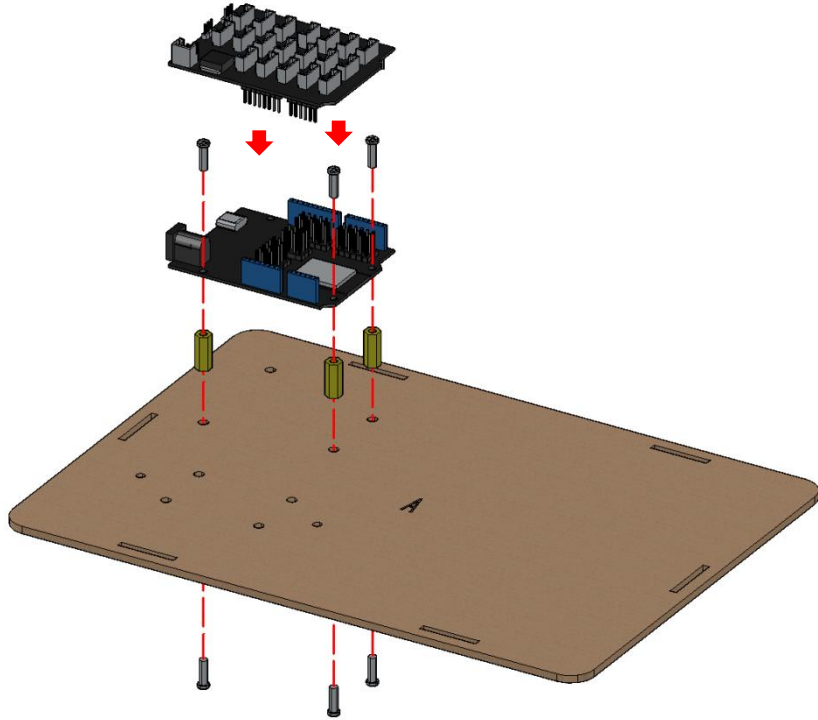
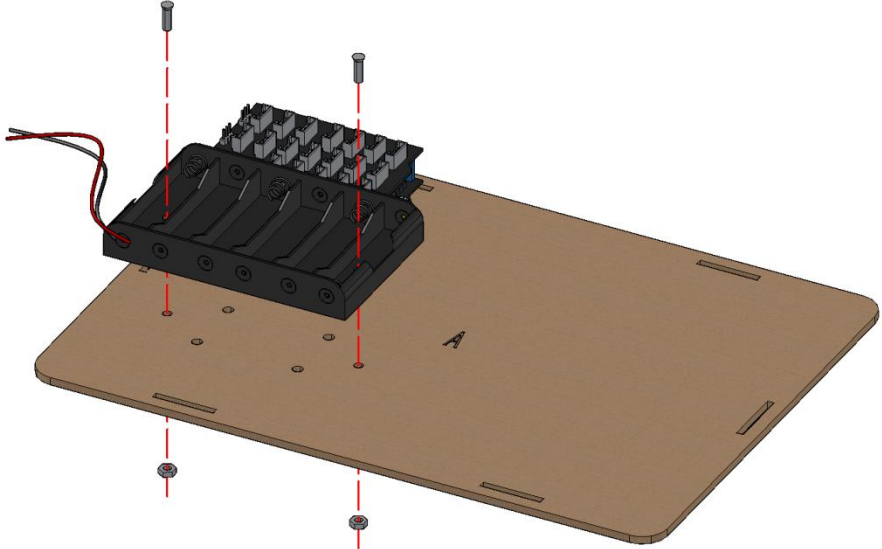
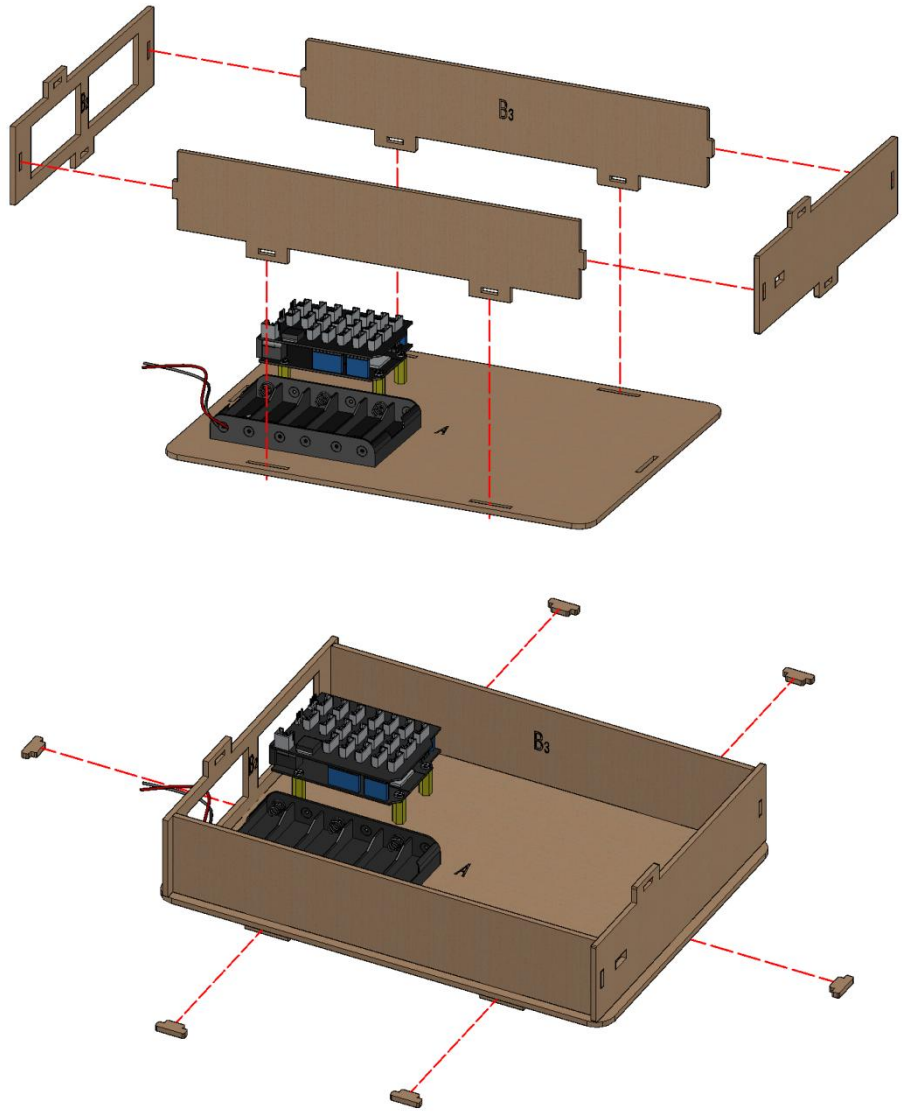


Step 1 Install ESP32 Control Board			
Parts Lists	"A" Print Basswood Board	M3*8MM Flat Head Screws*6	M3*14MM Dual-Pass Copper Pillar*3
	ESP32 Control Board*1	ESP32 Expansion board*1	
Splicing Diagram			
Attention	<p>1. First screw the copper pillar on the board, then cover the control control and tighten the screws, finally install the expansion board;</p> <p>2. The board sign is for the convenience of finding the board, but the board sign should face inward during installation.</p>		

## Step 2 Install Battery Box

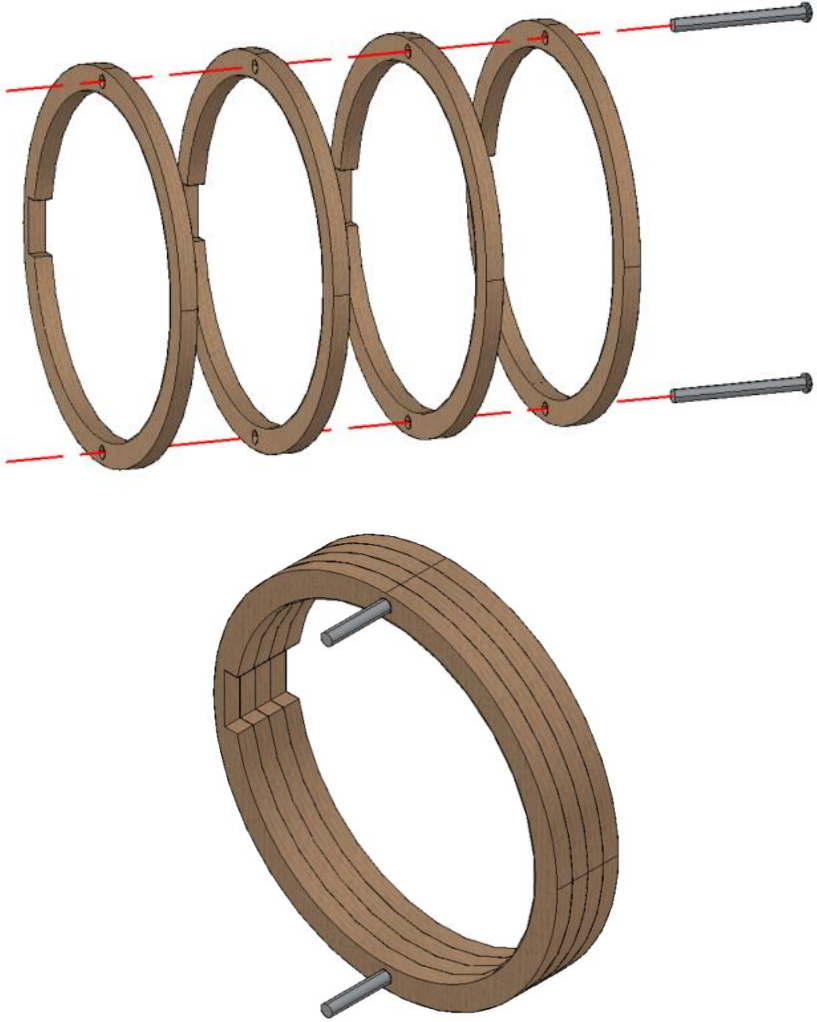
Parts Lists	M3 Nickel-Plated Nuts*2	M3*8MM Flat Head Screws*2	6xAA Battery Box with DC*1
Splicing Diagram			
Attention	<p>1.Screw step: first by hand the nut on the screw, and then tighten.</p> <p>2.Tightening method: hold the nut with a screwdriver, or hold the screw with Cross Wrench.</p>		

## Step 3 Install the Fence

Parts Lists	B1 Basswood Boards	B2 Basswood Boards	B3 Basswood Boards
	B4 Basswood Boards	Latch*6	
Splicing Diagram			
Attention	<ol style="list-style-type: none"><li>1. Connect the B1, B2, B3 and B4 basswood board in sequence;</li><li>2. Install them to the "A" Print Base Basswood Board;</li><li>3. Finally, install 6 latch on the bottom.</li></ol>		

## Step 4 Assemble the Home

### 4.1.1 Install Time Mirror Light

Parts Lists	Circle Ring Basswood Board*4	M2*22MM Round Head Screws*2
Splicing Diagram		
Attention	Use M2*22MM round head screws to fix the circular linden board.	

## Step 4 Assemble the Home

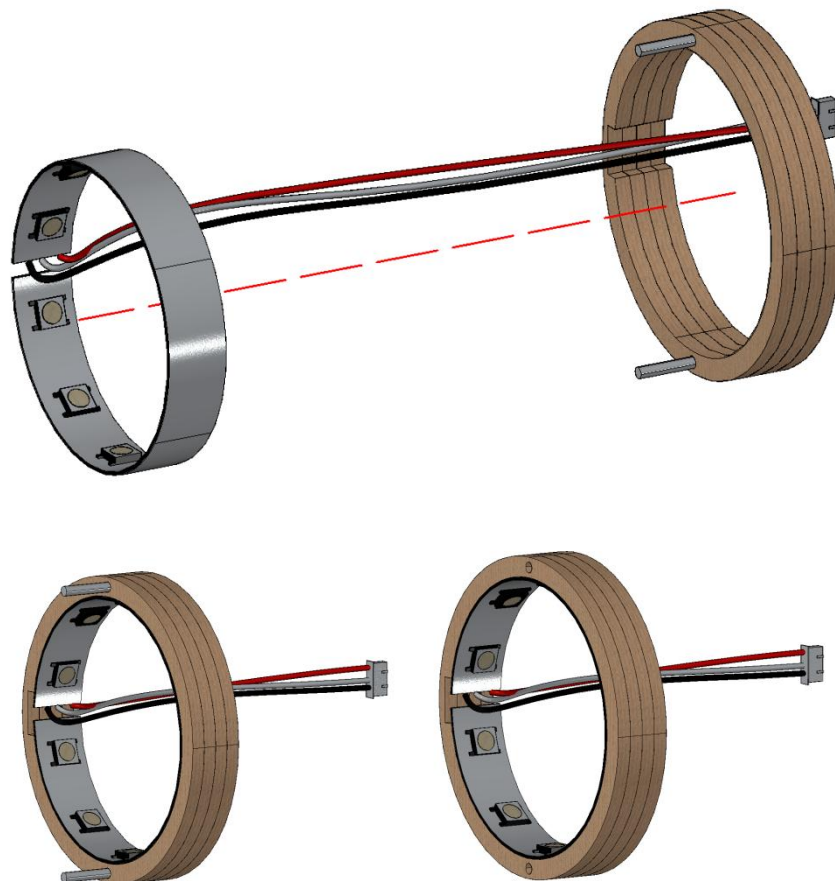
### 4.1.2 Install Time Mirror Light

Parts Lists

Assembled Circle Basswood  
Board\*4

RGB Light Strip\*1

Splicing  
Diagram

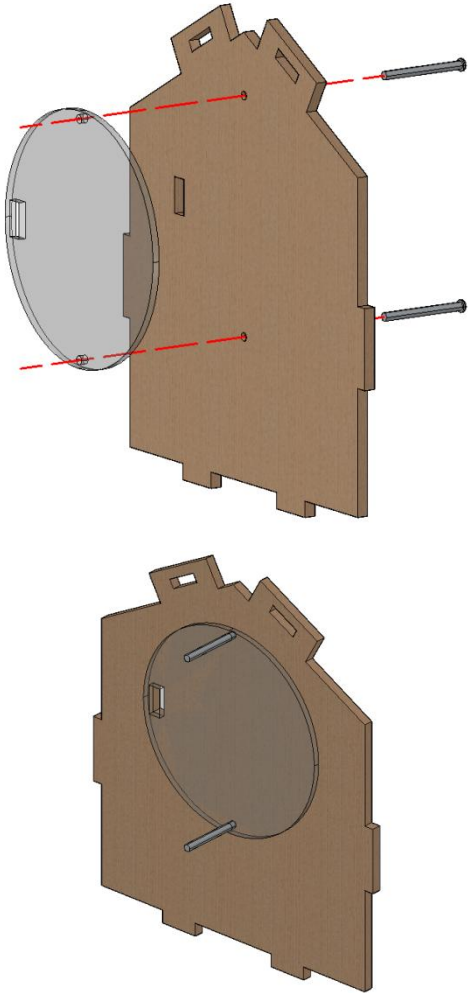


Attention

Tear the back double-side tape off the strip, and paste it on the circular linden board from the groove, and take out the M2\*22MM round-head screws used for fixing the circular linden board when the paste is finished, and keep them for later use.

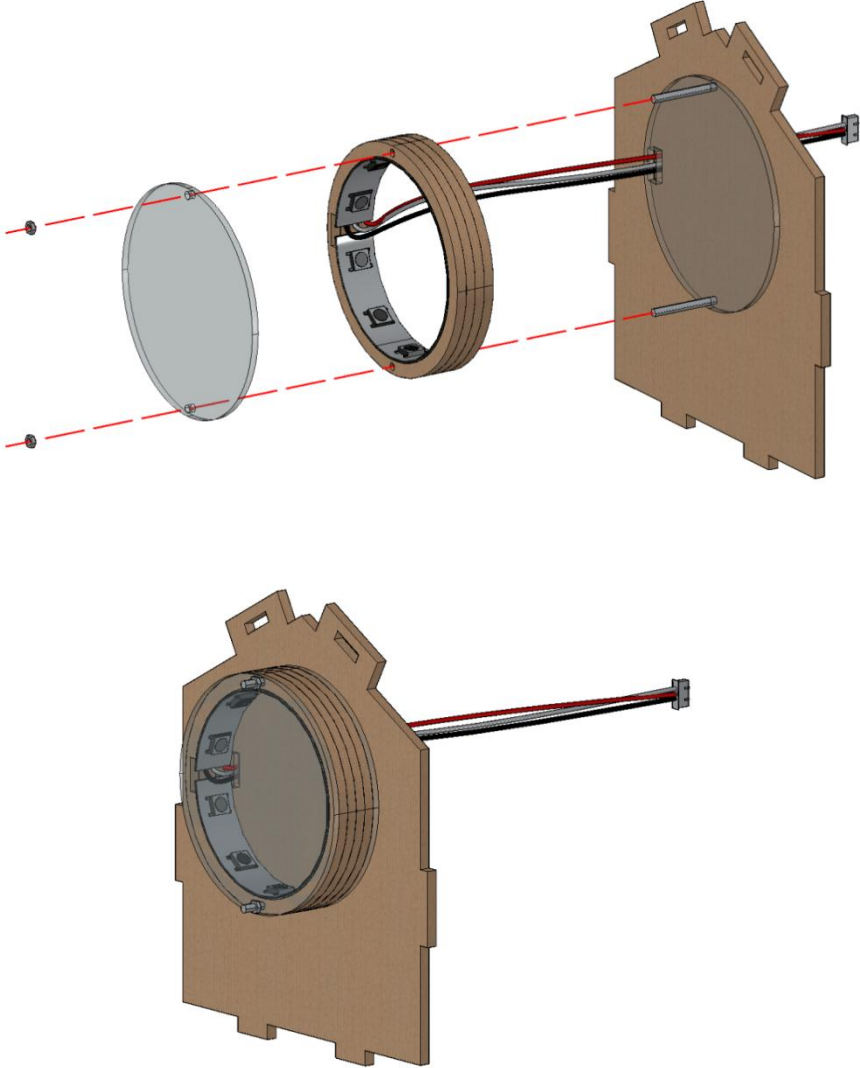
## Step 4 Assemble the Home

### 4.1.3 Install Time Mirror Light

Parts Lists	D1 Basswood Boards	Single Sided Mirror*1	M2*22MM Round Head Screws*2
Splicing Diagram			
Attention	<ol style="list-style-type: none"><li>1. Peel off the protective film on the single-sided mirror and align with the rectangular holes.</li><li>2. There are two circular holes and one rectangular hole on the Single Sided Mirror.</li></ol>		

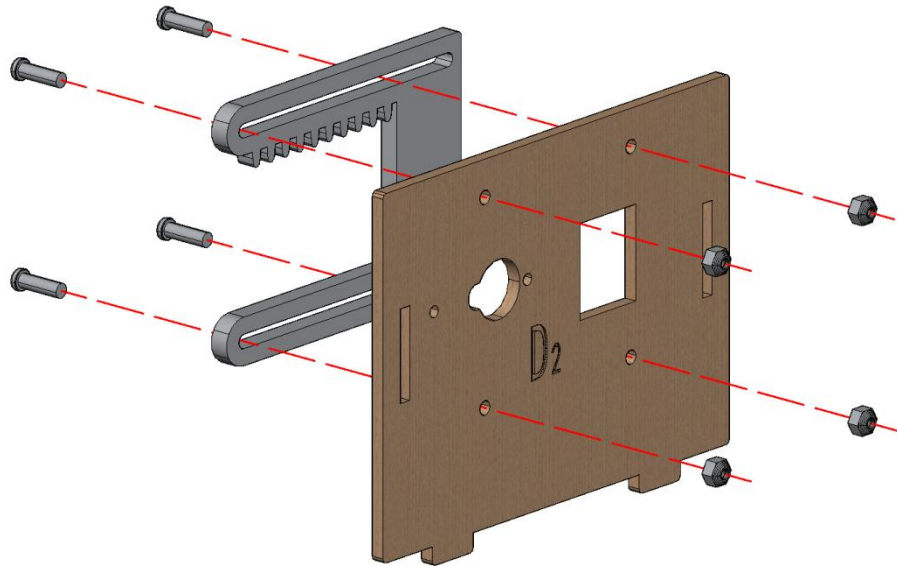
## Step 4 Assemble the Home

### 4.1.4 Install Time Mirror Light

Parts Lists	Assembled D1 Basswood Plate	Assembled Circle Ring Basswood Plate*4	Half Mirror*1
	M2 Nickel-Plated Nuts*2		
Splicing Diagram			
Attention	<p>1. Tear off the protective film on the half mirror(there are two round holes on the half-mirror, NOTE: the half-mirror is not divided into front and back);</p> <p>2. Put the wire of the light strip into the rectangular hole of the half-mirror;</p> <p>3. Finally, install the half-mirror on the Assembled Circle Basswood Plate with M2 nut.</p>		

## Step 4 Assemble the Home

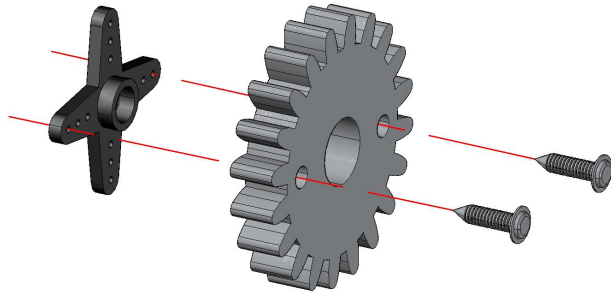
### 4.2.1 Install of windows

Parts	D2 Basswood Board	Short Rack Acrylic Plate*1	M3*10MM Round Head Screws*4
Lists	M3 Nickel-Plated Lock Nut*4		
Splicing Diagram			
Attention	<p>1. Fix the Lock Nut screws with Cross Wrench, turn the screws with a screwdriver, and tighten the screw properly, so that the short rack acrylic is fixed and can slide easily.</p> <p>2. Note that the acrylic rack is at the top.</p>		



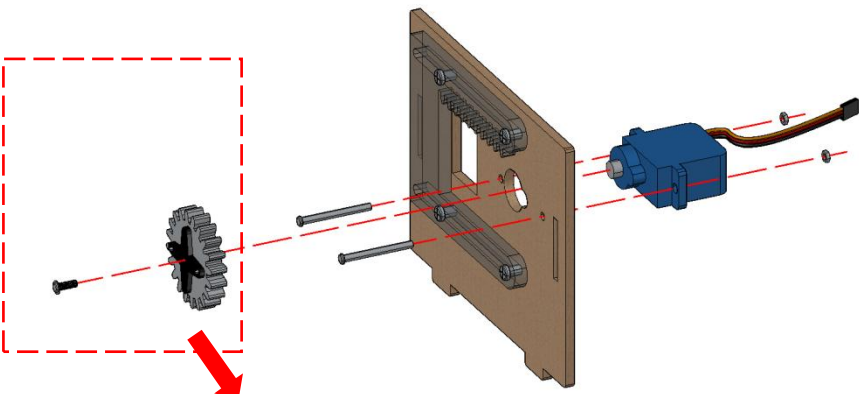
## Step 4 Assemble the Home

### 4.2.2 Install of Windows

Parts Lists	Gear Acrylic Plate*1	Cross Servo Motor Steering Wheel*1	M1.4*5 Large Round Flat Head Tapping Screws *2
Splicing Diagram			
Attention	<p>The screws should be fully tightened to the gear acrylic plate to prevent rubbing the basswood plate when rotating.</p> <p>The M1.4*5 tapping screws here are not included in the servo package but are in a separate screw pack.</p>		

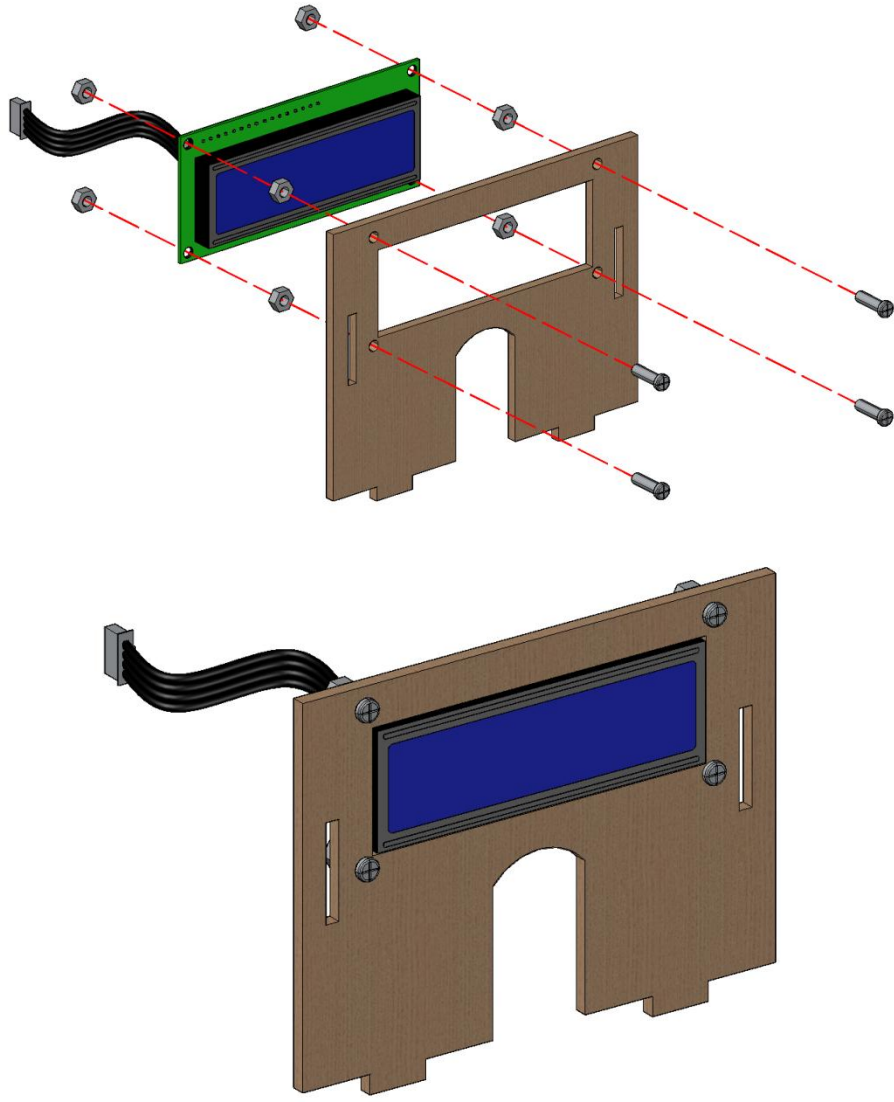
## Step 4 Assemble the Home

### 4.2.3 Install Windows

Parts Lists	SG90 Servo Module*1	M2*22MM Round Head Screws*2	M2 Nickel-Plated Nuts*2
Splicing Diagram	 <p>Leave this part uninstalled for now</p>		
Attention	<p>1.M2 nickel-plated nuts can be pressed tightly in the servo screw holes for easy installation;</p> <p>2. The servo motor needs to be calibrated, do not install the Gear Acrylic Plate and servo motor screw for now, the following course will teach you how to calibrated the servo, so please keep it.</p>		

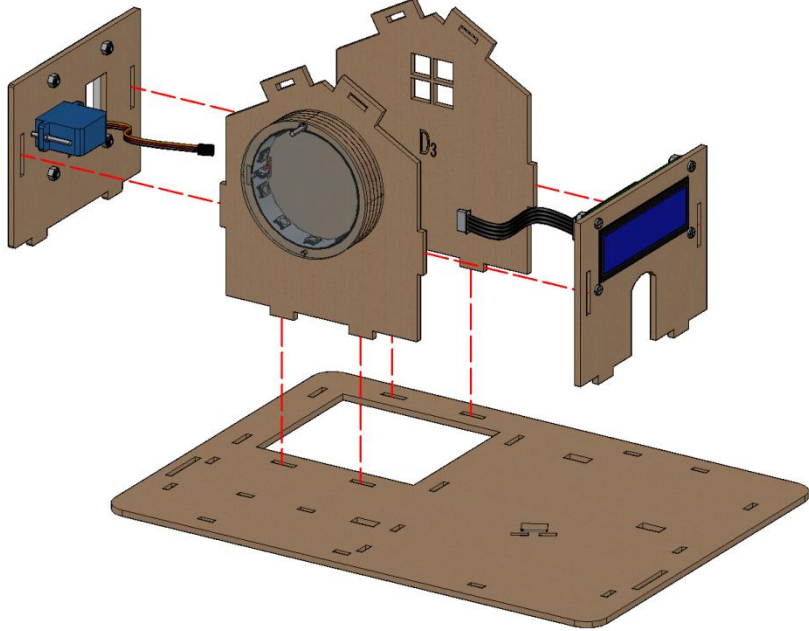
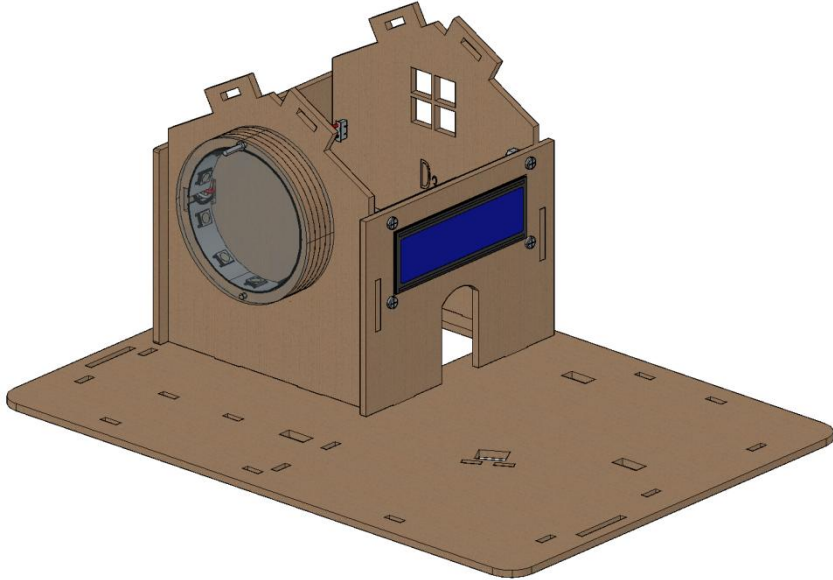
## Step 4 Assemble the Home

### 4.3 Install the I2C 1602 LCD Module

Parts Lists	I2C 1602 LCD Module*1	M3*10MM Round Head Screws*4	M3 Nickel-Plated Nuts*8
	D4 Basswood Boards	F-F 4P Cable	
Splicing Diagram			
Attention	<p>1.In order to prevent the LCD screen from being squeezed, we use 4pcs M3 nickel-plated nuts to prop up the LCD;</p> <p>2.Install 4pcs M3 nickel-plated nuts on the outermost part to prevent the screen from being damaged by compression.</p> <p>3.Plug in the cabl on the LCD.</p>		

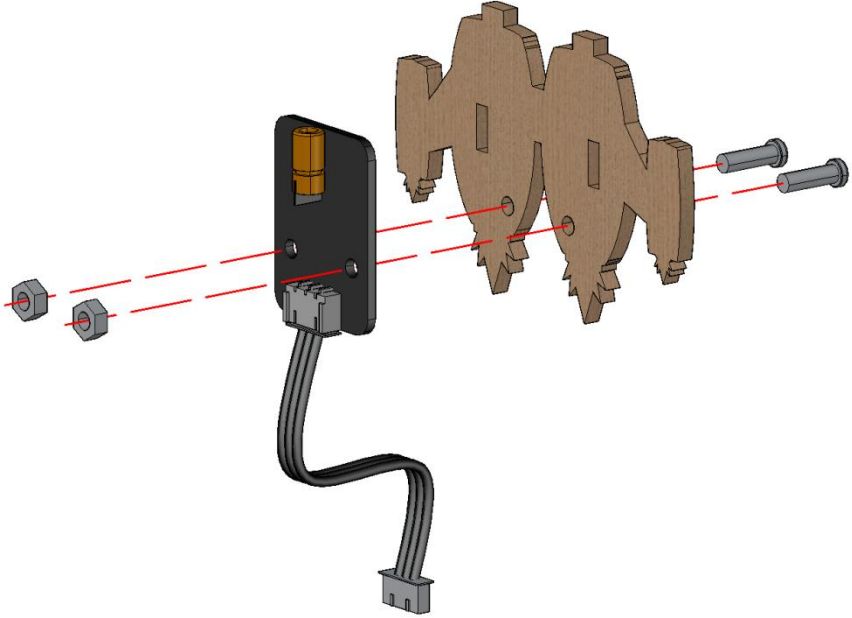
## Step 4 Assemble the Home

### 4.4 Assemble the Four Walls

Parts Lists	Assembled D1 Basswood Board	Assembled D2 Basswood Board	D3 Basswood Board
	Assembled D4 Basswood Board	C Basswood Board	
Splicing Diagram			
			
Attention	<ol style="list-style-type: none"><li>1. Assemble D1, D2, D3, D4 basswood boards in sequence and install to C basswood board;</li><li>2. Pay attention to the hole position when installing. Don't push hard blindly to avoid damaging the basswood board.</li></ol>		

## Step 5 Assemble Lumi's Flight Backpack

### 5.1 Assemble the Flight Pack

Parts Lists	M3*10MM Round Head Screws*2	M3 Nickel-Plated Nuts*2	Laser Module*1
	Flight Backpack Color Printed Basswood Board*1	F-F 3P Cable	
Splicing Diagram			
Attention	Connect cable in advance.		

## Step 5 Assemble Lumi's Flight Backpack

### 5.2 Assemble Lumi

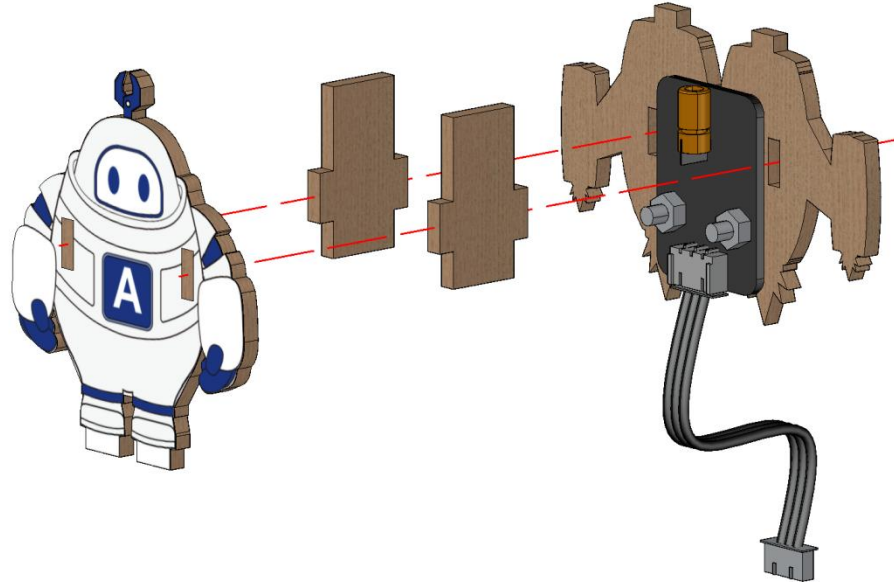
Parts Lists

Lumi Color Printed Basswood  
Board\*1

Cross Shape Basswood Board\*2

Splicing

Diagram



## Step 5 Assemble Lumi's Flight Backpack

### 5.3 Install Plate

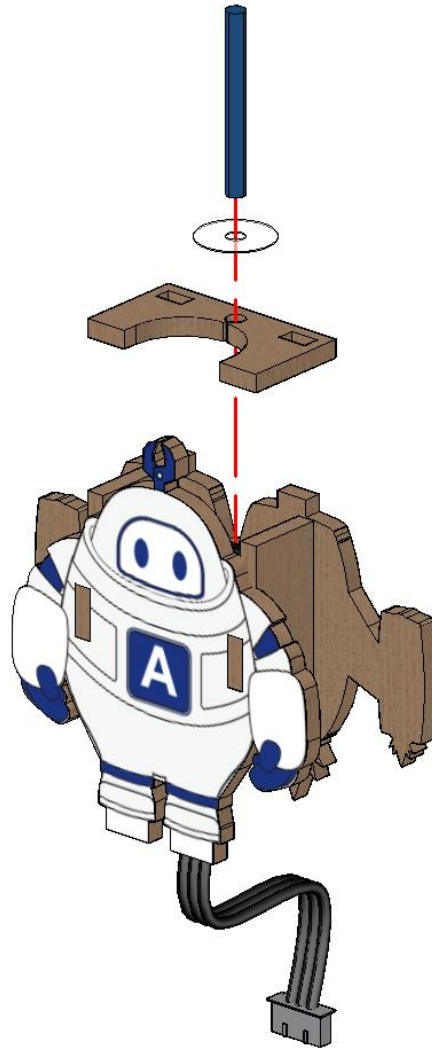
Parts Lists

Concave Basswood  
Board\*1

Plate\*1

Cylinder\*1

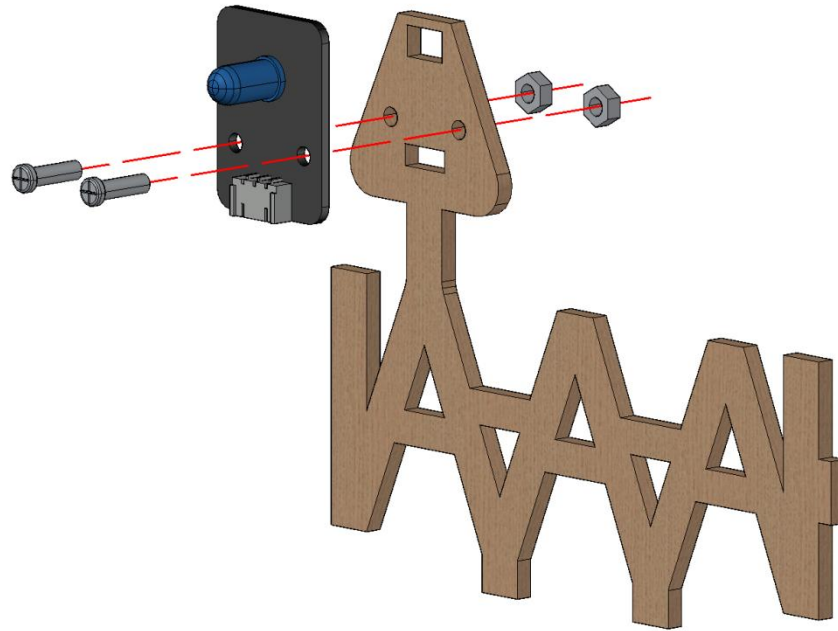
Splicing  
Diagram



## Step 6 Assemble the Street Light

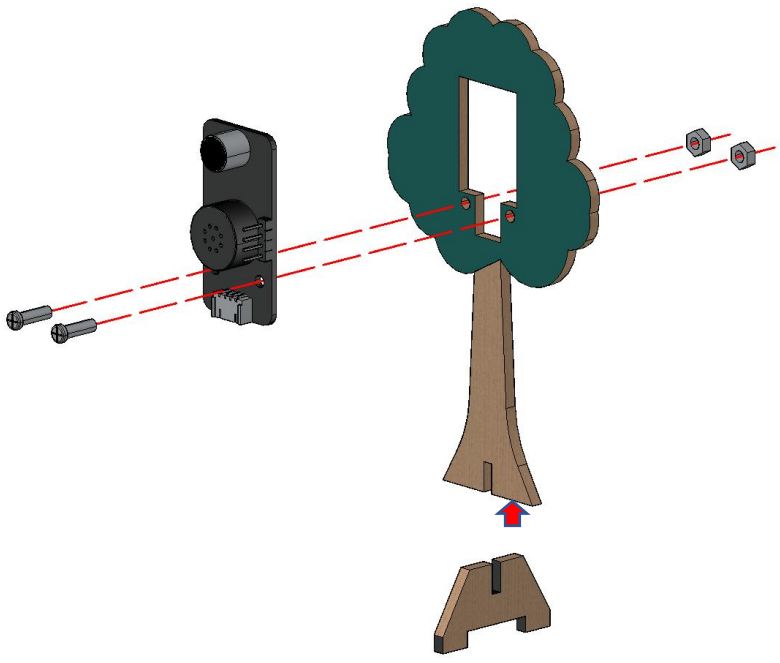
Parts Lists	Fence With Street Lights Basswood Boards*1	Blue LED Module*1	M3*10MM Round Head Screws*2
	M3 Nickel-Plated Nuts*2		

Splicing  
Diagram



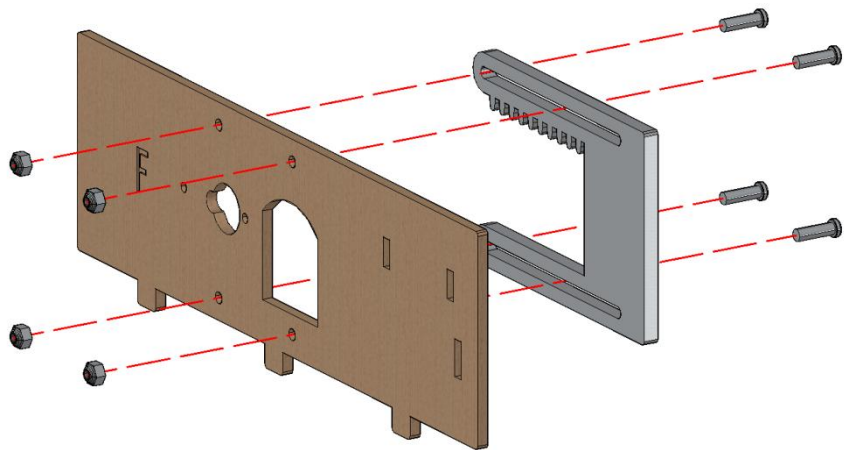


## Step 7 Assemble the Tree

Parts Lists	Tree-shaped Basswood Board*1	Voice Recognition Module V2.0*1	M3 Nickel-Plated Nuts*2
	M3*10MM Round Head Screws*2	Basswood Board for Holding the Tree Root*1	
Splicing Diagram			

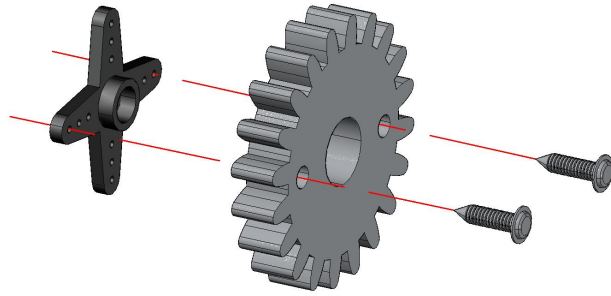
## Step 8 Assemble the Door

### 8.1 Install Acrylic Doors

Parts Lists	F Basswood Board*1	Long Rack Acrylic Plate*1	M3*10MM Round Head Screws*4
	M3 Nickel-Plated Lock Nuts*4		
Splicing Diagram			
Attention	<ol style="list-style-type: none"> <li>1. Fix the Lock Nut screws with Cross Wrench, turn the screws with a screwdriver, and tighten the screw properly, so that the long rack acrylic is fixed and can slide easily.</li> <li>2. Note that the acrylic rack is at the top.</li> </ol>		

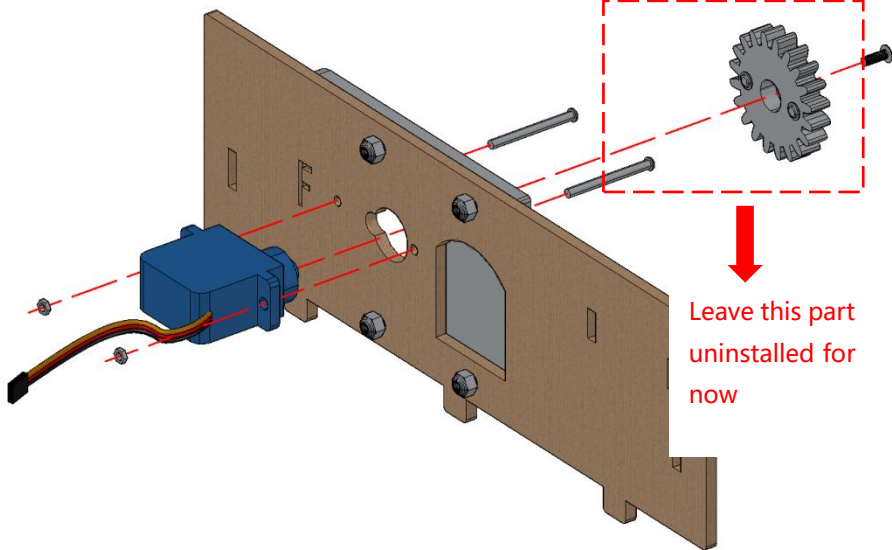
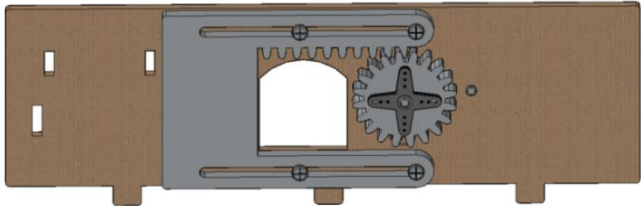
## Step 8 Assemble the Door

### 8.2 Assemble the Gear Acrylic

Parts Lists	Gear Acrylic Plate*1	Cross Servo Motor Steering Wheel*1	M1.4*5 Large Round Flat Head Tapping Screws*2
Splicing Diagram			
Attention	The screws should be fully tightened to the gear acrylic to prevent rubbing the basswood board when rotating.		

## Step 8 Assemble the Door

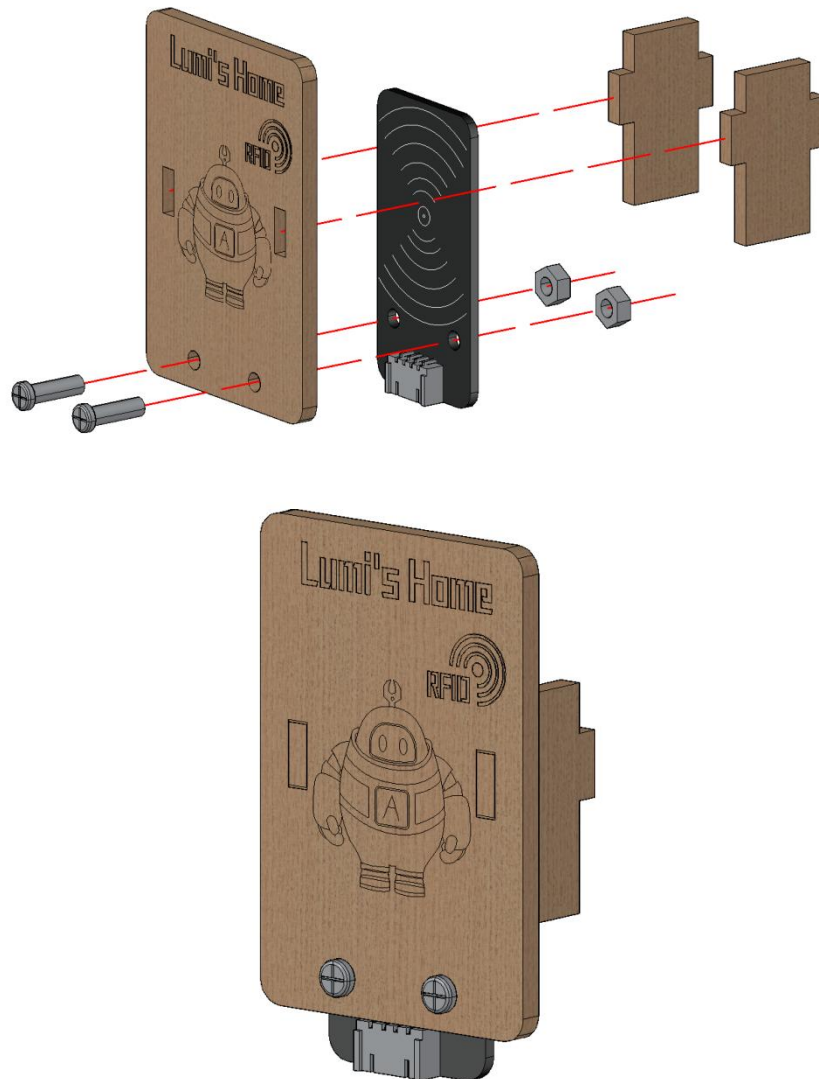
### 8.3 Install Servo

Parts Lists	SG90 Servo Module*1	M2*22MM Round Head Screws*2	M2 Nickel-Plated Nuts*2
Splicing Diagram	 		
Attention	<p>1.M2 nickel-plated nuts can be pressed tightly in the servo screw holes for easy installation;</p> <p>2. The servo motor needs to be calibrated, do not install the Gear Acrylic Plate and servo motor screw for now, the following course will teach you how to calibrated the servo, so please keep it.</p>		

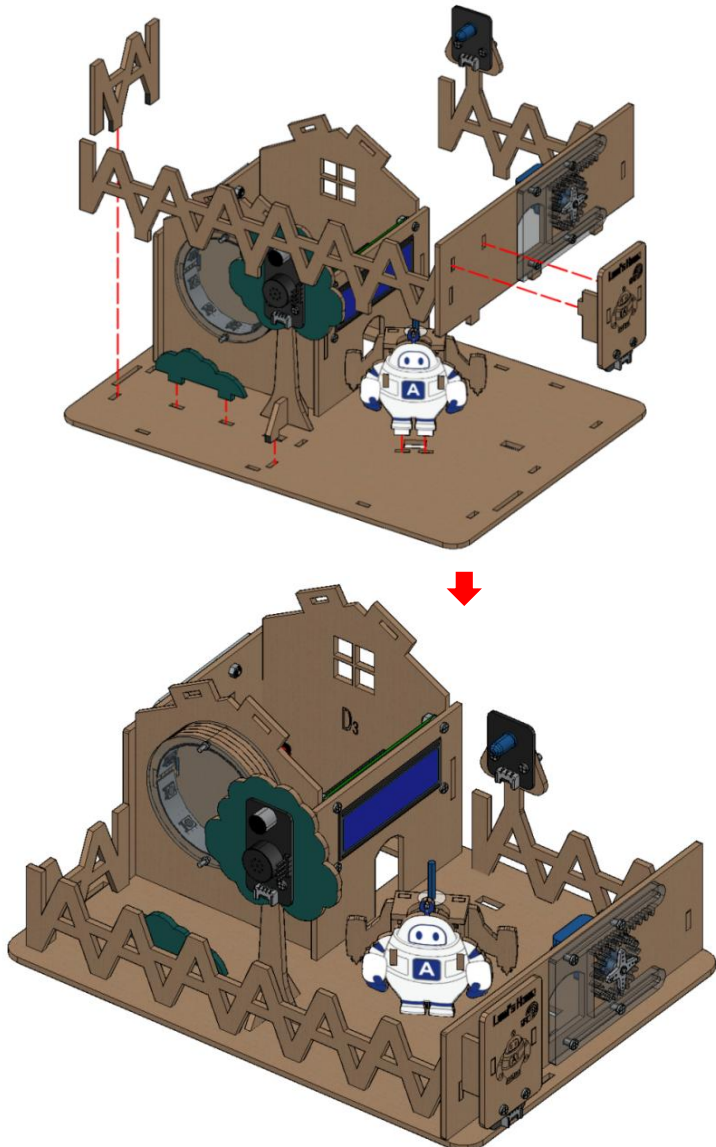
## Step 9 Assemble Access Control

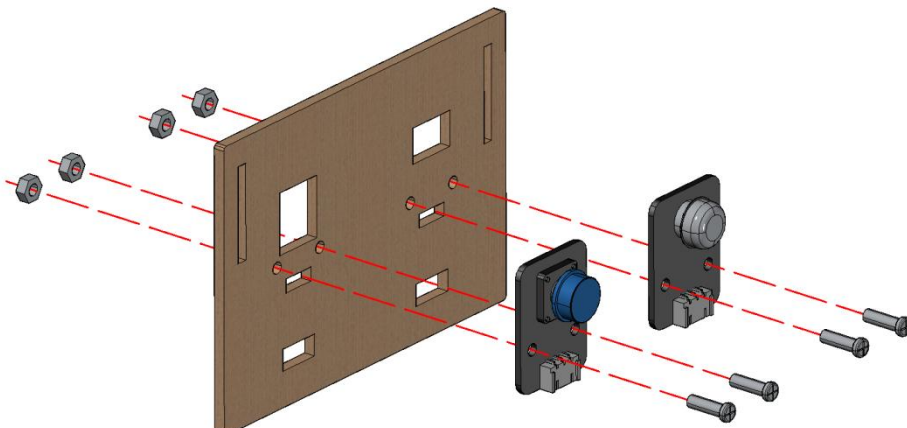
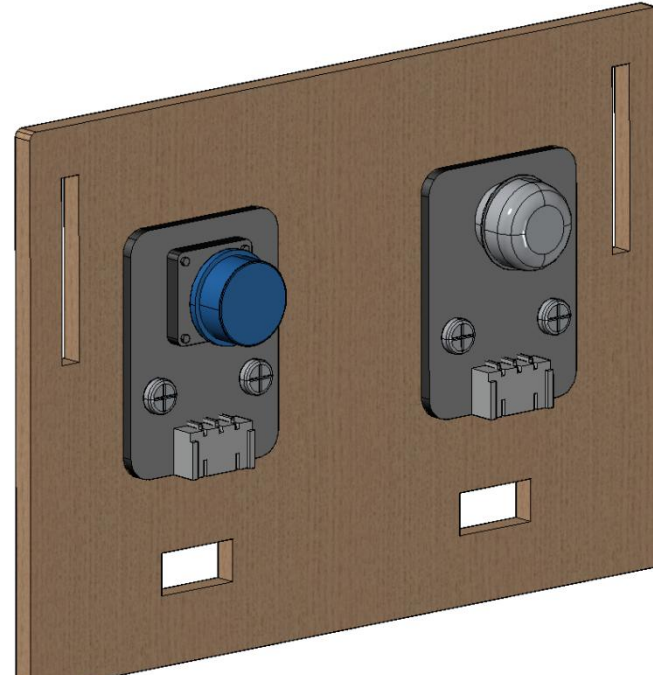
Parts Lists	RFID Module*1	M3*10MM Round Head Screws*2	M3 Nickel-Plated Nuts*2
	Lumi Rectangle Basswood Board*1	Cross Shape Basswood Board*2	

Splicing  
Diagram



## Step 10 Assemble the Yard

Parts Lists	Grass Color Printing Board*1	Long Fence Basswood Board*1	Assembled Lumi Flight Backpack*1
	Short Fence Board*1	Assembled Tree*1	Assembled Door*1
	Assembled Street Lamp*1	Assembled Access Control*1	C Basswood Board
Splicing Diagram			
Attention	<p>1. Install the inside part of the yard first, then install the outside fence;</p> <p>2. First connect the long fence basswood board, short fence board and assembled doors in sequence, and then install the whole to the C basswood board.</p>		

Step 11 Assemble the Roof			
11.1 Side Roofs 1			
Parts Lists	E1 Basswood Board*1	Button Module*1	PIR Motion Sensor*1
	M3*10MM Round Head Screws*4	M3 Nickel-Plated Nuts*4	
Splicing Diagram			
			

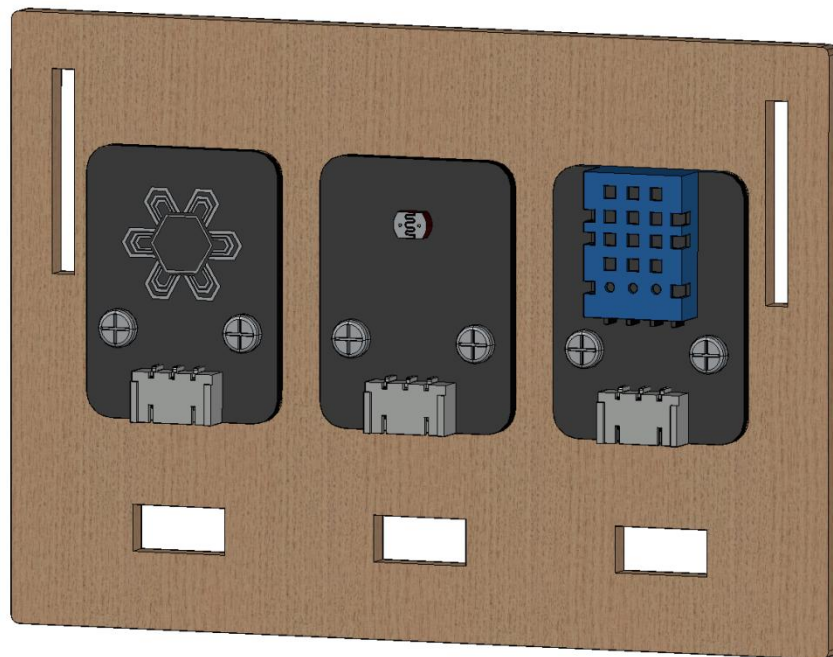
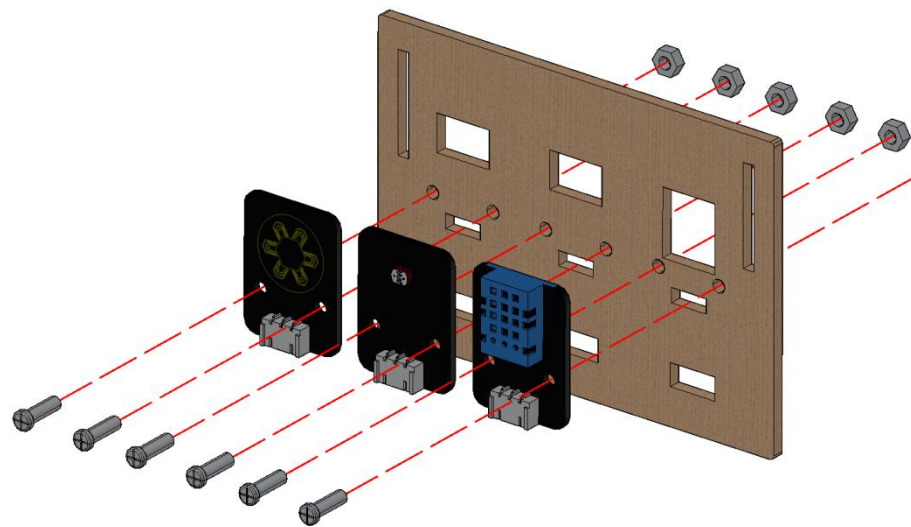


## Step 11 Assemble the Roof

### 11.2 Side Roofs 2

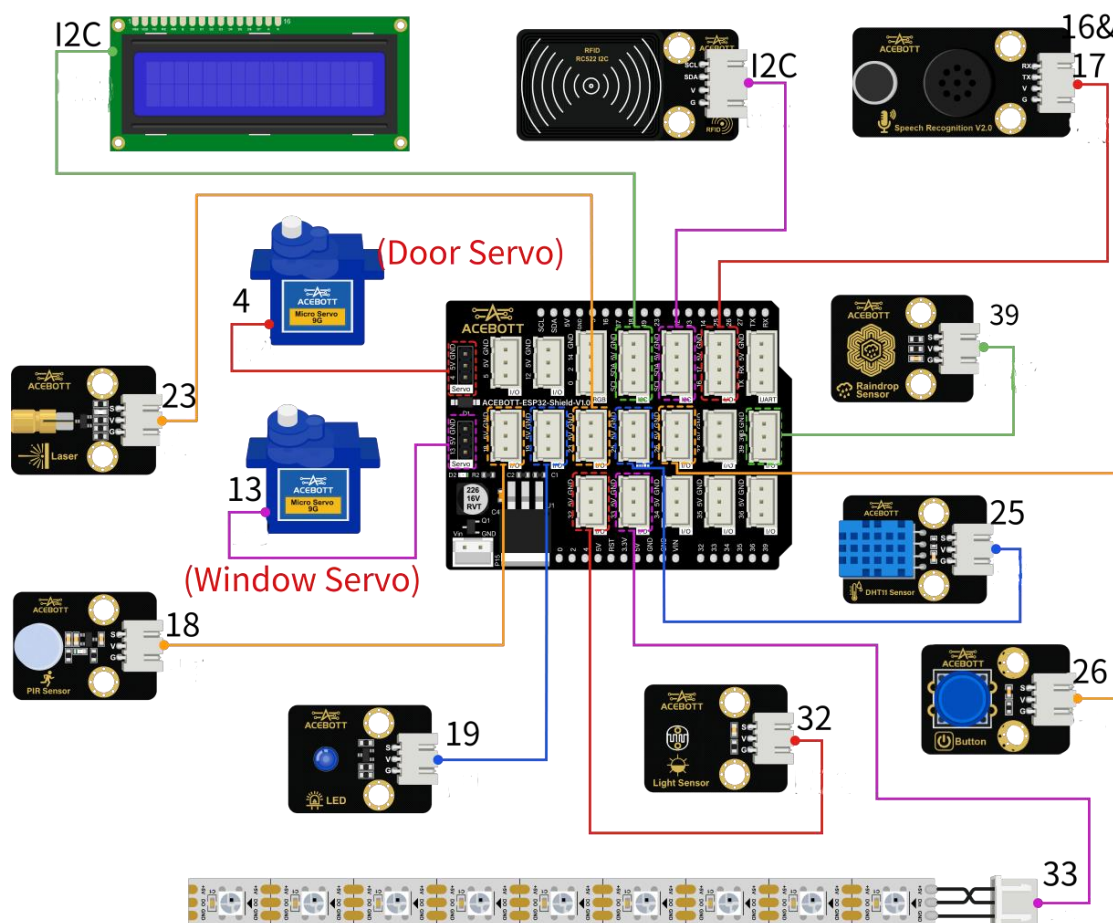
Parts Lists	E2 Basswood Board*1	Light Sensor*1	DHT11 Humidity Temperature Sensor*1
	Raindrop Sensor*1	M3*10MM Round Head Screws*6	M3 Nickel-Plated Nuts*6

Splicing  
Diagram



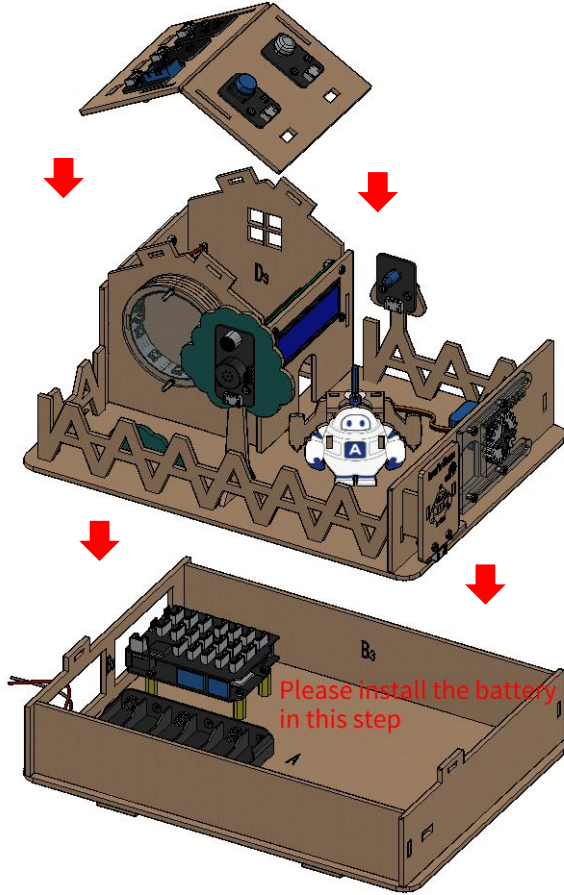


## Step 12 Wiring



1. The cable has reverse connection protection. It can only be successfully connected if inserted in the correct direction into the module.
2. The cable color of the servo is different from the common cable, the red wire connects to the "V" pin, the brown wire connects to the "G" pin, and the yellow wire connects to the "digital" pin;
3. Please make sure to strictly follow the wiring instructions when connecting the module to the ESP32 controller board. Incorrect wiring may cause a short circuit and damage the ESP32 controller board.

Step 12 Wiring	
IO	Modules/Sensor
19	LED Module
33	RGB Light Strip
13	Servos on Windows
4	Servos on Doors
23	Laser Module
16&17	Voice Recognition Module
18	PIR Motion Sensor
25	DHT11 Humidity Temperature sensor
26	Button Module
I2C	I2C 1602 LCD Module
I2C	RFID Module
32	Light Sensor
39	Raindrop Sensor

Step 13 Install of Roof			
Parts Lists	Assembled E1 Basswood Board*1	Assembled Yard*1	Assembled Bottom*1
	Assembled E2 Basswood Board*1		
Splicing Diagram			
Attention	Please install the 6xAA battery in this step.(This kit without battery, please prepare battery)		

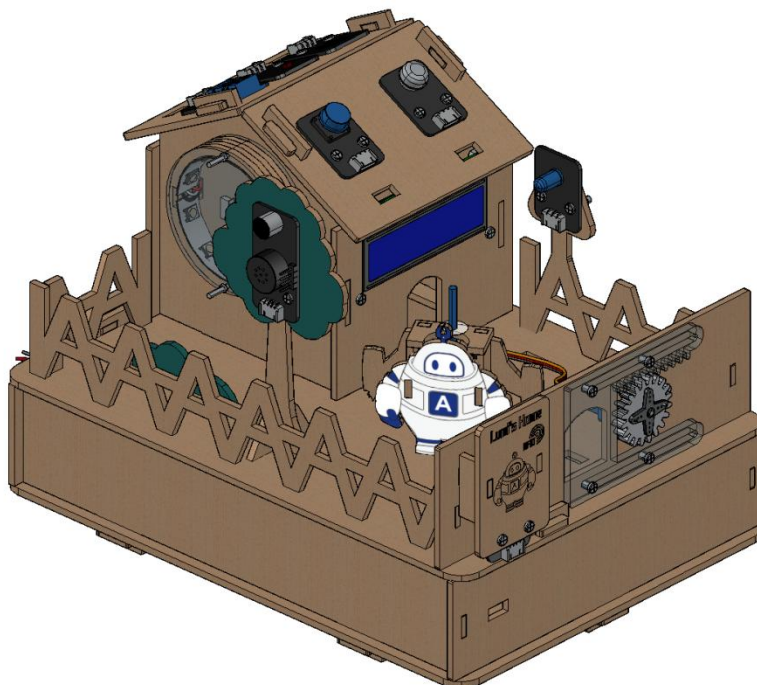
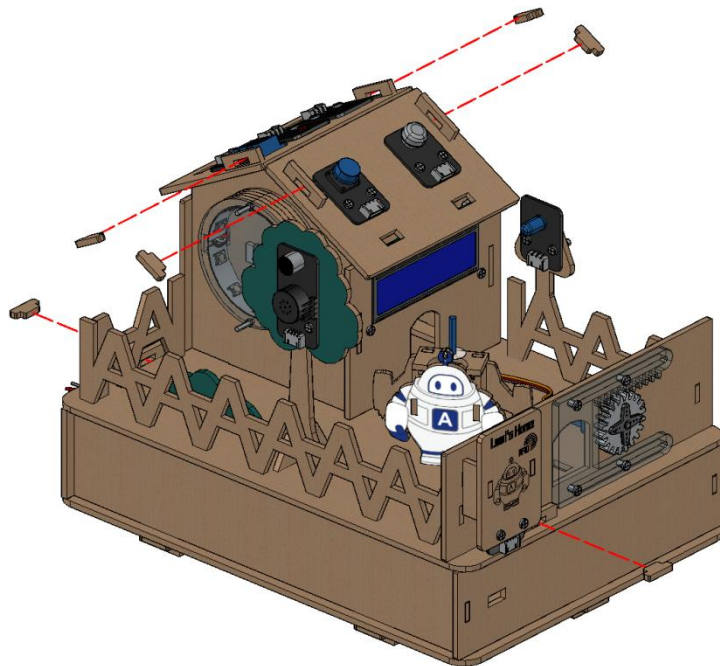
## Step 14 Fixing the Home

Parts Lists

Latch\*6

Splicing

Diagram



Attention

The latch of the access position cannot influence the operation of the acrylic door.