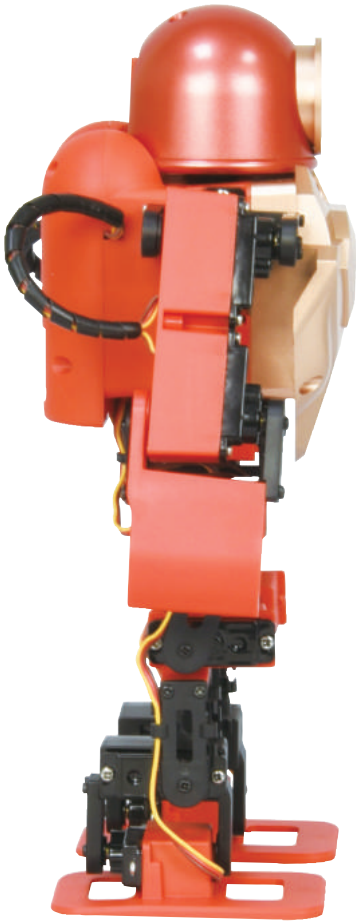
BUILD YOUR OWN INSTRUCTION MANUAL

No.7500-K10 / K10E

PLEASE READ THIS GUIDE THOROUGHLY BEFORE USING ROBOHERO

The contents are subject to change without prior notice due to product improvement and specification changes.

More information can view the tutorial videos on our TTR official website(www.ttrobotix.com) or YouTube channel https://www.youtube.com/user/ThunderTigerVideo)



INTRODUCTION

ROBOBHERO is a 17 axis robot which is controlled with specific mobile APP by WIFI. The basic operating interface includes 6 basic motions and 11 combined motions. It also has voice command mode, servo setting mode, and motion editor mode. This product also allows user to edit ROBOHERO motion by Arduino complier.

WARNING

1.Keep the ROBOHERO away from children under 3 years old at all items to prevent injury or damage
2.If the ROBOHERO is operating abnormally, there is an unusual sound, smell or smoke is detected:
- Turn the ROBOHERO OFF immediately
- Unplug the ROBOHERO
- Remove the battery (remove screws on the front chest casing)
- Ensure the ROBOHERO does not tip over or fall down

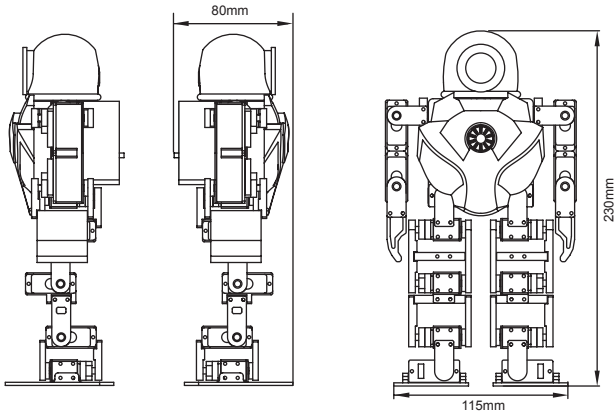
3.To prevent the spread of fire, keep candles or other open flames away from the ROBOHERO at all times.

FEATURES

1.17 axis can be freely controlled.
2.Through Arduino IDE to take full control of ROBOHERO movements and actions.
3.Control your ROBOHERO by APP interface(iOS & Android) and voice command.
4.Editable movements and actions.
5.Use 270 degrees micro metal gear servo to enhance flexibility and reduce maintenance costs.

SPECIFICATION

Product Name	ROBOHERO
Dimension	H230 x W80 x D115(mm)
Weight	500g
Servo	Torque: 2.0kgf.cm , Speed: 0.12sec/60°
Battery	7.2V/550mAh Lithium Capacitor Battery
Remote Control	ESP-Wroom-02 WiFi



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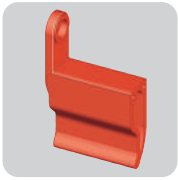
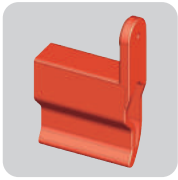

Part A(L)


Part B(R)

Part C

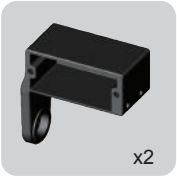
Part C1

Part D

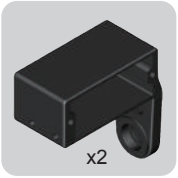
Part D1

Part E

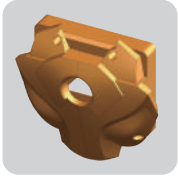
Part E1



Part F(L)



Part G(R)


Part H


Part I

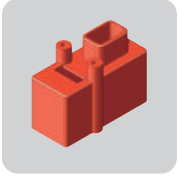

Part J

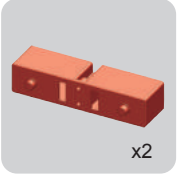

Part K


Part L

Part M

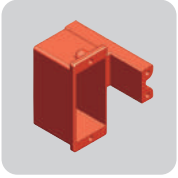

Part N

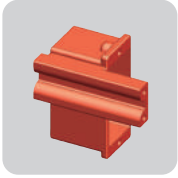

Part N1



Part O

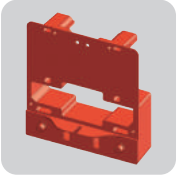
Part P


Part Q1(L)

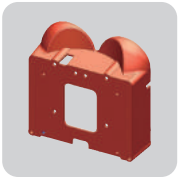

Part Q2(R)

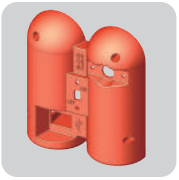

Part R1(L)


Part R2(R)


Part S

CONTENTS INCLUDED


Part T


Part U

Bushing

Collar

Servo


Charger Jack Wire


Switch Wire


Power Connecting Wire


LED Wire


Battery


Charger


Main Control Board


Power Board


Lampshade Sticker


Mouth sticker

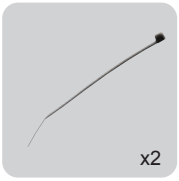

Screw Driver

Cable Clamp

HMF2-5B-1(M2x5L)

HMJ2-6B(M2x6L)

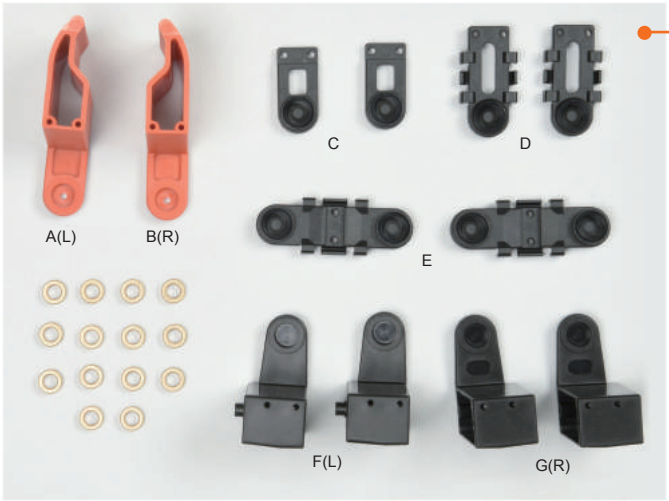
HMJ2-8B(M2x8L)



Cable Tie

Spiral Wrappind Band

I Bushing assembly

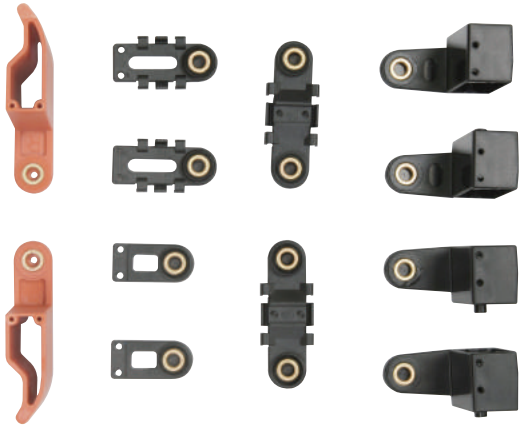


Parts List

Bushing x 14Pcs
Part A x 1Pcs(L)
Part B x 1Pcs(R)
Part C x 2Pcs
Part D x 2Pcs
Part E x 2Pcs
Part F x 2Pcs(L)
Part G x 2Pcs(R)

Assembly Method

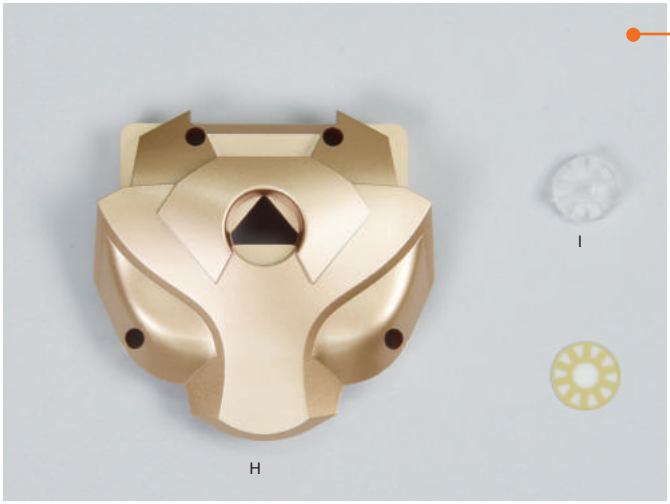
According to the figure, press 14 pieces of bushings into the Parts



Note

Please make sure that the bushing is pressed even so that no jut out on the appearance.

2 Front lampshade assembly



Parts List

Part H x 1Pcs
Part I x 1Pcs
Lampshade Sticker x 1Pcs

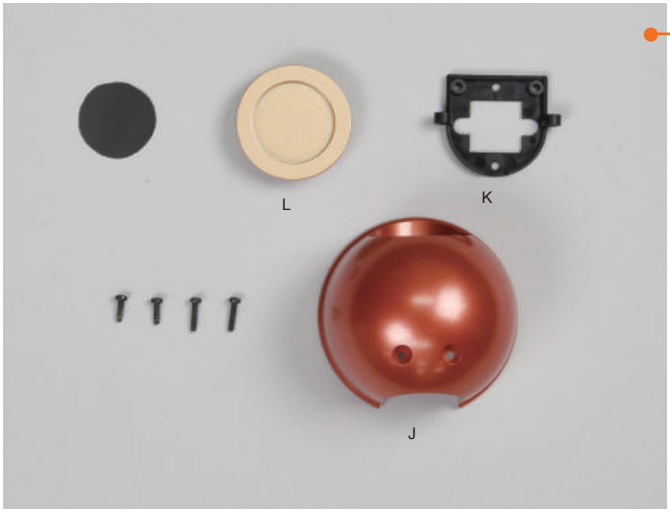
Assembly Method

According to the figure, press Part I into Part H and stick lampshade sticker on Part I

Note

Please make sure that Part I is pressed in. You can add some glue in the juncture to prevent falling off.

3 Hood assembly



Parts List

Part J x 1Pcs
Part K x 1Pcs
Part L x 1Pcs
Mouth Sticker x 1Pcs
HMJ2-6B x 2Pcs
HMJ2-8B x 2Pcs

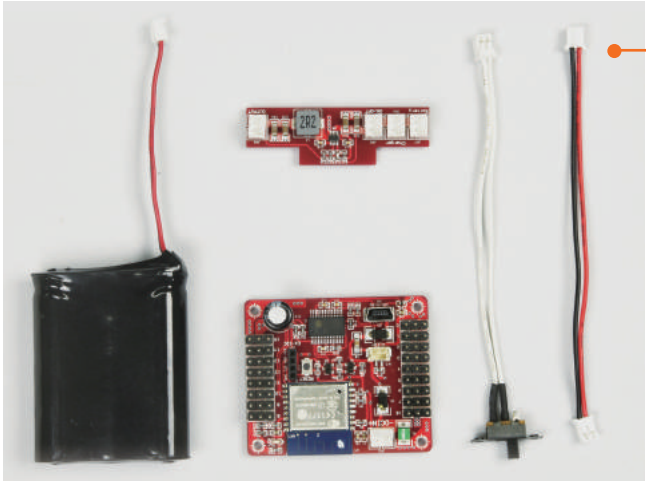
Assembly Method

1. According to the figure, use HMJ2-8B to lock Part K into Part J

2. Then use HMJ2-6B to lock Part L into Part K according to the figure

3. Stick mouth sticker on Part L

4.1 Servo assembly- environment setting

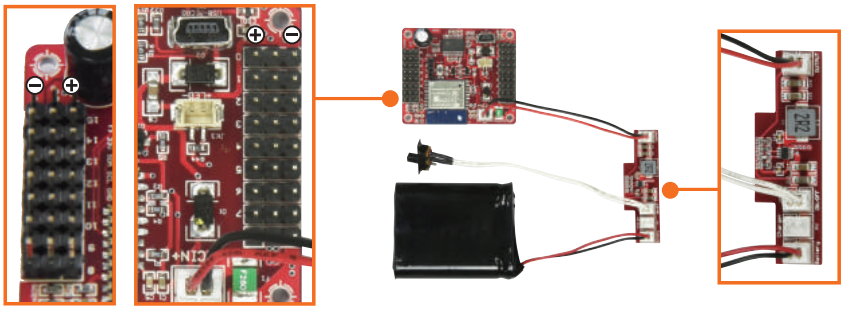


Parts List

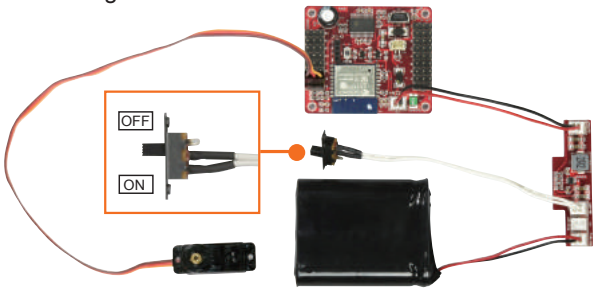
Battery x 1Pcs
Main Control Board x 1Pcs
Power Board x 1Pcs
Power Connecting wire x 1Pcs
Switch Wire x 1Pcs

Assembly Method

1. Respectively connect battery and switch wire to the power board and use power connecting wire to connect main control board and power board



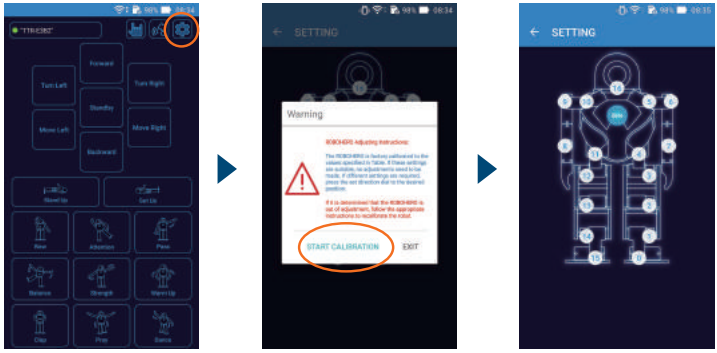
2. Insert the servo needed setting into the corresponding position in the main control board according to the number



4.1 Servo assembly- environment setting

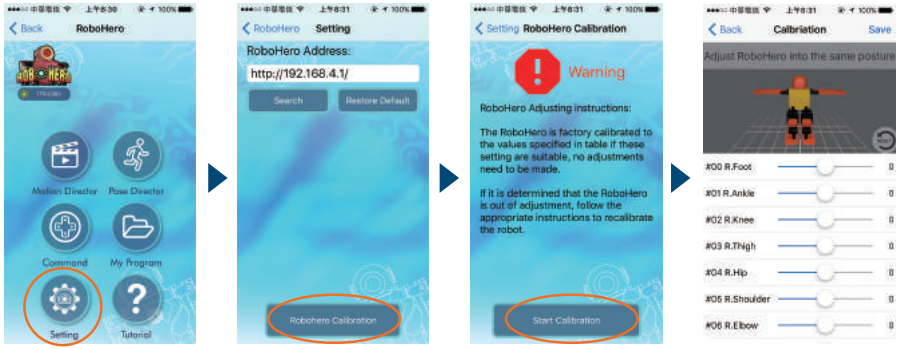
3. After turning on the power, download exclusive APP and after connecting WIFI and start the APP to operate servo setting function

4. ANDROID:
Click Start Calibration, servo will automatically lock in the neutral point. At this time you can start assembling the collar and connecting base of servo



iOS:

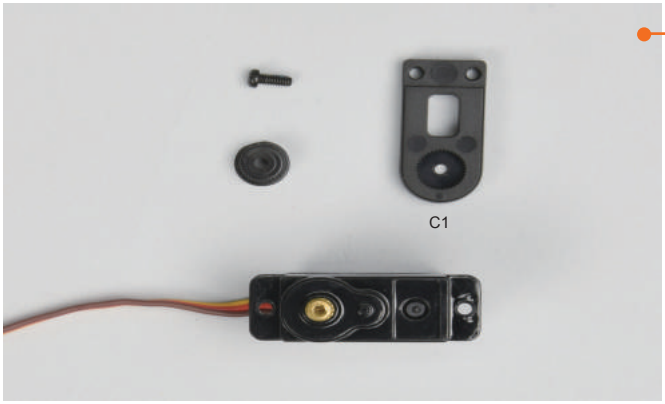
Click Start Calibration, servo will automatically lock in the neutral point. At this time you can start assembling the collar and connecting base of servo



Note

1. Please pay attention to the position of switch in case of putting the main control board and power board in the place easy to cause short circuit or inflammable when turning on the power
2. Pay attention to the direction when connecting the wire of servo and main control board (black wire/negative terminal are all toward the outside of main control board)

4.2 Servo assembly- collar and connecting base

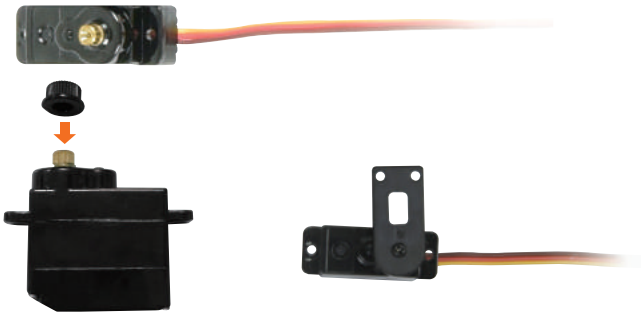


Parts List

Servo x 1Pcs
Collar x 1Pcs
HMF2-5B-1 x 1Pcs
Part C1 x 1Pcs

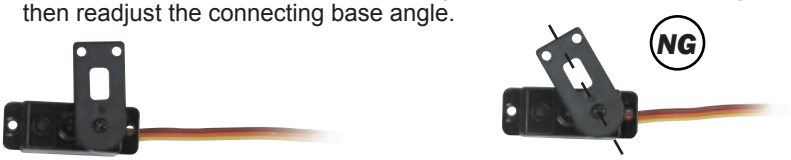
Assembly Method

1. Follow environment setting steps, use APP servo setting function to lock servo needed setting
2. Press collar into the servo gear
3. Follow the servo's connecting base angle setting, press the Part C1 with correct angle into the collar and use HMF2-5B-1 to lock in

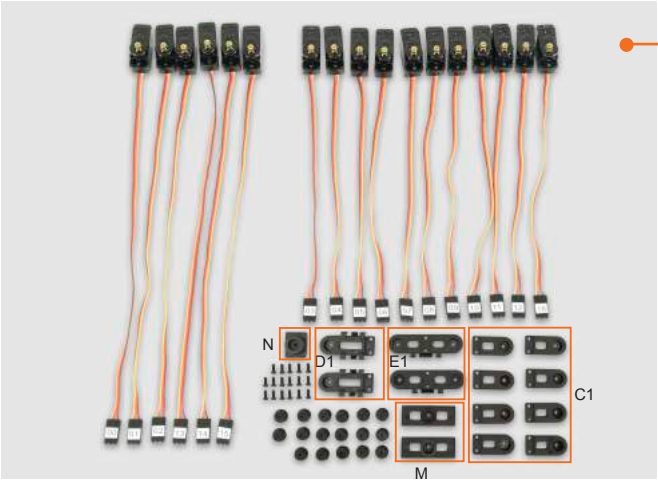


Note

1. Different servos have different connecting base angle setting. Please do not mix them together
2. If the connecting base can not be adjusted to the required angle (90°or180°), you can take out the collar and rotate it to change its position before placing the servo gear, and then readjust the connecting base angle.



4.3 Servo assembly- setting

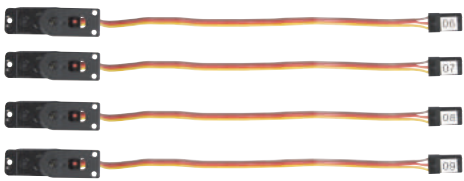


Parts List

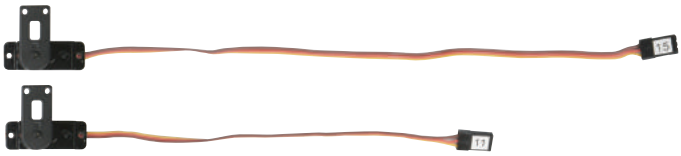
Servo x 17Pcs
Collar x 17Pcs
HMF2-5B-1 x 17Pcs
Part C1 x 8Pcs
Part D1 x 2Pcs
Part M x 2Pcs
Part E1 x 2Pcs
Part N x 1Pcs

Assembly Method

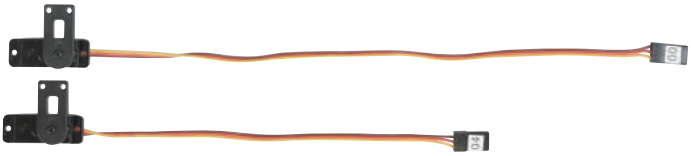
1. Follow the collar and connecting base steps, respectively complete the setting and assembly of the 17 servos
2. servo No.#6,#7,#8,#9's connecting base angle (180°) setting is shown as below



3. servo No. #11,#15's connecting base angle (90°) setting is shown as below

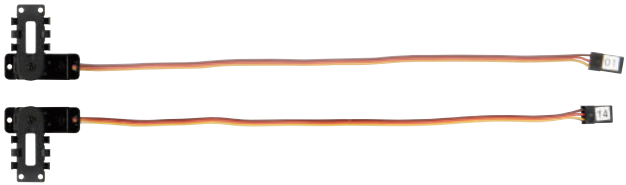


4. servo No. #0,#4 's connecting base angle (90°) setting is shown as below

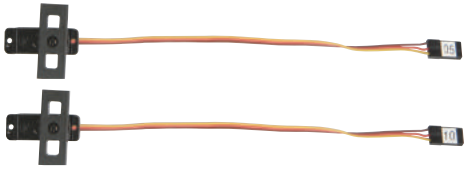


4.3 Servo assembly- setting

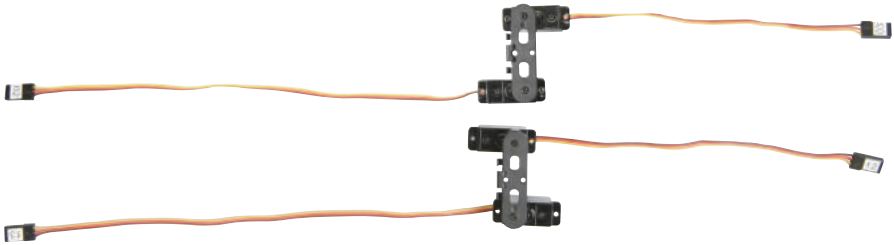
5. servo No. #1,#14 's connecting base angle (90°) setting is shown as below



6. servo No. #5,#10's connecting base angle (90°) setting is shown as below



7. servo No. #2,#3,#12,#13 's connecting base angle (90°) setting is shown as below

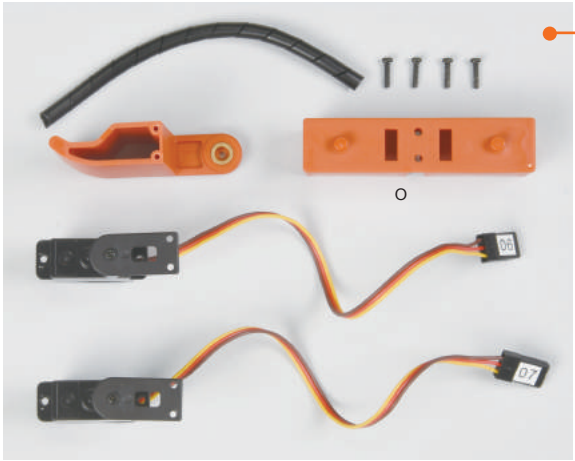


8. servo No. #16 's connecting base angle (180°) setting is shown as below

Note

1. Different servos have different connecting base angle setting. Please do not mix them together
2. During assembling, please make sure to follow the figures. Pay attention to the servo number and direction of part
3. Servo's wire has two types of length (15CM & 22CM), the length of No.#0,#1,#2,#13,#14,#15 is 22CM, the length of other 11 pieces is 15CM

5 Hand assembly

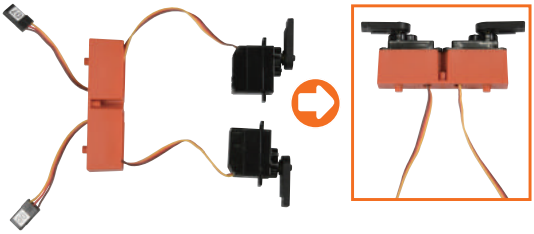


Parts List

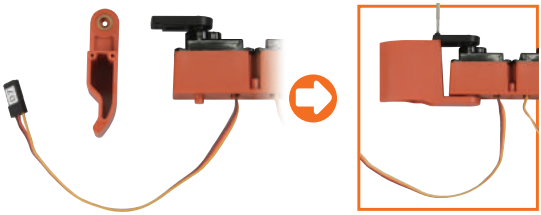
Servo Set x 4Pcs(#6,#7,#8,#9)
Part A set x 1Pcs(L)
Part B set x 1Pcs(R)
Part O x 2Pcs
HMJ2-8B x 12Pcs
Spiral Wrapping Band x 2Pcs

Assembly Method

1. According to the figure, install servo set(#6,#7) into Part O and use HMJ2-8B to lock in



2. According to the figure, install Part A set (L) into servo set #7 side and use HMJ2-8B to lock in



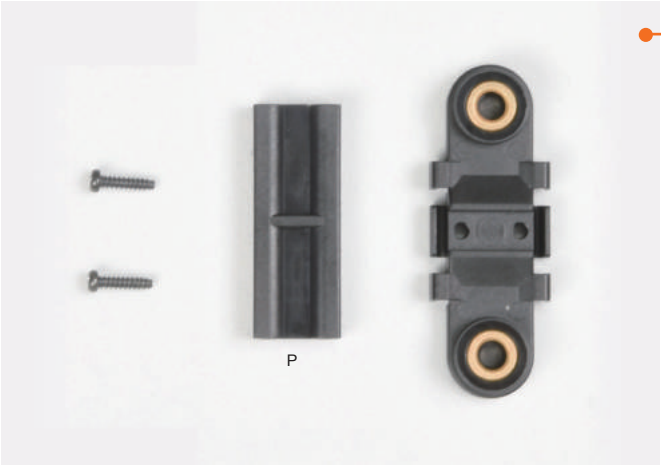
3. According to the figure, set in the spiral wrapping band to complete the left hand assembly

4. The right hand assembly is based on the same procedure (install Part B set into servo set #8 side)

Note

During assembling, please make sure to follow the figures. Pay attention to the servo number and direction of part

6.1 Leg assembly- joint connecting base- upper



Parts List

Part P x 2Pcs
Part E set x 2Pcs
HMJ2-8B x 4Pcs

Assembly Method

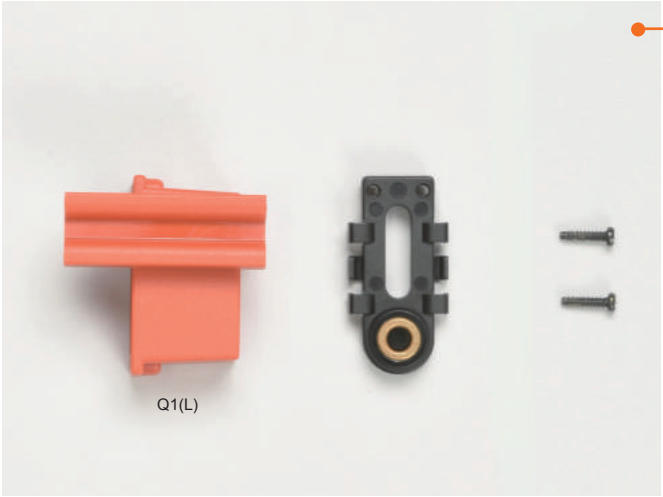
1. According to the figure, connect Part P with Part E set and use HMJ2-8B to lock in

2. Follow the same procedure to complete another set of joint connecting base- upper assembly

Note

During assembling, please make sure to follow the figures

6.2 Leg assembly- joint connecting base- lower

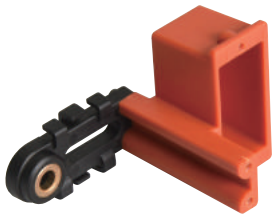


Parts List

Part Q1 x 1Pcs(L)
Part Q2 x 1Pcs(R)
Part D set x 2Pcs
HMJ2-8B x 4Pcs

Assembly Method

1. According to the figure, connect Part Q1(L) with Part D set and use HMJ2-8B to lock in to complete the joint connecting base-lower (L)

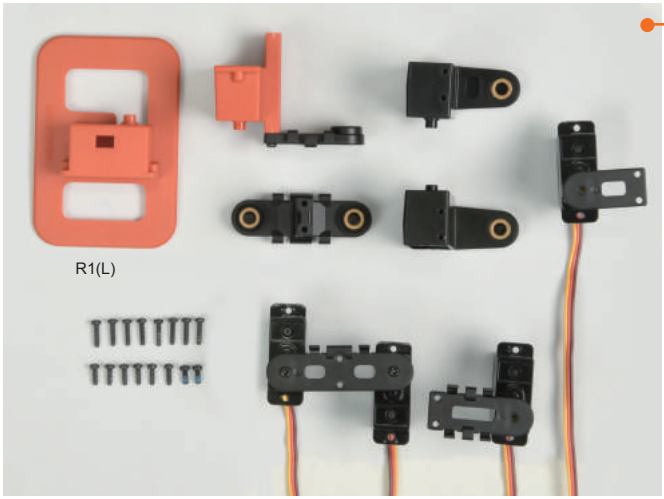


2. Follow the same procedure to complete another set of joint connecting base- lower(R) assembly

Note

During assembling, please make sure to follow the figures. Pay attention to the direction of part

6.3 Leg assembly



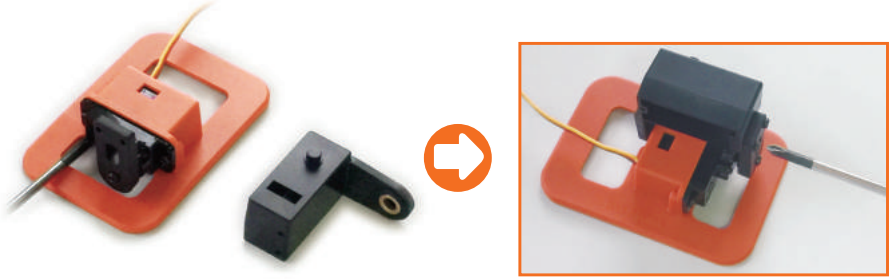
Parts List

Servo Set x 8Pcs(#0,#1,#2, #3,#12,#13,#14,#15)
Joint Connecting Base -Upper x 2Pcs
Joint Connecting Base -Lower x 2Pcs(L,R)
Part F set x 2Pcs(L)
Part G set x 2Pcs(R)
Part R1 x 1Pcs(L)
Part R2 x 1Pcs(R)
HMJ2-8B x 16Pcs
HMJ2-6B x 12Pcs

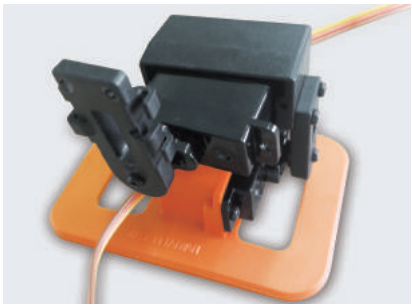
Assembly Method

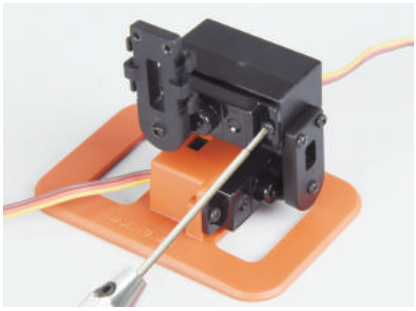
1. According to the figure, install servo set (#0) into Part R1(L) and use HMJ2-6B to lock in

2. According to the figure, install Part F set(L) and use HMJ2-6B to lock in

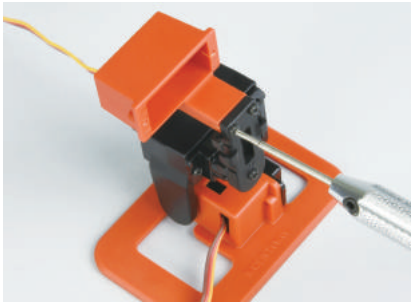


3. According to the figure, install servo set (#1) and use HMJ2-8B to lock in

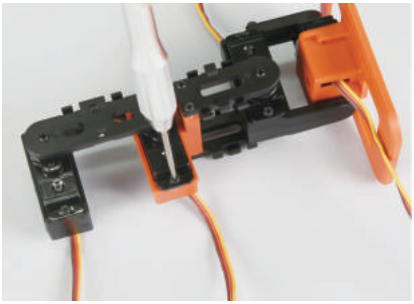


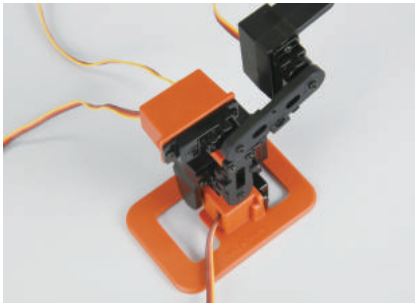


4. According to the figure, install joint connecting base – lower (L) and use HMJ2-8B to lock in



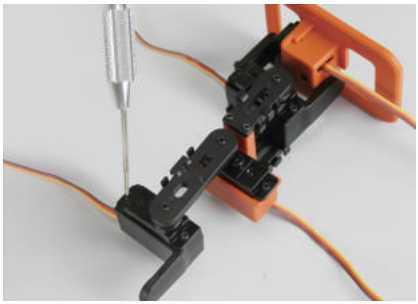
5. According to the figure, install servo set (#2,#3) and use HMJ2-6B to lock in

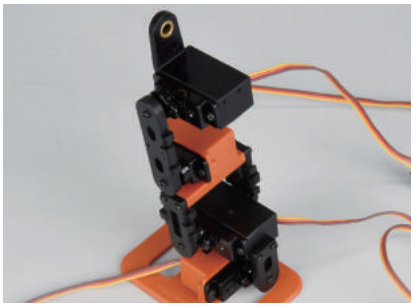




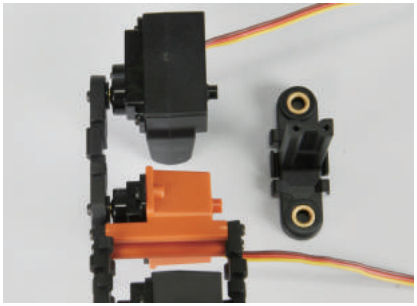
6.3 Leg assembly

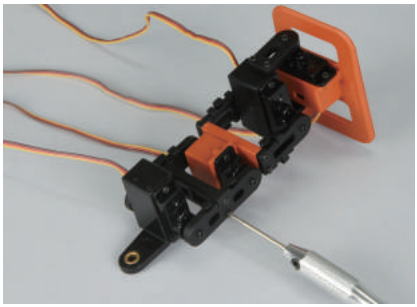
6. According to the figure, install Part G set(R) and use HMJ2-8B to lock in





7. According to the figure, install joint connecting base- upper and use HMJ2-8B to lock in to complete the left leg assembly

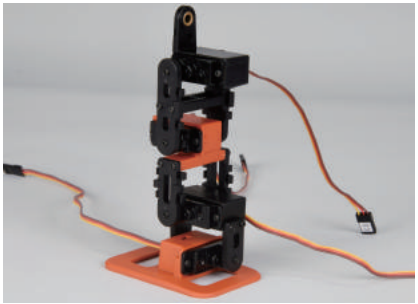


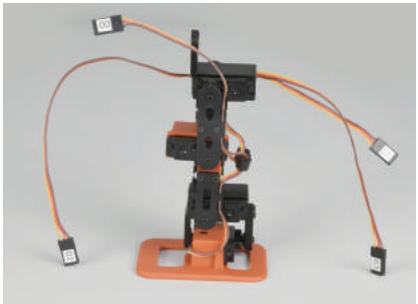


8. Follow the same procedure to complete the right leg assembly

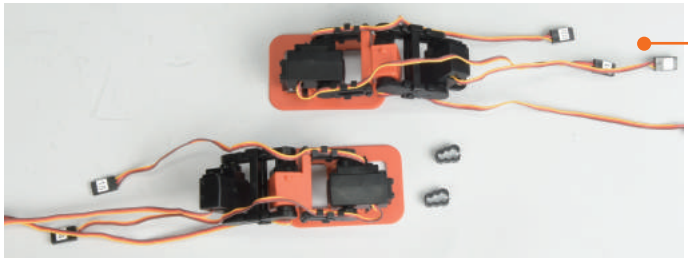
Note

During assembling, please make sure to follow the figures. Pay attention to the servo number and direction of part





6.4 Leg assembly-arrange wires

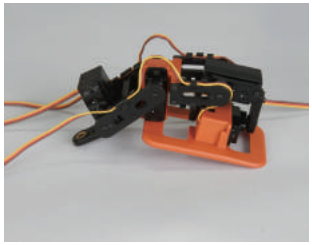


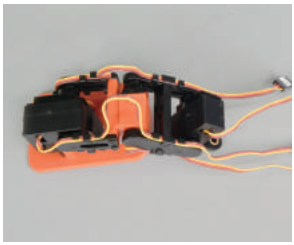
Parts List

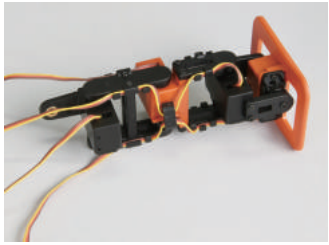
Left Leg Set x 1Pcs
Right Leg Set x 1Pcs
Cable Clamp x 2Pcs

Assembly Method

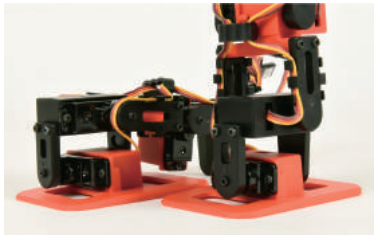
1. According to the figure, adjust all servos of the left leg to their maximum angle, level the wire and reserve enough moving space before installing the cable clamp





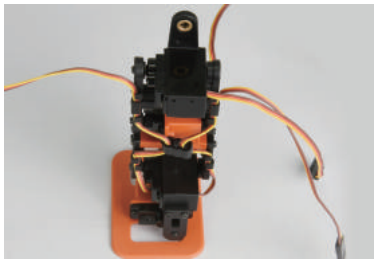


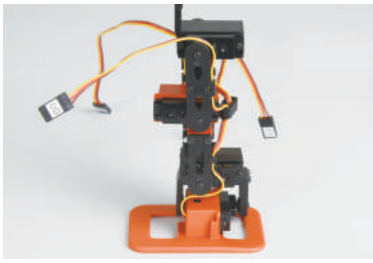
2. Follow the same procedure to complete the right leg assembly



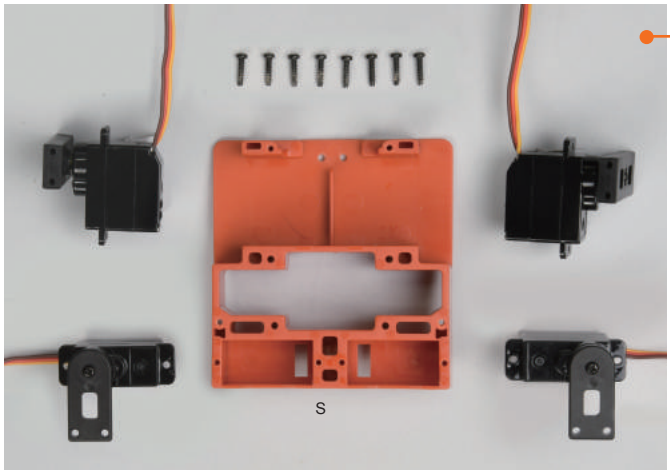
Note

During assembling, please make sure to follow the figures. Pay attention to the direction of part





7.1 Body assembly- four limbs servo

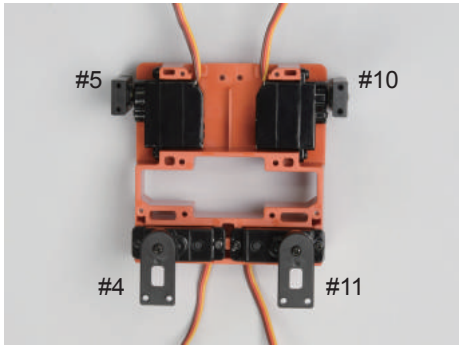


Parts List

Servo Set x 4Pcs
(#4,#5,#10,#11)
Part S x 1Pcs
HMJ2-8B x 8Pcs

Assembly Method

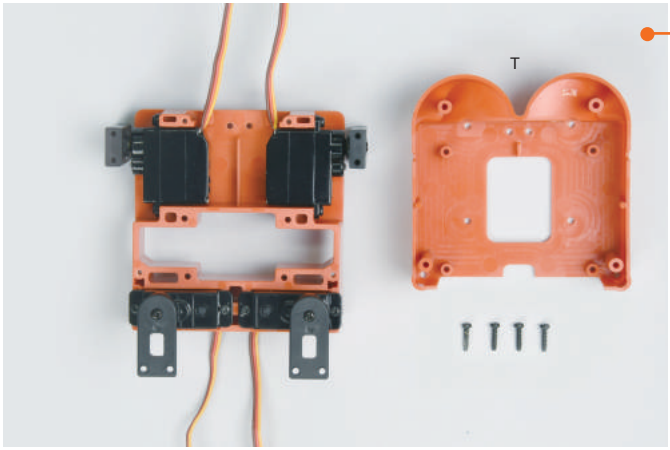
According to the figure, install servo set into Part S and use HMJ2-8B to lock in



Note

During assembling, please make sure to follow the figures. Pay attention to the servo number and direction of part

7.2 Body assembly-body cover



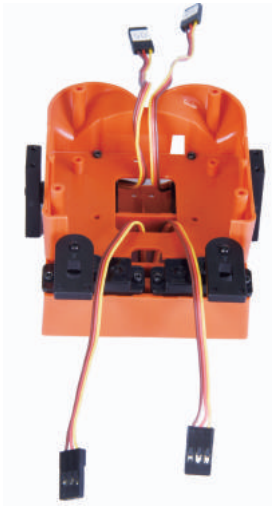
Parts List

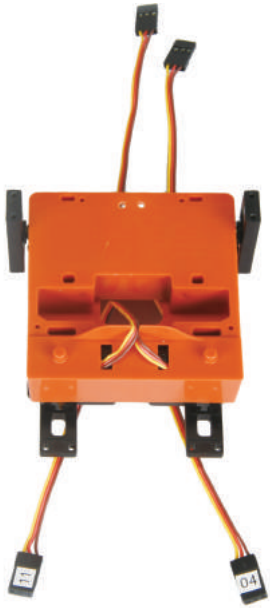
Part T x 1Pcs

HMJ2-8B x 4Pcs

Assembly Method

According to the figure, install servo wire into Part T and use HMJ2-8B to lock in

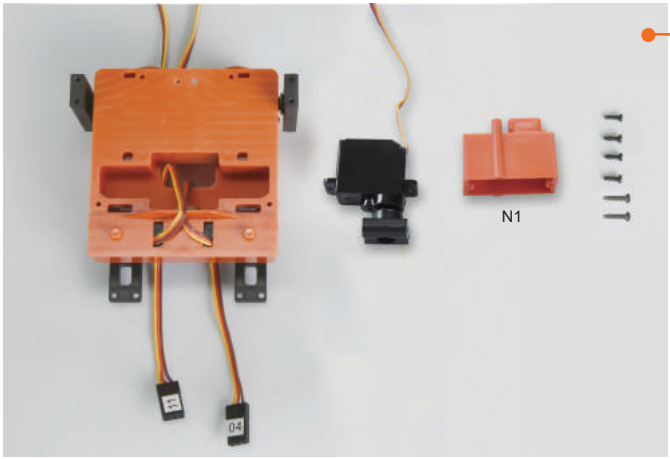




Note

1. During assembling, please make sure to follow the figures. Pay attention to the servo number and direction of part
2. Please make sure to arrange servo wire according to the figure

7.3 Body assembly- head servo

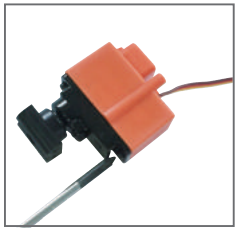


Parts List

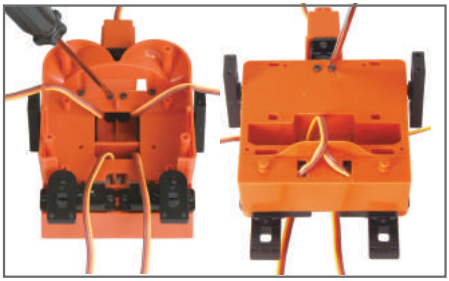
Servo Set x 1Pcs(#16)
Part N1 x 1Pcs
HMJ2-6B x 4Pcs
HMJ2-8B x 2Pcs

Assembly Method

1. According to the figure, install servo set into Part N1 and use HMJ2-8B to lock in



2. According to the figure, install Part N1 set and use HMJ2-6B to lock in

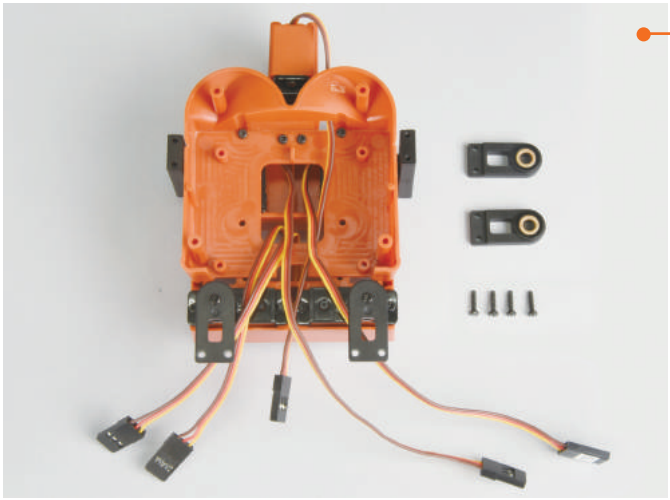


3. According to the figure, put the servo wire through

Note

During assembling, please make sure to follow the figures. Pay attention to the direction of part

7.4 Body assembly- joint connecting base



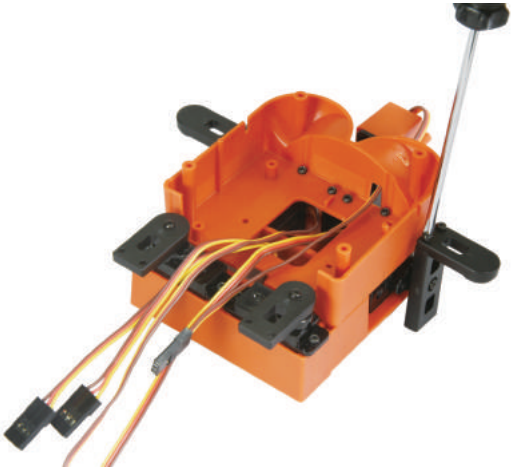
Parts List

Part C Set x 2Pcs

HMJ2-8B x 4Pcs

Assembly Method

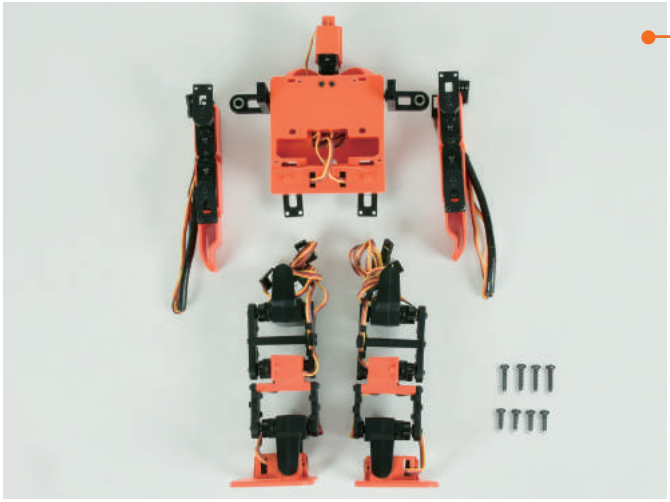
According to the figure, install Part C set and use HMJ2-8B to lock in



Note

During assembling, please make sure to follow the figures. Pay attention to the direction of part

8 Four limbs assembly



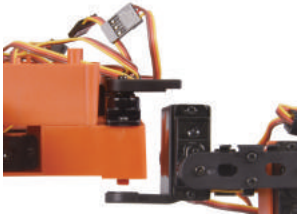
Parts List

Body Set x 1Pcs
Left Hand Set x 1Pcs
Right Hand Set x 1Pcs
Left Leg Set x 1Pcs
Right Leg Set x 1Pcs
HMJ2-6B x 4Pcs
HMJ2-8B x 4Pcs

Assembly Method

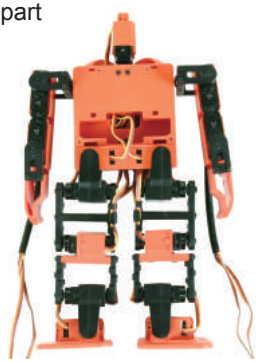
1. According to the figure, install left/right hand set and use HMJ2-8B to lock in

2. According to the figure, install left/right leg set and use HMJ2-6B to lock in

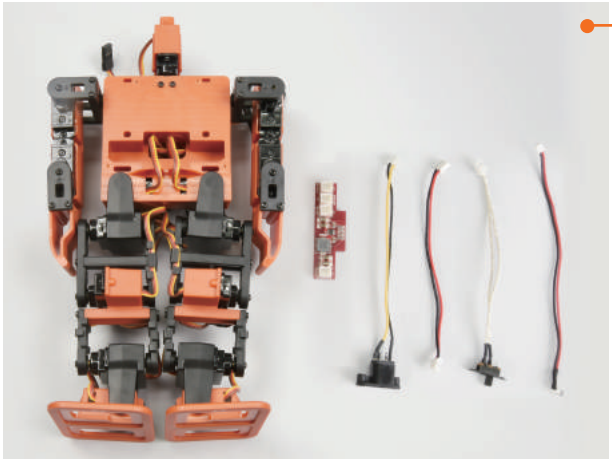


Note

During assembling, please make sure to follow the figures. Pay attention to the direction of part



9 Power board assembly

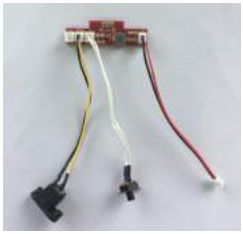


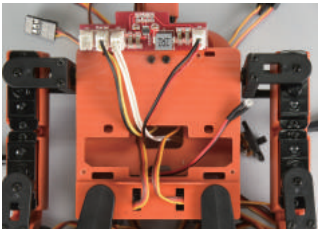
Parts List

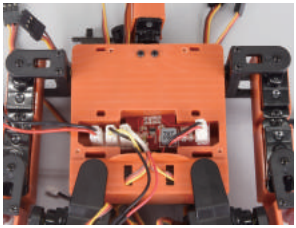
Power Board x 1Pcs
Power Connecting Wire x 1Pcs
Switch Wire x 1Pcs
Charger Jack Wire x 1Pcs
LED Wire x 1Pcs

Assembly Method

1. According to the figure, connect one terminal of the power connecting wire, switch wire and charger jack wire with power board and put the other terminal through the upper hole of the body to the back
2. According to the figure, put the socket terminal of the LED wire through the lower hole of the body to the back and place the power board into the groove

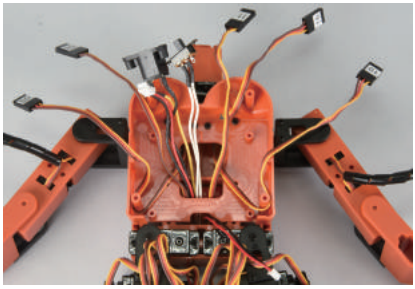




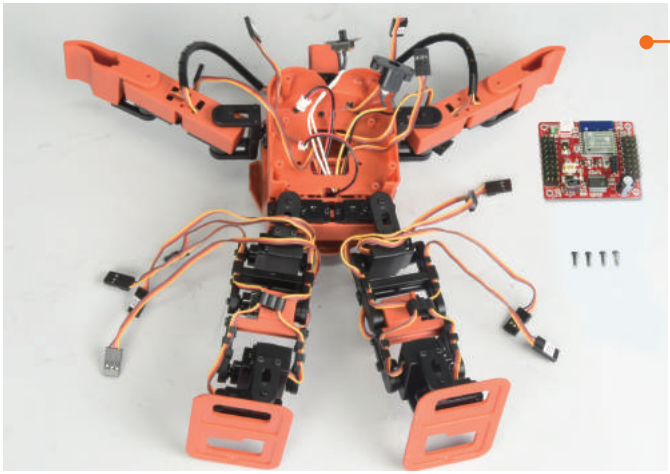


Note

Please arrange the wire according to the figure for the convenience of subsequent assembly



10.1 Main control board assembly



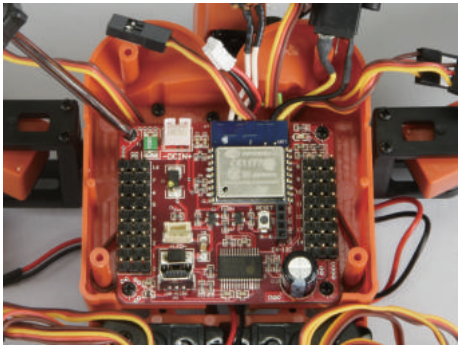
Parts List

Main Control Board x 1Pcs

HMJ2-6B x 4Pcs

Assembly Method

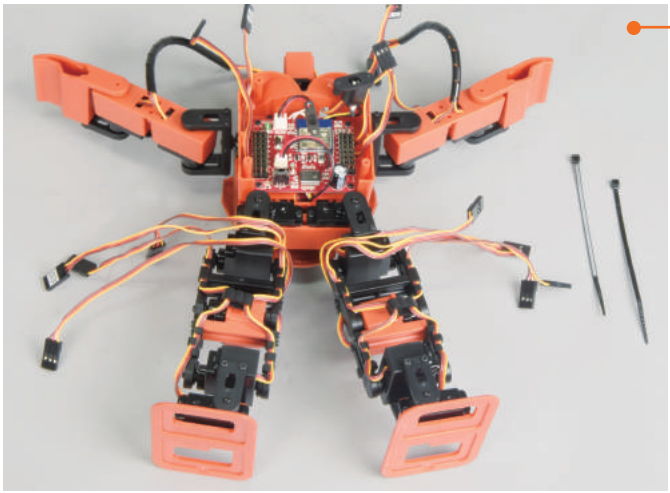
According to the figure, put the power connecting wire, switch wire, charger jack wire, LED wire and left/right hand servo wire (#6,#7,#8,#9) to their fixed positions and then install the main control board and use HMJ2-6B to lock in



Note

Before installing the main control board, please pull out the wire according to the figure for the convenience of subsequent assembly

10.2 Main control board connection / Arrange wires

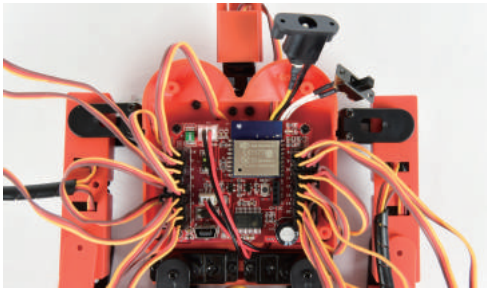


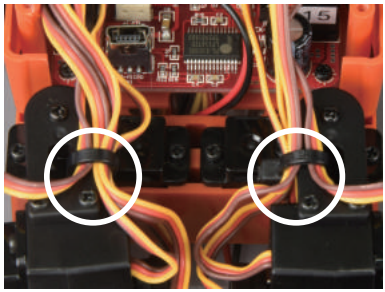
Parts List

Cable Tie x 2Pcs

Assembly Method

1. According to the figure, insert the power connecting wire, switch wire, charger jack wire, LED wire and 17 sets of servo wire into their corresponding positions in the main control board
2. Arrange the wire of main control board according to the figure and reserve enough space for left/right leg servo wire (#0,#1,#2,#3,#12,#13,#14,#15) and then put them to fixed positions, use cable tie to fix them

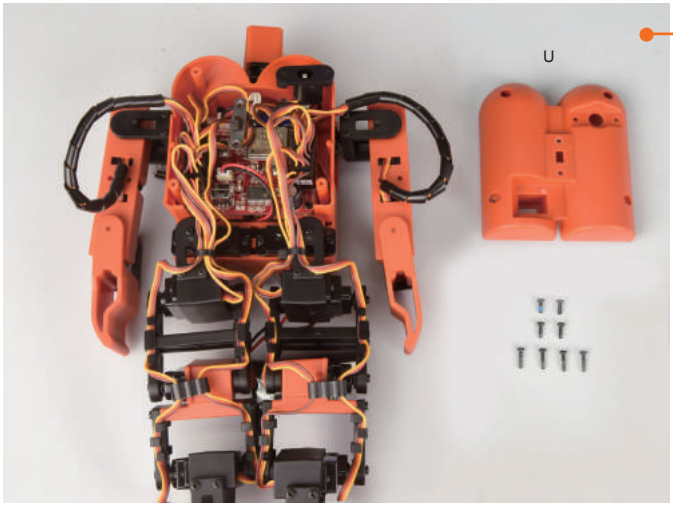




Note

1. Please pay attention to the direction when connecting the servo wire with the main control board (black wire/negative terminal are all towards the outside of the main control board)
2. Please make sure that the servos are inserted into the corresponding positions in the main control board according to the number
3. Please reserve enough wire length in case of the servo being interfered by the wire when moving

II Back cover assembly

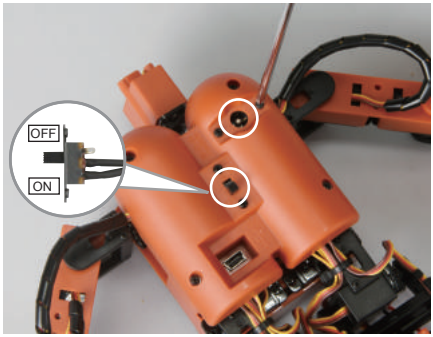


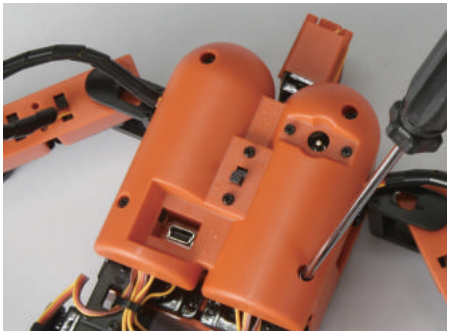
Parts List

Part U x 1Pcs
HMF2-5B-1 x 2Pcs
HMJ2-6B x 2Pcs
HMJ2-8B x 4Pcs

Assembly Method

1.According to the figure, install the charger jack wire into the charger jack hole in Part U and use HMJ2-6B to lock in
2.According to the figure, install the switch wire into the corresponding position in Part U and use HMF2-5B-1 to lock in
3.According to the figure, install Part U and use HMJ2-8B to lock in

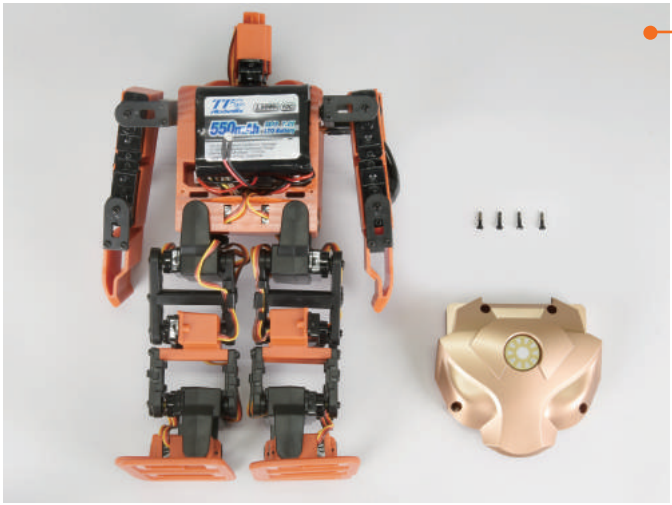




Note

1.Please pay attention to the direction of the switch wire during assembling
2.When assembling Part U, make sure that the hole of MINI USB port is correct and meanwhile the wire should not be bended improperly

12 Front chest assembly

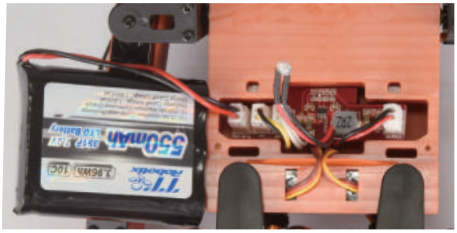


Parts List

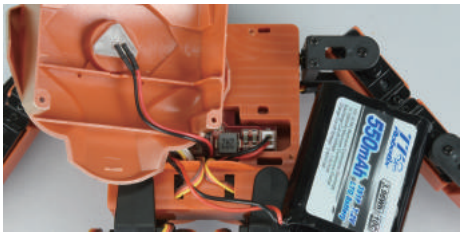
Battery x 1Pcs
Part H Set x 1Pcs
HMJ2-8B x 4Pcs

Assembly Method

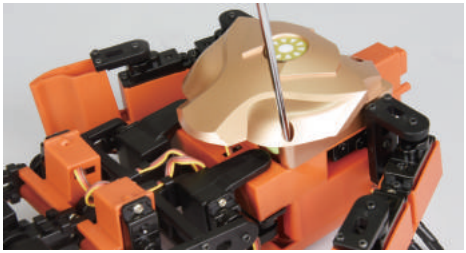
1.According to the figure, connect battery to the power board



2.According to the figure, install LED wire into Part H set



3.According to the figure, install Part H set and use HMJ2-8B to lock in



Note

Please make sure that the switch is turn OFF before loading the battery

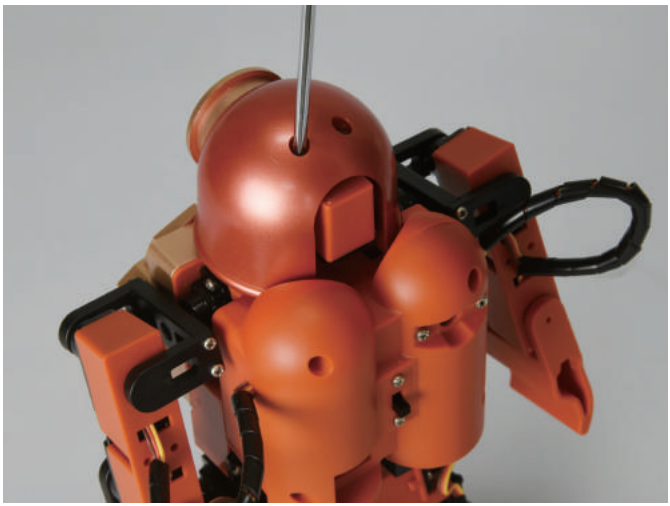
Head assembly

Parts List

Hood Set x 1Pcs
HMJ2-6B x 2Pcs

Assembly Method

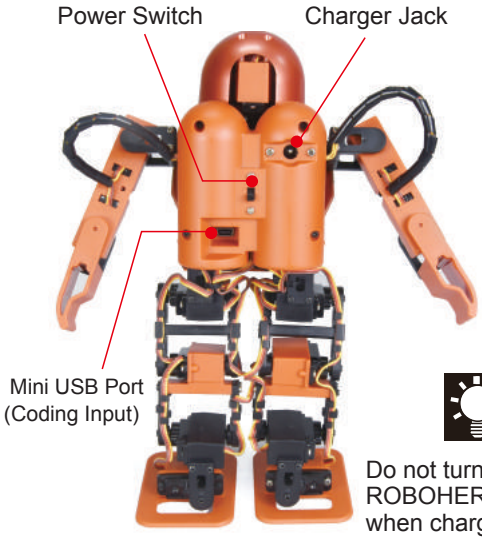
According to the figure, install hood set and use HMJ2-6B to lock in



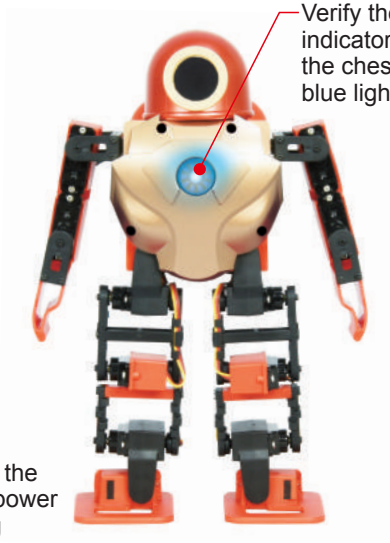
14 ROBOHERO assembly is done

BOOTING

1.Charging the ROBOHERO for one hour, then discharging when the charger indicator light turns green from red.
2.Turn on the power, and verify the power indicator light on the chest is on.
3.The power is not enough or going to be ended if the power indicator light is continuously twinkling.



Do not turn on the ROBOHERO power when charging



ROBOHERO APP DOWNLOAD

ANDROID APP ON Google play

Download on the App Store

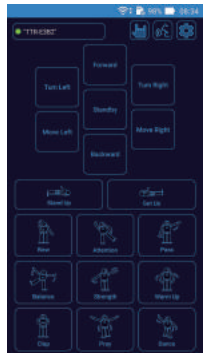
Download the ROBOHERO App from the App Store or the Google play.

ROBOHERO APP Connection

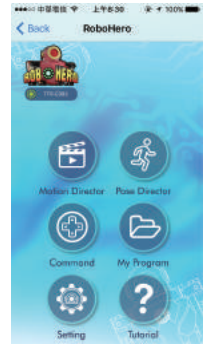
1.Make sure the Wi-Fi function on your smart phone is switched on.
2.Connect to the SSID TTR-XXXX and enter the password 12345678, which should appear in your Wi-Fi signals list approx.

3.Click the ROBOHERO App on your smart phone.

ANDROID:



iOS:



TROUBLESHOOTING

1. I can't get the remote control or wireless communication (WIFI) to work.

- Please make sure the mobile phone WIFI has been turned on and the connection between mobile phone and ROBOHERO is normal.
- Wireless communication may not function properly if there is insufficient power supply. Please make sufficient power supply for the battery.
- If above ways can't be worked, please contact your local distributor or customer service of Thunder Tiger Corp.

2. There is no torque in the servo. The ROBOHERO motion is abnormal.

- The battery is low, please fully charge the battery and try again
- The servo is stuck by the connection wire. Please arrange connection wire well and turn the servo back to datum point smoothly.
- User operating the ROBOHERO without pushing "Standby"in APP. Please push "Standby" in APP then operate the ROBOHERO.
- If above ways can't be worked, please contact your local distributor or customer service of Thunder Tiger Corp.

3. The ROBOHERO keeps on falling when performing a motion.

- The battery is low, please fully charge the battery and try again
- The servo is out of the best status after factory, please adjust the status back to default value by servo setting mode in the APP, or contact your local distributor or customer service of Thunder Tiger Corp for assistance.

Regulatory Compliance Information

Taiwan Wireless NCC Information

 CCAJ16LP9FD1T6  CCAJ16LP9FD0T4

本產品內含射頻模  CCAJ16LP9FD1T6  CCAJ16LP9FD0T4

低功率電波輻射性電機管理辦法:

第十二條

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電通信。

低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾

Certification

Federal Communications Commission (FCC)

FCC ID: 2AC7Z-ESPWROOM02

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution
To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement
This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

The equipment has fully complied with the requirements of FCC Part 15 Rules. Operations is subject to the following conditions:
(1) The device may not cause harmful interference.
(2) The device must accept any interference received which may cause undesired operation.
The test data contained in the referenced test report relate only to the EUT and Item(s) tested.

Certification

Declaration Of Conformity

The following mentioned products have been tested in typical configuration by Max Light Technology Co., Ltd. and were found to comply with the essential requirement of Council Directive on the Approximation of the Laws of the Member State relating to Electromagnetic Compatibility. (2014/30/EC)

Report No : MLT1607EMC001

Equipment :

Type of Product	:	ROBOHERO
Trade Name	:	THUNDER TIGER
Model Number	:	7500-Fxx (Super Combo Edition)(xx=00 – 99)
Series	:	7500-Kxx (DIY Kit)(xx=00 – 99) 7500-Axx (Assembly Kit)(xx=00 – 99)

Applied by :

Applicant	:	THUNDER TIGER CORPORATION
Address	:	NO.7, 6TH ROAD, INDUSTRY PARK, TAICHUNG TAIWAN R.O.C.

Applied Standards:

EN 55022: 2010/AC: 2011 (Class B)
EN 61000-3-2: 2014
EN 61000-3-3: 2013
EN 55024: 2010
IEC 61000-4-2: 2008(ESD)
IEC 61000-4-3: 2006+A1: 2007+A2: 2010(RS)
IEC 61000-4-4: 2012(EFT)
IEC 61000-4-5: 2014(Surge)
IEC 61000-4-6: 2013/COR1: 2015(CS)
IEC 61000-4-11: 2004(Dip)

Based on the description of Article 10(1) of the EMC directive, the manufacturer or his authorized representative within EC shall affix the CE Marking to the product if he ensures that the product complies with the relevant harmonized standards and draws up a declaration of conformity.

Authorized by : Roger Chen Date : October/24/2016

Roger Chen

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http://robohero.ttrobotix.com

THUNDER TIGER GROUP
thundertiger.com