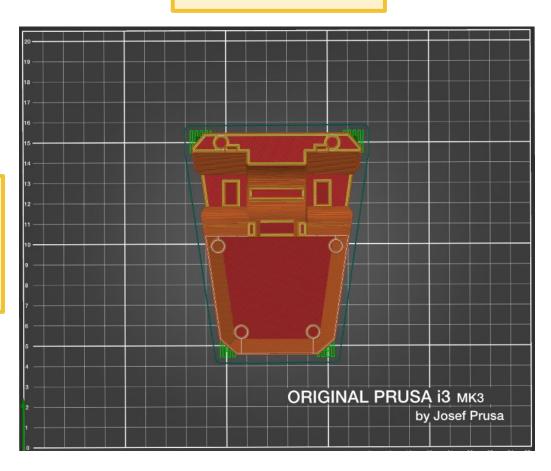
Console_Front (47.35g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: None

Print Orientation
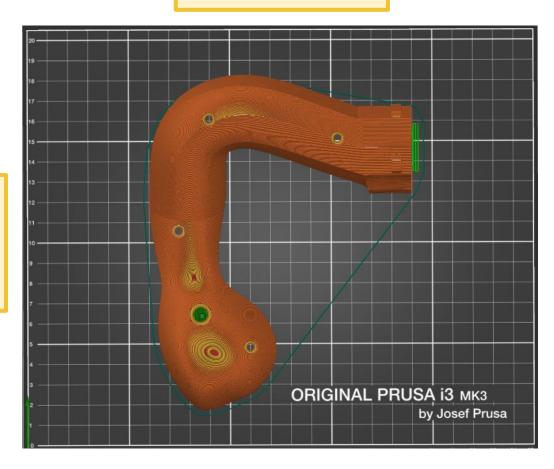
Controller_LB (84.41g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: On build plate only

Print Orientation
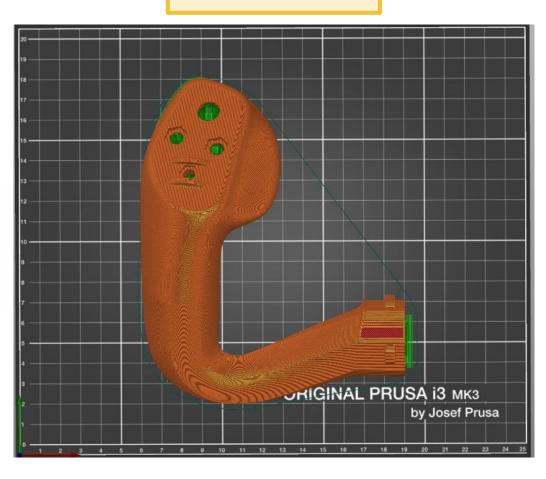
Controller_LF (85.31g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: On build plate only

Print Orientation
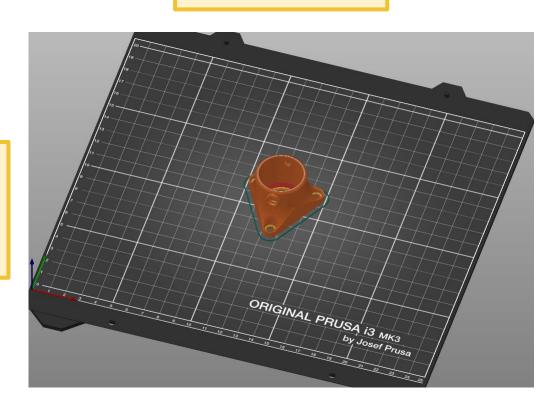
Controller_Mount (13.66g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: None
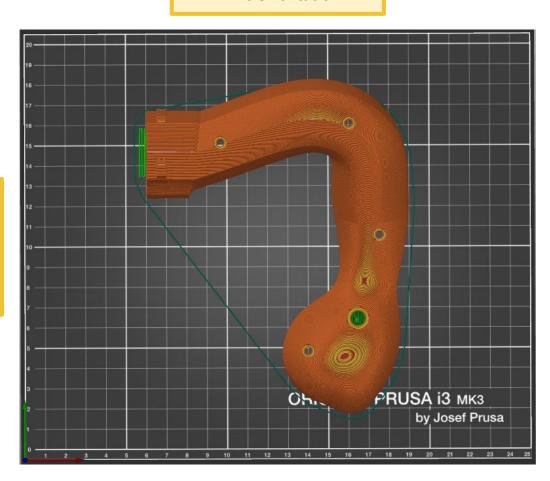
Controller_RB (84.41g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: On build plate only

Print Orientation
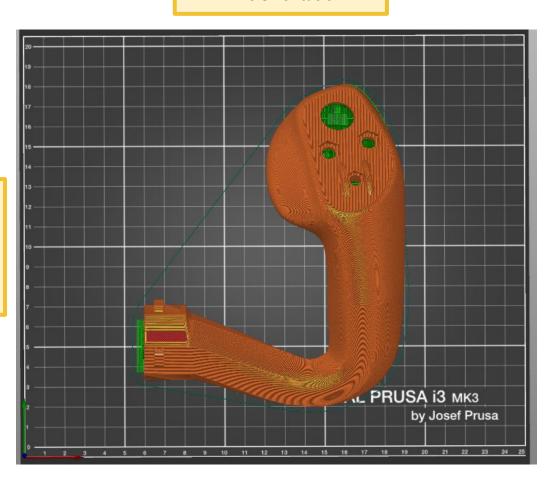
Controller_RF (83.53g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: On build plate only

Print Orientation
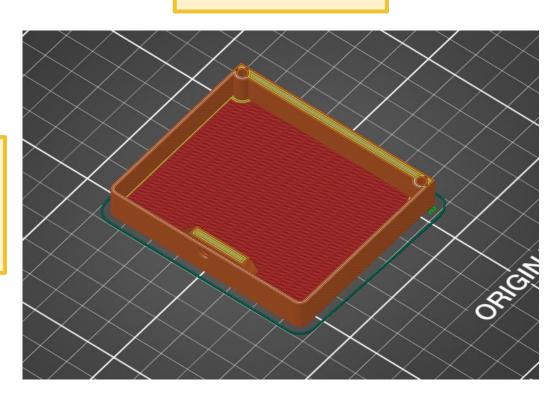
Electronics_Housing_Base (16.70g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: On build plate only

Print Orientation
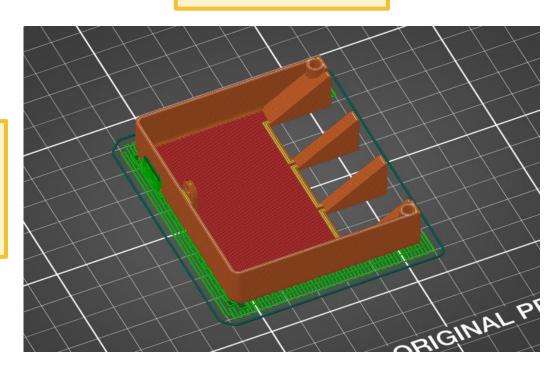
Electronics_Housing_Lid (16.14g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: On build plate only

Print Orientation
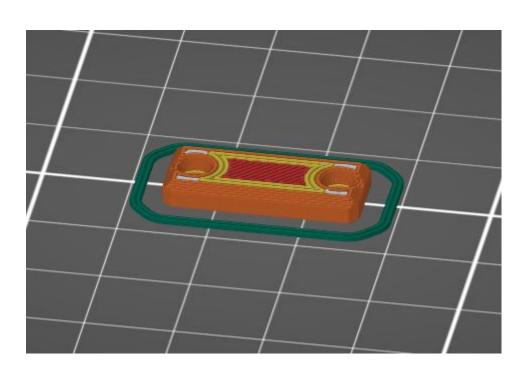
Hat_Switch_Mount (0.72g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: On build plate only

Print Orientation
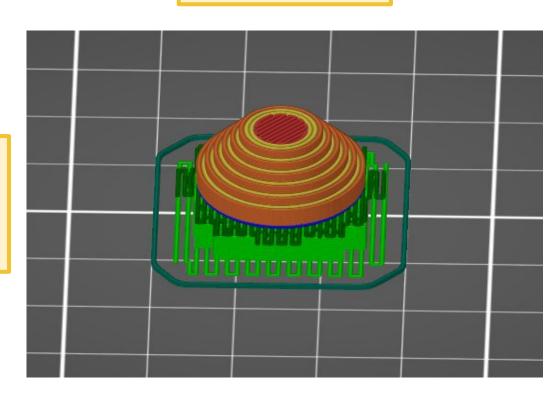
Hat_Switch_Topper (2.65g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: On build plate only

Print Orientation

Helical_Pitch_Gear_35R(29.33g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: None
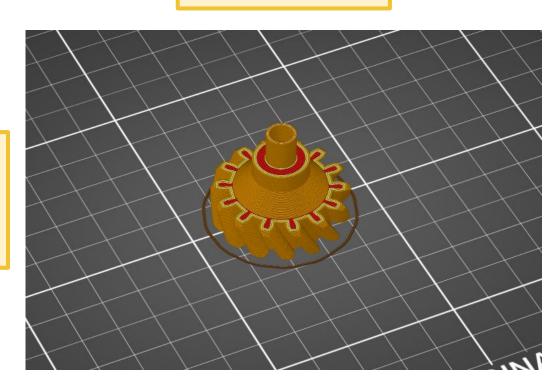
Helical_Roll_Gear_14L (7.00g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: None

Print Orientation

Print Orientation

Helical_Roll_Gear_21R (14.19g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: None

Print Orientation
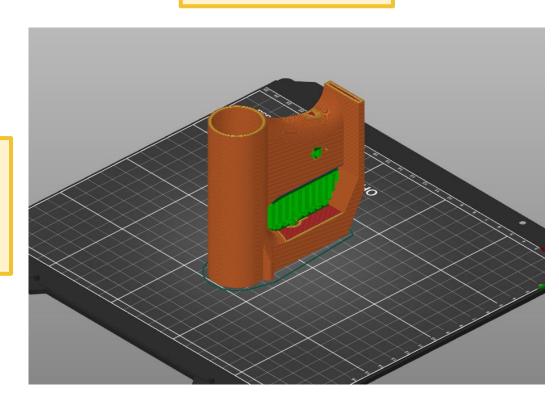
Linear_Rail_Body (87.25g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: Everywhere

Print Orientation

Linear_Rail_Mount (5.89g)
Filament: PETG
Layer Height: 0.2
Perimeters: 3
Infill: 15%
Supports: On build plate only

ORIGIN