

ZiiROBOT Smart Cart C1

Owner's Manual



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PREFACE

Read this manual thoroughly before operating the ZiiROBOT Smart Cart C1. This Smart Cart is designed for various applications, a mobile cart, a smart end-table, or simple a mobile eye using its on-board camera, or a mobile coffee table. You may turn it to something even more exciting by modifying its structure. Your innovative mind is the limit of its applications. By adding more T-slot frame extrusions which we provide, or any other building material you can think of, you can build your favorite robot furniture out of the current Smart Cart. Let us know your innovative ideas!

This manual specifies how you can assemble the Smart Cart along with the camera module. Depending on the model you have ordered, the number of the frame extrusions and plates may be different, but the way of assembly is all the same.

Keep the manual in a proper place for reference. We reserve the right to make design modifications as technologies advance. As the design changes, some pictures and illustrations in this owner's manual may not exactly match the Smart Cart you have purchased. The illustrated principles remain the same.

SPECIFICATIONS

- | | |
|-------------------|-------------------|
| 1. Product Weight | 18.8 lb (8.53 kg) |
|-------------------|-------------------|



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2. Dimensions	L: 14.96" (380 mm) x W: 11.82" (300 mm) x H: 23.62" (600 mm)
3. Driving Wheel	5" (125.00 mm) diameter, 1.57" (40 mm) width
4. Caster Size	3" (76.20 mm) diameter
5. Max Speed	3.94" (10 mm)/sec
6. Max Load	40 lb (18.14 kg)
7. Communication Method	WIFI Connection
8. Control Device	Your Smart Phone with Google Android or IOS
9. Control Software	APP down-loadable from Google Play or App Store
10. Lithium Battery	24V, 2500 mAh

LITHIUM BATTERY SAFETY NOTICE

Your robot comes with a lithium battery. Lithium batteries have high energy density and long cycle life, and are environmentally friendly. To take these advantages, special care should be exercised in using and charging the battery. A proper use of the lithium battery can prolong its life of use.

Here are important safety notices for the lithium battery, which you should follow:

- A. Never throw the battery in fire.
- B. Unless you need to replace the lithium battery, never take it out of the Control Module (see Fig. 1)
- C. DO NOT pour water on the Control Module which contains the lithium battery.
- D. DO NOT short circuit the two terminals.
- E. Charge the battery when the power strength becomes weak (power indicating light becomes red).



STRUCTURE AND PARTS

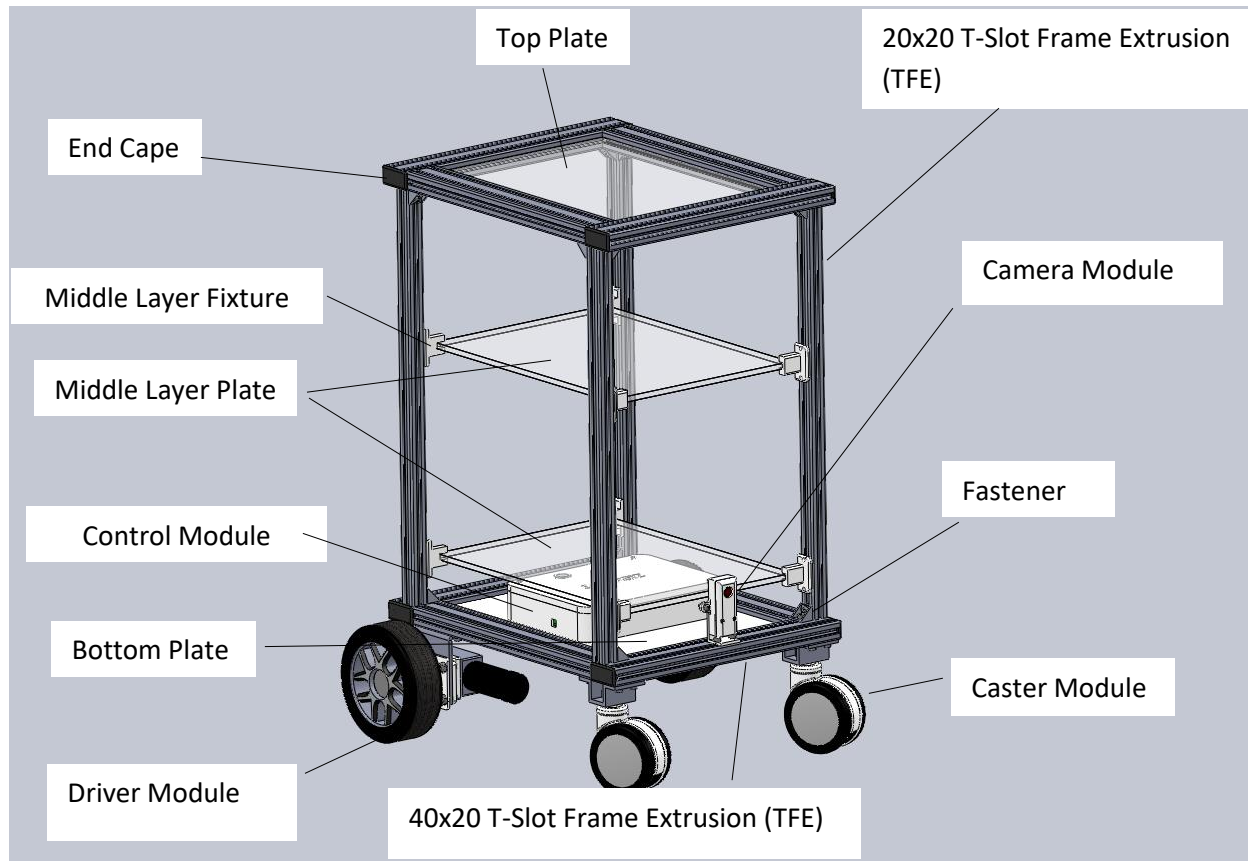


TABLE 1: LIST OF PARTS

PARTS	NUMBER
Control Module	1
Driver Module	2
Caster Module	2
Camera Module	1
End Cap	8
Fasteners	16
T-Slot Frame Extrusion. 40X20	8
T-Slot Frame Extrusion. 20X20	4
Top Plate	1
Middle Layer Plate	N (N layers)
Middle Layer Fixture	4N
Bottom Plate	1
Connecting Cables	3



SMART CART MODULES

Every ZiiROBOT Smart Cart consists of the following modules.

Module 1: Control Module. The Control Module in its box contains a controller, a drive, and a lithium battery. A push button on the top serves as the power switch. On one side of the box there is a battery recharge port. On the other side there is also an LED light which indicates the strength of the battery. When the LED light is brown or red, the battery needs to be recharged.

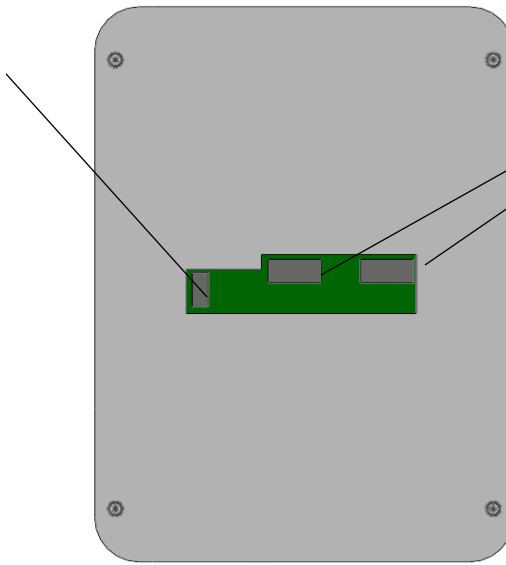


Fig. 1 Module 1-1: Control Module

At the bottom of the Control Module box, there are two female connectors for connecting to the two motors (one for each motor), and another female connector for connecting to the camera (see below).



Connector for the
camera cable



Connector for the
motor cable

Fig. 2 Bottom of the Control and Power Unit box

Module 2: Camera Module. The Camera module contained in a small box has a camera in it. The module can be installed anywhere on the TFE with the provided fastening parts. We recommend installing the module in the front of the cart as shown in Fig. 3.

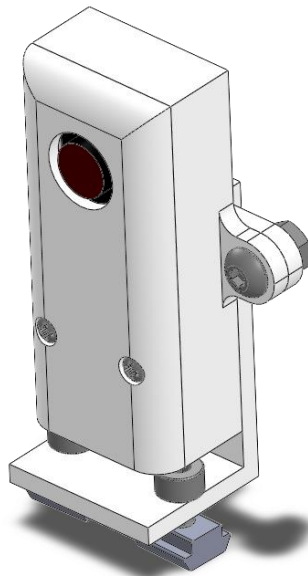


Fig. 3 Camera Module which can be installed on the T-slot FE facing the front.



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Module 3: Drive Module. The module consists of a DC motor, a wheel, and a few mechanical parts. Of the latter, the L-shaped bracket is used to install the module on the T-Slot FE. Your order should have two of them since two driving wheels are needed for the Smart Cart.

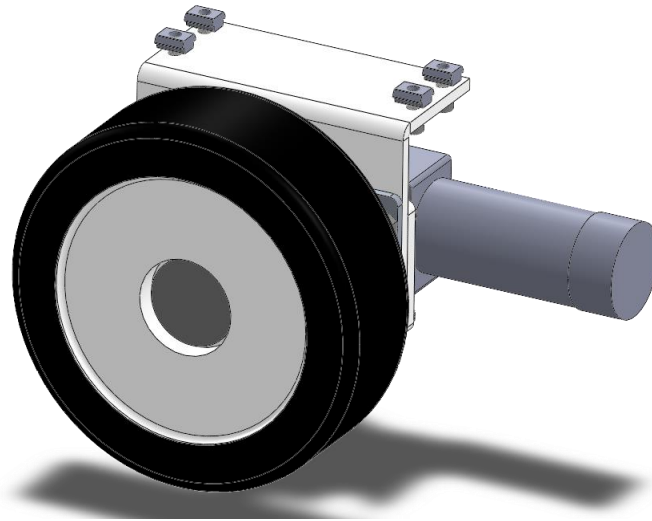


Fig. 4 Drive Module

Module 4: Caster Module. The Caster module is an assembly of a caster, a nylon self-lock nut and a mechanical holder. The holder is used to attach the entire caster module on the T-slot FE using the four holes as shown in Fig. 5. The holder has 4 holes which are used for the attachment.

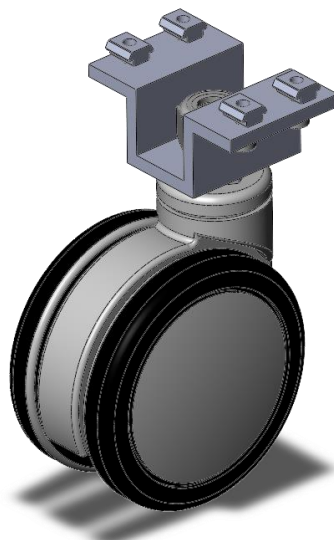


Fig. 5 Caster Module



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Module 5: T-Slotted Frame Extrusion (TFE). There are two types of the module differentiated by the section areas, which are 40mm x 20mm and 20mm x 20mm, respectively.

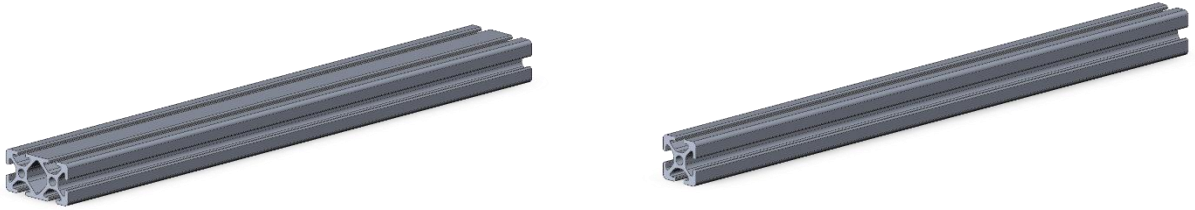


Fig. 6 Two T-Slot Frame Extrusion Modules 40mm X 20mm (left) and 20mm X 20mm (right)

Module 6: Fastener. The fastener Module is a set of multiple parts for assembling two TFEs together. It has two triangle metal parts, along with two socket head cap screws and two fastener sliders. You slide the sliders into T-slots of the FEs during assembly.

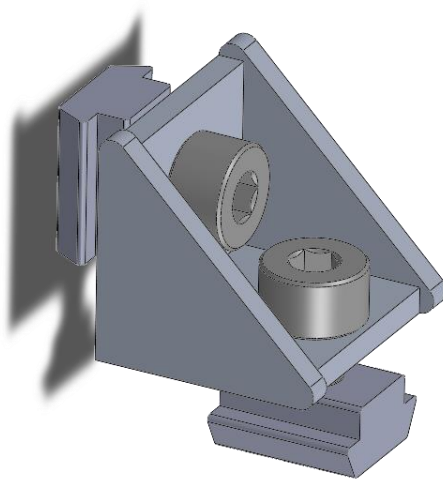


Fig. 7 Fastener Module

ASSEMBLING INSTRUCTION

For your convenience, all the models arrive with the platform assembled. You only need to add the top on the platform. In the following, the assembly procedures for both platform and cart are included, in case you need to disassemble/reassemble the cart.



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1. Assemble the Platform of the Robot Table

Step 1-1: The very basic operation in assembly is to slide the fasteners in the slots of TFEs. For installing the Drive Module, you may want to attach the sliders on the L bracket first and then slide the entire Drive Module in to the TFE as shown below.

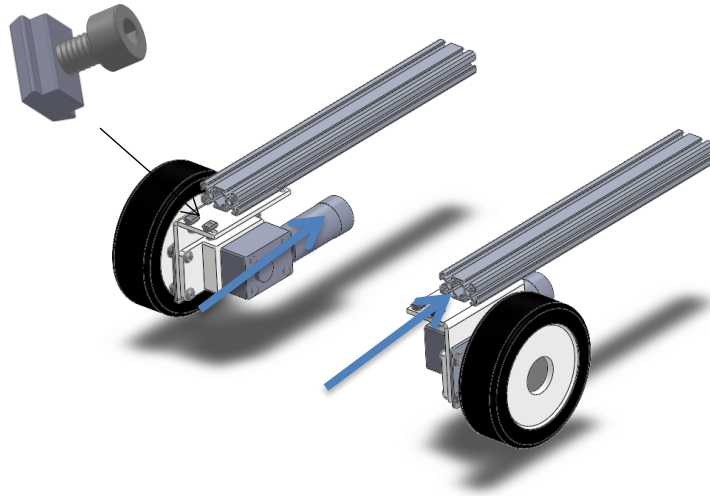


Fig. 8 Slide in the Drive Module to the TFE

Step 1-2: Tight the screws to install the Drive Module on the junction of two T-slot FEs as shown below.

Tight the screws

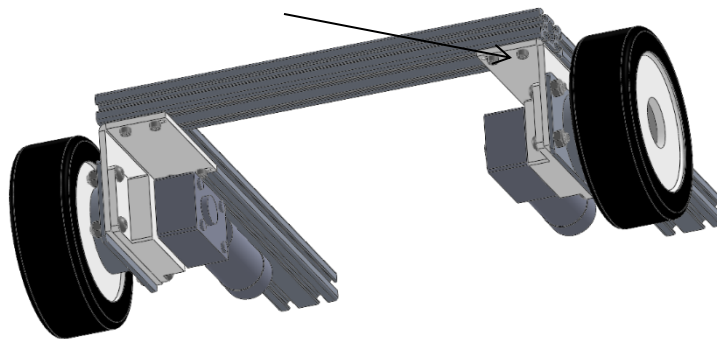


Fig. 9 Tight the screws for the Drive Module

Step 1-3: Slide the Bottom Plate into the slot along the blue arrow direction. (**Attention:** Make sure that a 10 mm diameter hole on the plate is on the front side since the camera cable needs to go through the hole).



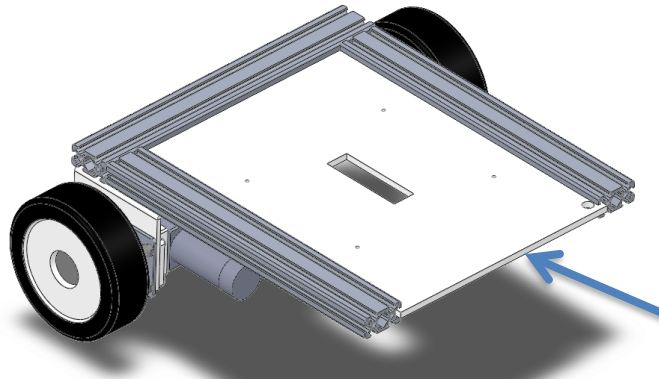


Fig. 10 Slide in the Bottom Plate

Step 1-4: Install the casters to the TFEs on the base. Use the fasteners and screw parts for fixture.

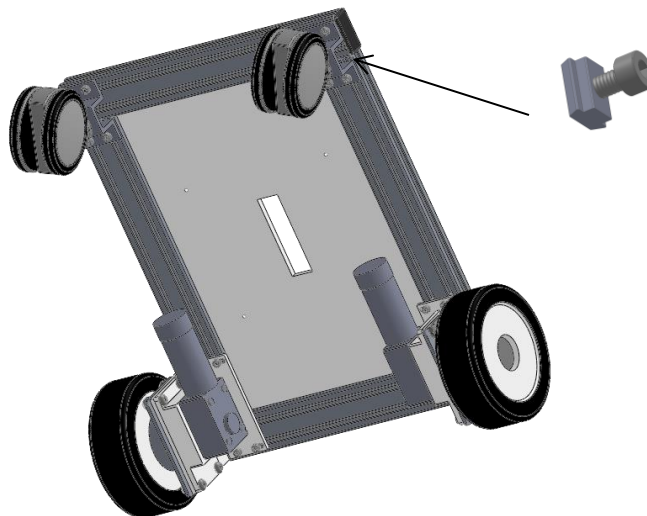


Fig. 11 Install the Caster Module

2. Install the f

of the Smart Cart

Step 2-1: Install

on the upper face of the base.



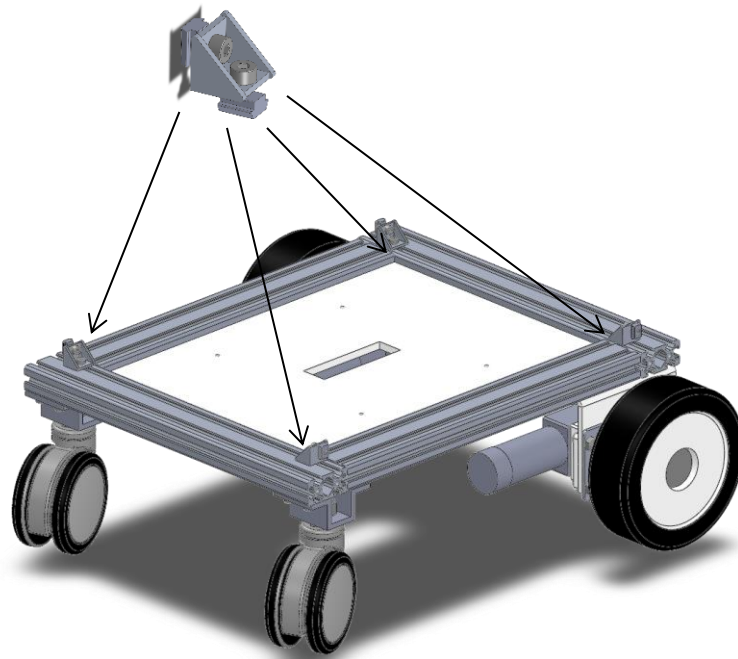


Fig. 12 Slide the Triangle Parts of the Fastener in the Platform TFEs

Step 2-2: Install the four 20 mm x 20 mm TFEs as pillars.



Fig. 13 Slide in the Four 20mm x 20mm TFEs as Table Pillars

Note: remember to install the middle layer fixtures on 4 TFE pillars, before you move to the next step, depending on the number of middle layers you have ordered.



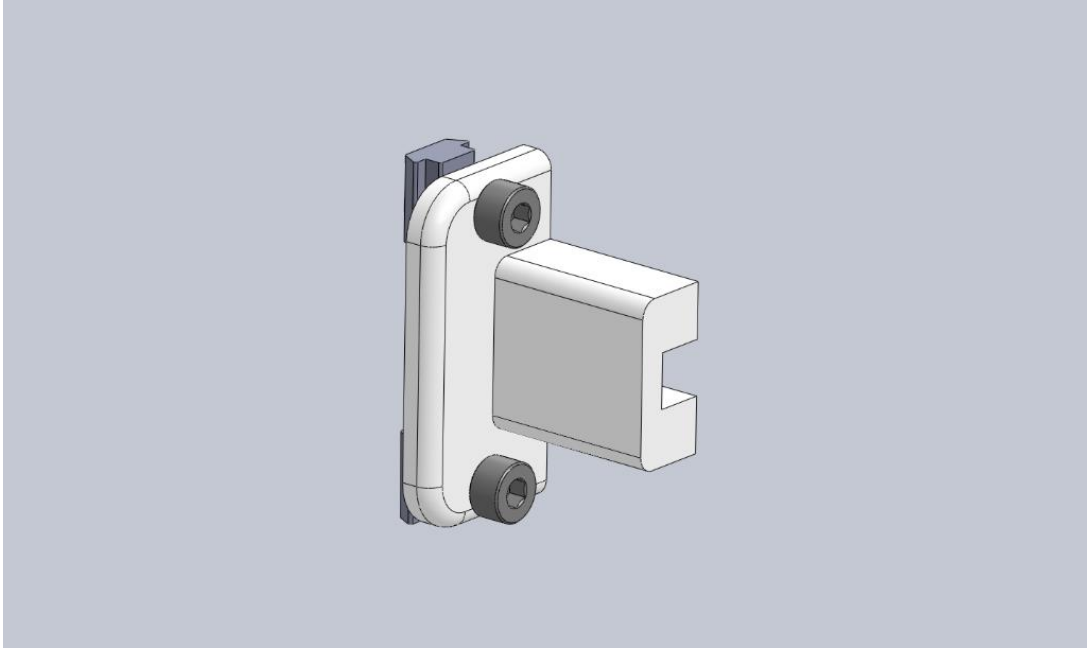


Fig. 14 Middle Layer Plate Fixtures

Step 2-3: Install three 40 mm x 20 mm TFEs on the top. (**Attention:** fix the triangle parts on the pillars before installing the top TFEs).

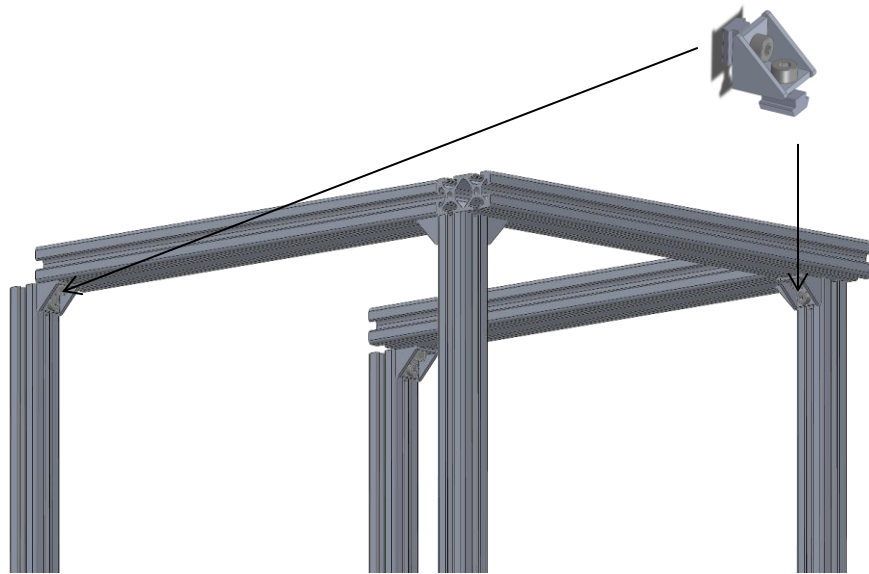


Fig. 15 Install the Three TFEs on the Top of the Pillars.

Step 2-4: Slide the top plate along the slots to the end.





Fig. 16 Slide in the Top Plate.

Step 2-5: Slide the last TFE along the arrow direction shown below. Tight the screws to complete the installation.

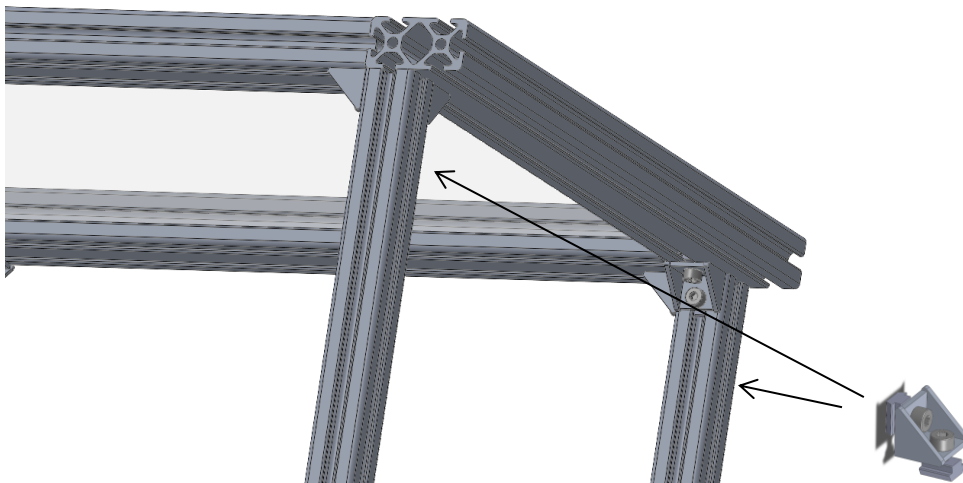


Fig. 17 Complete the installation of the table

3. Install the Control Module and Camera Module



Step 3-1: Install the Control Module box on the base plate.

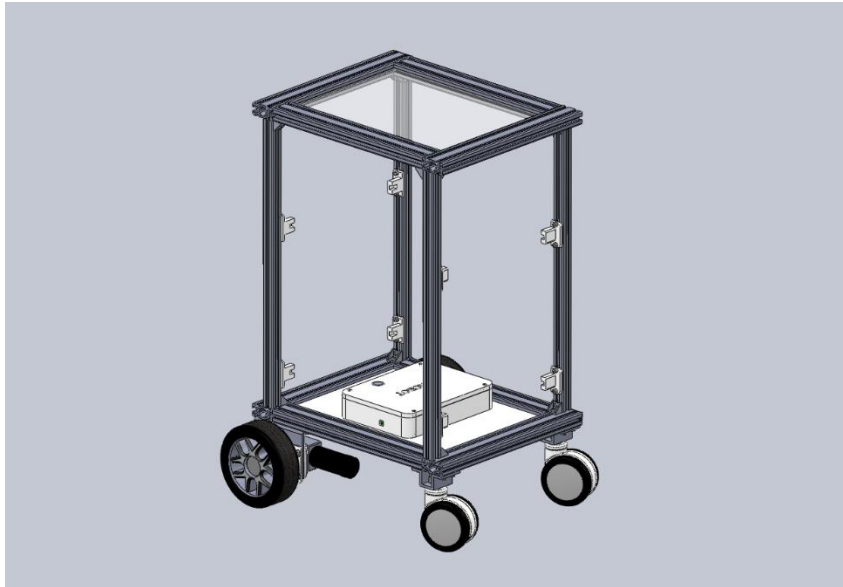


Fig. 18 Install the Controller box

Step 3-2: Install the bottom lid under the base plate using the provided M3 X 22 button head hex drive screws.

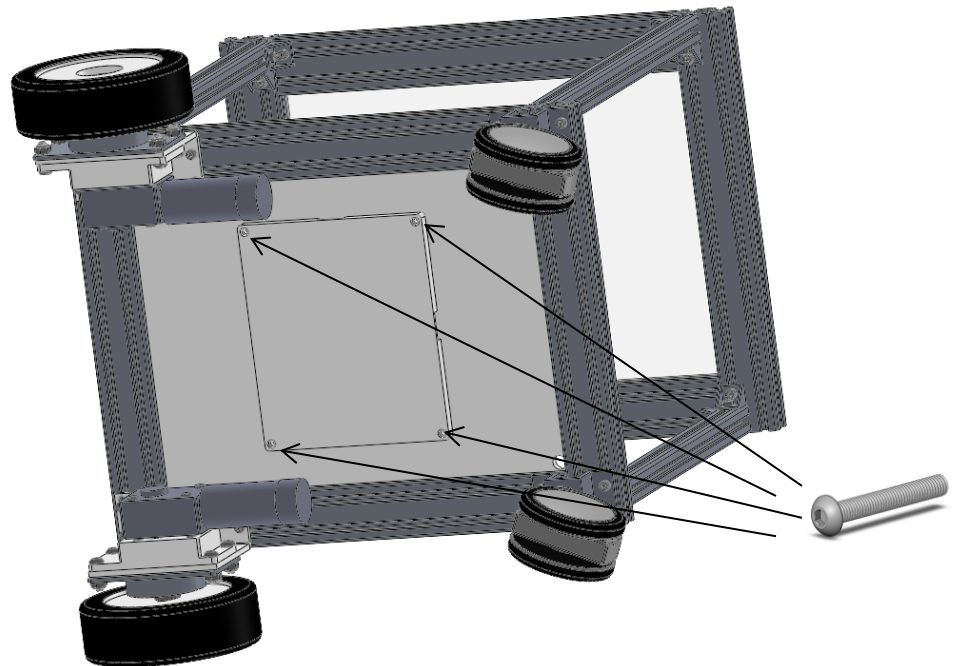


Fig. 19 Fix the Bottom Lid with the Control box

Step 3-3: Install the camera frame on the front aluminum extrusion



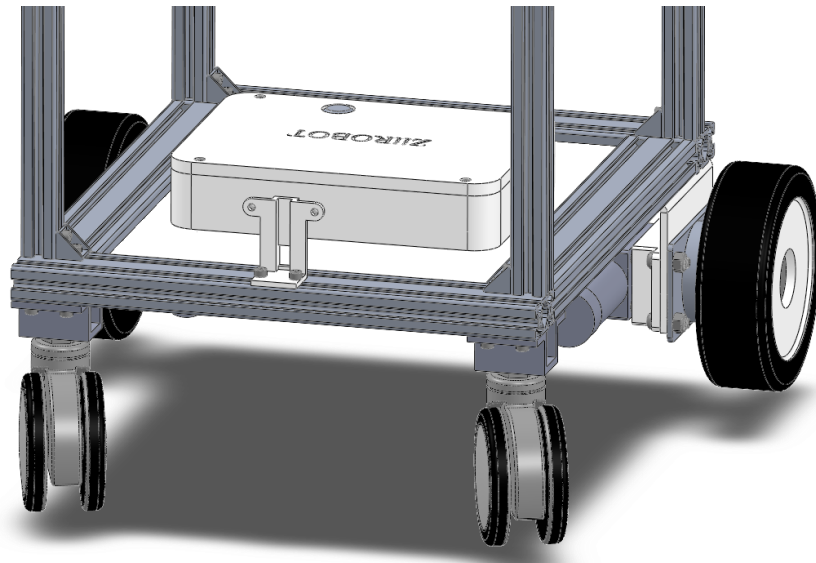


Fig. 20 Fix the Camera Frame on the Front Aluminum Extrusion

Step 3-4: Install the camera module on the frame. (**Attention:** make sure the cable go through the hole on the bottom plate)

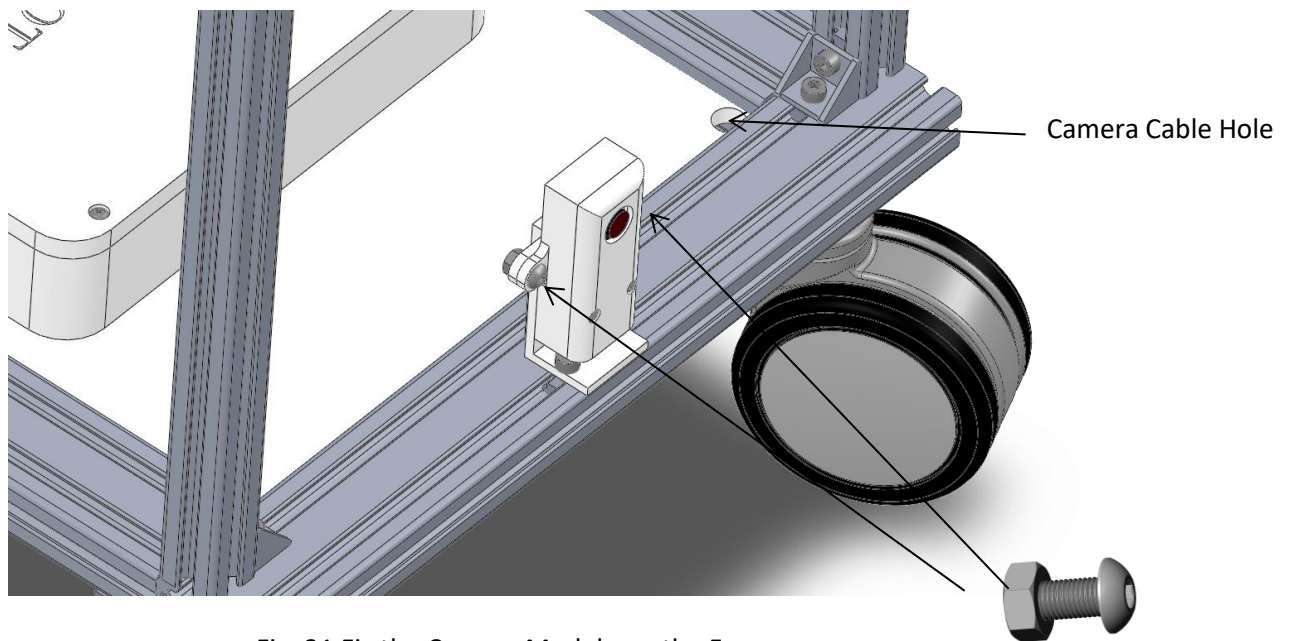


Fig. 21 Fix the Camera Module on the Frame

Step 3-5: Put all end caps on.





Fig. 22 Put on all the End Caps

Step 3-6: Install layers plates and tight the Layer Plate Fixtures for each layer.



Fig. 23 Final Assembly

Note:



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Normally you will receive the product with the platform already assembled (shown below), without the camera module, as shown below. You can follow the instructions to complete assembly of the Smart Cart.

