

# 14 in 1<sub>KIT</sub> EDUCATIONAL SOLAR ROBOT

⚙ Build your own solar robot kit ⚙

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## Manual de instrucciones

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# 14 in 1 EDUCATIONAL SOLAR ROBOT KIT

## Product Introduction

Alternative energy is the future, so now is the perfect time to start children on the path of learning basic concepts behind these technologies. Fortunately, this product is powered by the sun, there are no batteries required. The robot moves in direct sunlight and allows children to create while using their infinite imagination.

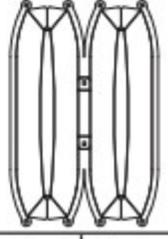
There are two levels in building the robot kit. Level one includes: Turtle-bot, Beetle-bot, Quadru-bot, Boat-bot, Walker-bot, Dog-bot, and Wheel-bot. Then they can challenge their manipulative skills with the second level: Roly Poly-bot, Auto-bot, Slither-bot, Surf-bot, Boxer-bot, Crab-bot and Row-bot.

## Tool You May Need

### Diagonal Cutter



## Mechanical Parts List

<b>P1 Motor With Connectors</b>  Don't connect the wires to the mains. QTY: 1		<b>P2 Solar Panel With Springs</b>  QTY: 1	
<b>P3 Pinion Gear(yellow)</b>  QTY: 1	<b>P4 Gear With Shaft</b>  QTY: 1	<b>P5 Gear(Red)</b>  QTY: 1	<b>P9 boat</b>  QTY: 1
<b>P6 Gear(Green)</b>  QTY: 1	<b>P7 Sponge</b>  QTY: 2	<b>P8 Round Shaft</b>  QTY: 1	

## Introducción

La energía alternativa activará al mundo futuro. Por ello, es el momento ideal para aprender a los niños los conceptos básicos de estas tecnologías. Afortunadamente este producto funciona con energía solar (sin pilas). El robot se mueve en caso de luz solar directa y permite a los niños realizar nuevas cosas utilizando la imaginación. Hay dos grados de dificultad. Nivel 1 incluye: Turtle-bot, Beetle-bot, Quadru-bot, Boat-bot, Walker-bot, Dog-bot y Wheel-bot. El segundo nivel incluye: Roly Poly-bot, Auto-bot, Slither-bot, Surf-bot, Boxer-bot, Crab-bot y Row-bot.

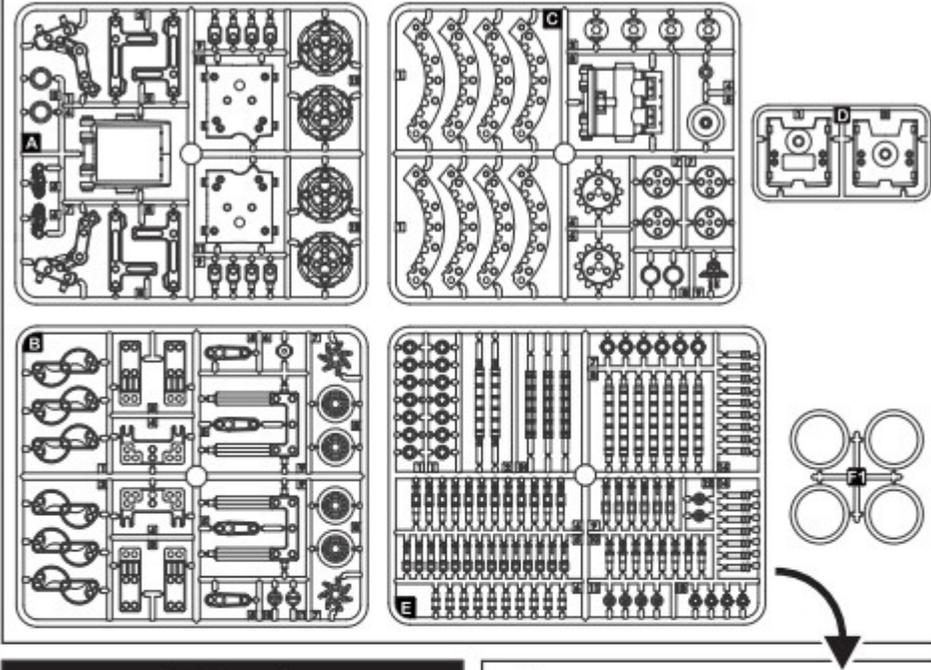
## Herramientas necesarias

Alicates de corte en diagonal

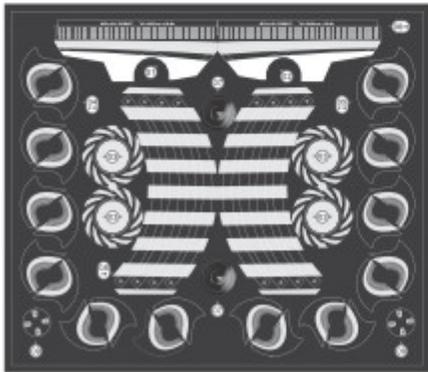
## Lista de componentes mecánicos

Motor con conectores	Panel solar con muelles	
Piñón (Color amarillo)	Rueda dentada con eje	Rueda dentada (Color rojo)
Rueda dentada (Color verde)	Esponja	Eje redondo

## Plastic Parts



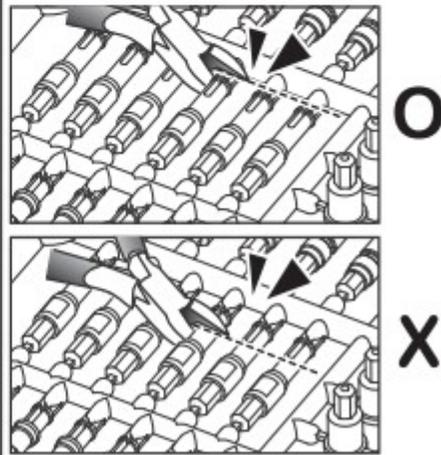
## Sticker A



QTY

1

 Make sure to cut the plastic parts **E** correctly.



## Piezas de plástico

## Pegatina A

Asegúrese de cortar las piezas de plástico correctamente.

Sticker B			Zipper bag	
	QTY			QTY
	1			9

Pegatina B

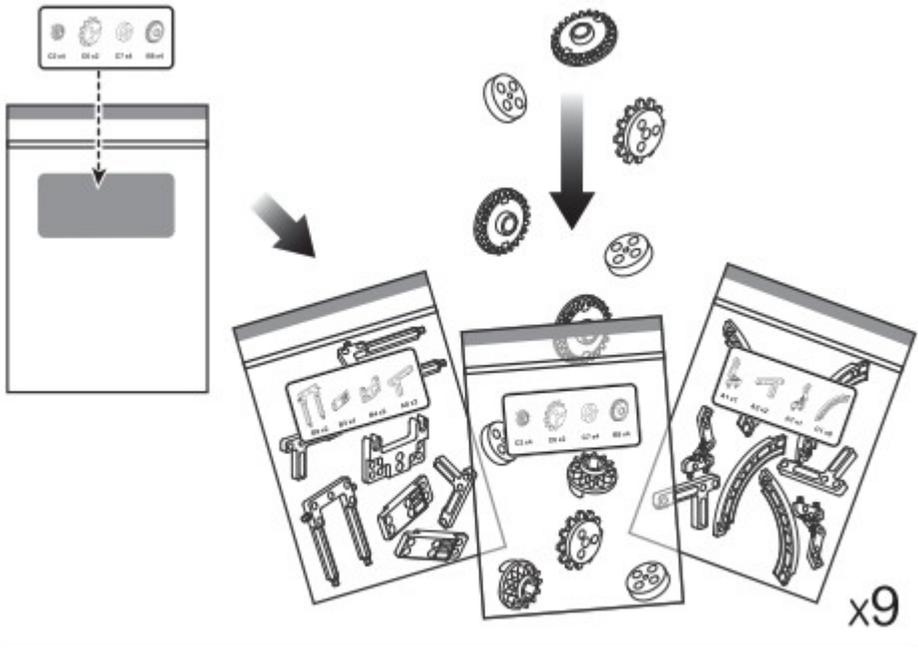
Bolsa con cremallera

**Tip**



For easy identification of each plastic part, suggest to sort out plastic parts and put them into zipper bags as per instruction.

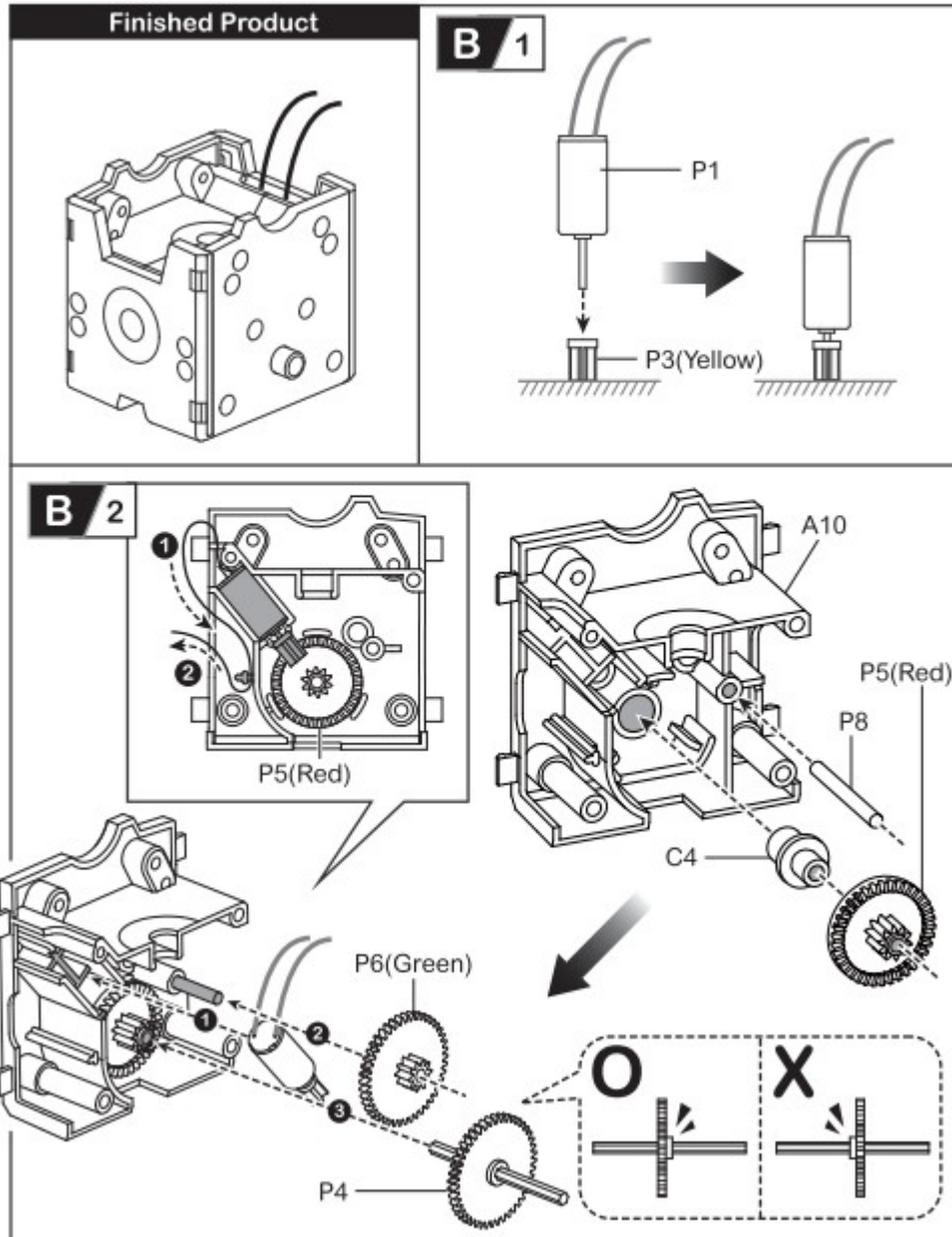
( P.S. Each zipper bag to be placed an illustrated sticker B (as below) first.)



Para una fácil identificación de cada pieza de plástico, ordene las piezas de plástico y póngalas en bolsas con cremallera para cada montaje.

Consejo: Ponga una pegatina B en la bolsa (véase fig.).

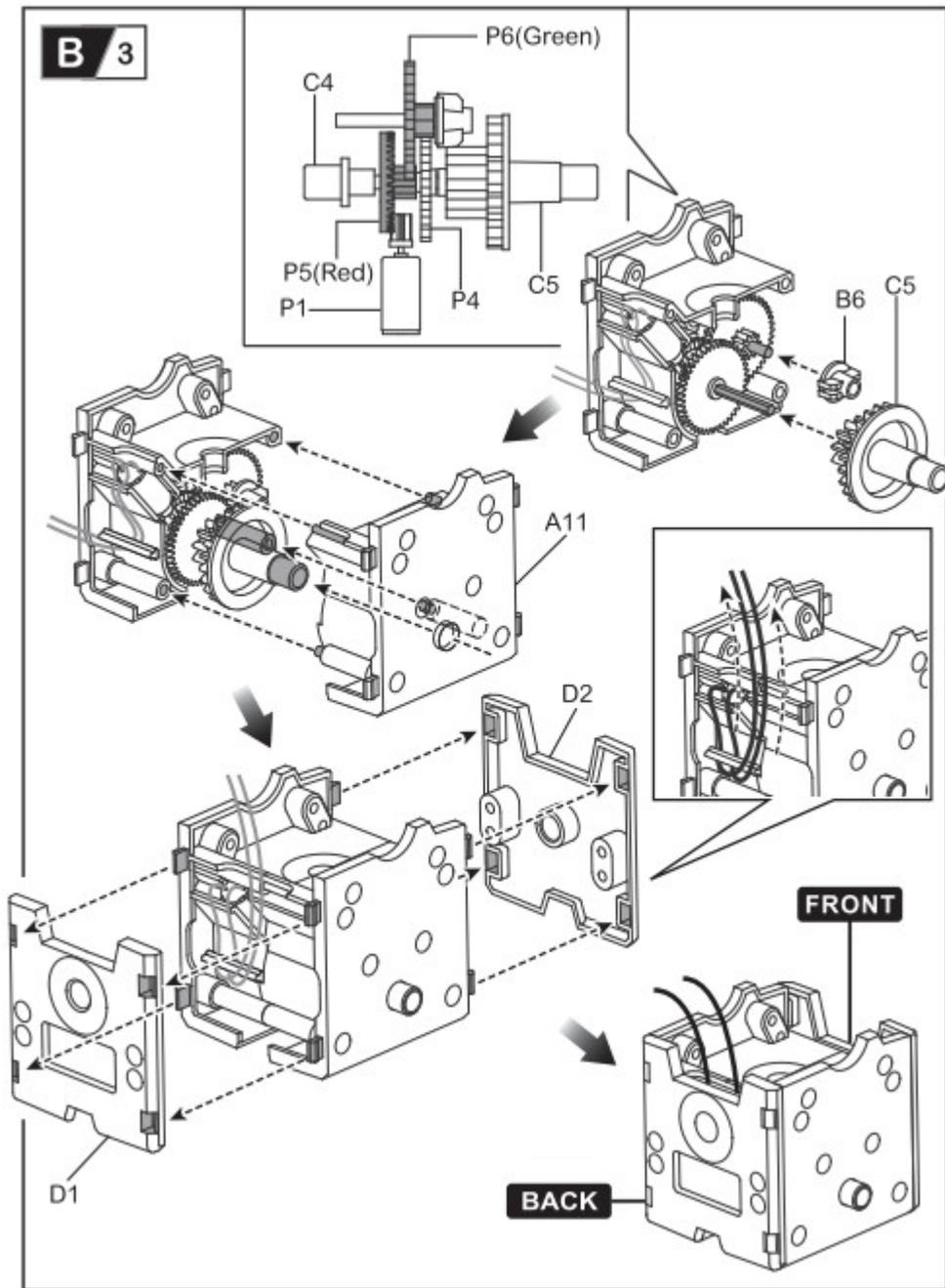
## Body Module Assembly



## Montar el cuerpo

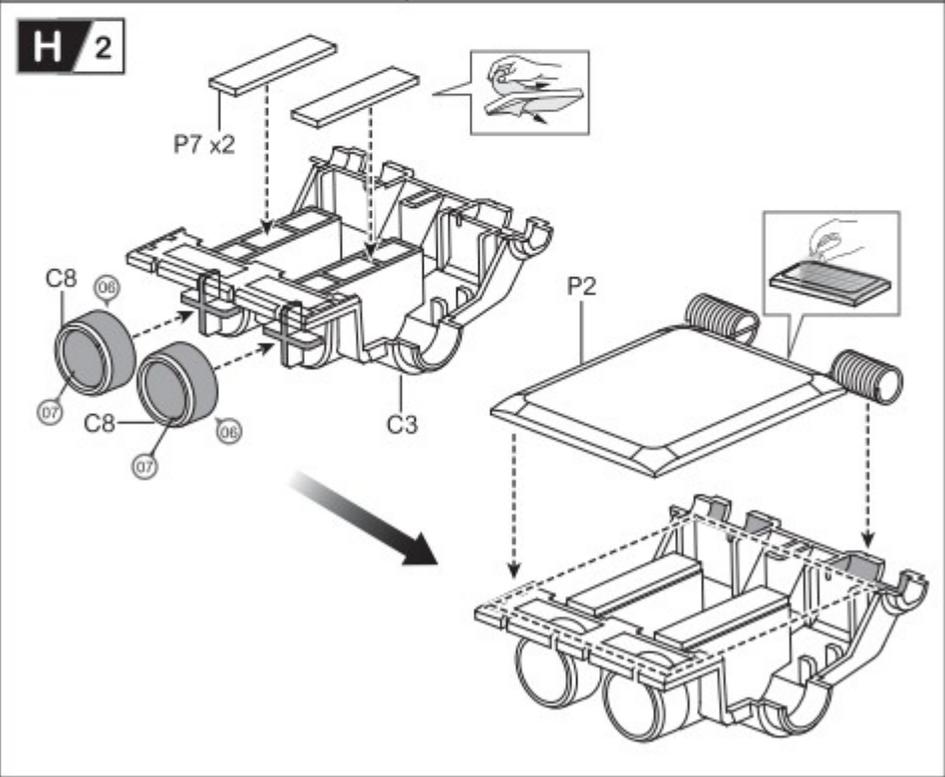
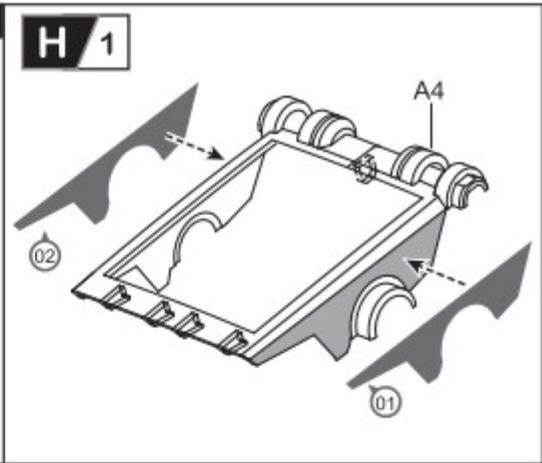
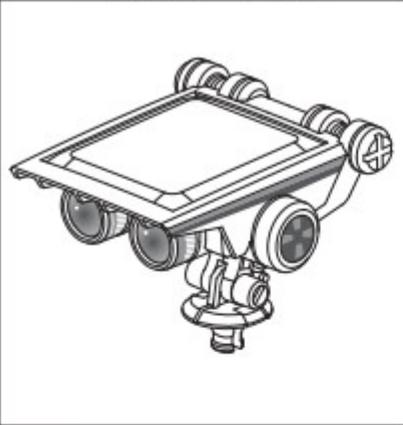
Producto terminado

**B 3**



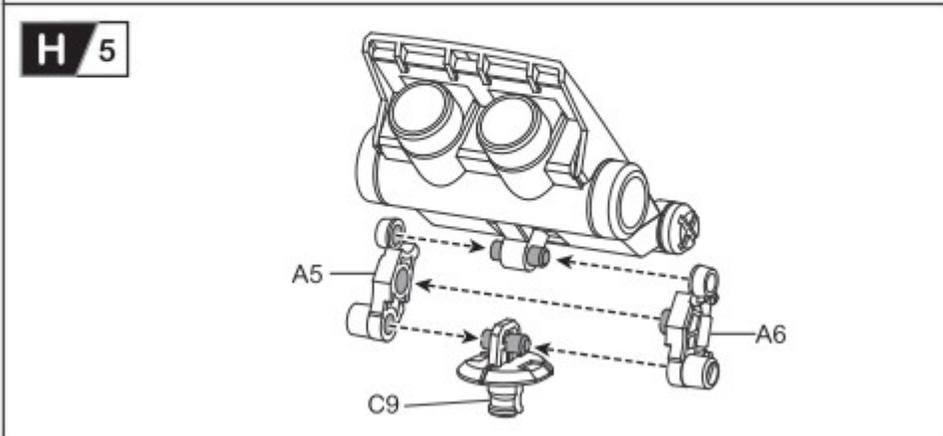
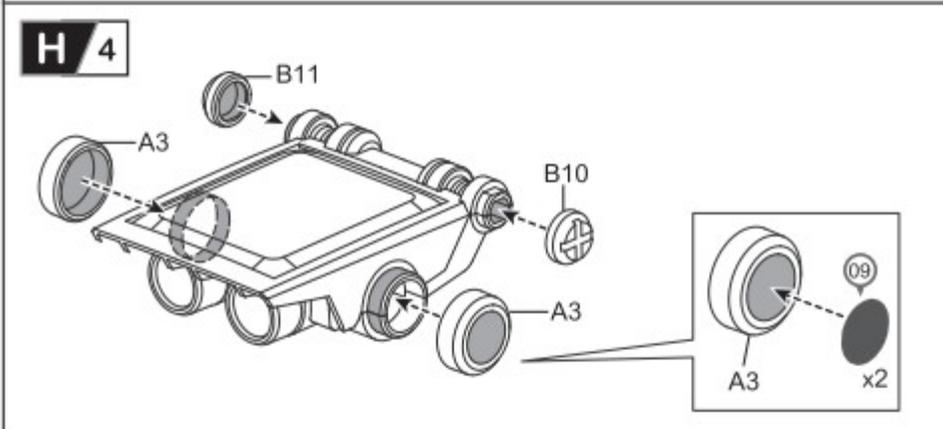
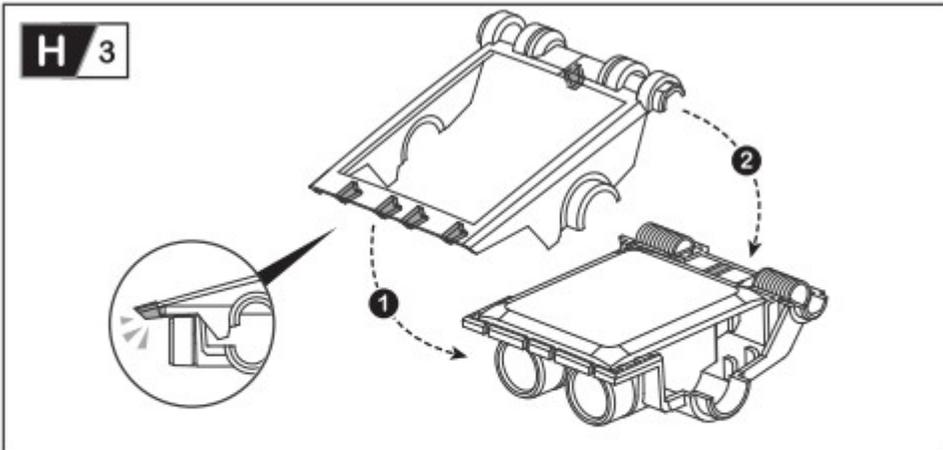
## Head Module Assembly

Finished Product

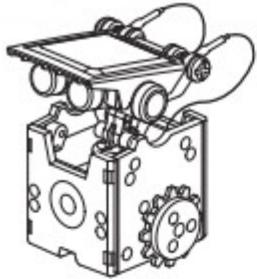


## Montar el cabezal

Producto terminado



## Testing : You need to test the gear box first.



Prepare the below parts first before you test the "Gear box" and "Solar panel".



Body  
(Gear Box)

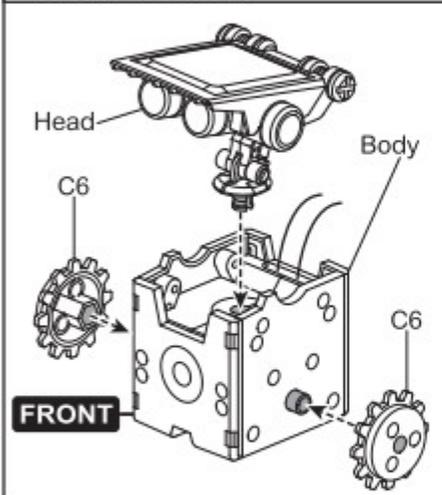


Head  
(Solar Panel)

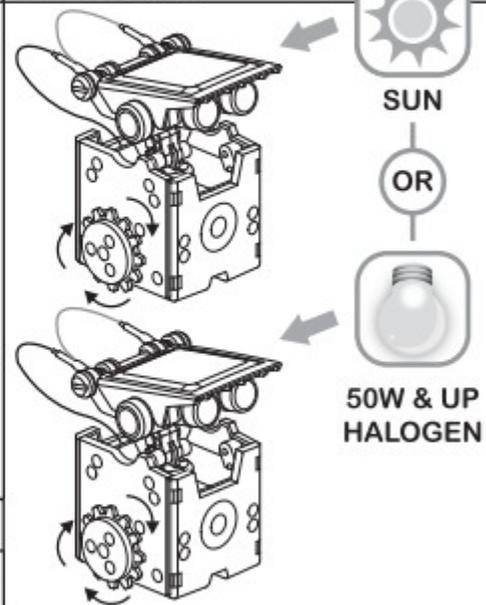


C6 x2

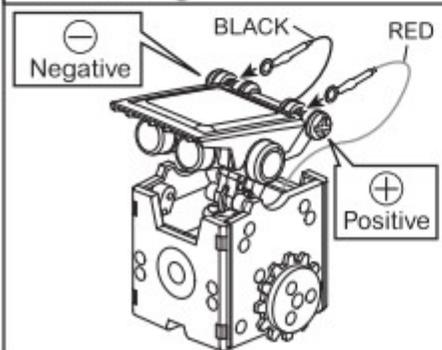
### 01 Assembly



### 03 Testing



### 02 Wiring



### 04 Trouble shooting

If C6 does not work,  
Please disassemble the gear box,  
and back to the page 4.

## Realizar una prueba : Primero, compruebe la caja de cambios.

Primero, monte las siguientes piezas antes de comprobar la "Caja de cambios" y la "Panel solar".

Montaje

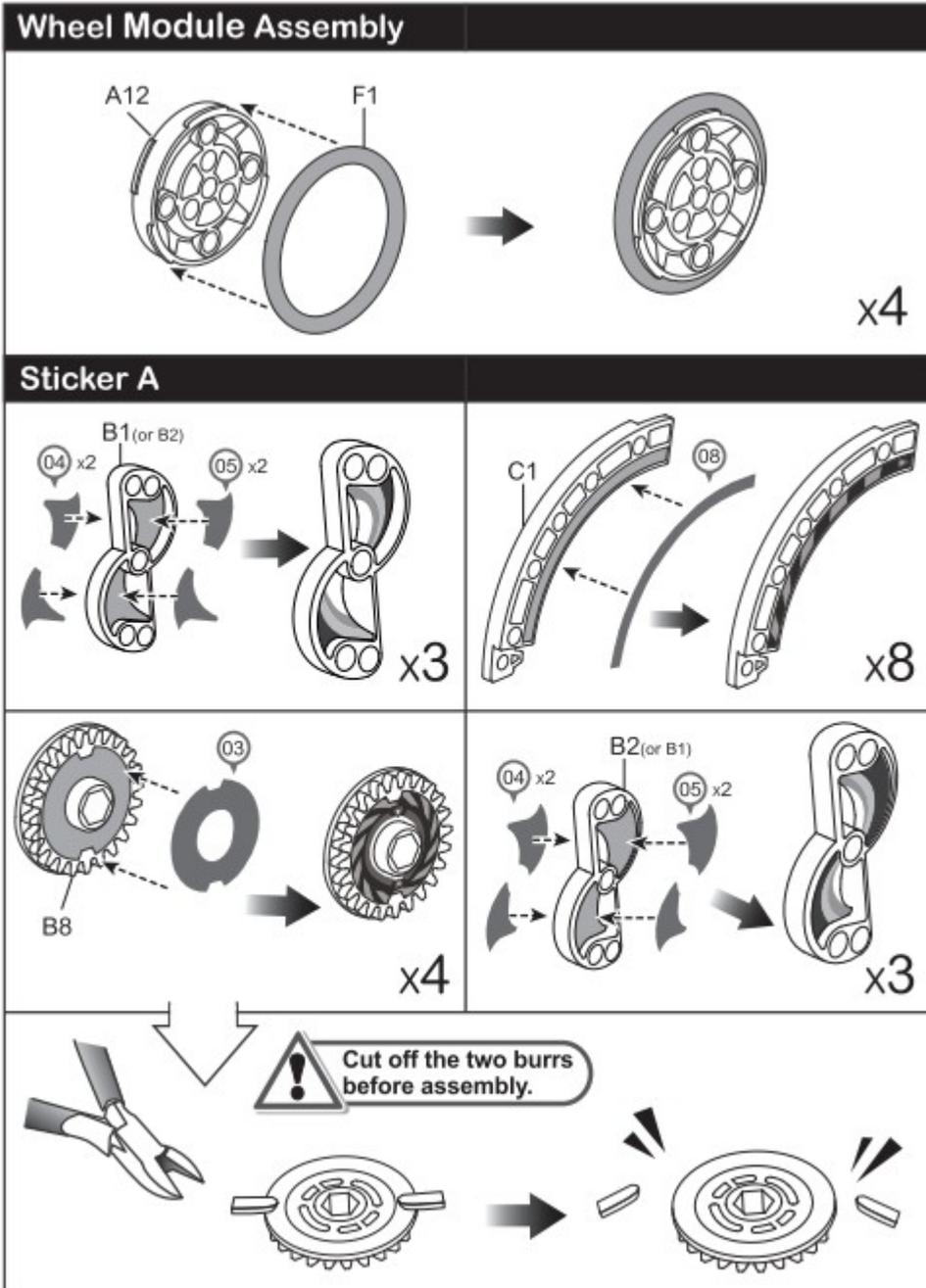
Comprobar la  
manguera  
luminosa

Cableado

¡Asegúrese de que C6 está girando!

Solución de  
problemas

Página



**Montar la rueda**

**Pegatina A**

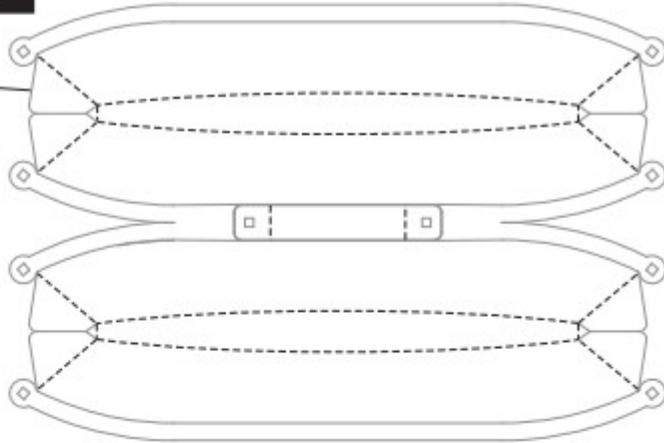
Corte las dos rebabas antes del montaje.

## Boat Module Assembly

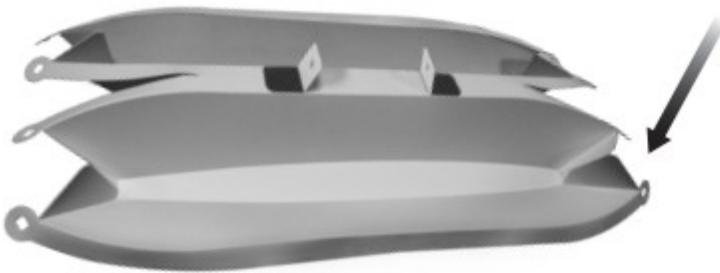
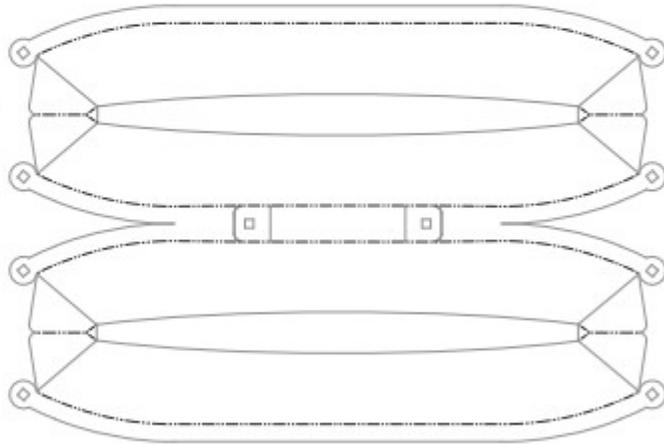
form the boat

P9

Valley fold



Mountain fold

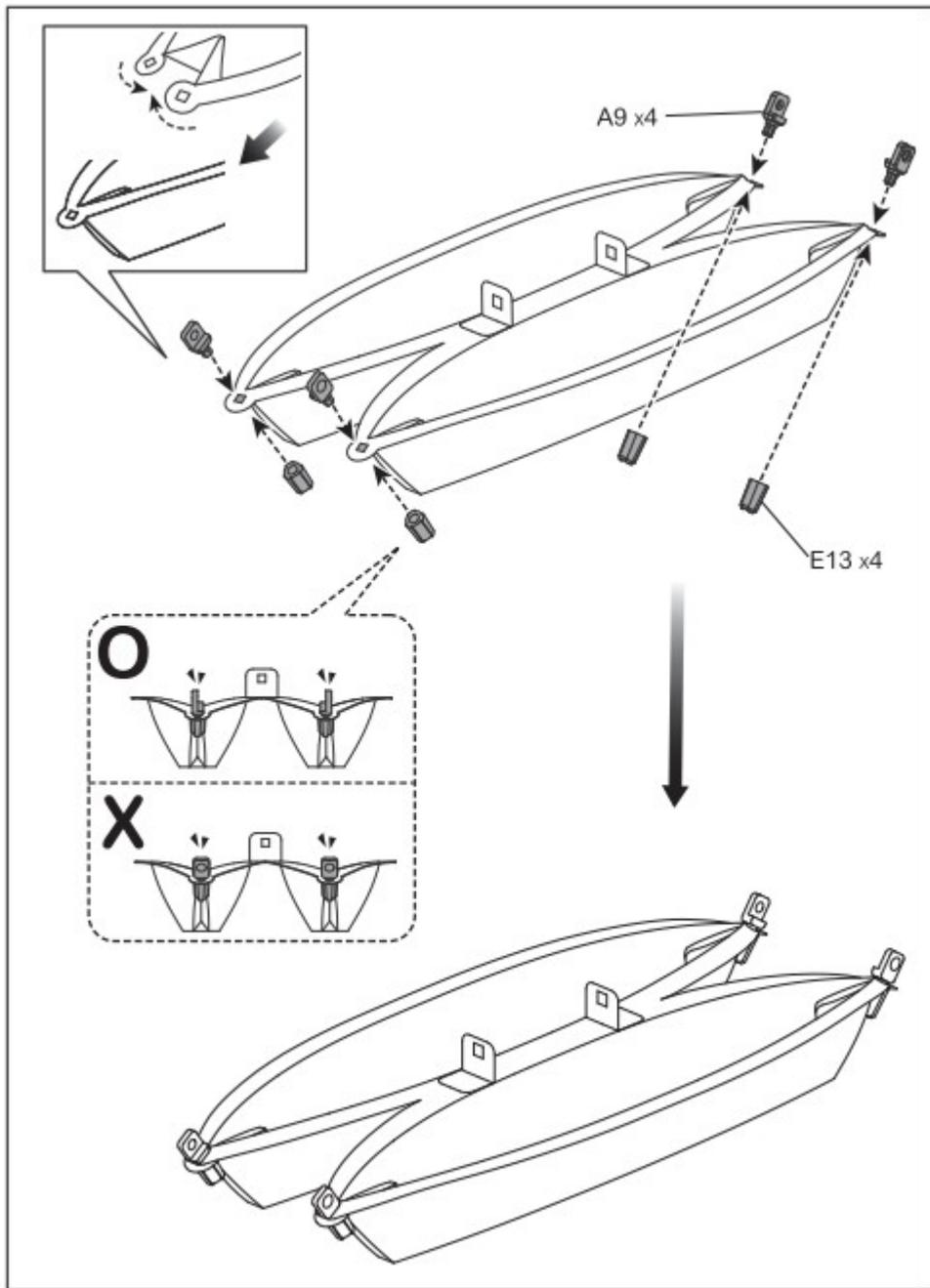


## Montar el bote

Monte el bote

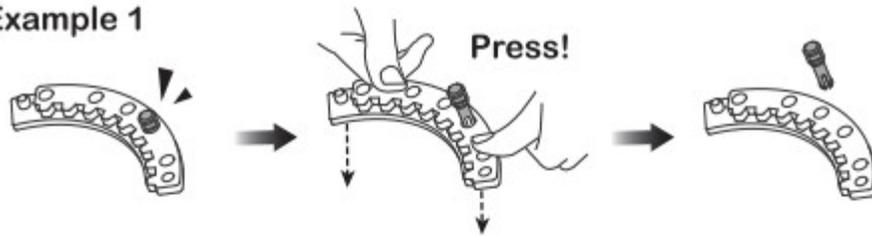
Doblar hacia  
arriba

Doblar hacia  
abajo

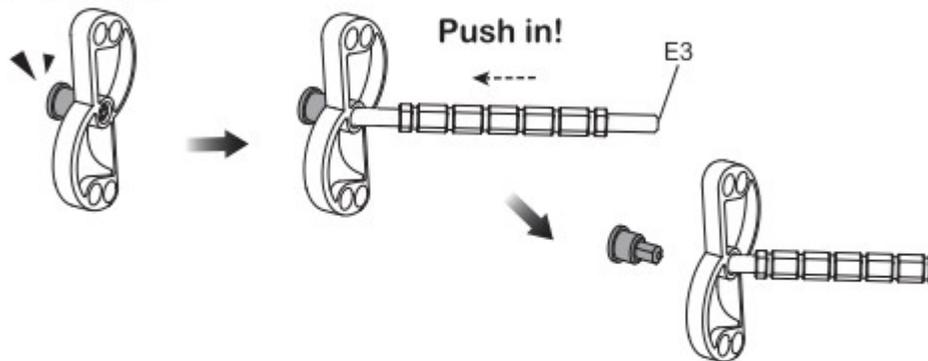


**Tips (When your part's stuck.)**

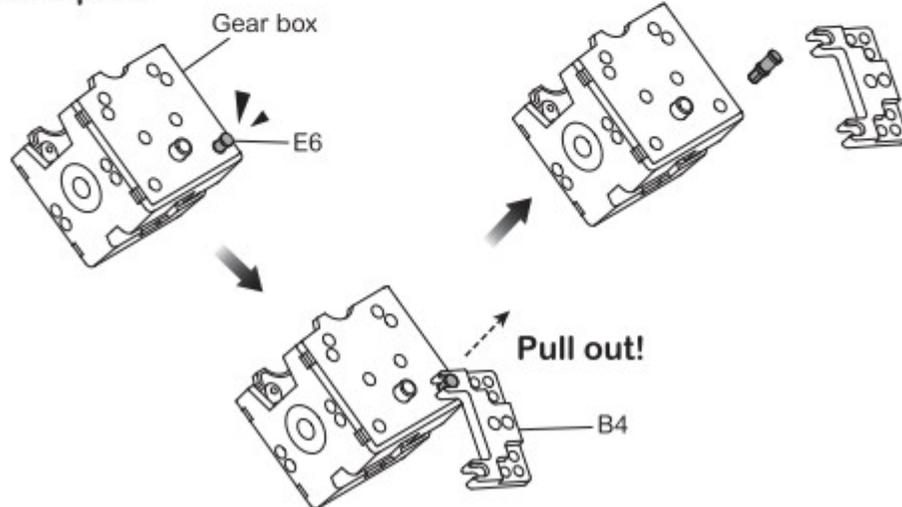
**Example 1**



**Example 2**



**Example 3**



**Consejos (Si la pieza está bloqueada.)**

Ejemplo 1

Presión

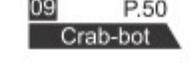
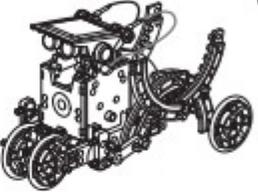
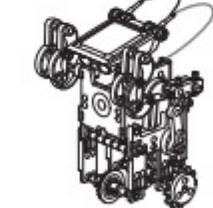
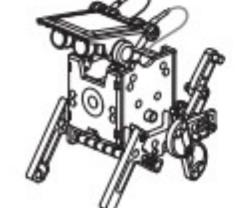
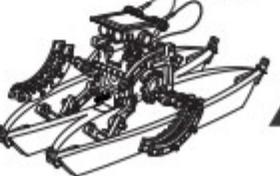
Ejemplo 2

¡Introducir!

Ejemplo 3

¡Sacar!

# 14 Robot Modes

LEVEL 1		LEVEL 2	
	P.14 01 Turtle-bot		P.46 08 Auto-bot
	02 P.19 Walker-bot		09 P.50 Crab-bot
	P.22 03 Quadru-bot		P.55 10 Slither-bot
	04 P.27 Wheel-bot		11 P.60 Roly poly-bot
	P.32 05 Boat-bot		P.66 12 Boxer-bot
	06 P.37 Beetle-bot		13 P.71 Surf-bot
	P.42 07 Dog-bot		P.76 14 Row-bot

# 14 diferentes robots

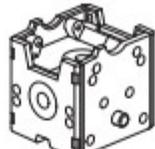
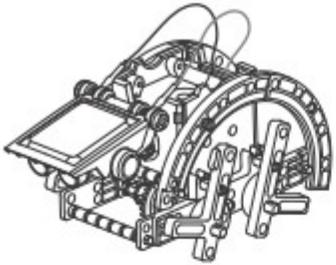
## NIVEL 1

## NIVEL 2

# 01 Turtle-bot Assembly

# Level 1

Prepare the below parts first before you assemble the "Turtle-bot".



Body



Head



A2 x2



A8 x2



B3 x4



B4 x2



B8 x3



C1 x4



C2 x1



C7 x4



E8 x5



E3 x2



E6 x4



E14 x2



E5 x4



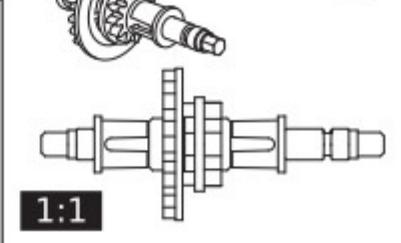
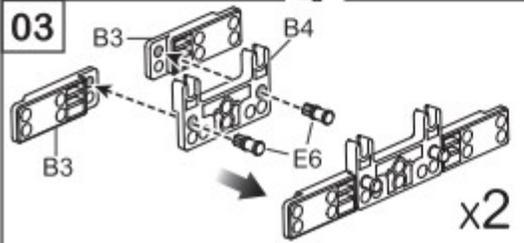
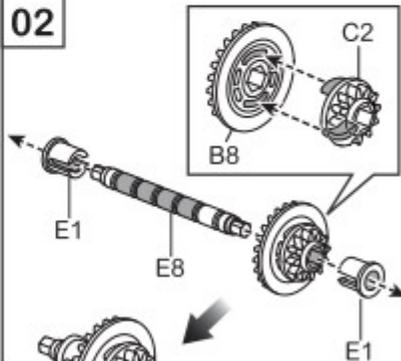
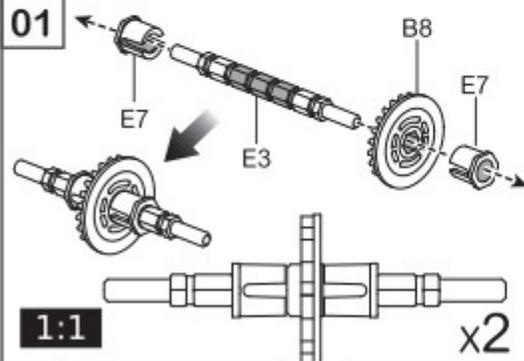
E4 x4



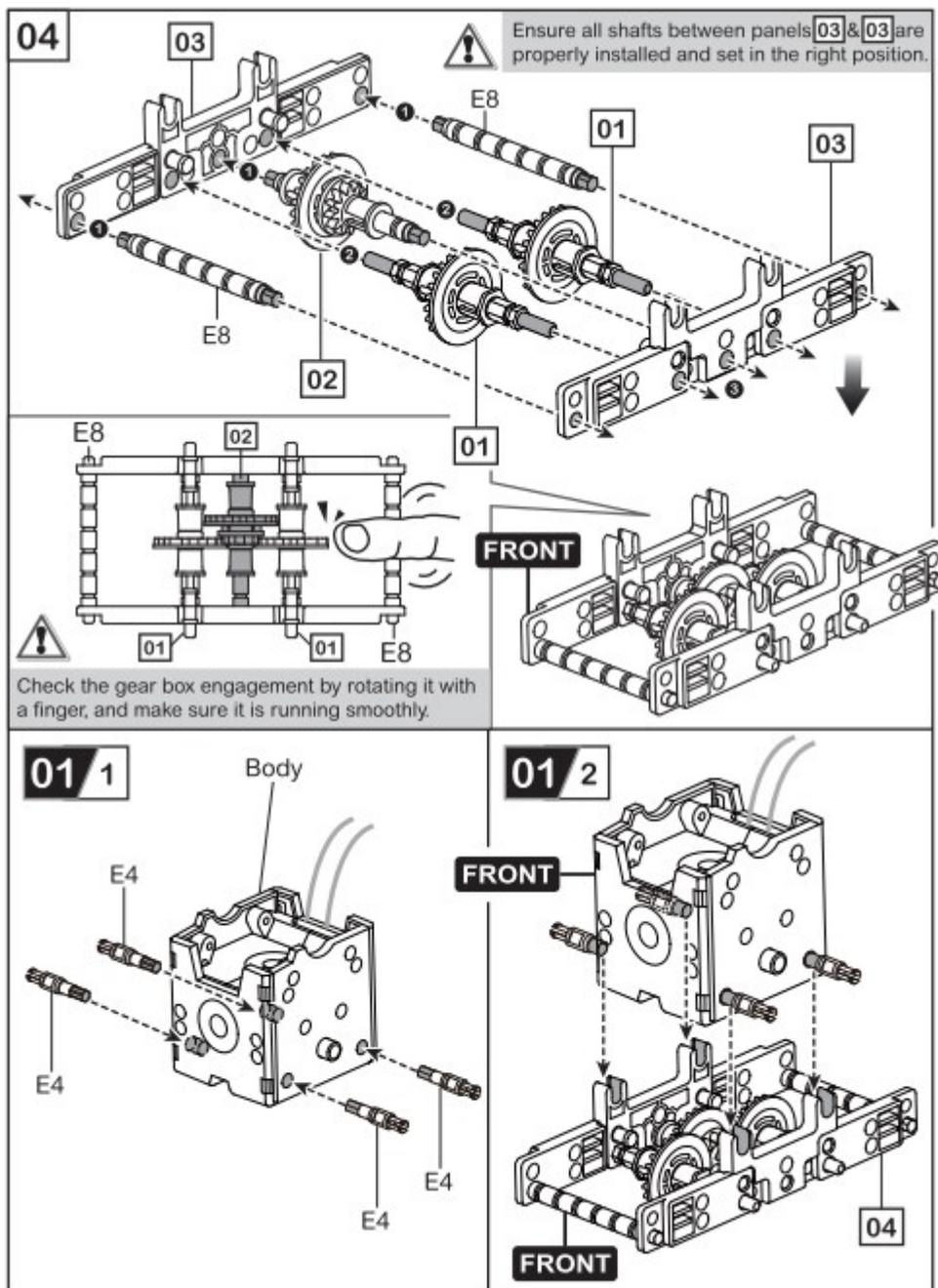
E7 x4



E1 x2



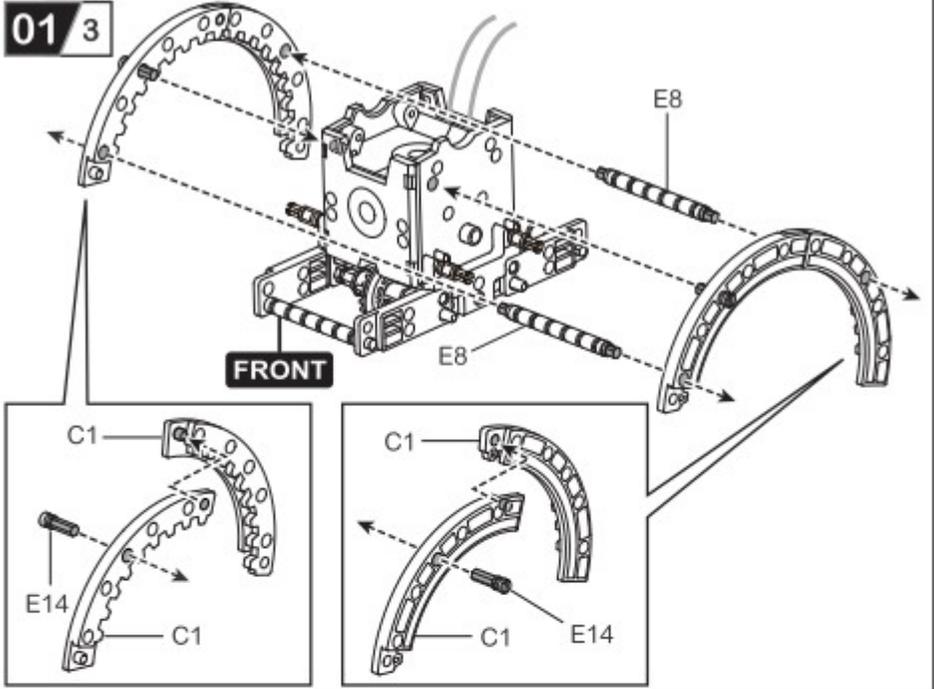
Primero, monte las siguientes piezas antes de montar el "Turtle-bot".



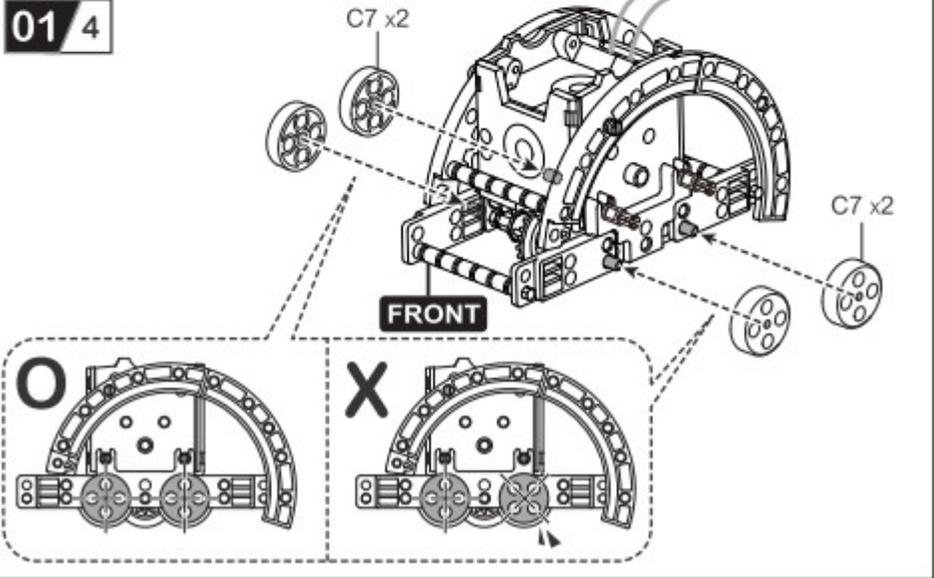
Asegúrese de que todos los ejes entre los paneles 03 & 03 estén instalados correctamente y estén en la posición correcta.

Compruebe el embrague de la caja de cambios girándolo con un dedo y asegúrese de que funcione correctamente.

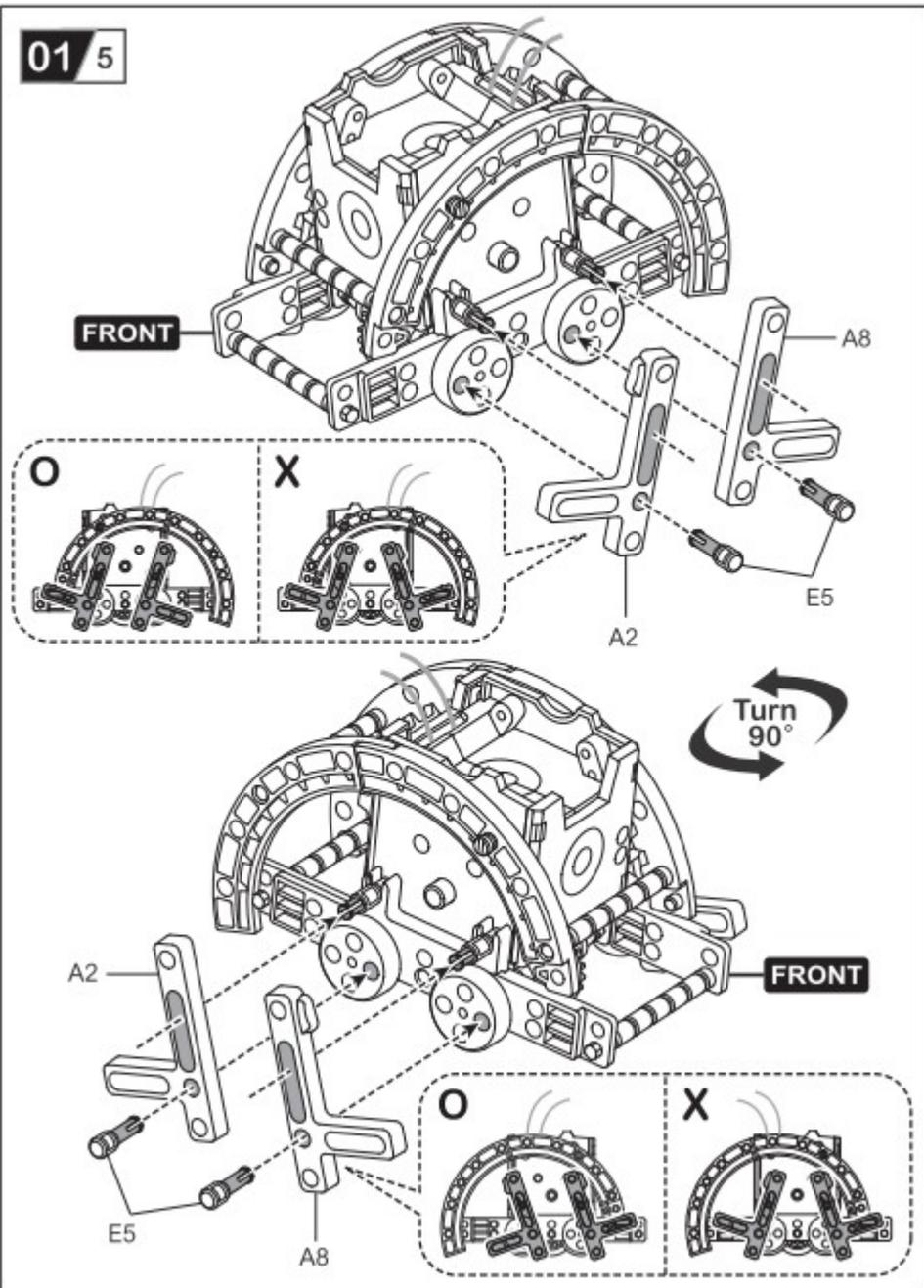
01/3



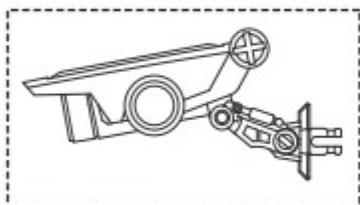
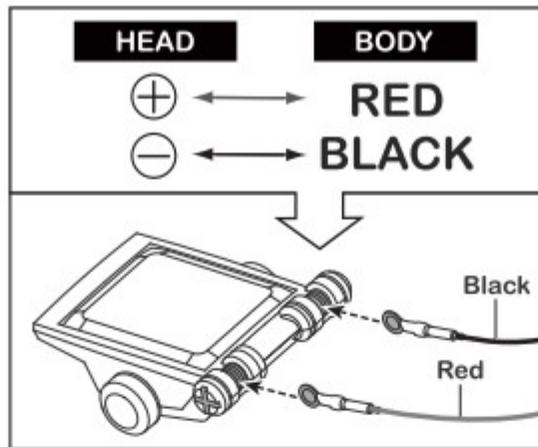
01/4



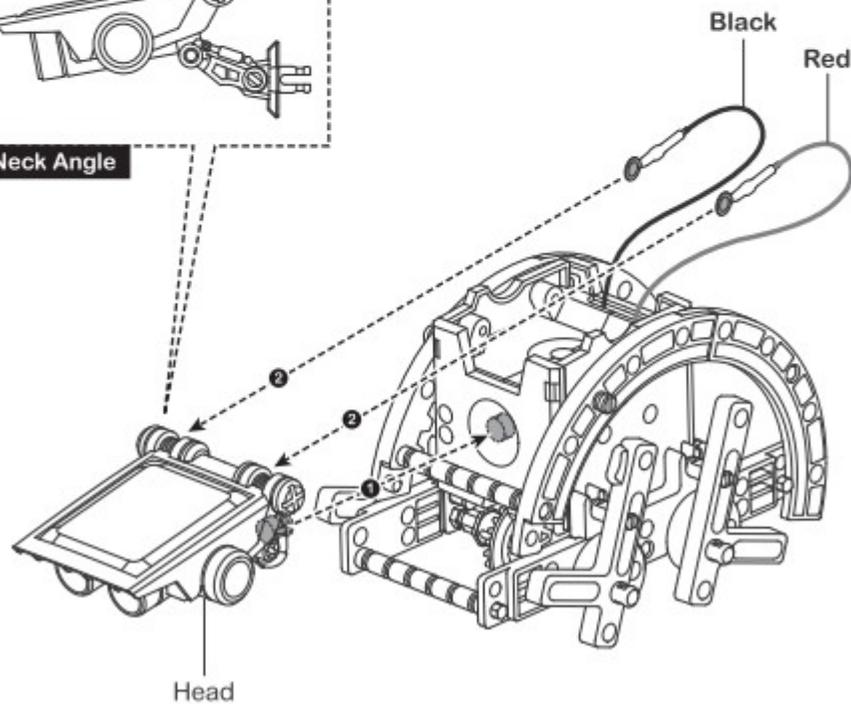
01 / 5



01/6

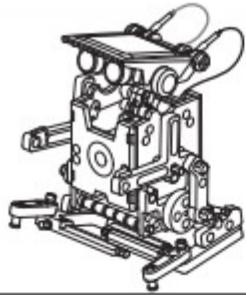


Neck Angle

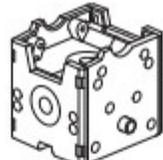


## 02 Walker - bot Assembly

Level 1



Prepare the below parts first before you assemble the "Walker-bot".



Body



Head



A1 x1



A2 x1



A8 x1



A7 x1



B4 x2



B5 x2



B8 x1



B9 x2



C7 x2



E6 x6



E14 x2



E5 x4



E4 x2



E7 x2

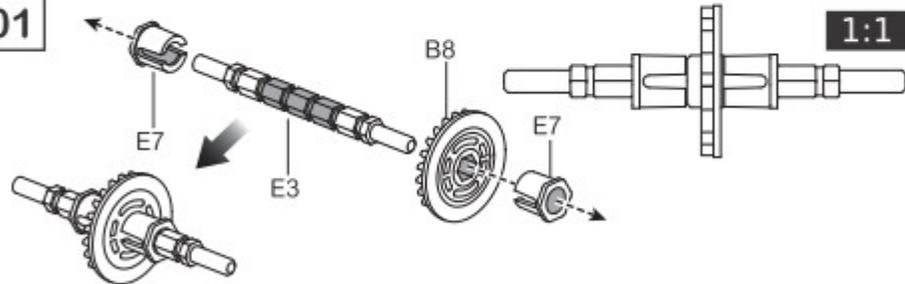


E8 x2



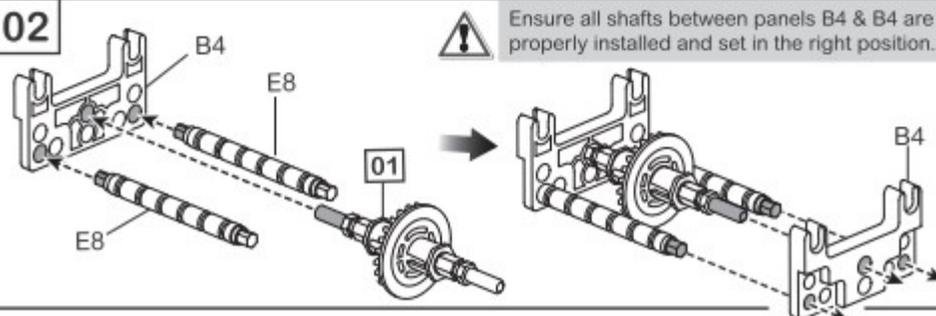
E3 x1

01



1:1

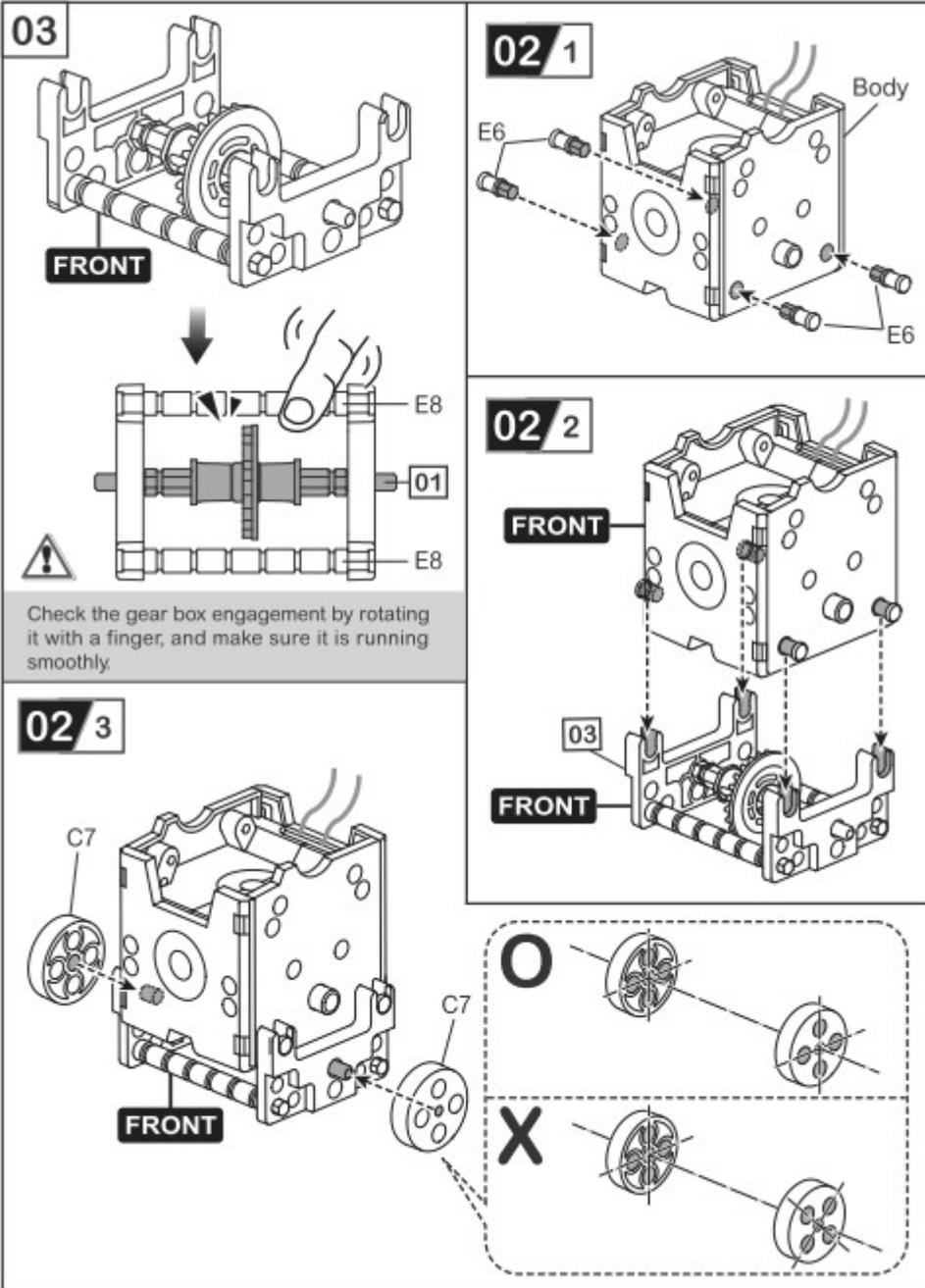
02



Ensure all shafts between panels B4 & B4 are properly installed and set in the right position.

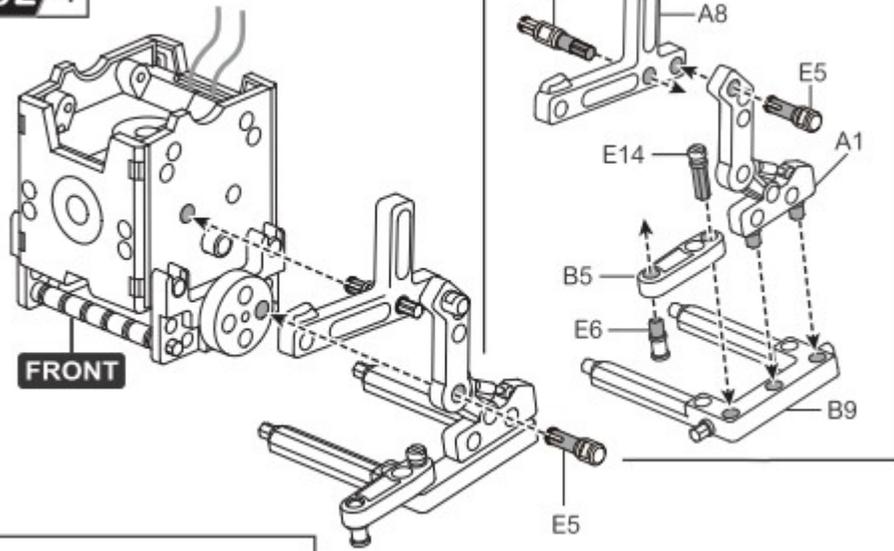
Primero, monte las siguientes piezas antes de montar el "Walker-bot".

Asegúrese de que todos los ejes entre los paneles B4 & B4 estén instalados correctamente y estén en la posición correcta.

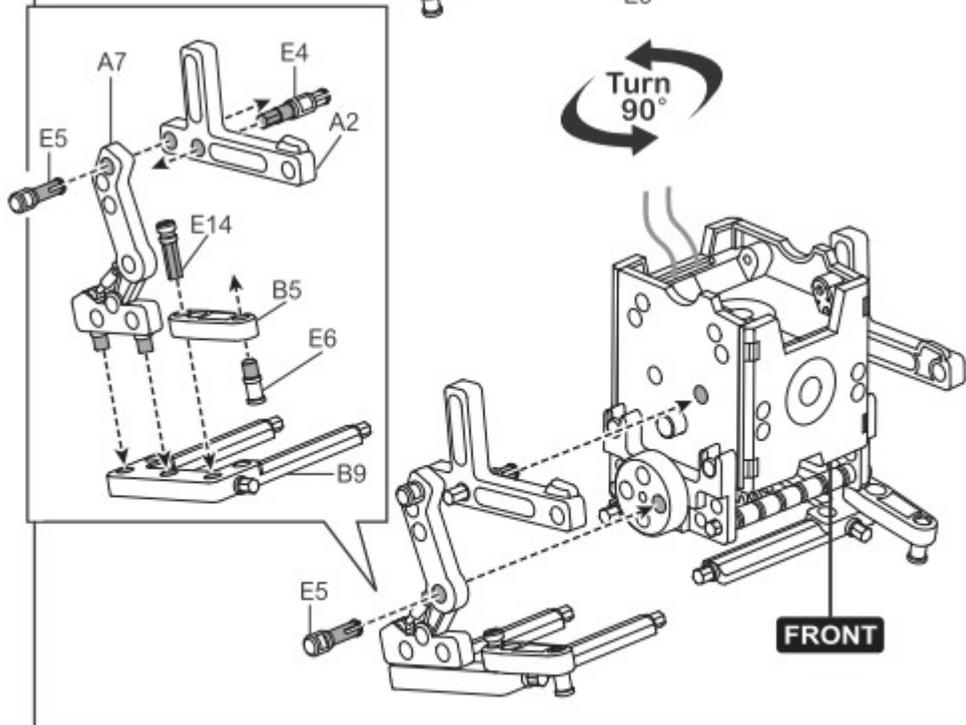


Compruebe el embrague de la caja de cambios girándolo con un dedo y asegúrese de que funcione correctamente.

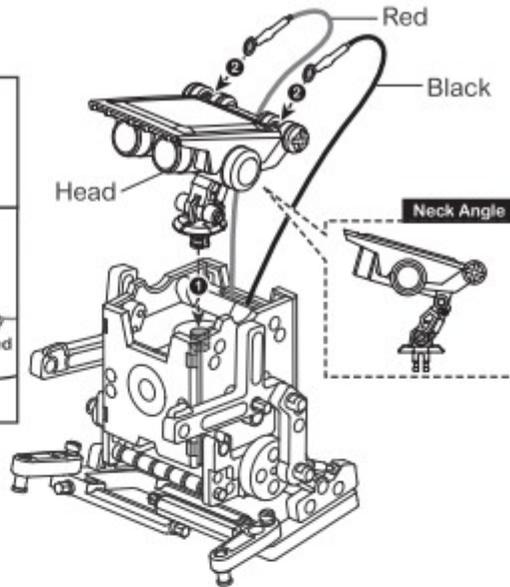
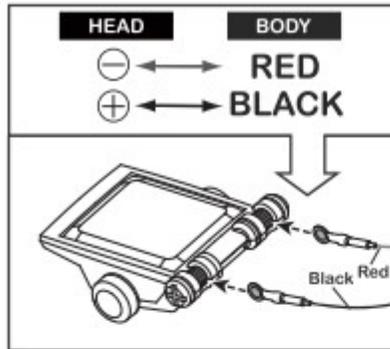
02 4



Turn 90°



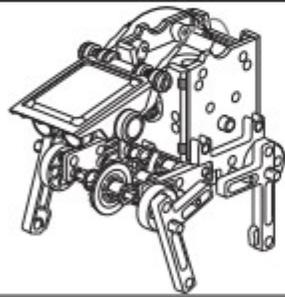
02 / 5



### 03 Quadru-bot Assembly

Level 1

Prepare the below parts first before you assemble the "Quadru-bot".



Body



Head



A2 x2



A8 x2



B3 x2



B4 x2



B8 x4



C2 x2



C7 x4



E6 x6



E5 x4



E1 x6



E7 x4



E8 x1

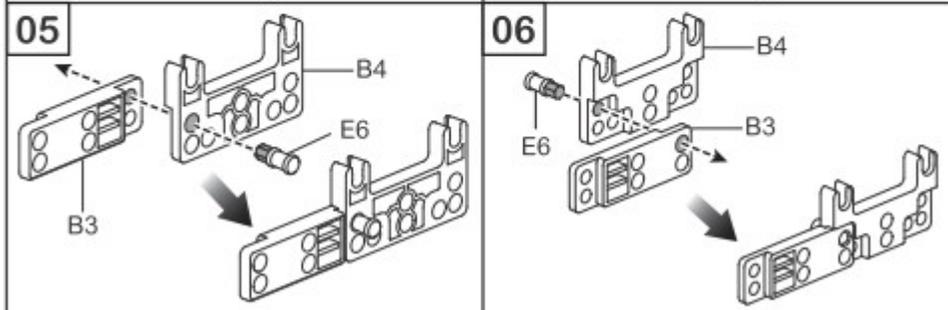
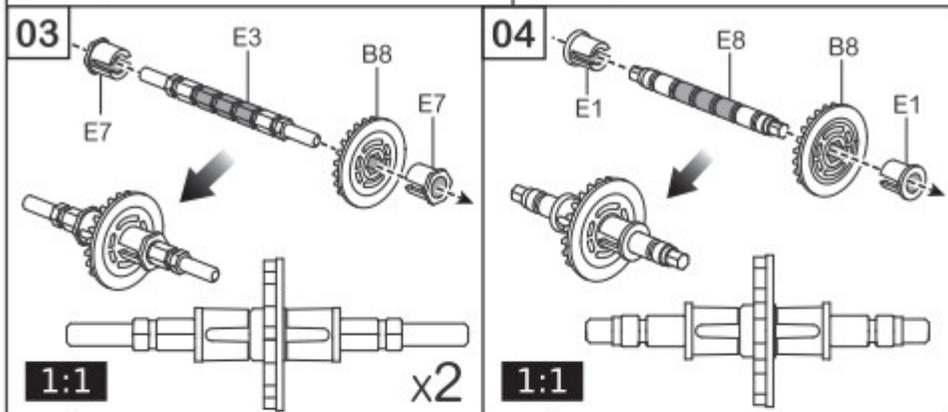
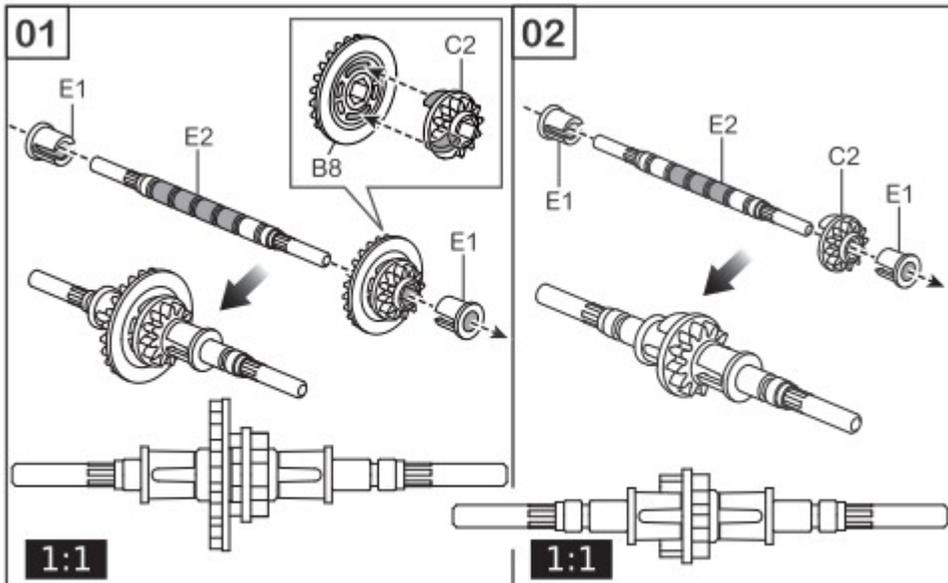


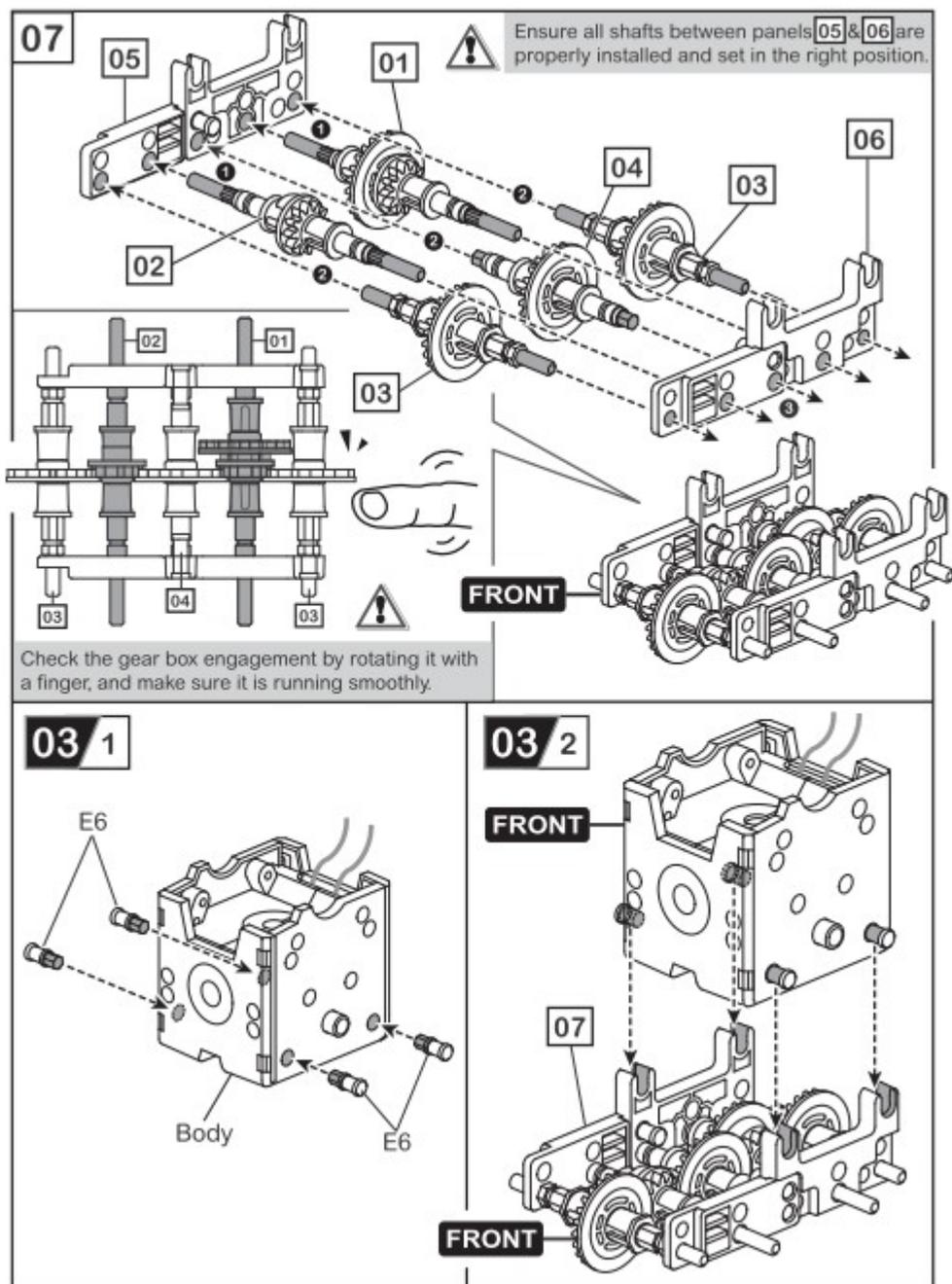
E2 x2



E3 x2

Primero, monte las siguientes piezas antes de montar el "Quadru-bot".

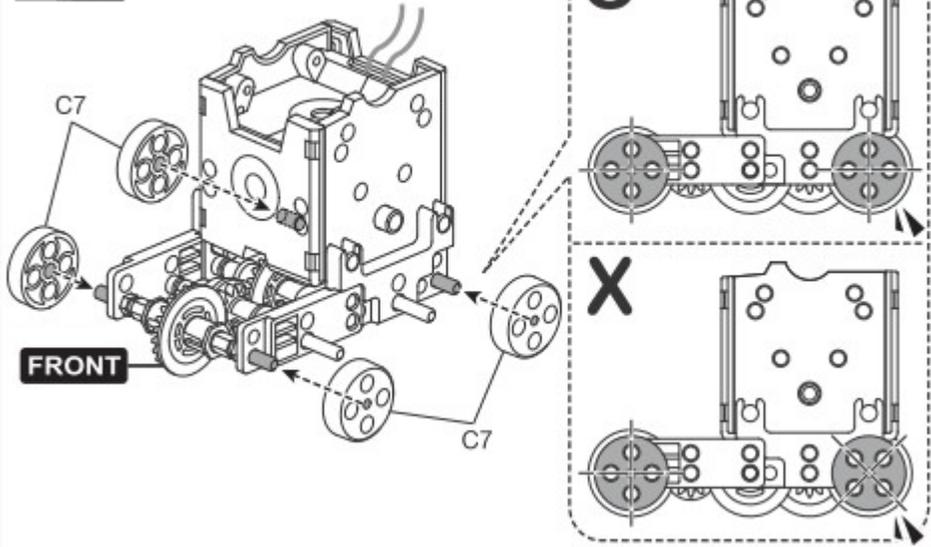




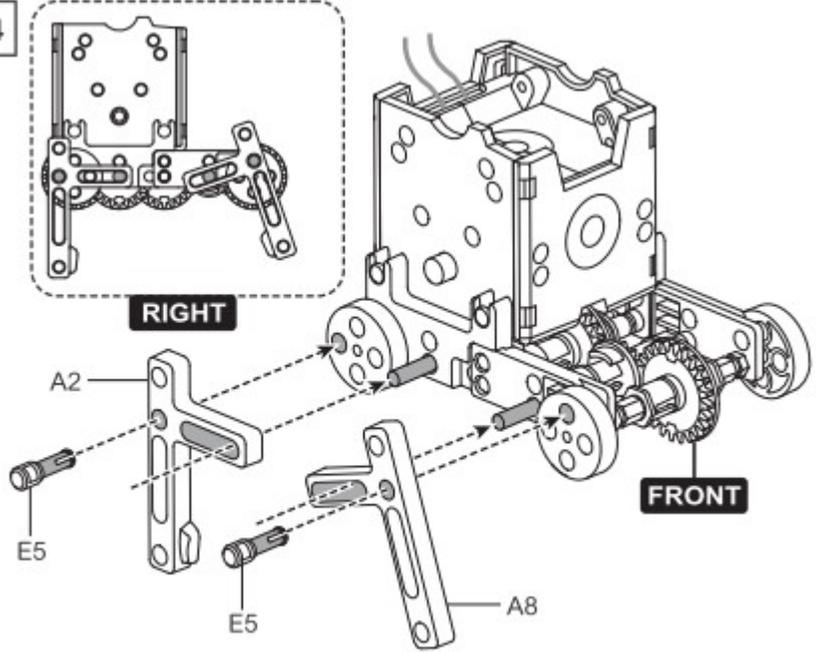
Asegúrese de que todos los ejes entre los paneles 05 & 06 estén instalados correctamente y estén en la posición correcta.

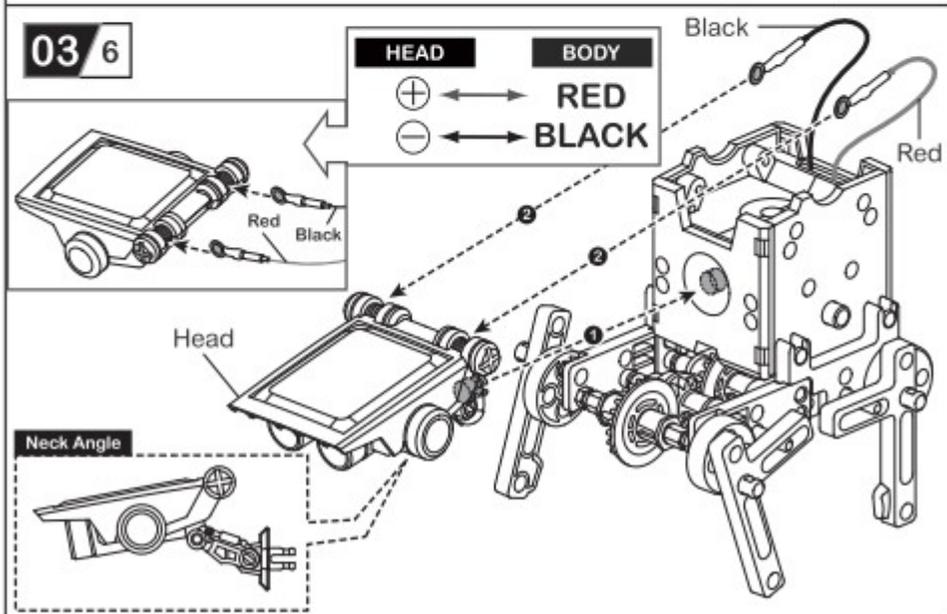
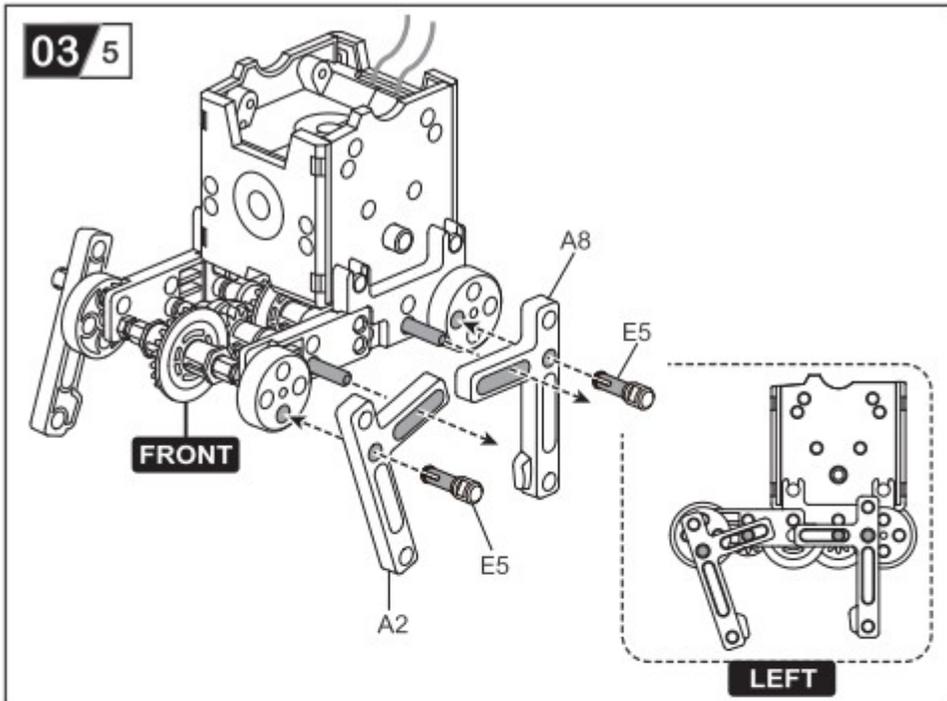
Compruebe el embrague de la caja de cambios girándolo con un dedo y asegúrese de que funcione correctamente.

03 / 3



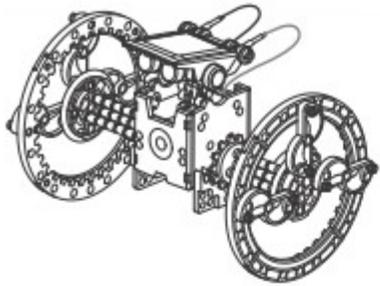
03 / 4



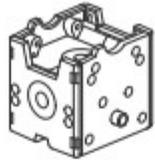


# 04 Wheel-bot Assembly

## Level 1



Prepare the below parts first before you assemble the "Wheel-bot".



Body



Head



Wheel x4



A1 x1



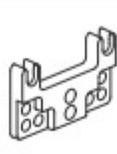
A7 x1



B1 x3



B2 x3



B4 x2



C6 x2



C1 x8



E6 x4



E14 x14

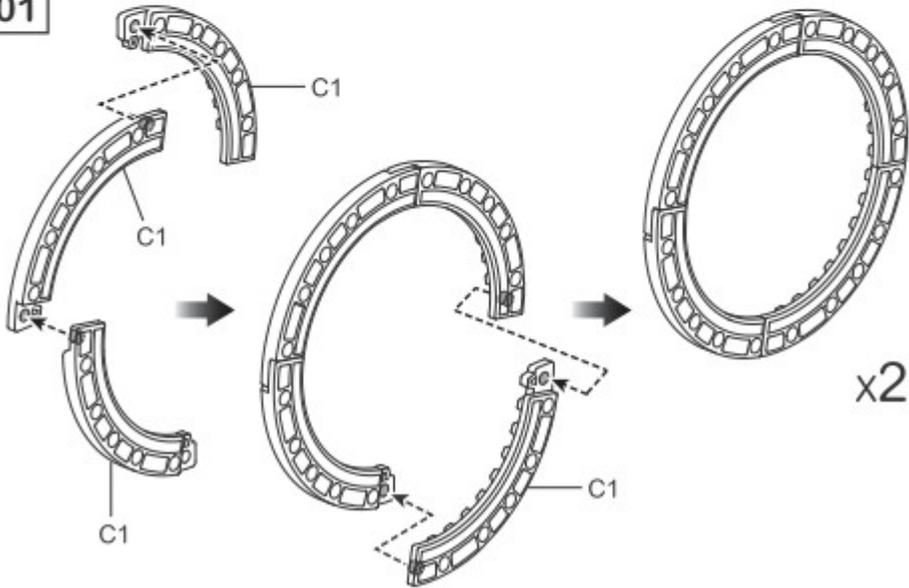


E10 x2



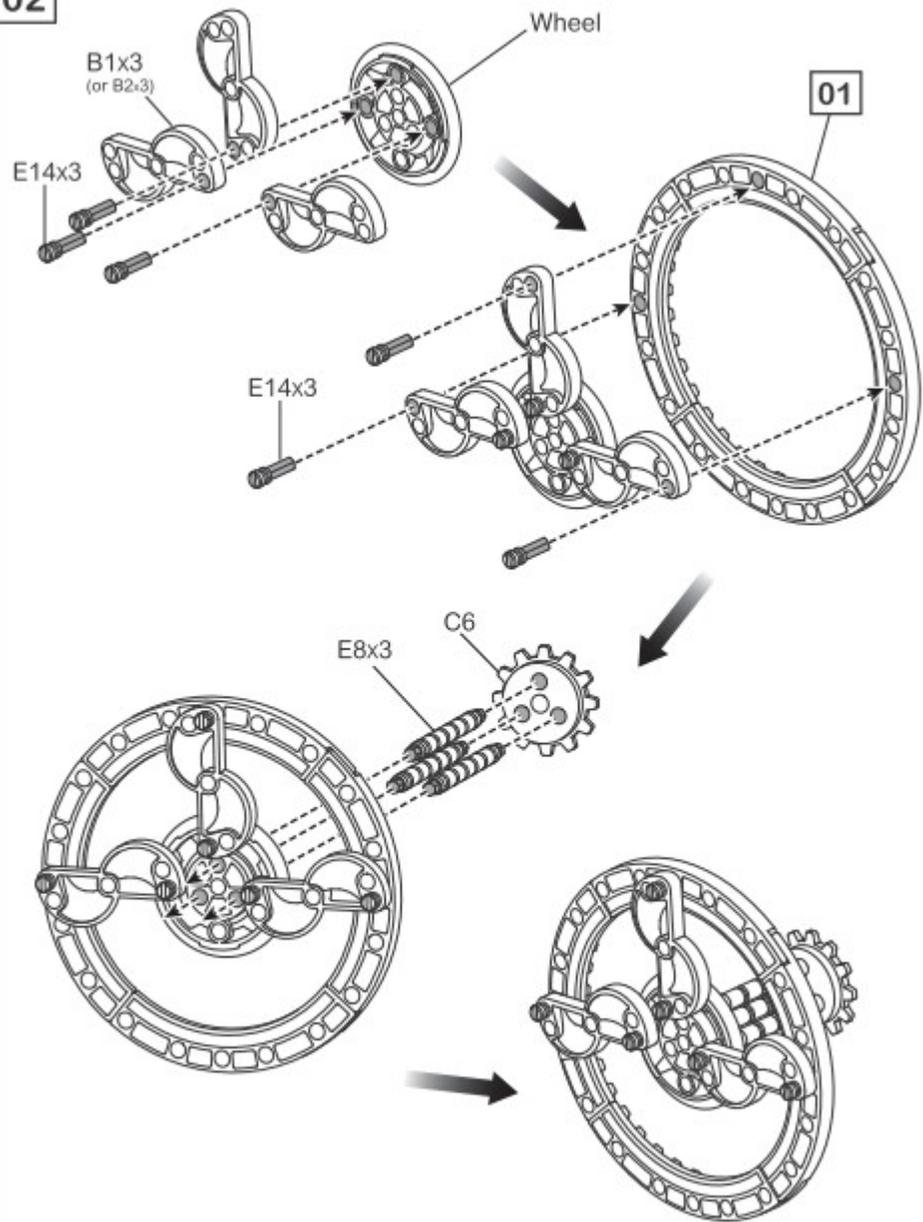
E8 x6

01

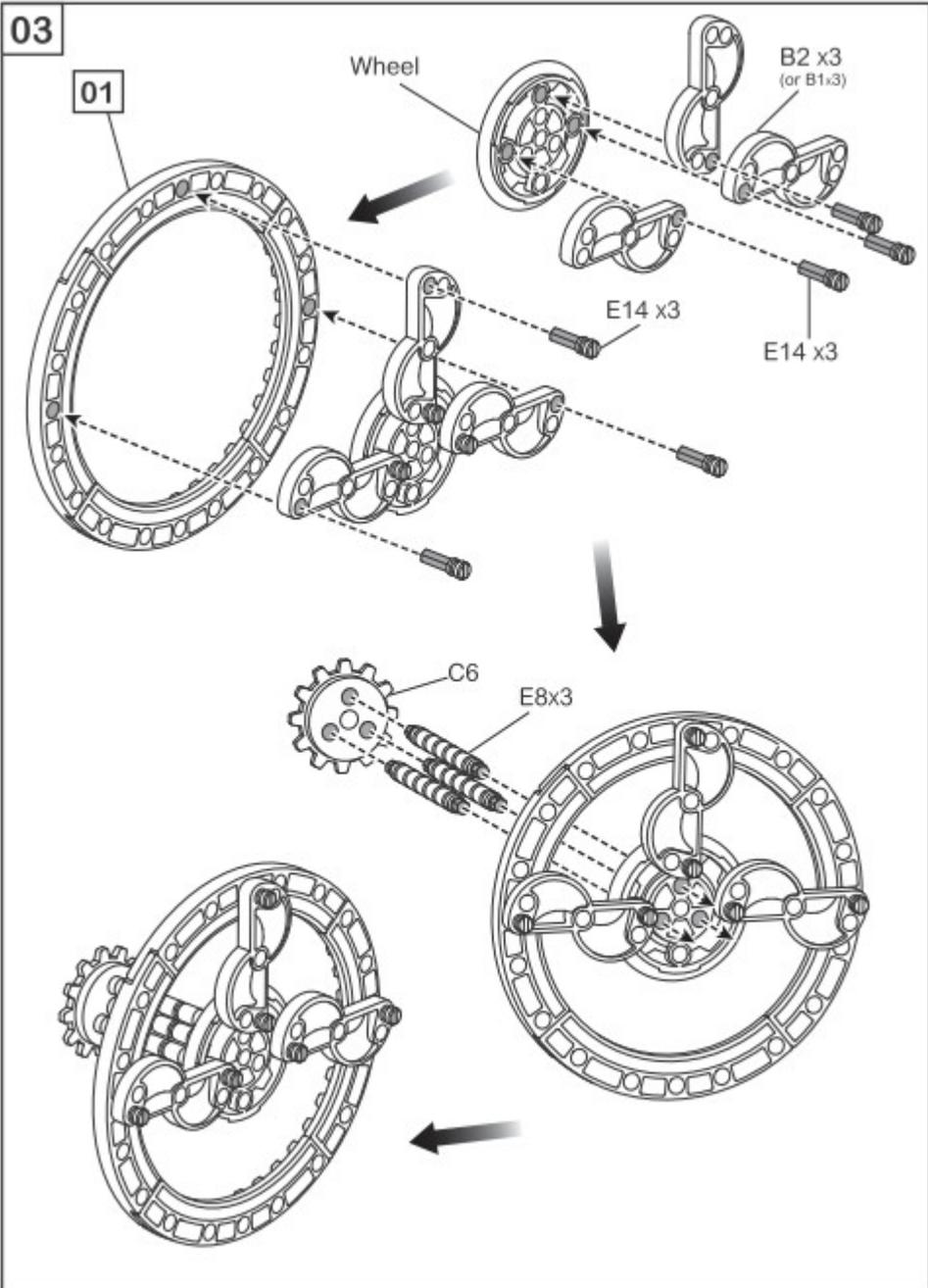


Primero, monte las siguientes piezas antes de montar el "rueda-bot".

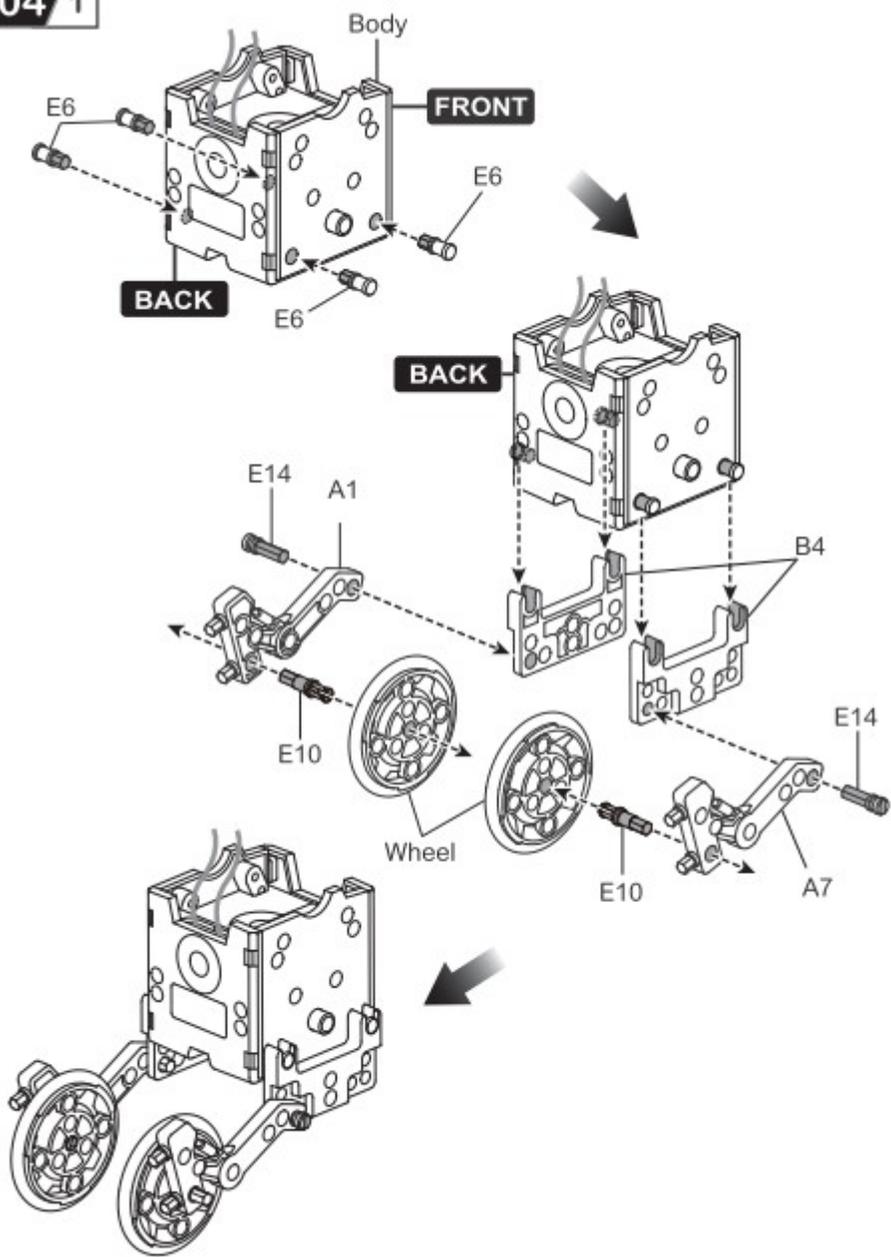
02

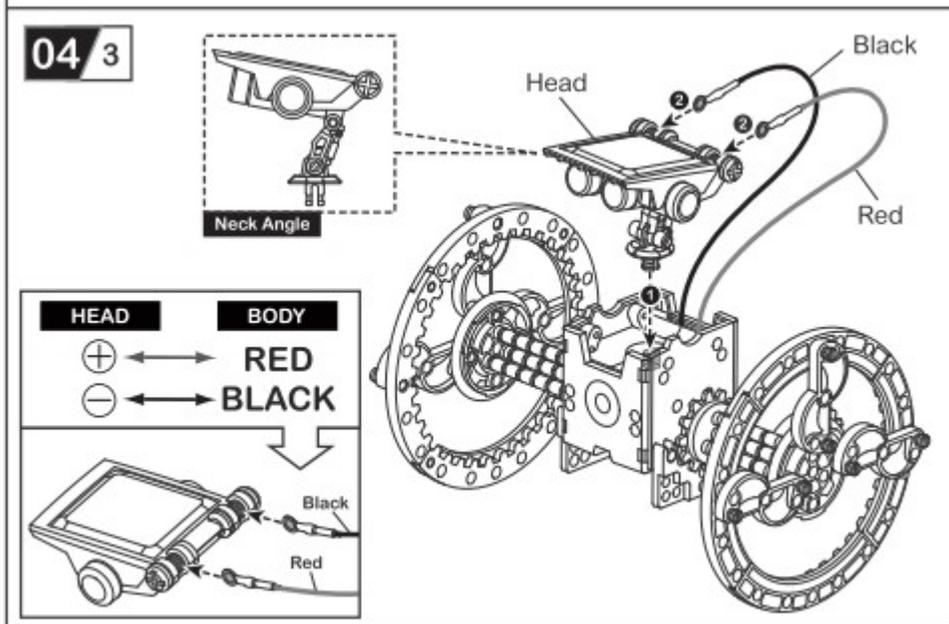
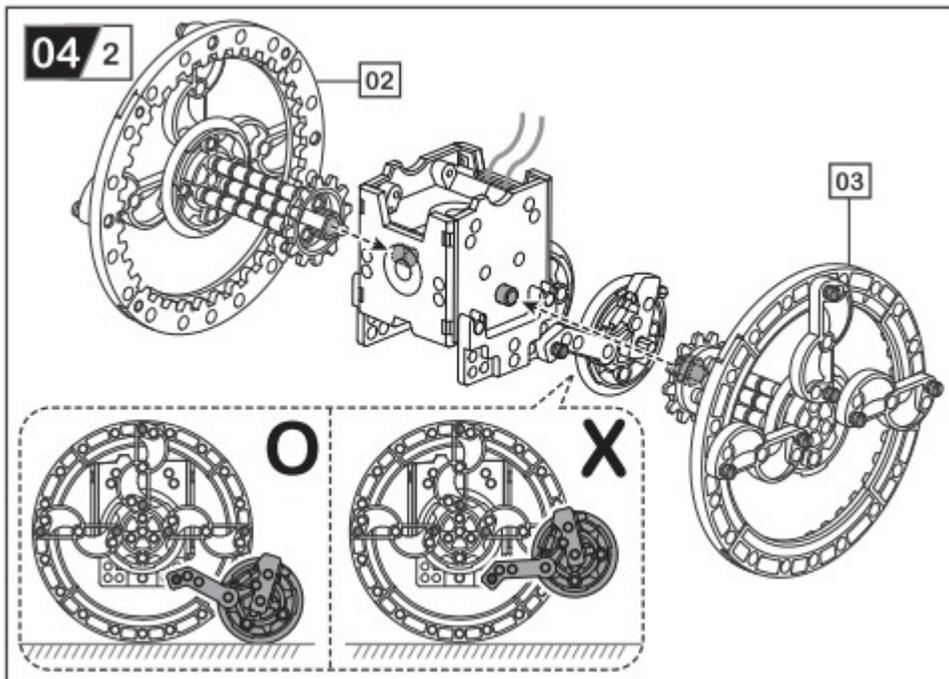


03



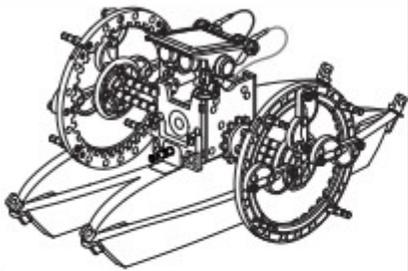
04/1



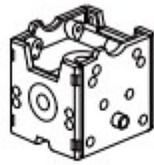


# 05 Boat-bot Assembly

## Level 1



Prepare the below parts first before you assemble the "Boat-bot".



Body



Head



Wheel x2



B1 x3



B2 x3



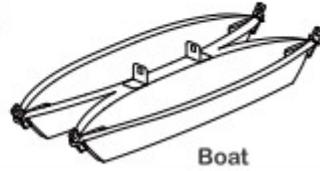
B4 x2



C6 x2



C1 x8



Boat



E6 x4



E14 x12



E4 x8

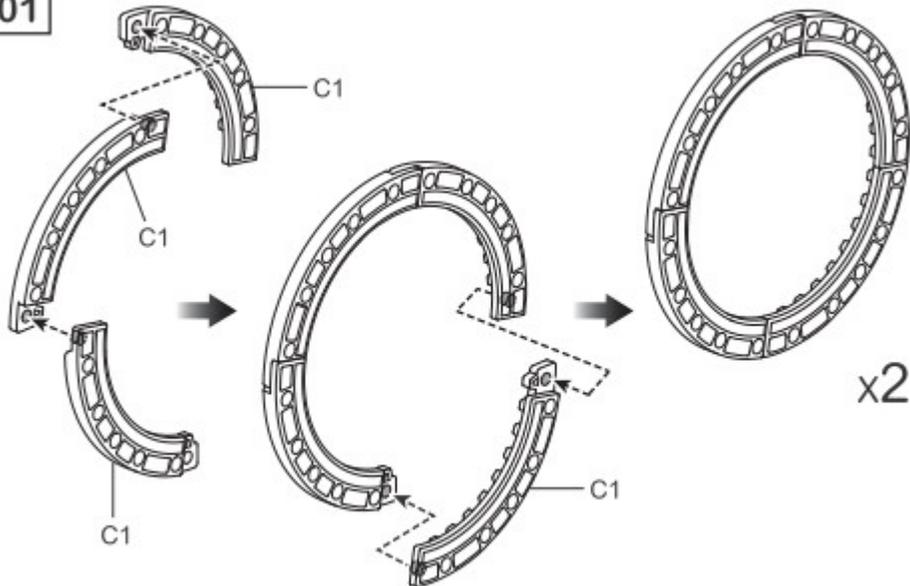


E9 x2



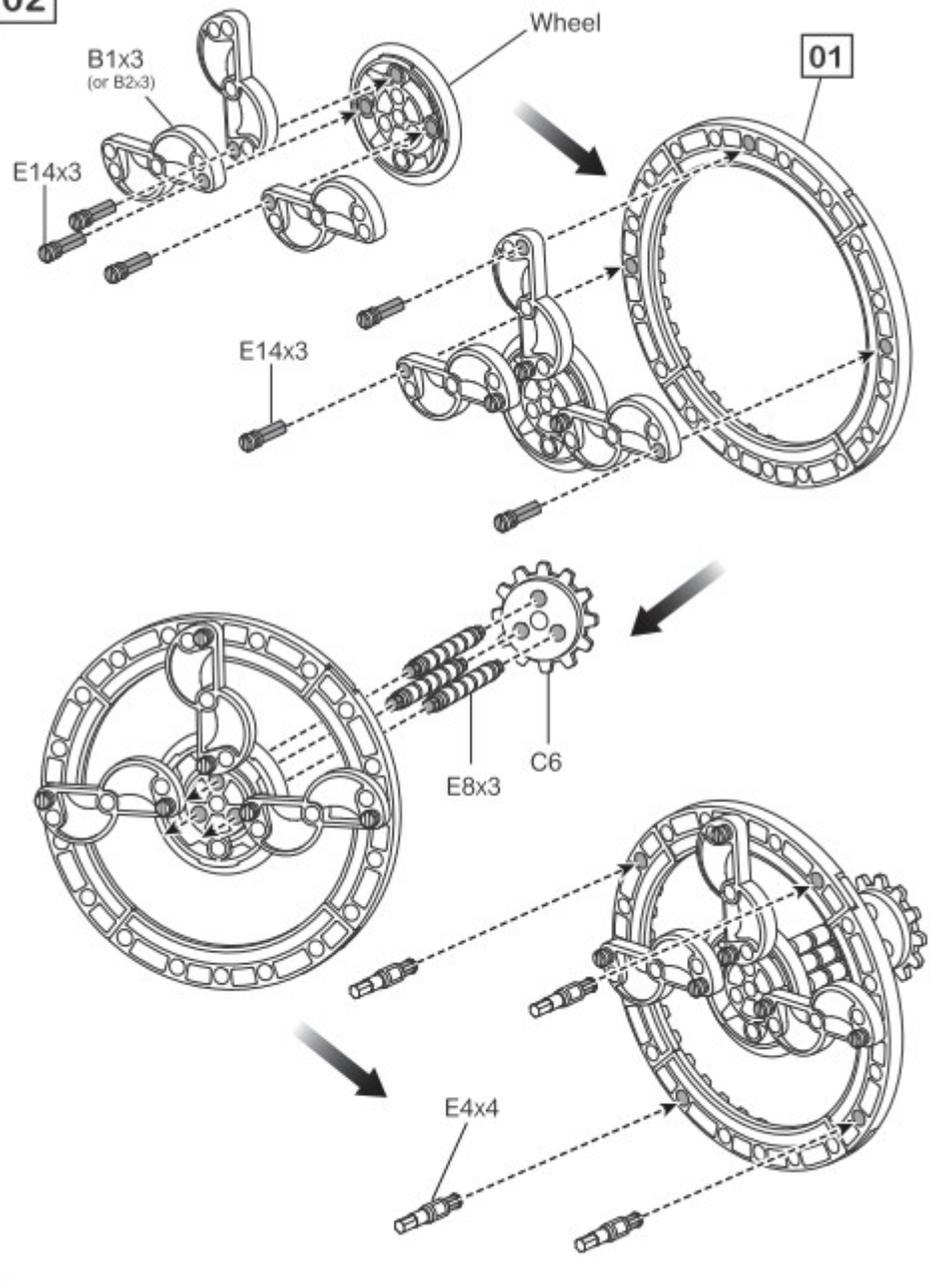
E8 x6

01

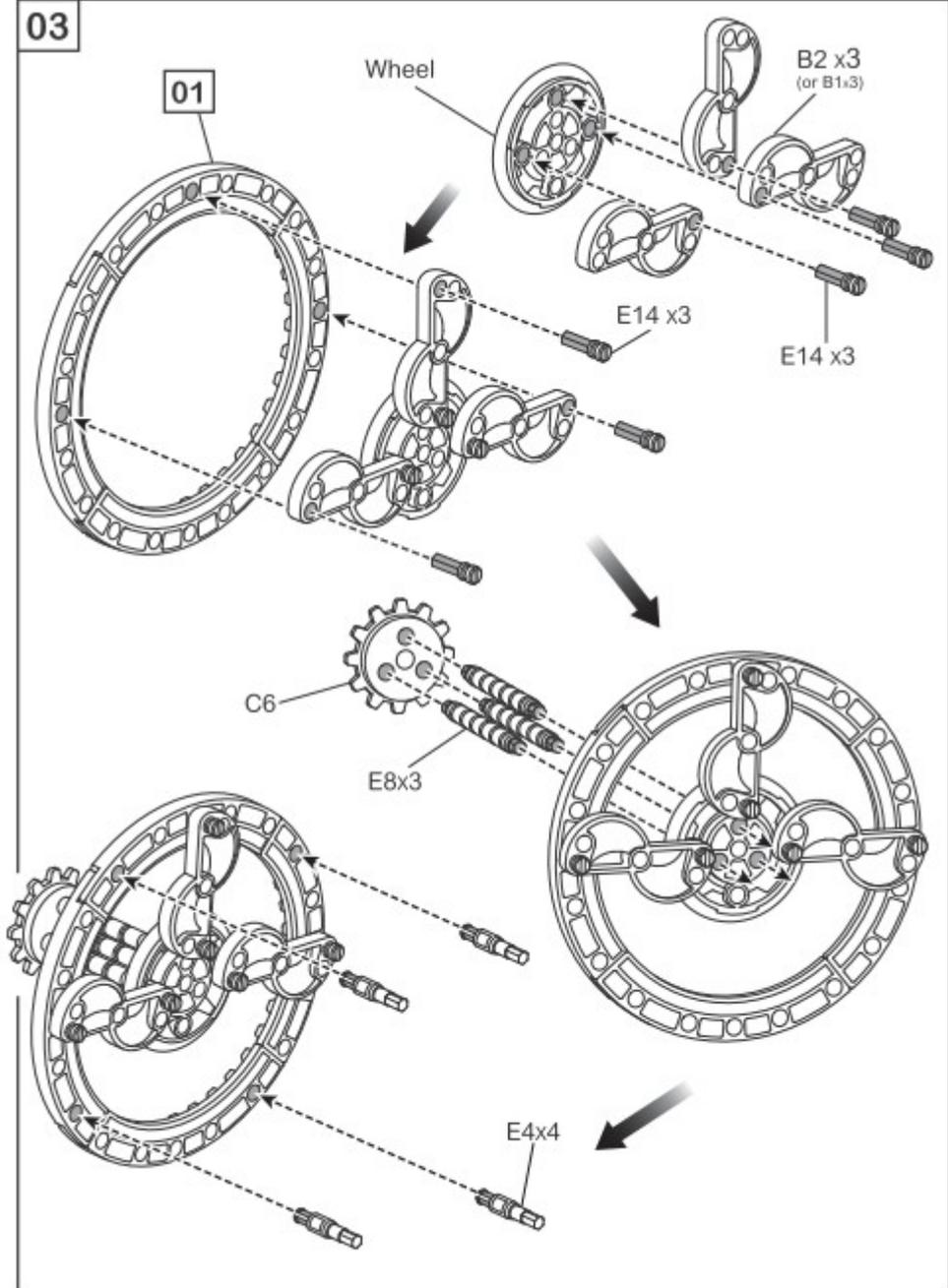


Primero, monte las siguientes piezas antes de montar el "Bote-bot".

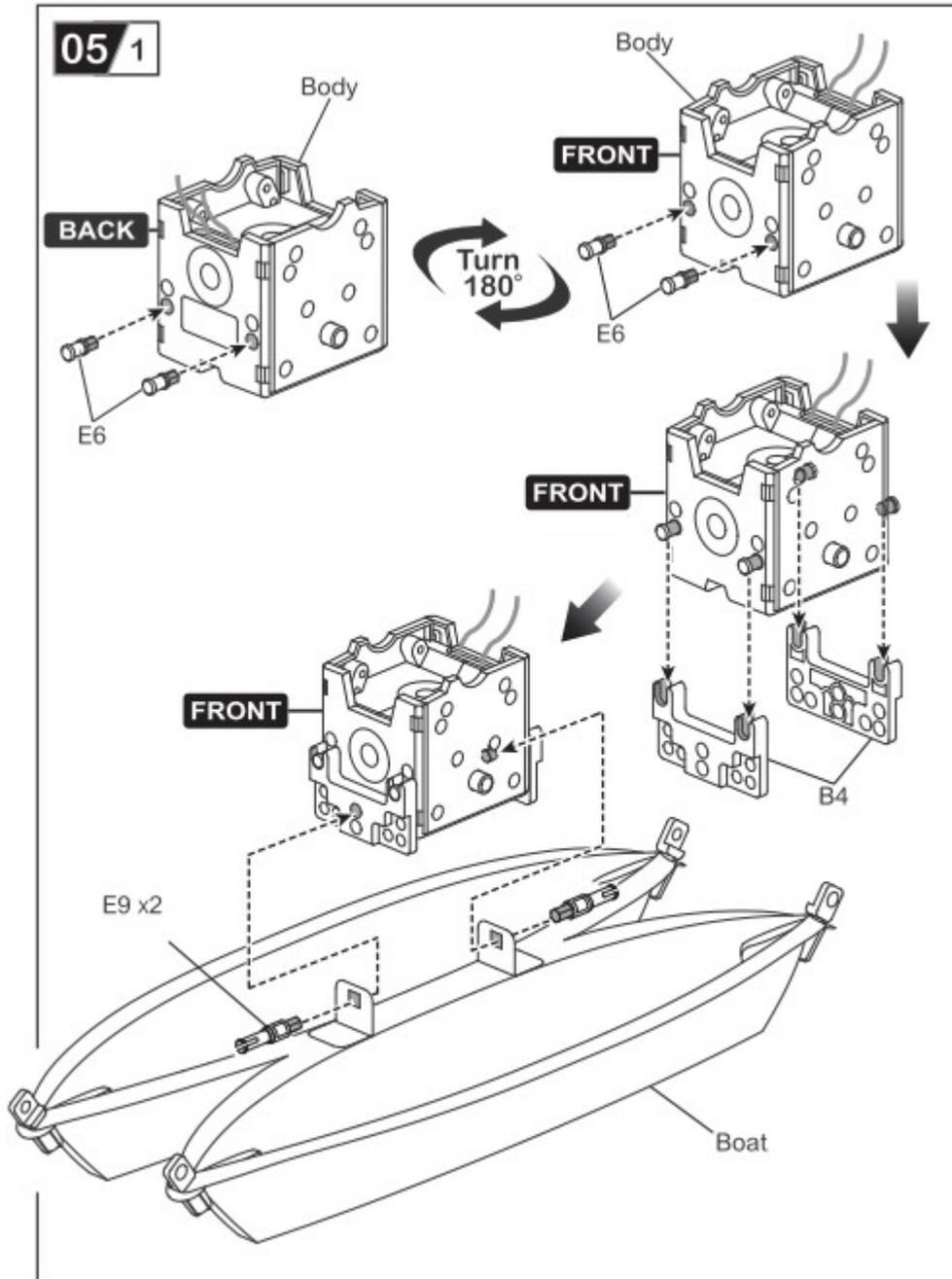
02



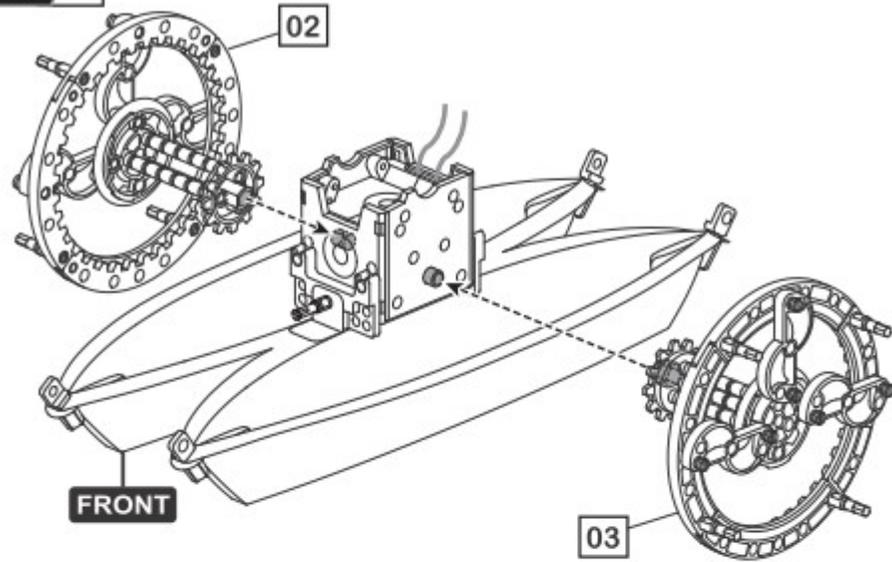
03



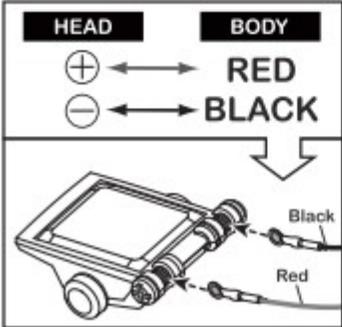
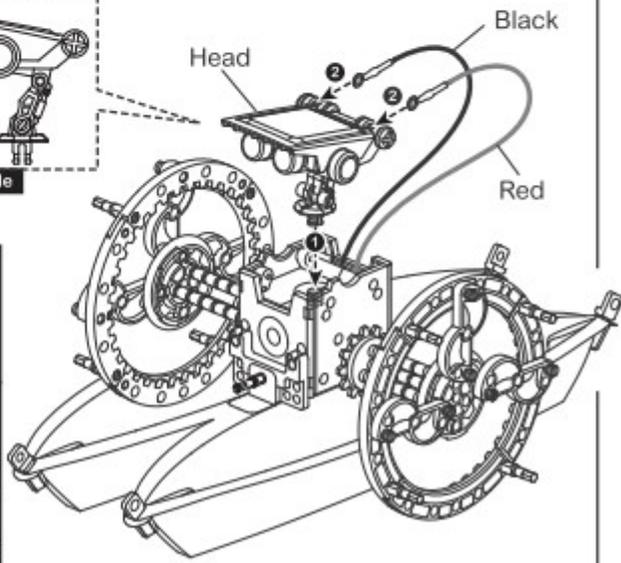
05 1



05/2

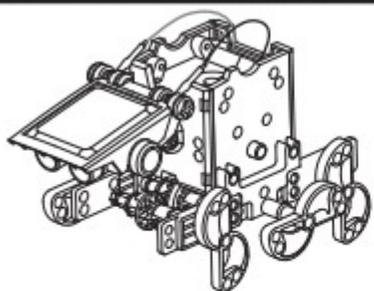


05/3

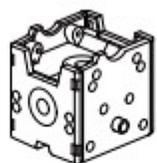


# 06 Beetle-bot Assembly

# Level 1



Prepare the below parts first before you assemble the "Beetle-bot".



Body



Head



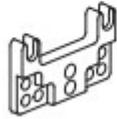
B1 x3



B2 x3



B3 x4



B4 x2



B8 x3



C2 x3



E6 x8



E11 x4



E12 x2



E7 x6



E1 x4

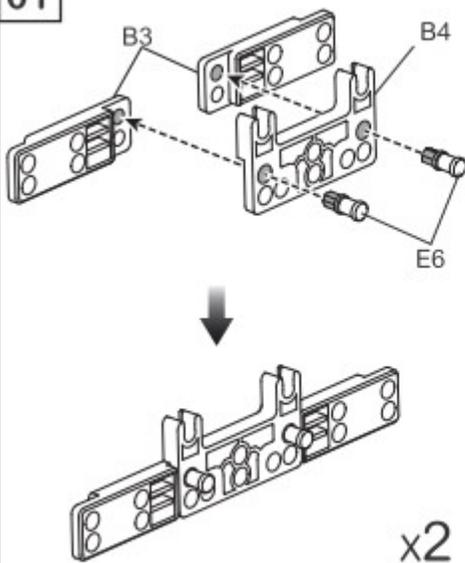


E8 x2



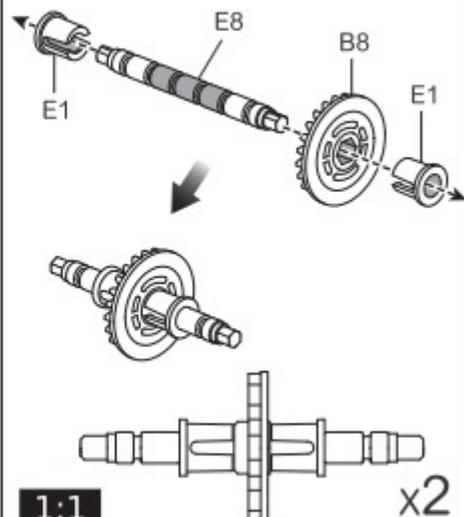
E3 x3

01



x2

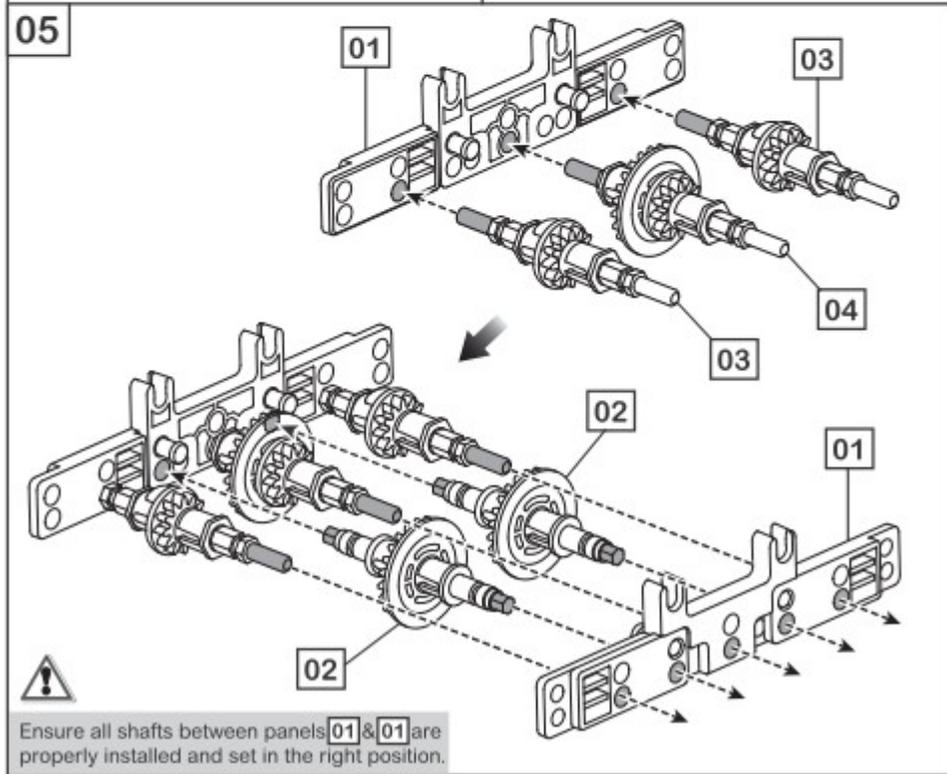
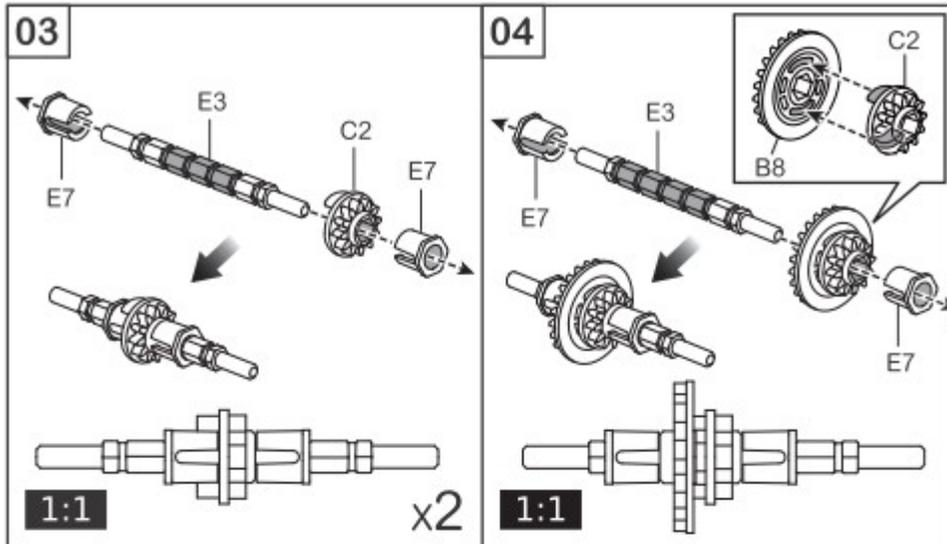
02



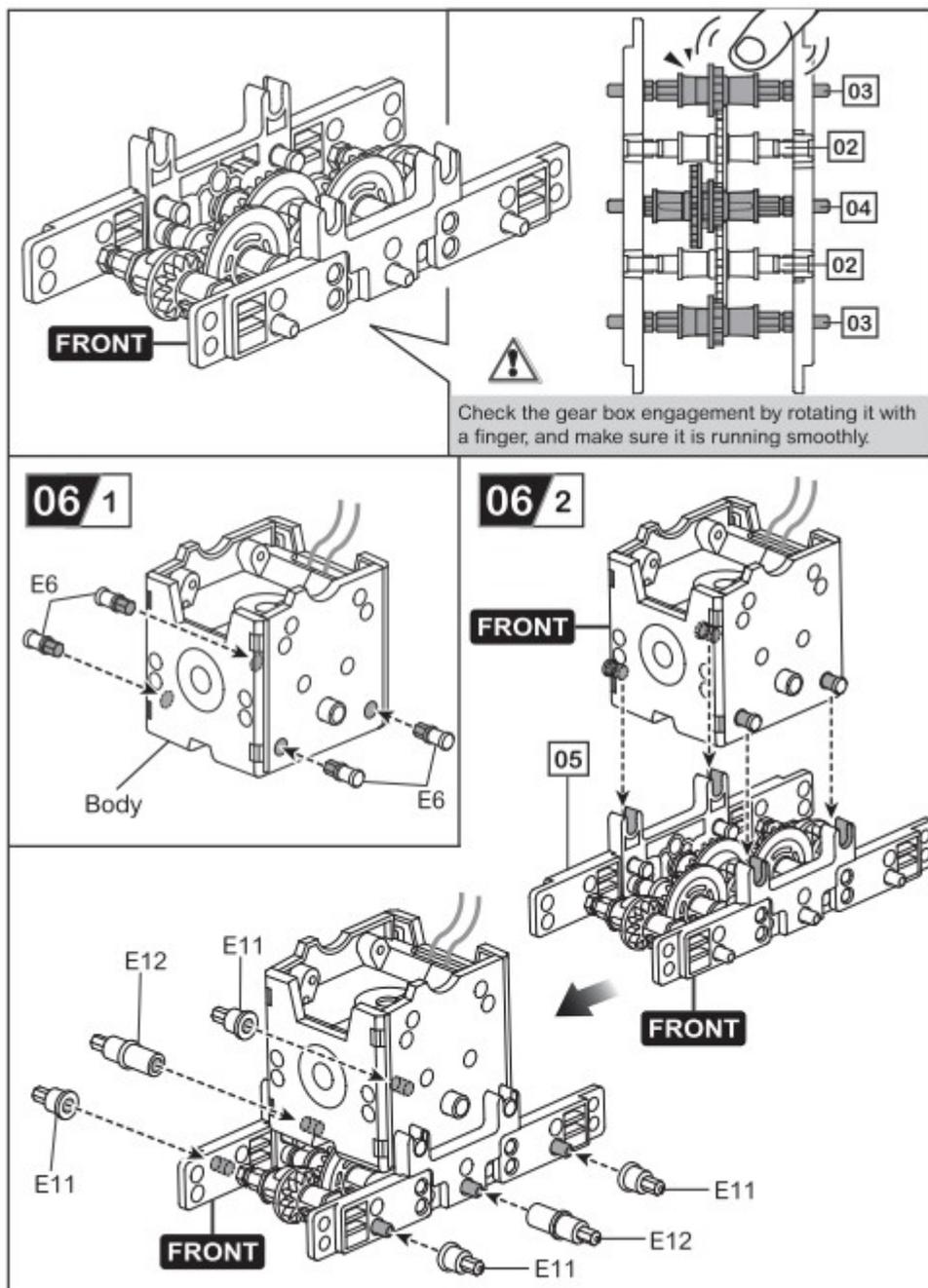
1:1

x2

Primero, monte las siguientes piezas antes de montar el "Beetle-bot".

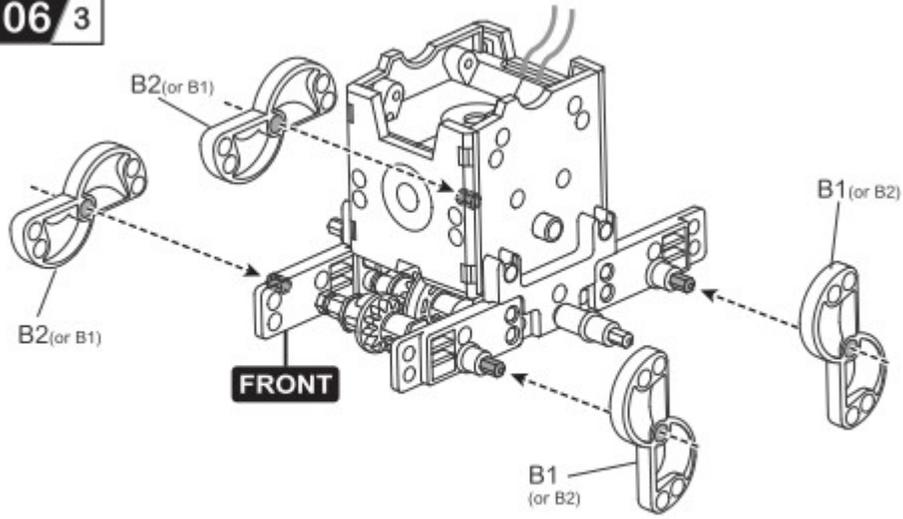


Asegúrese de que todos los ejes entre los paneles 05 & 06 estén instalados correctamente y estén en la posición correcta.

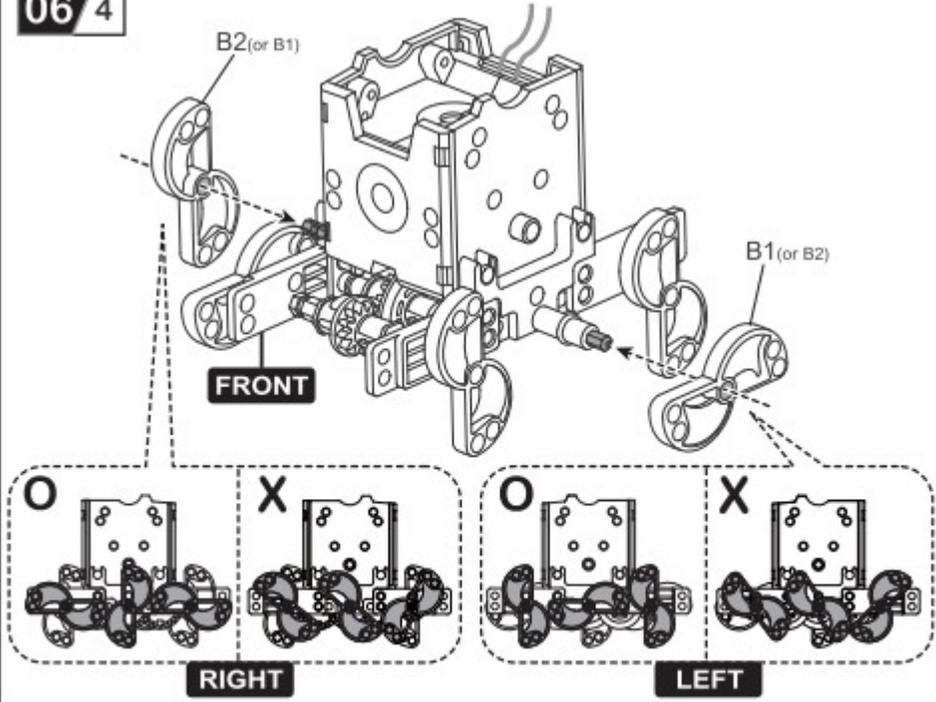


Compruebe el embrague de la caja de cambios girándolo con un dedo y asegúrese de que funcione correctamente.

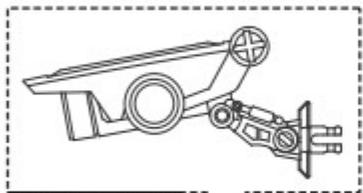
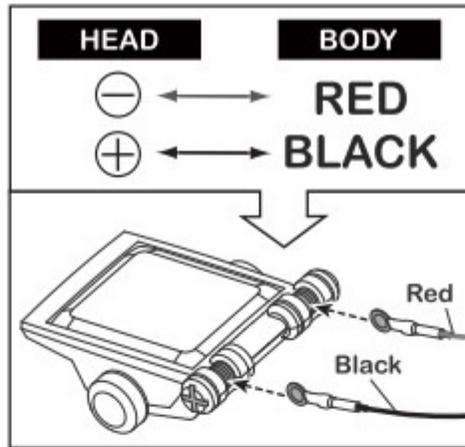
06 3



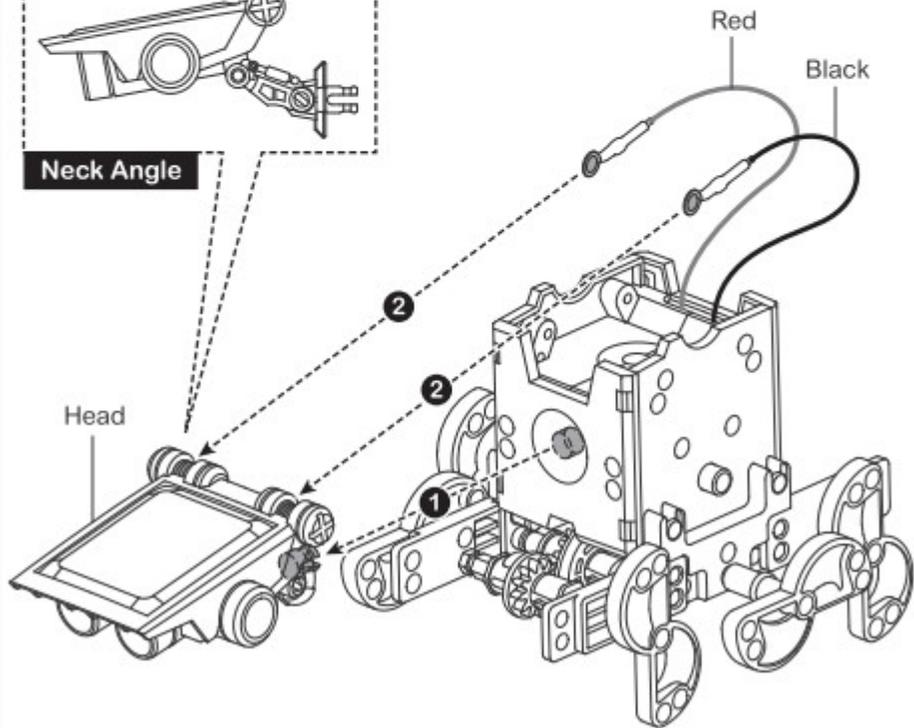
06 4



06/5



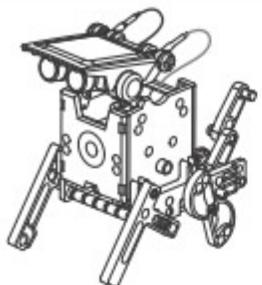
Neck Angle



Ángulo del cuello

# 07 Dog-bot Assembly

## Level 1



Prepare the below parts first before you assemble the "Dog-bot".



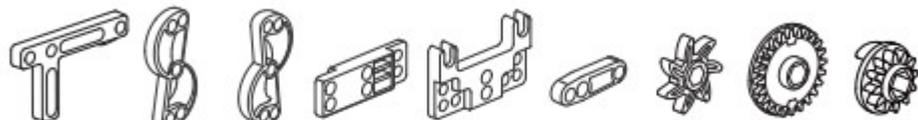
Body



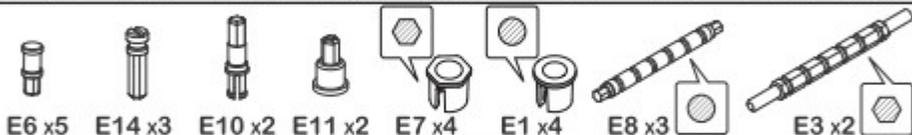
Head



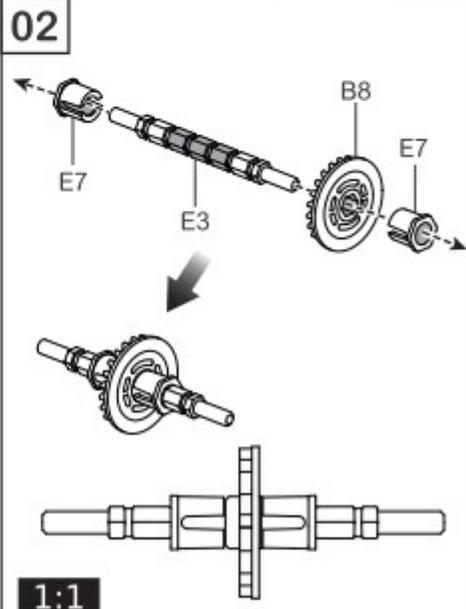
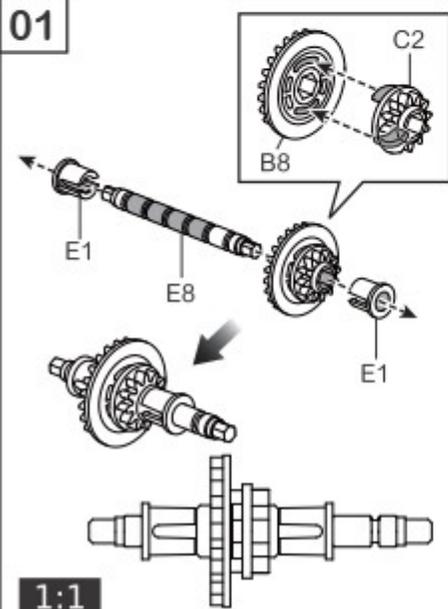
A2 x1



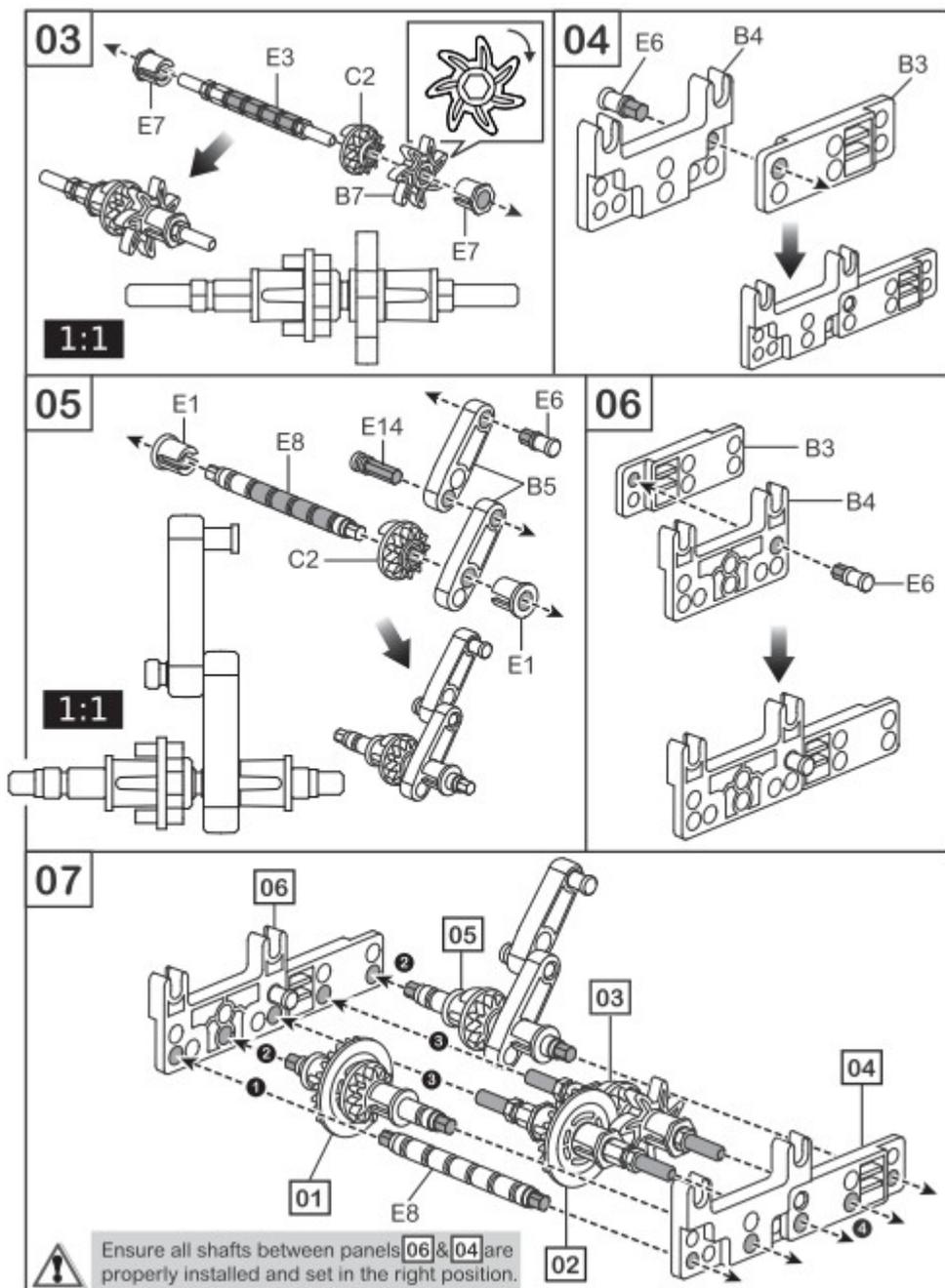
A8 x1 B1 x1 B2 x1 B3 x2 B4 x2 B5 x2 B7 x1 B8 x2 C2 x3



E6 x5 E14 x3 E10 x2 E11 x2 E7 x4 E1 x4 E8 x3 E3 x2

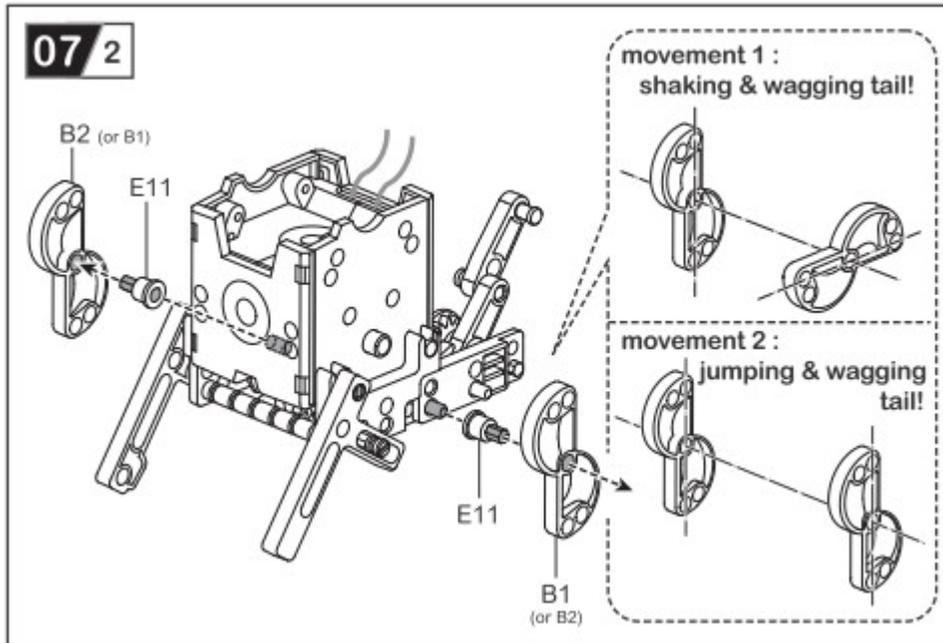


Primero, monte las siguientes piezas antes de montar el "Dog-bot".



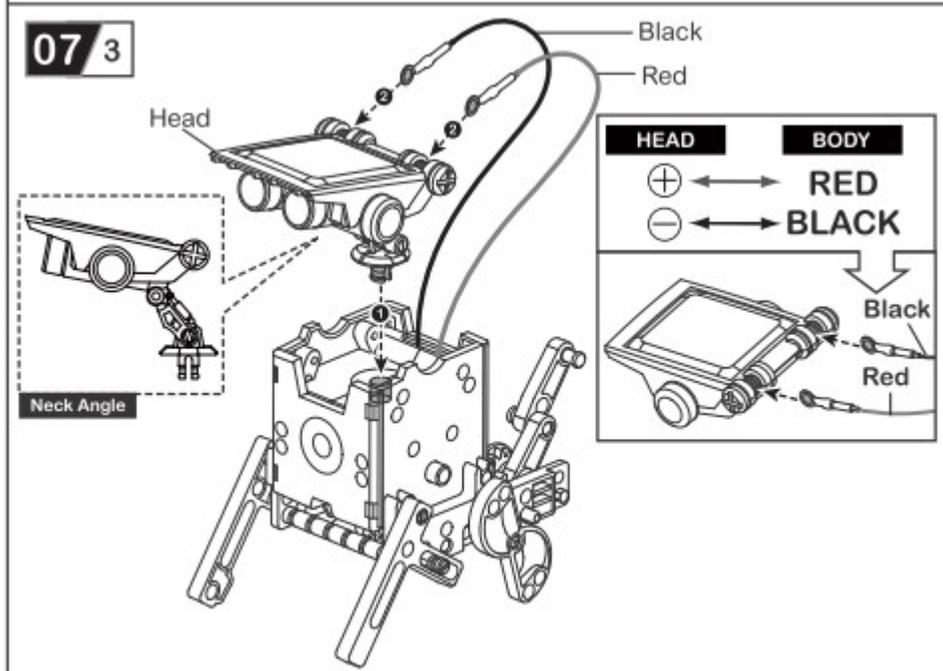
Asegúrese de que todos los ejes entre los paneles 06 & 04 estén instalados correctamente y estén en la posición correcta.





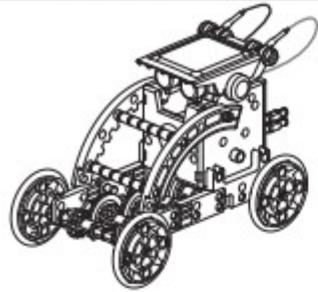
movimiento 1: isacudir & mover la cola

movimiento 2: isaltar & mover la cola

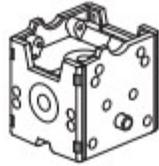


# 08 Auto-bot Assembly

## Level 2



Prepare the below parts first before you assemble the "Auto-bot".



Body



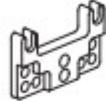
Head



Wheel x4



B3 x4



B4 x2



B8 x4



C1 x2



C2 x4



E6 x8



E14 x2



E4 x4



E11 x4



E7 x2



E1 x10

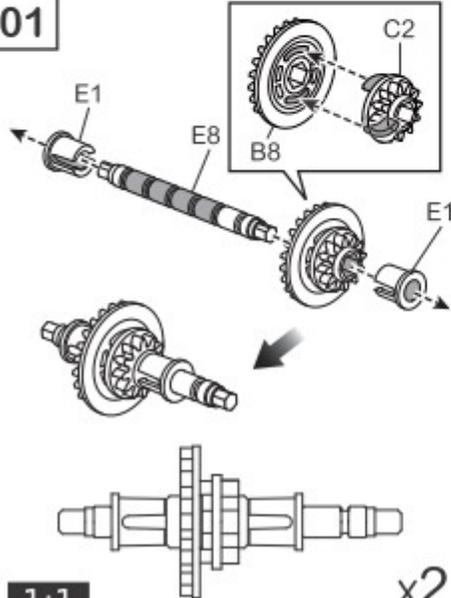


E8 x7



E3 x2

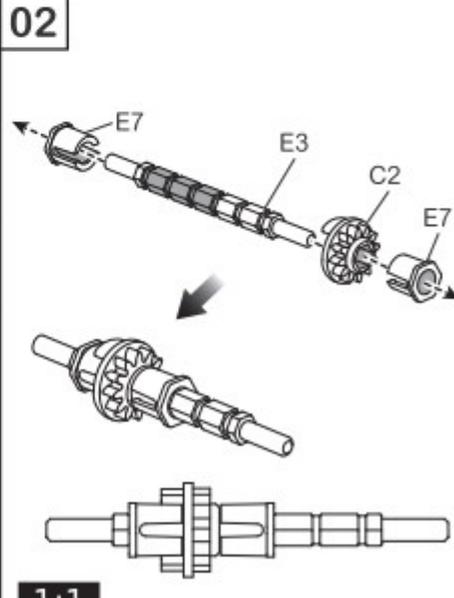
01



1:1

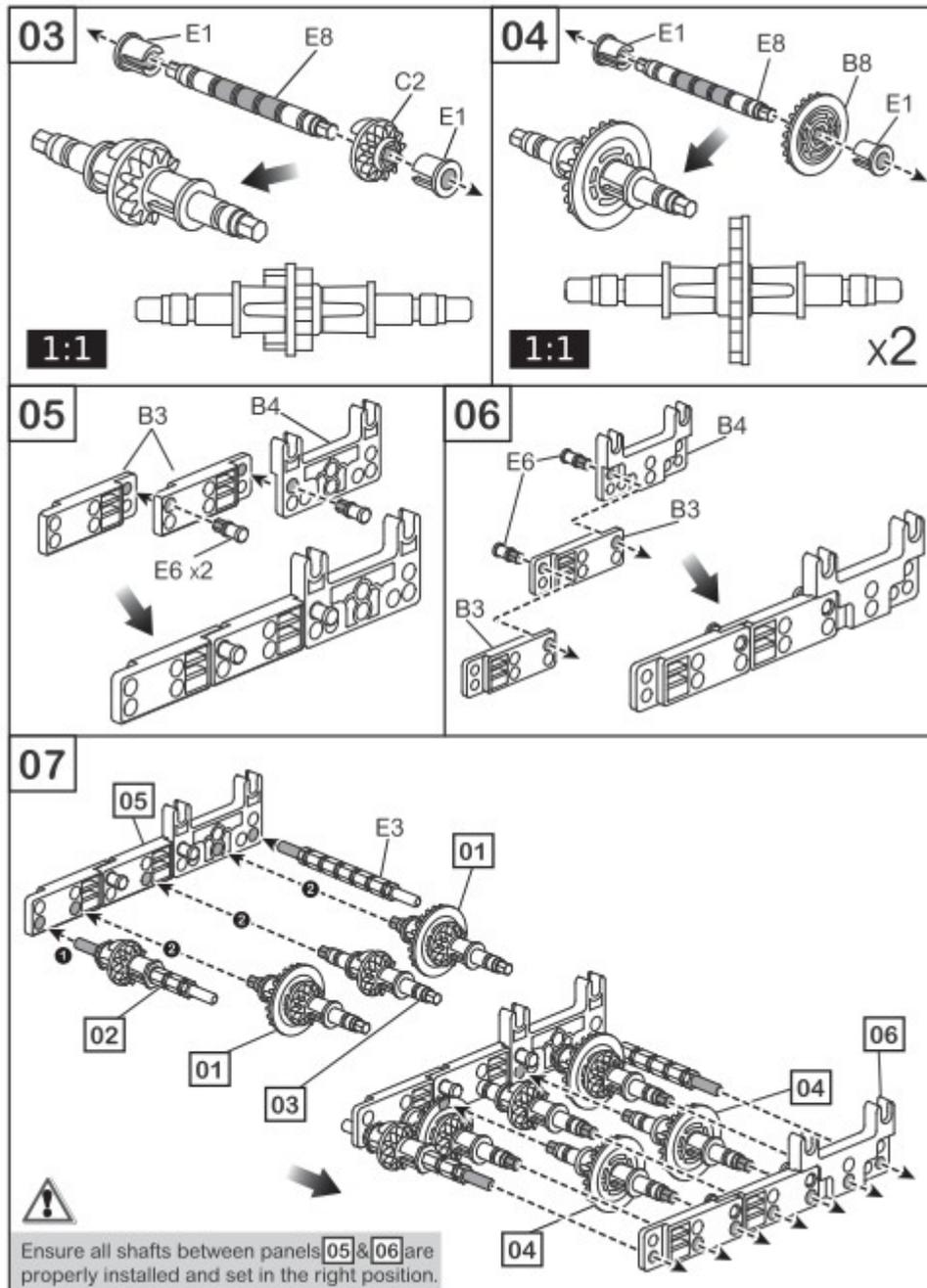
x2

02

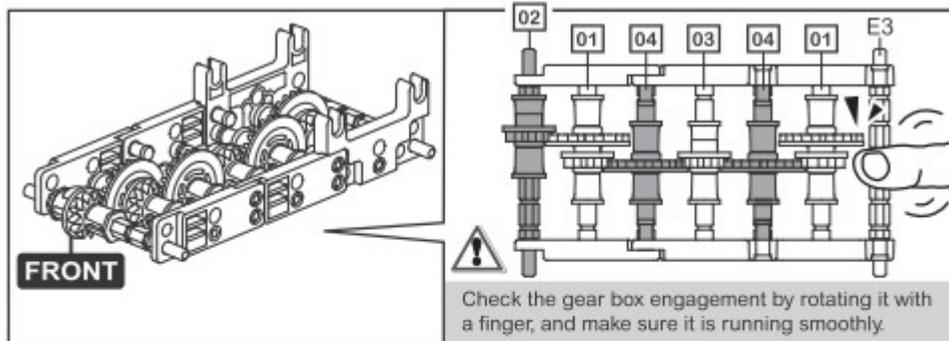


1:1

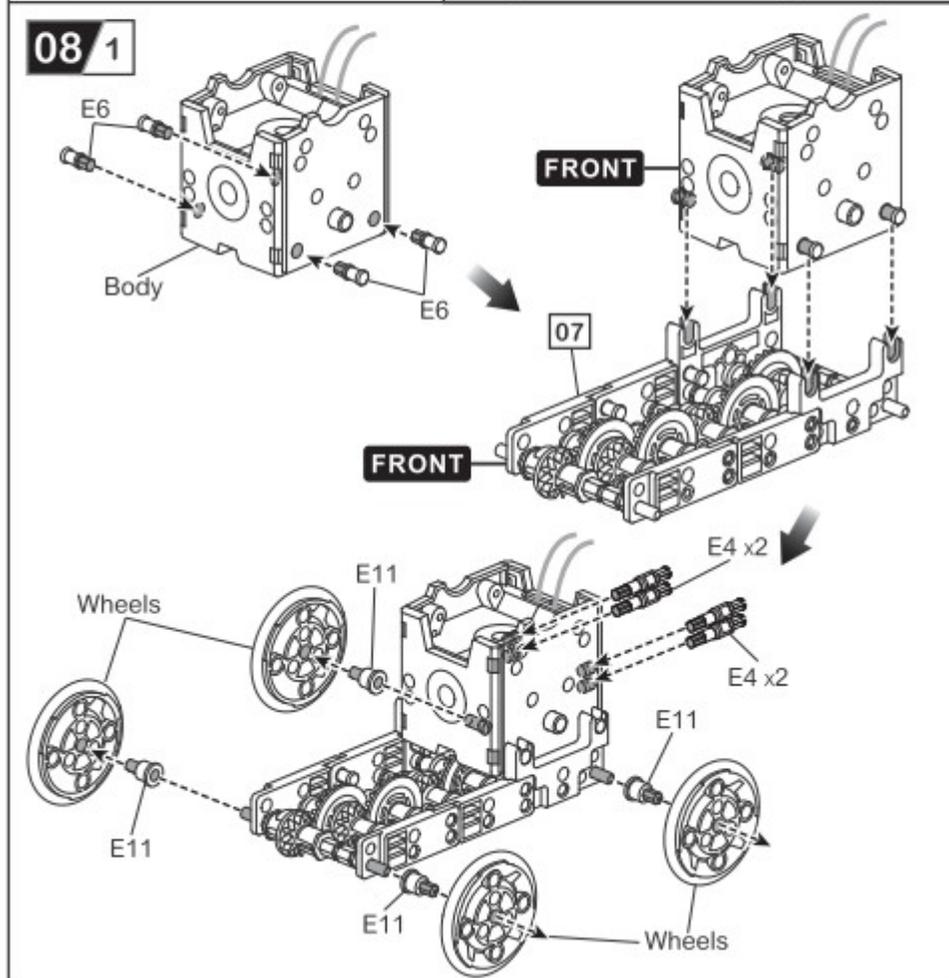
Primero, monte las siguientes piezas antes de montar el "Auto-bot".



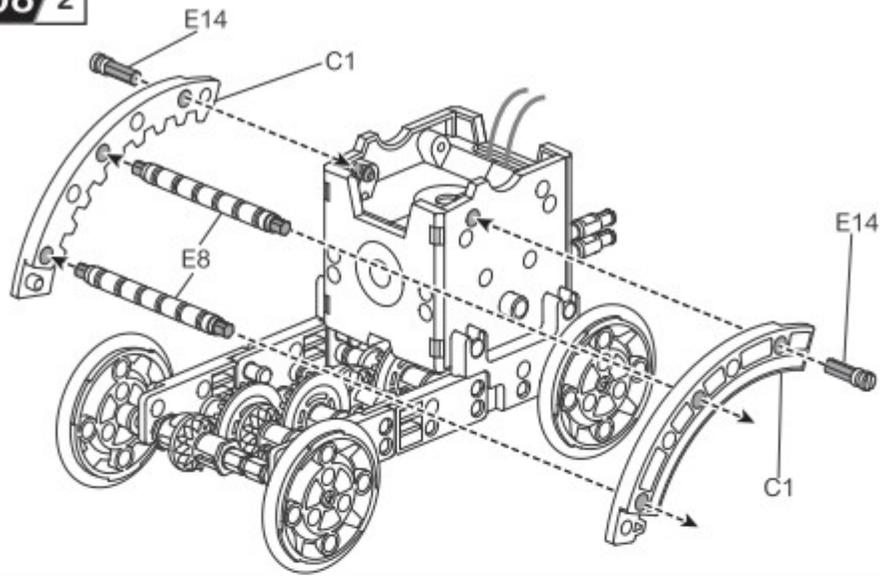
Asegúrese de que todos los ejes entre los paneles 05 & 06 estén instalados correctamente y estén en la posición correcta.



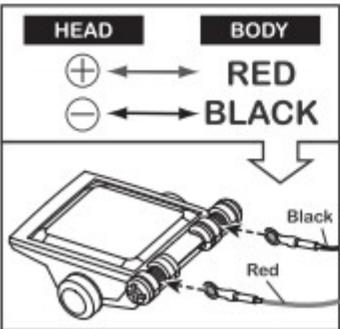
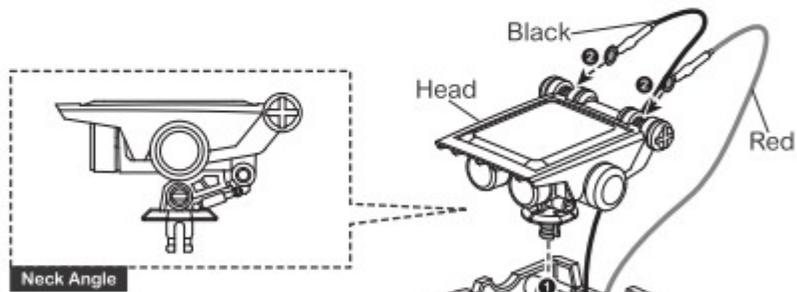
Compruebe el embrague de la caja de cambios girándolo con un dedo y asegúrese de que funcione correctamente.



08 / 2

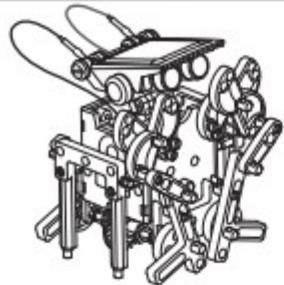


08 / 3

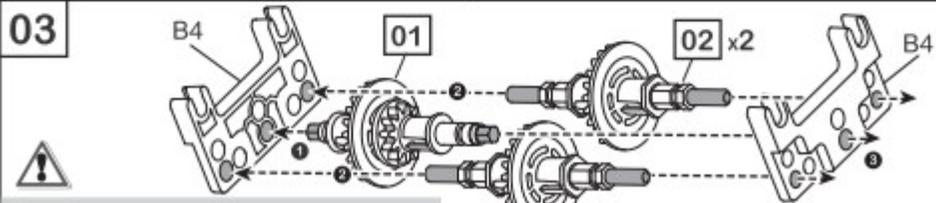
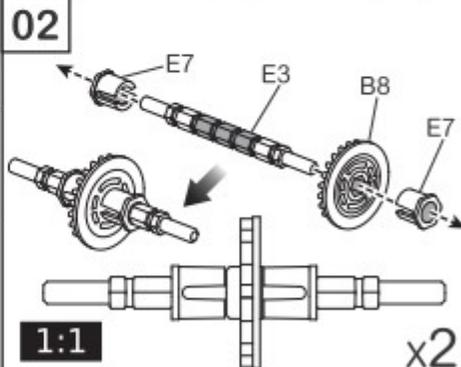
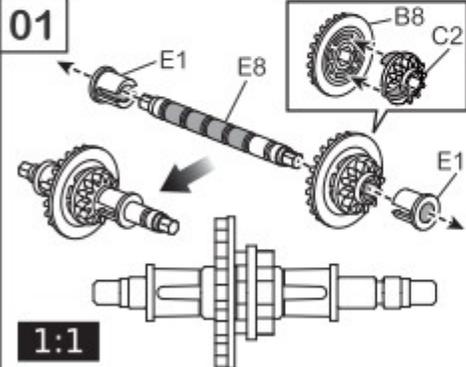
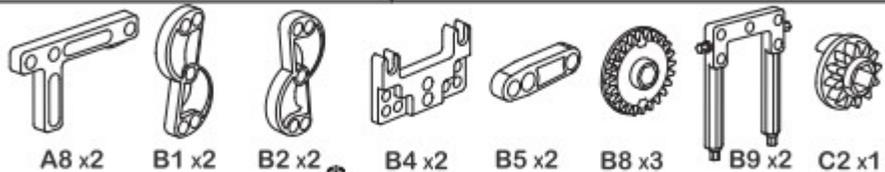
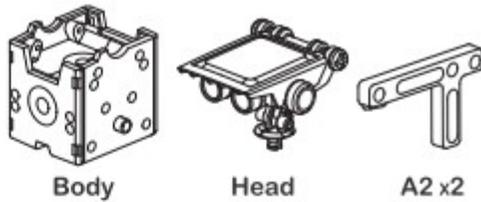


# 09 Crab-bot Assembly

Level 2



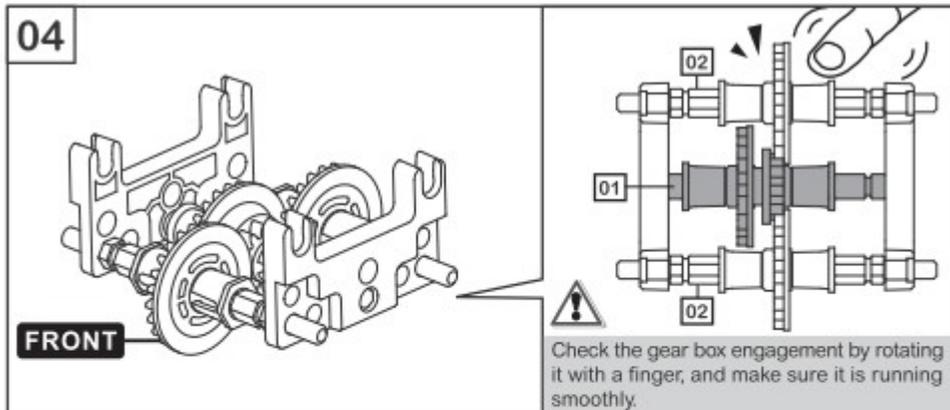
Prepare the below parts first before you assemble the "Crab-bot".



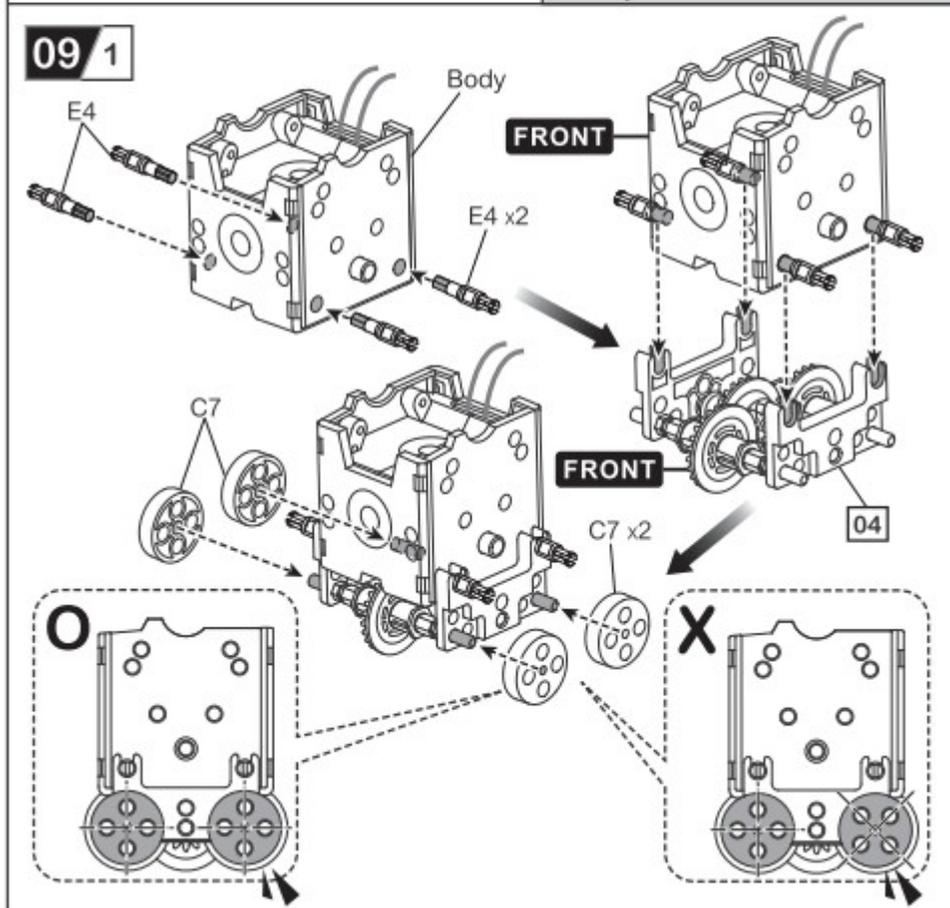
Ensure all shafts between panels B4 & B4 are properly installed and set in the right position.

Primero, monte las siguientes piezas antes de montar el "Crab-bot".

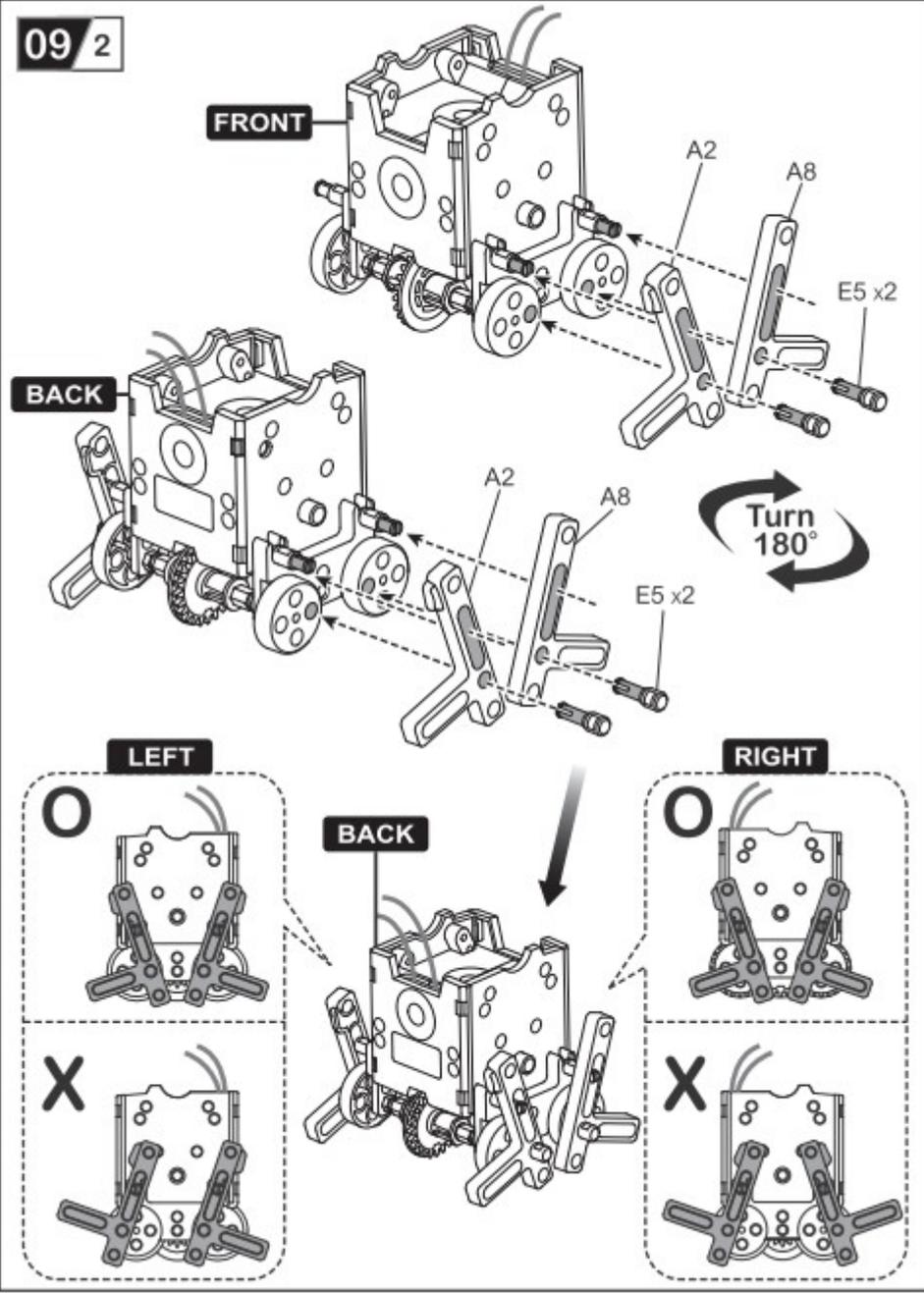
Asegúrese de que todos los ejes entre los paneles B4 & B4 estén instalados correctamente y estén en la posición correcta.



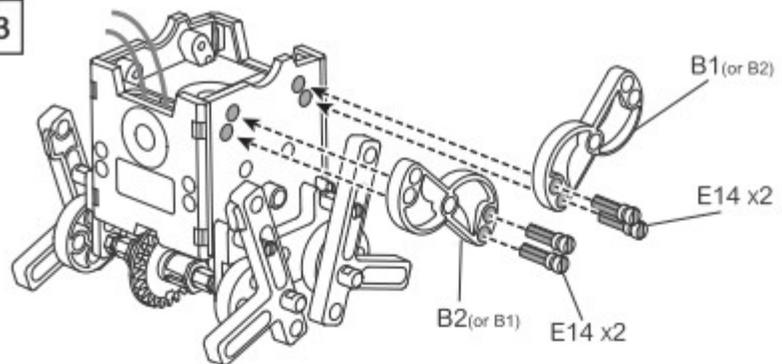
Compruebe el embrague de la caja de cambios girándolo con un dedo y asegúrese de que funcione correctamente.



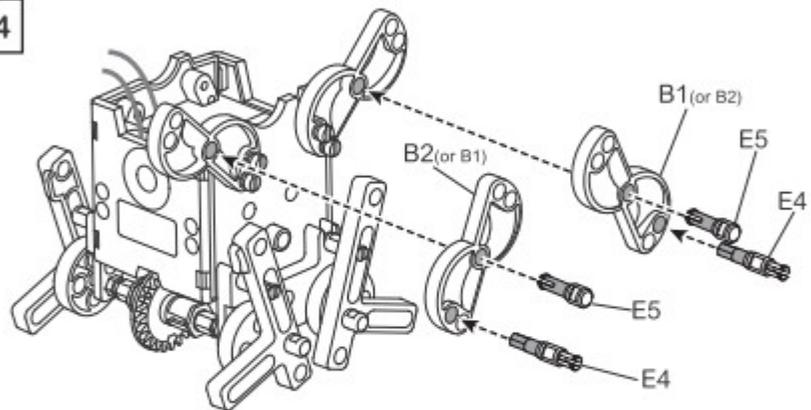
09/2



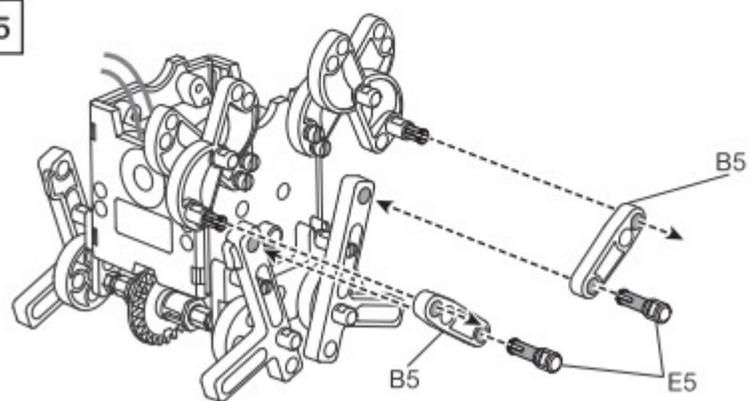
09/3

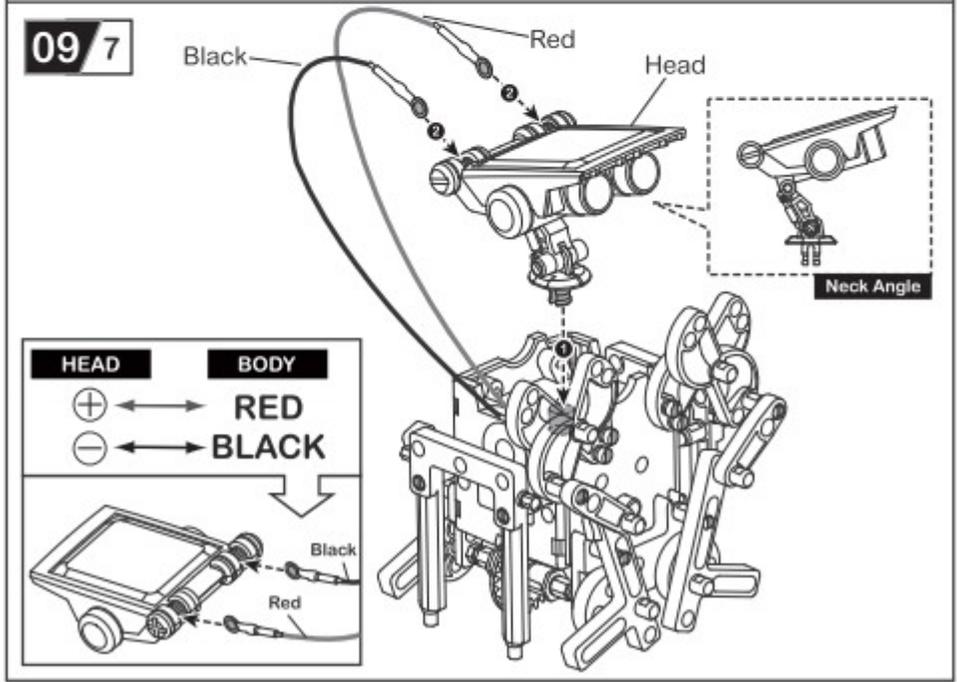
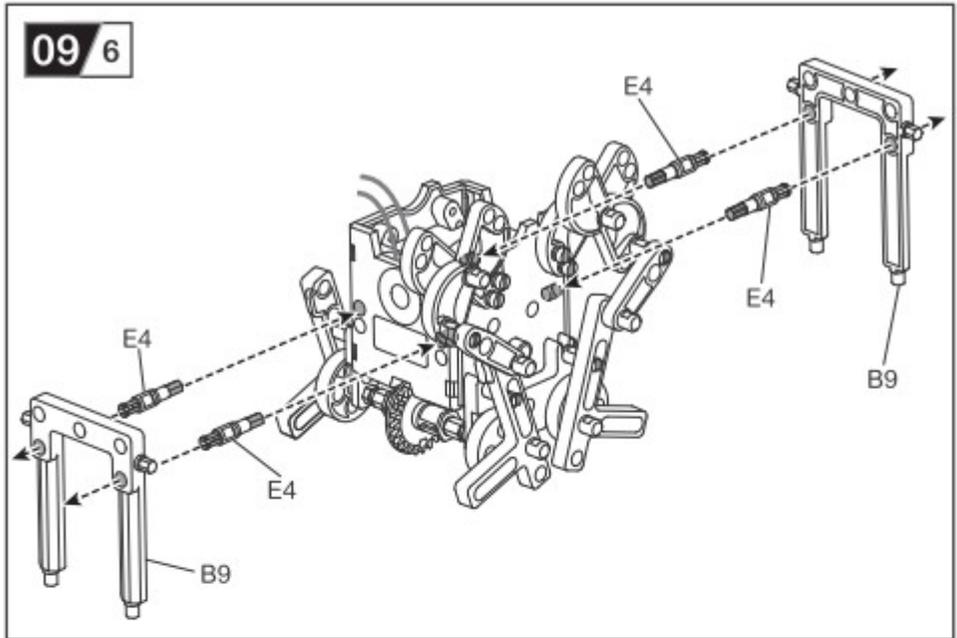


09/4



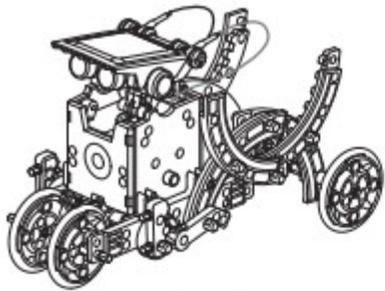
09/5



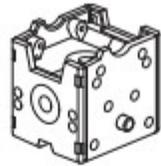


# 10 Slither-bot Assembly

## Level 2



Prepare the below parts first before you assemble the "Slither-bot".



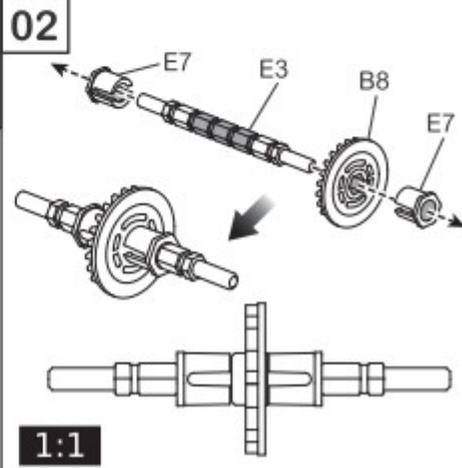
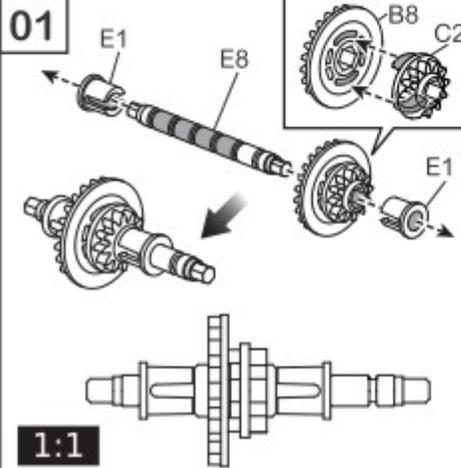
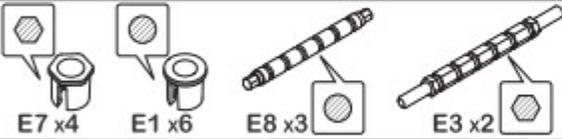
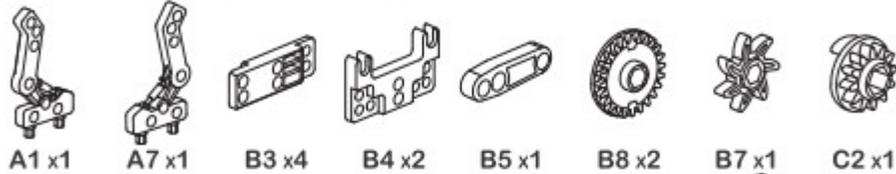
Body



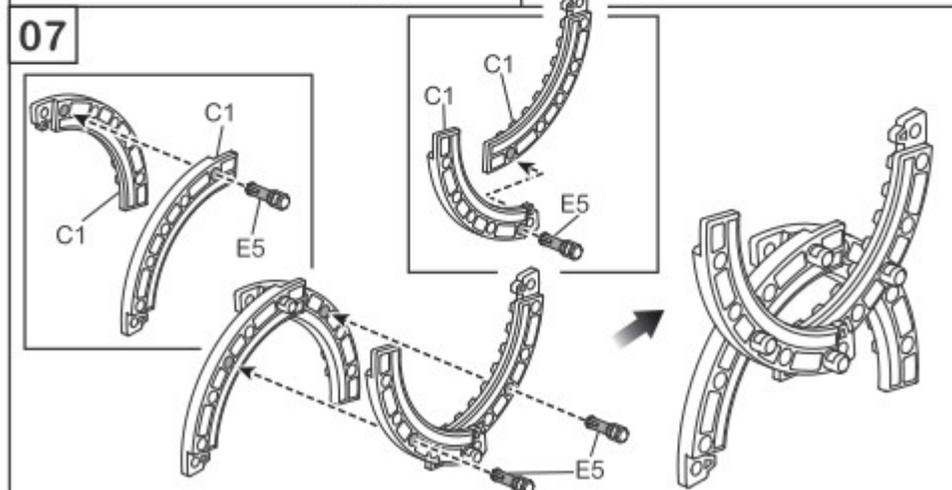
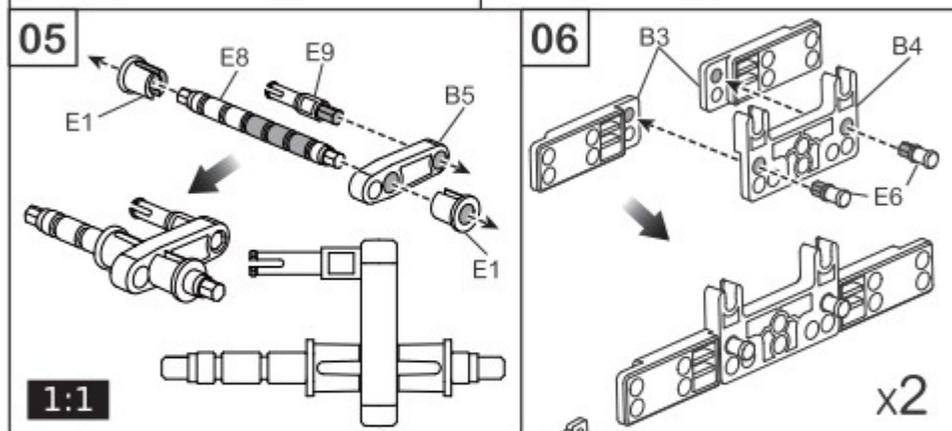
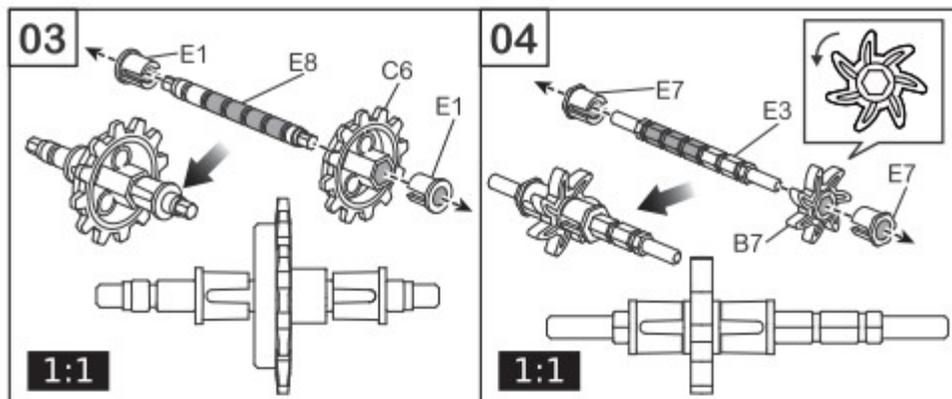
Head

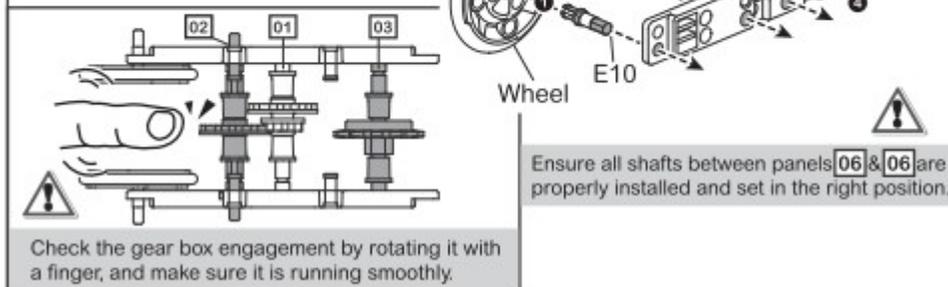
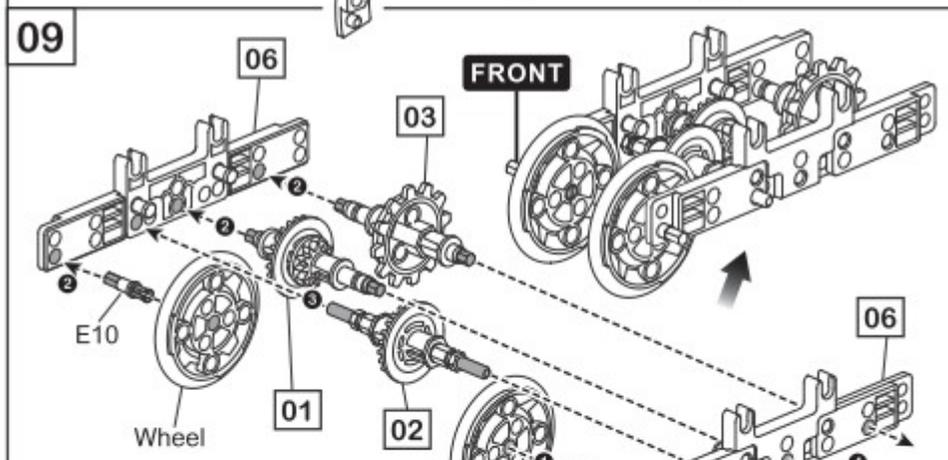
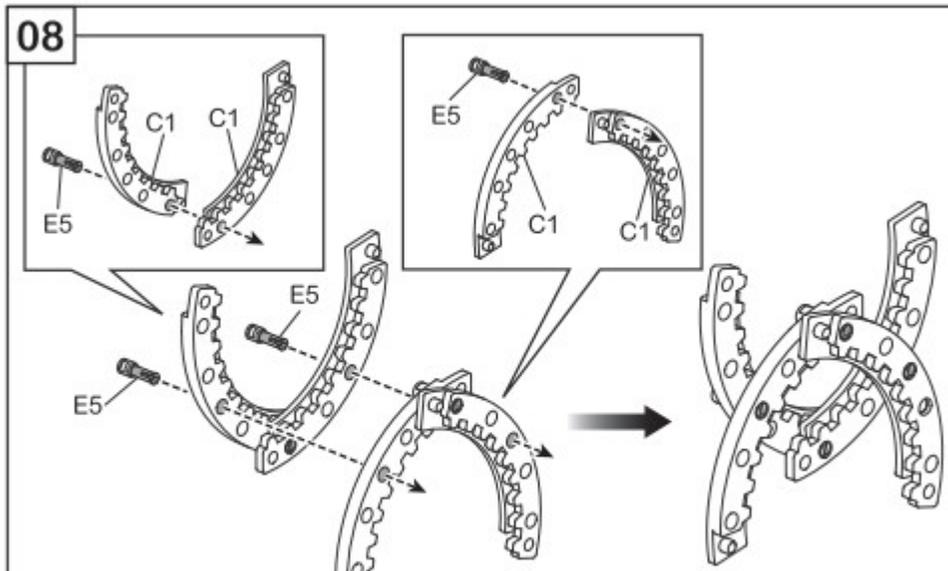


Wheel x4



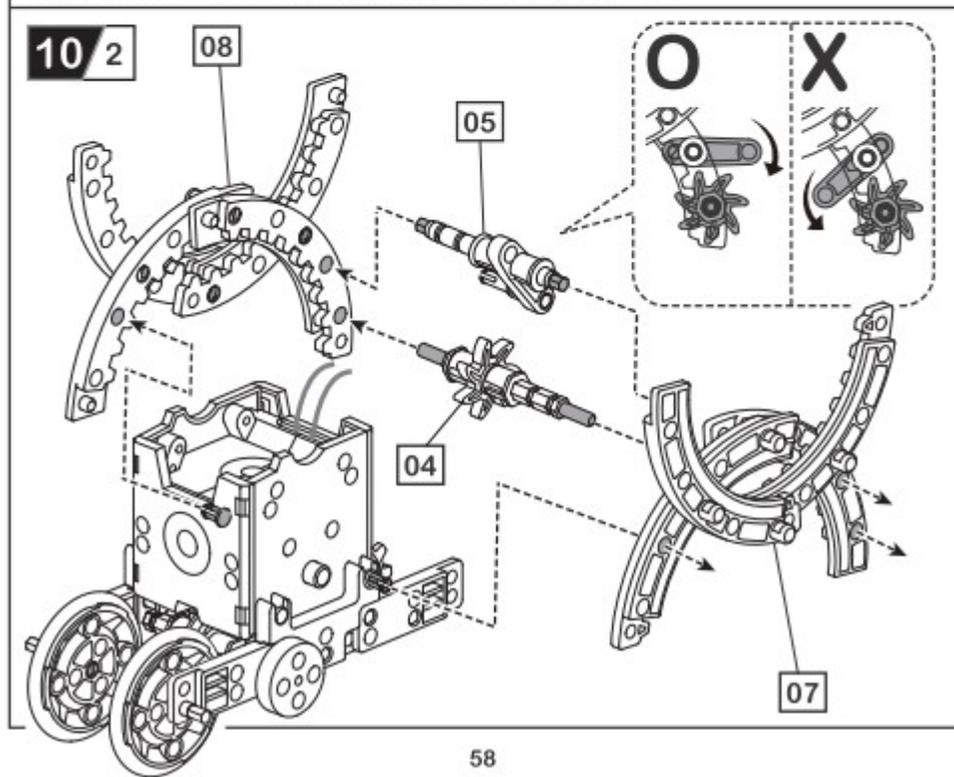
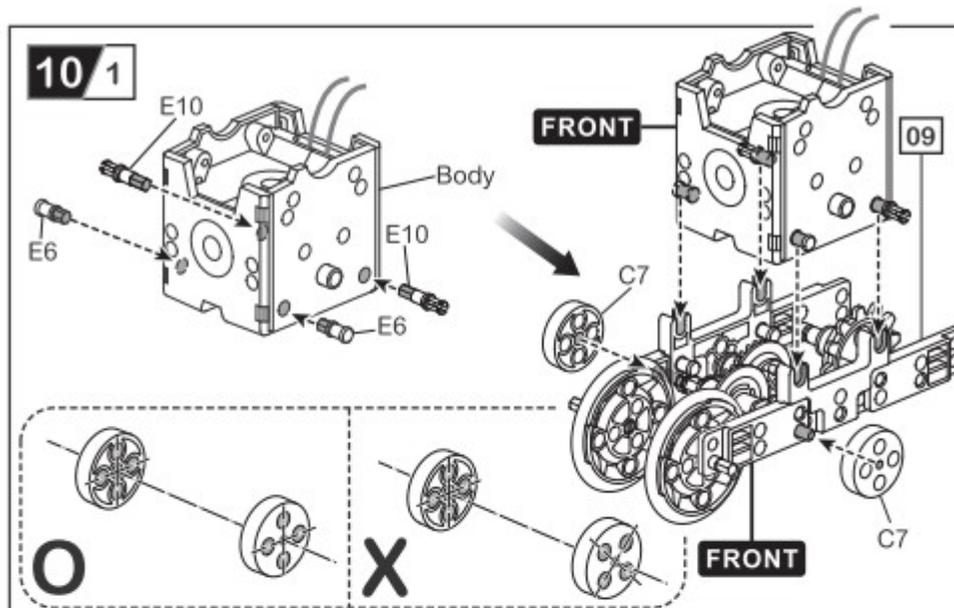
Primero, monte las siguientes piezas antes de montar el "Slither-bot".

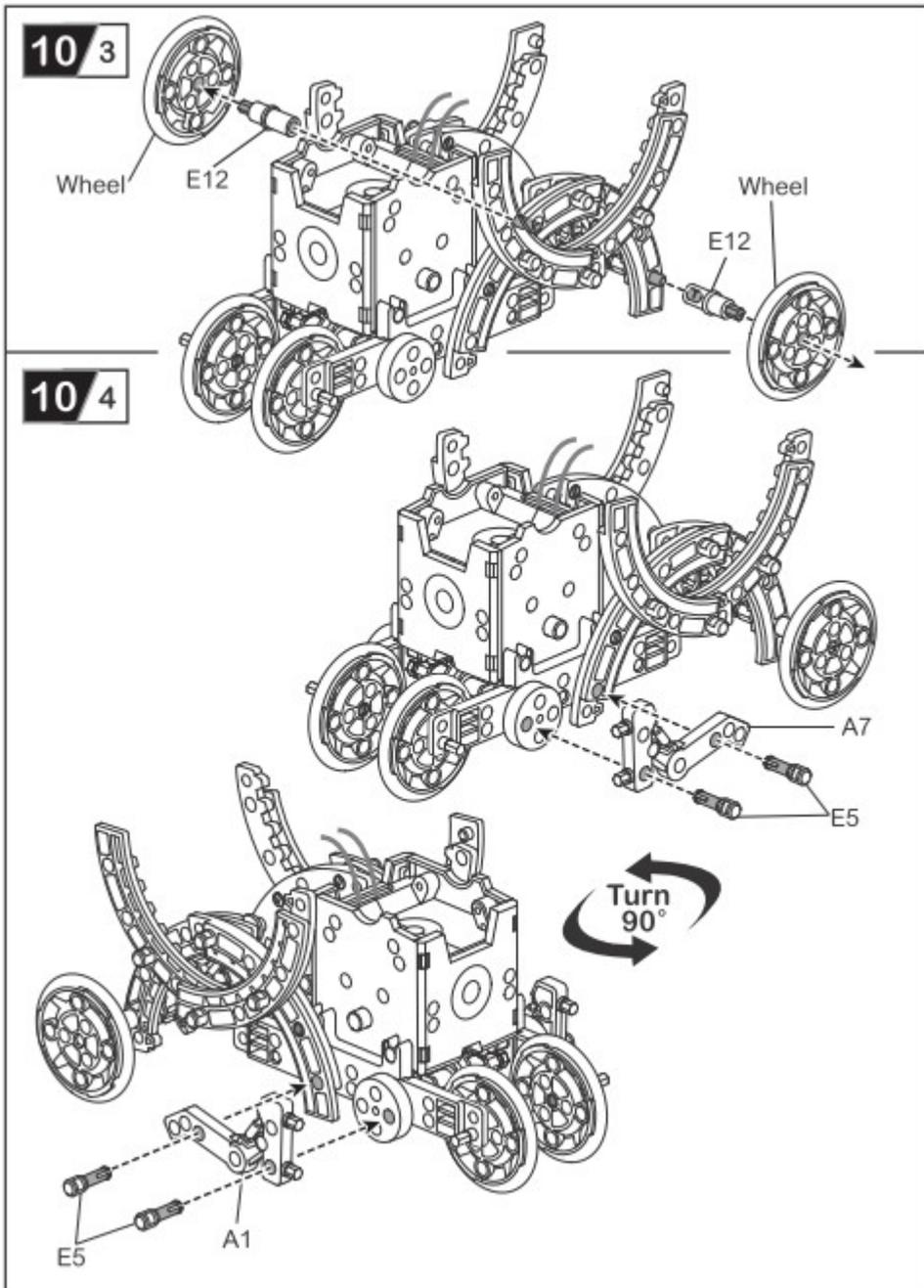


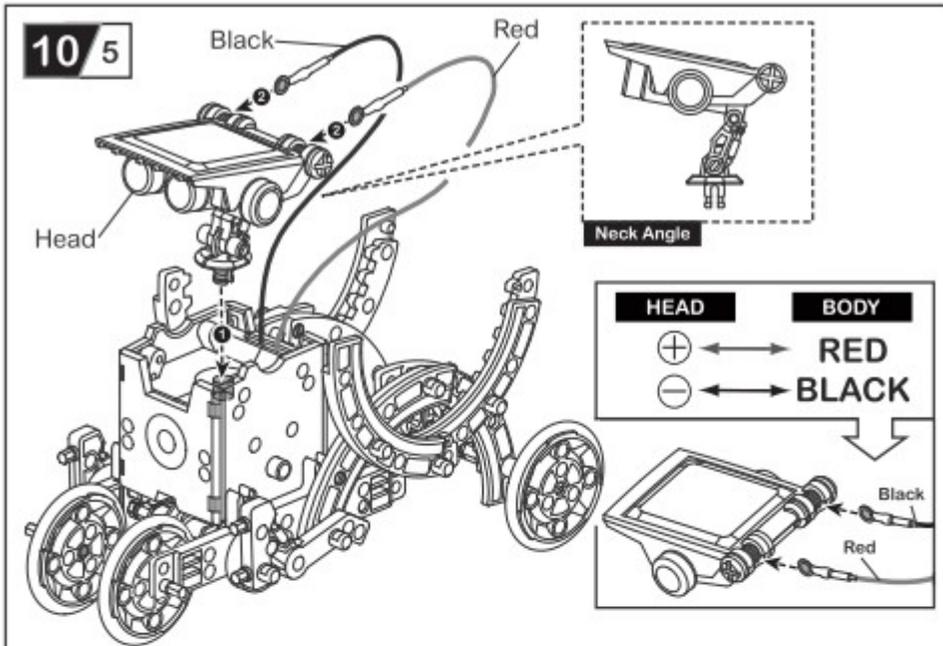


Asegúrese de que todos los ejes entre los paneles 06 & 06 estén instalados correctamente y estén en la posición correcta.

Compruebe el embrague de la caja de cambios girándolo con un dedo y asegúrese de que funcione correctamente.

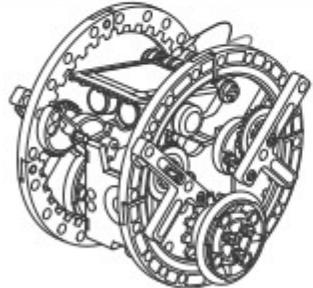




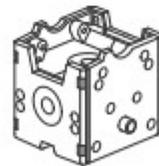


## 11 Roly poly-bot Assembly

Level 2



Prepare the below parts first before you assemble the "Roly poly-bot".



Body



Head



Wheel x2



A2 x2



A8 x2



B1 x2



B2 x2



B8 x4



C1 x8



C6 x2



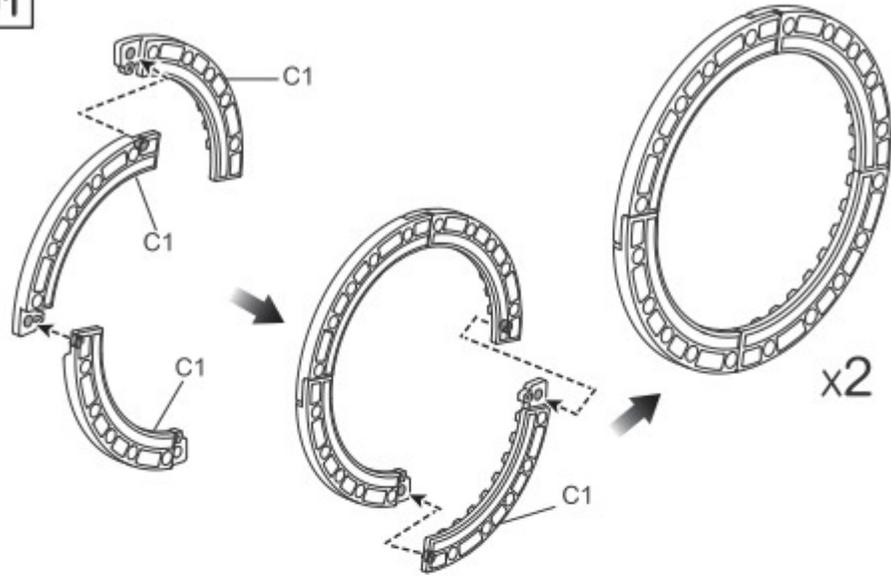
E14 x10



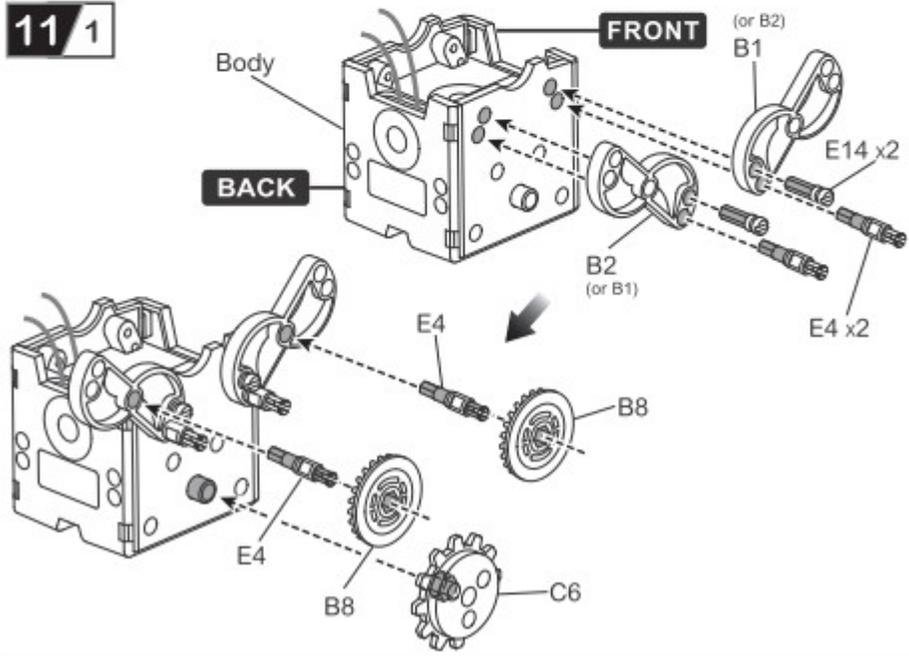
E4 x8

Primero, monte las siguientes piezas antes de montar el "Roly poly-bot".

01

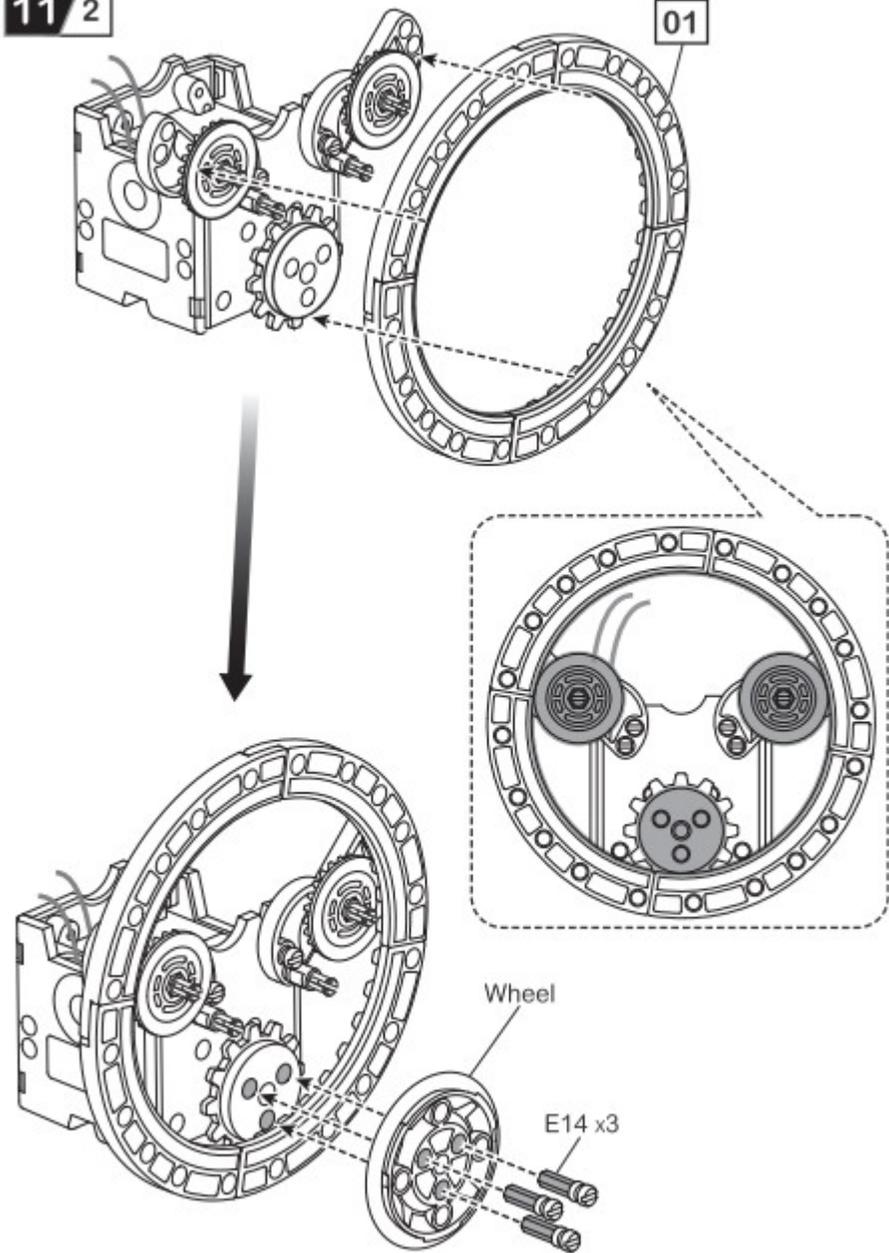


11 / 1

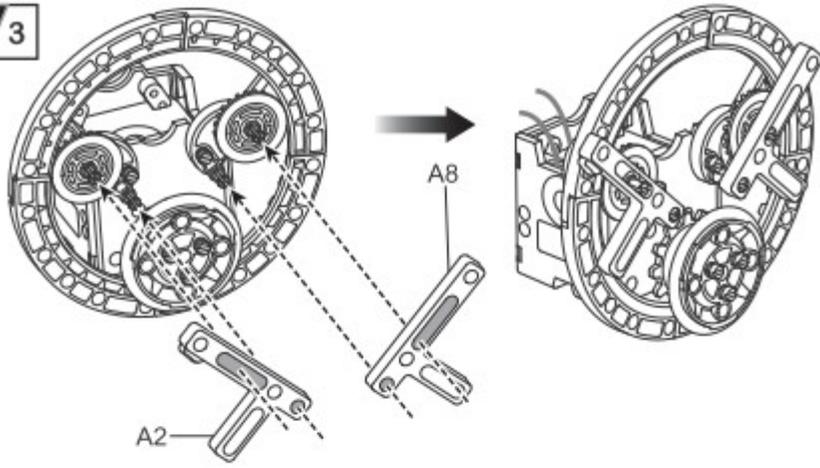


11 / 2

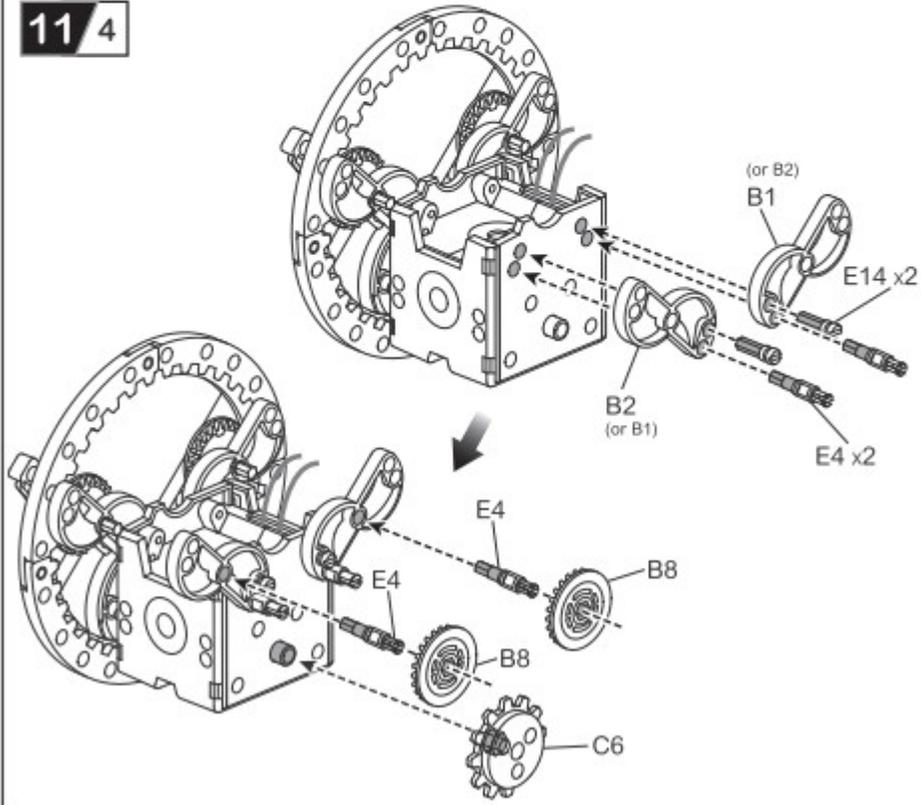
01



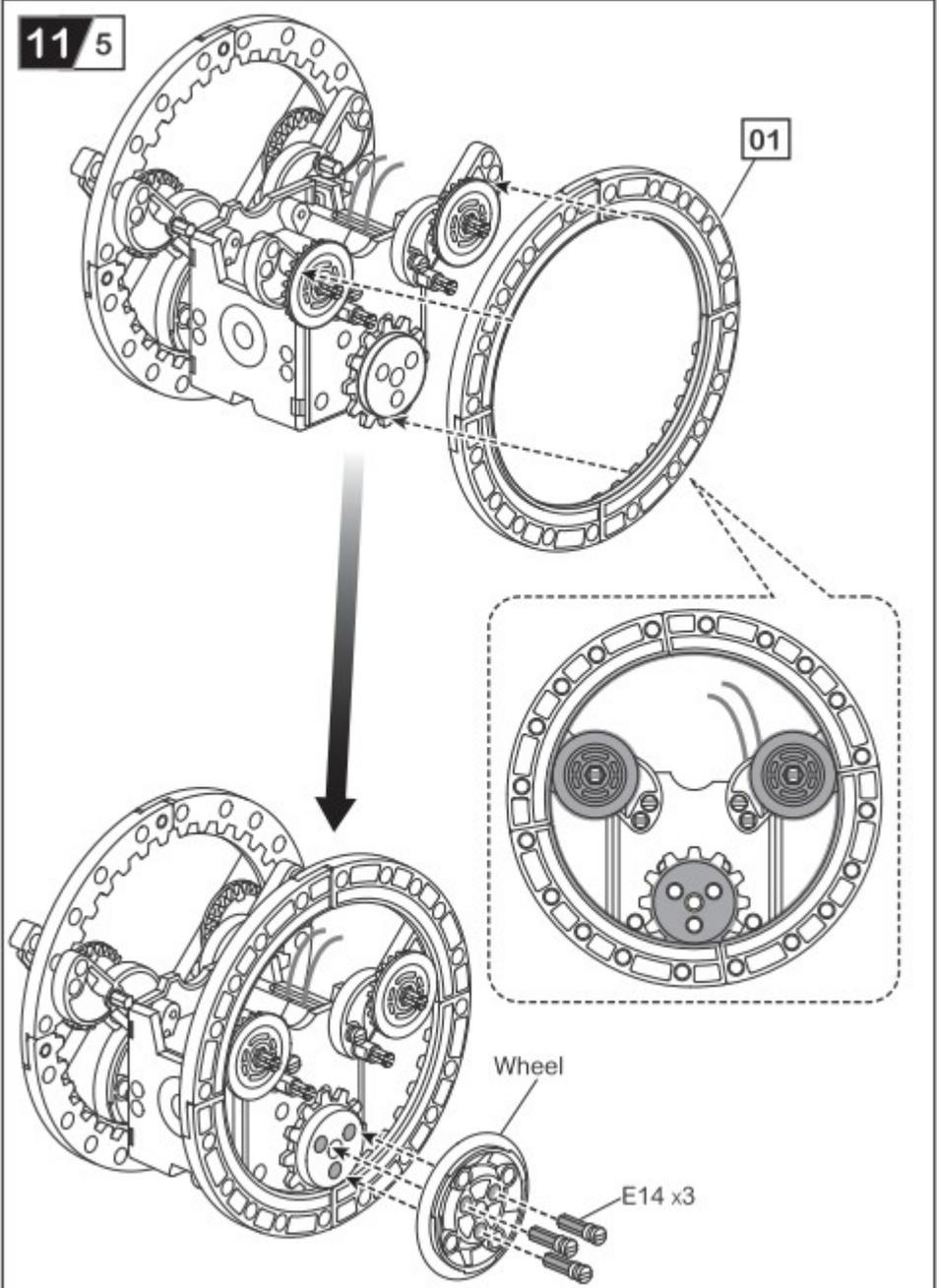
11/3

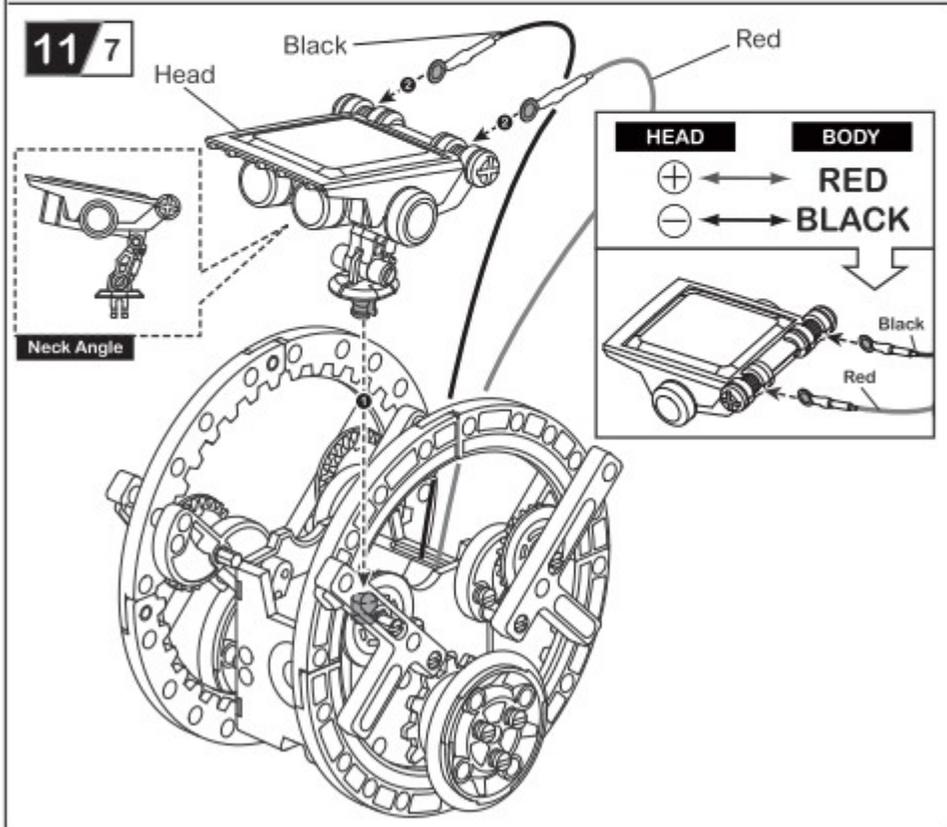
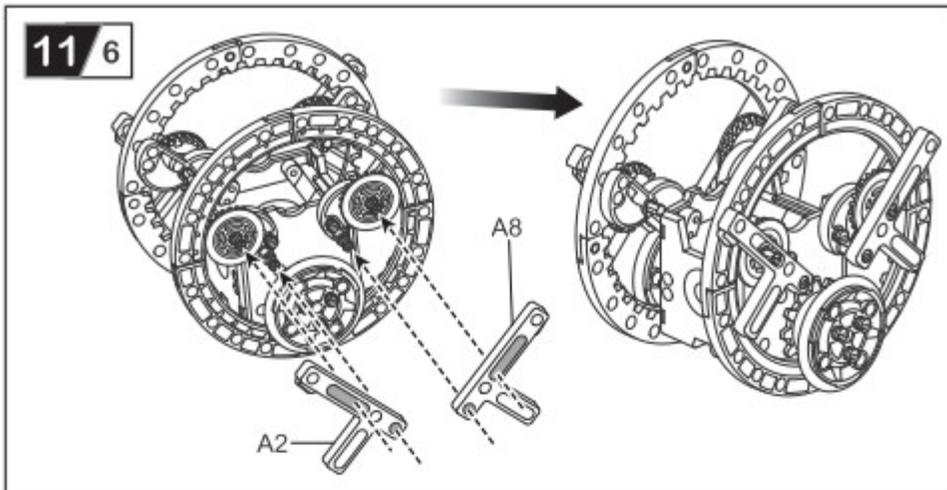


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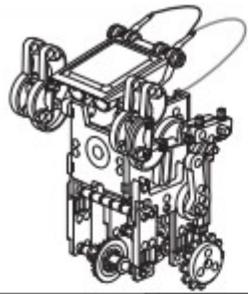
11 / 5



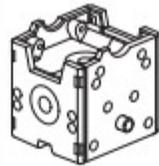


# 12 Boxer-bot Assembly

## Level 2



Prepare the below parts first before you assemble the "Boxer-bot".



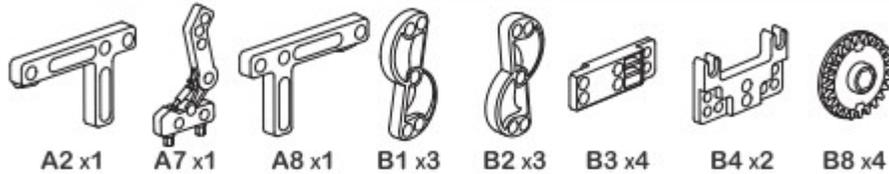
Body



Head



A1 x1



A2 x1

A7 x1

A8 x1

B1 x3

B2 x3

B3 x4

B4 x2

B8 x4



B9 x2

C2 x2

C6 x2

C7 x2

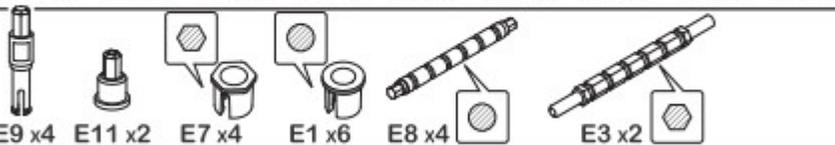
E6 x8

E14 x2

E5 x4

E10 x2

E4 x2



E9 x4

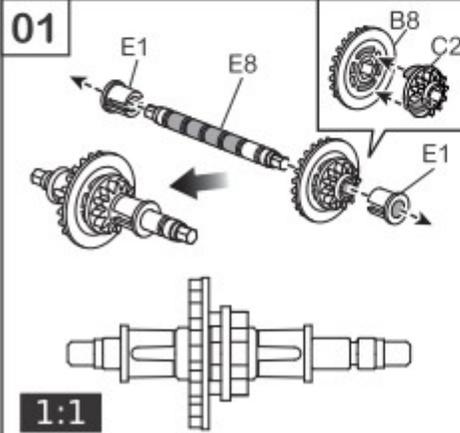
E11 x2

E7 x4

E1 x6

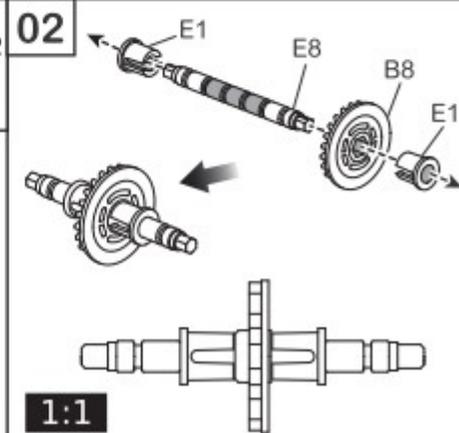
E8 x4

E3 x2



01

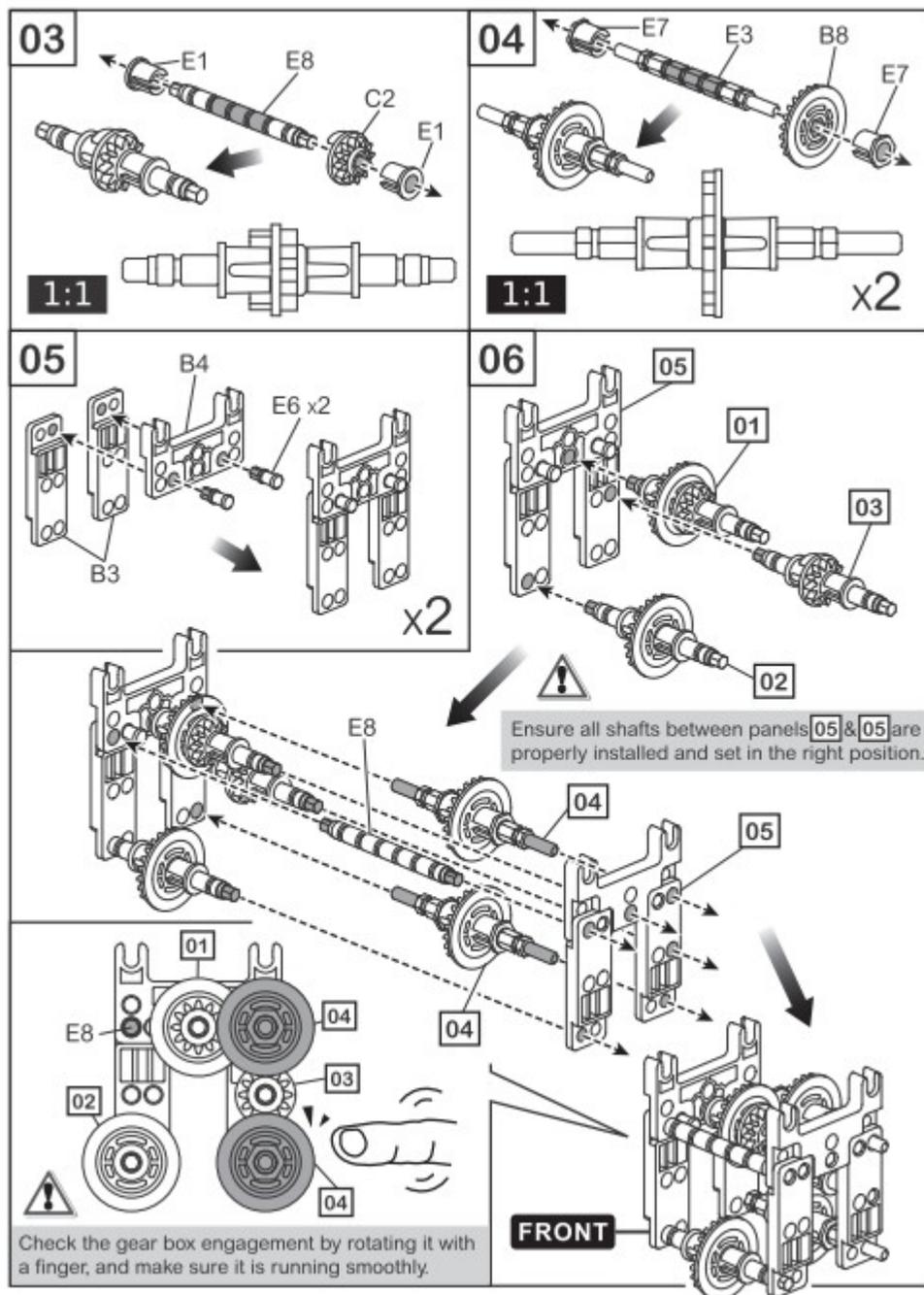
1:1



02

1:1

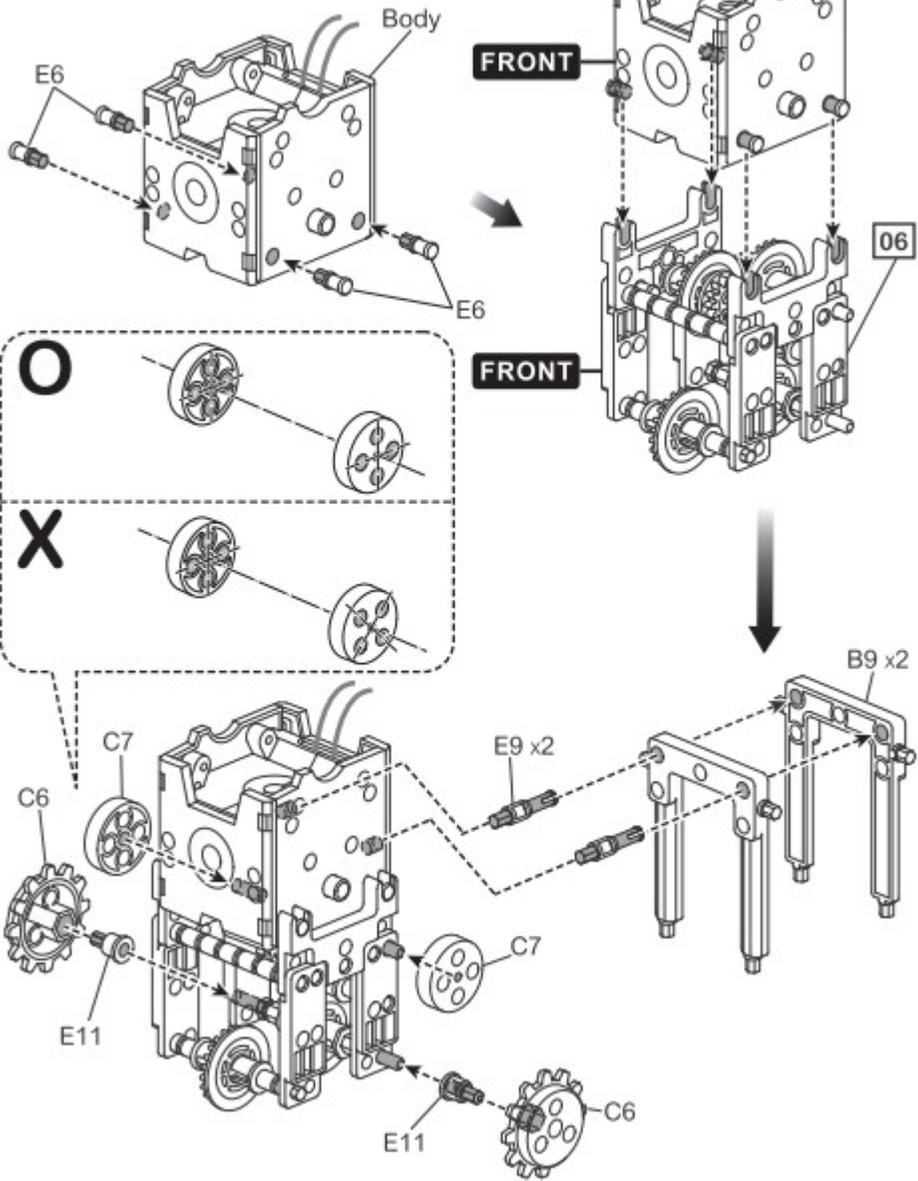
Primero, monte las siguientes piezas antes de montar el "Boxer-bot".



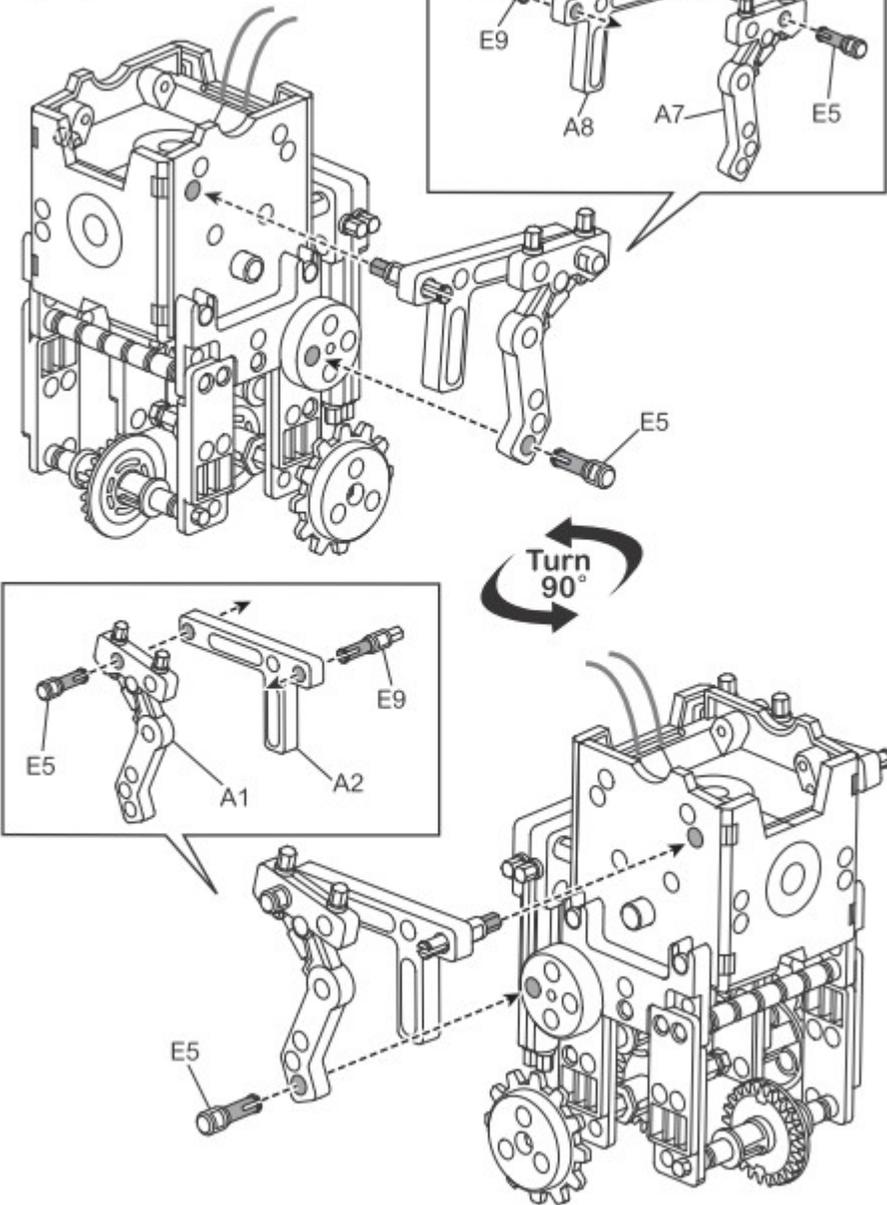
Asegúrese de que todos los ejes entre los paneles 05 & 05 estén instalados correctamente y estén en la posición correcta.

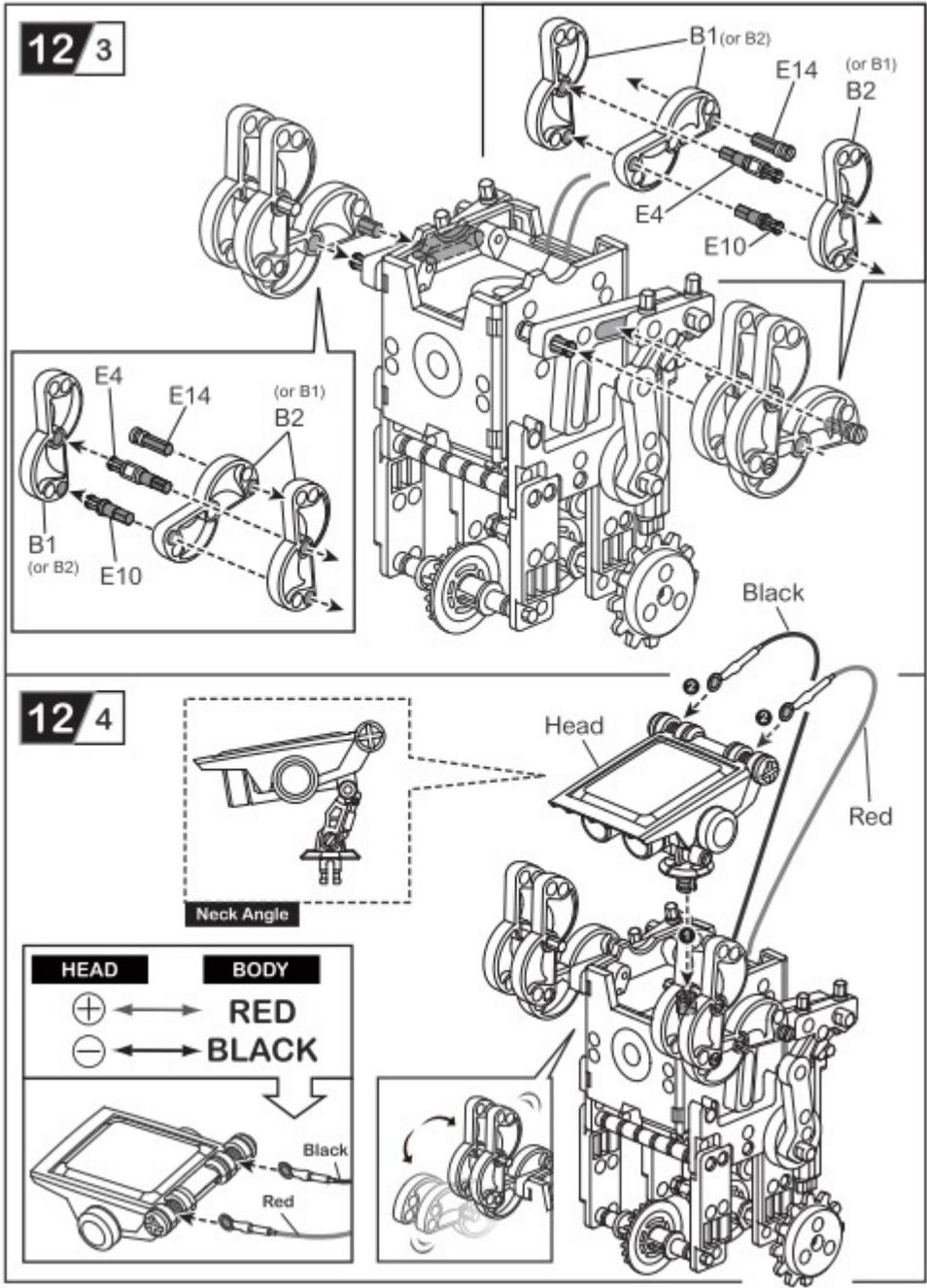
Compruebe el embrague de la caja de cambios girándolo con un dedo y asegúrese de que funcione correctamente.

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12/2

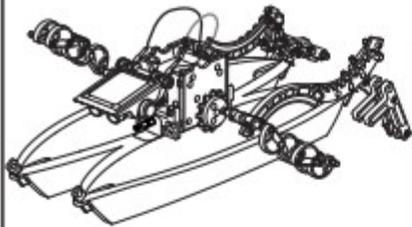




# 13 Surf-bot Assembly

# Level 2

Prepare the below parts first before you assemble the "Surf-bot".



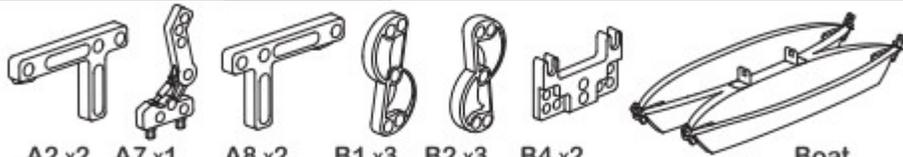
Body



Head



A1 x1



A2 x2

A7 x1

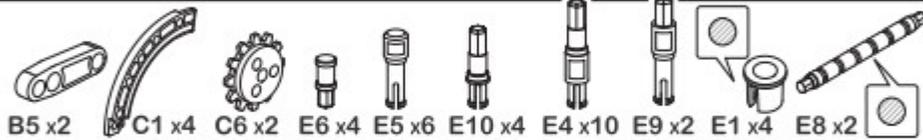
A8 x2

B1 x3

B2 x3

B4 x2

Boat



B5 x2

C1 x4

C6 x2

E6 x4

E5 x6

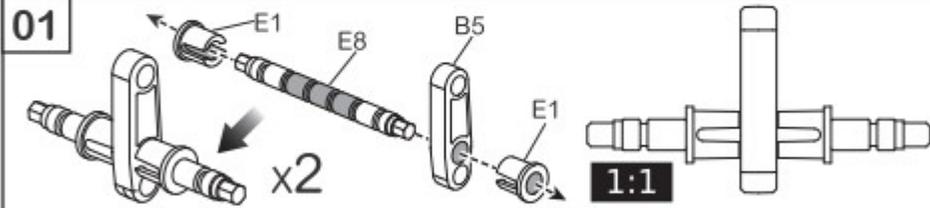
E10 x4

E4 x10

E9 x2

E1 x4

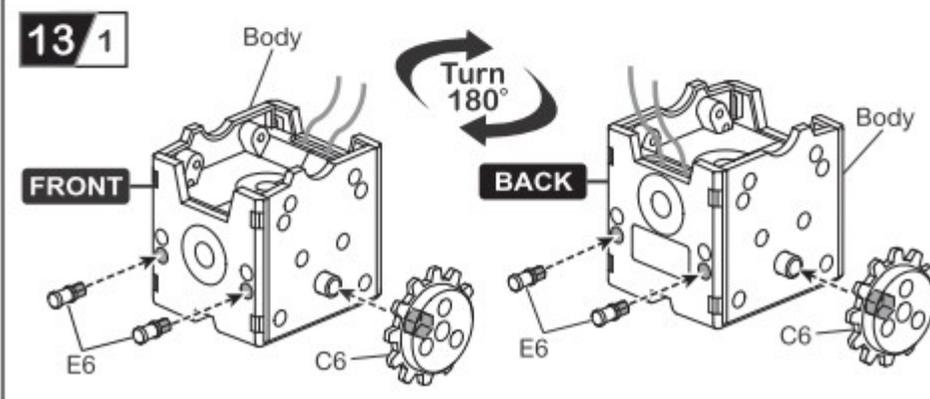
E8 x2



01

x2

1:1



13/1

Body

Turn 180°

FRONT

BACK

Body

E6

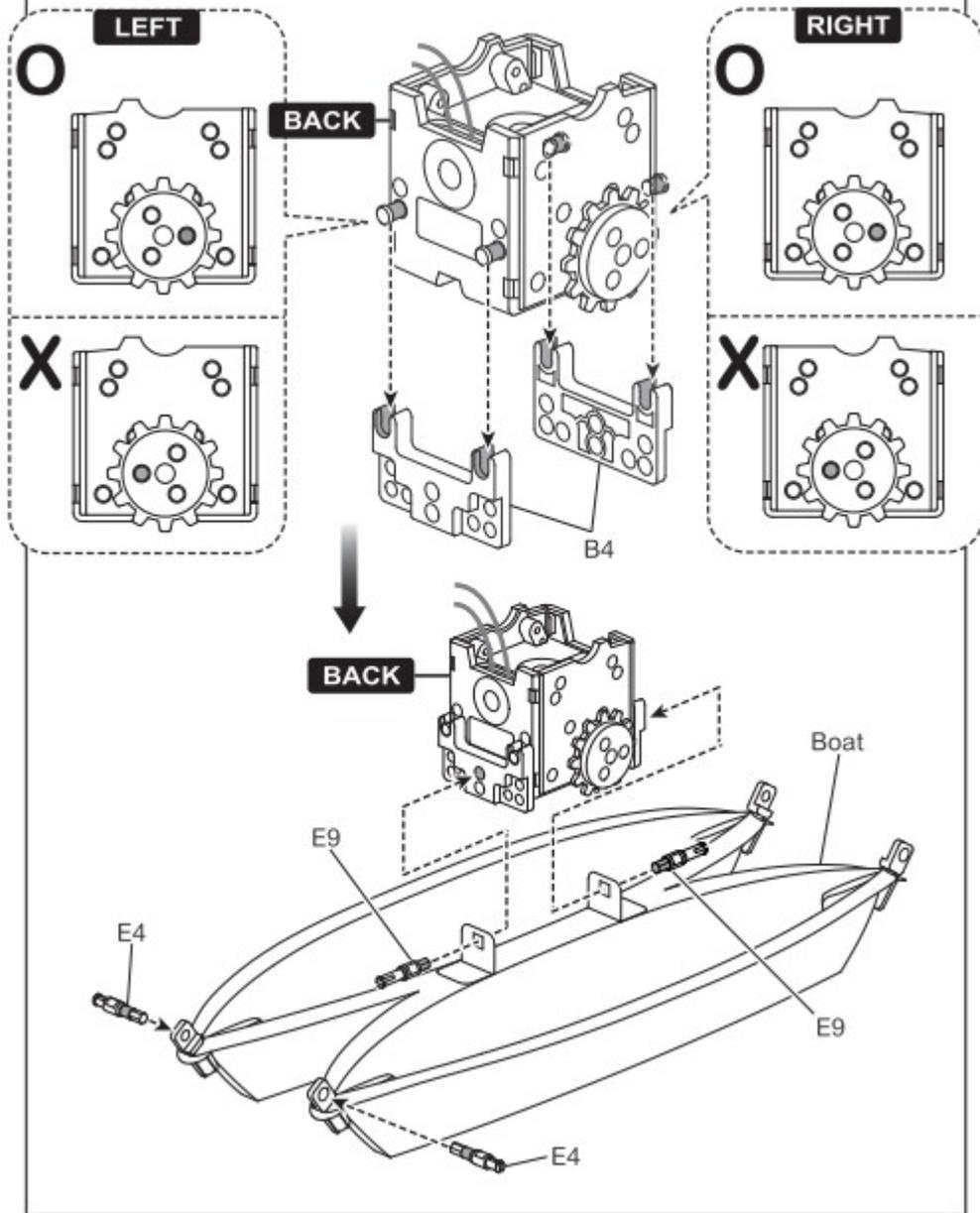
C6

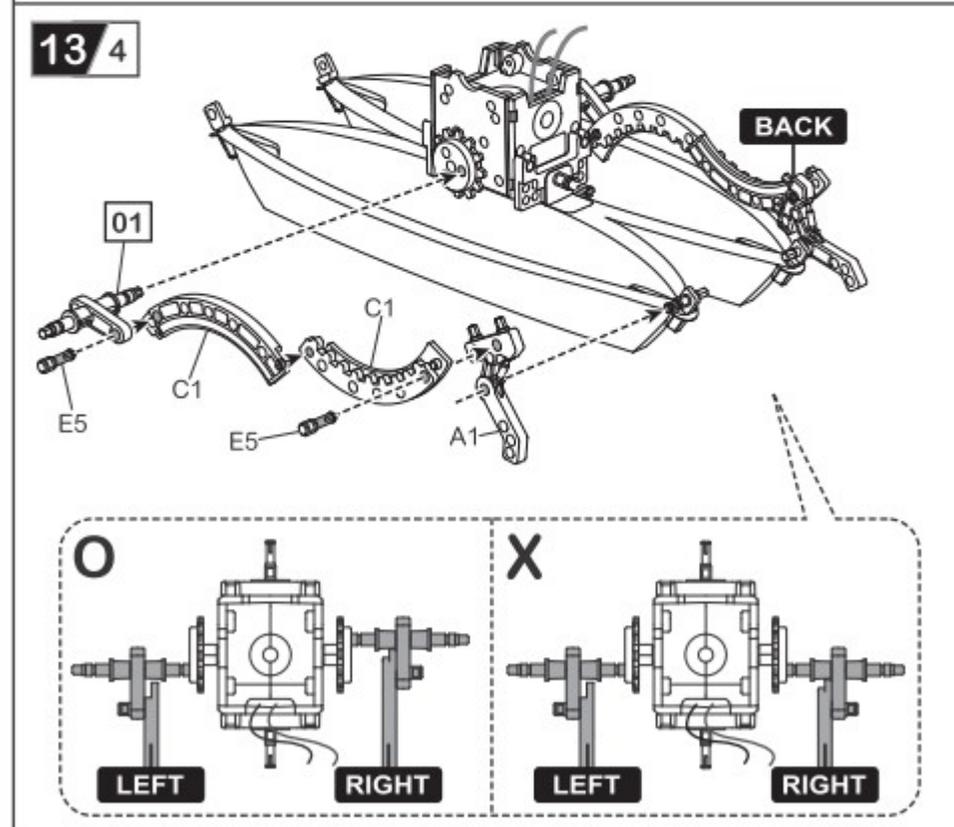
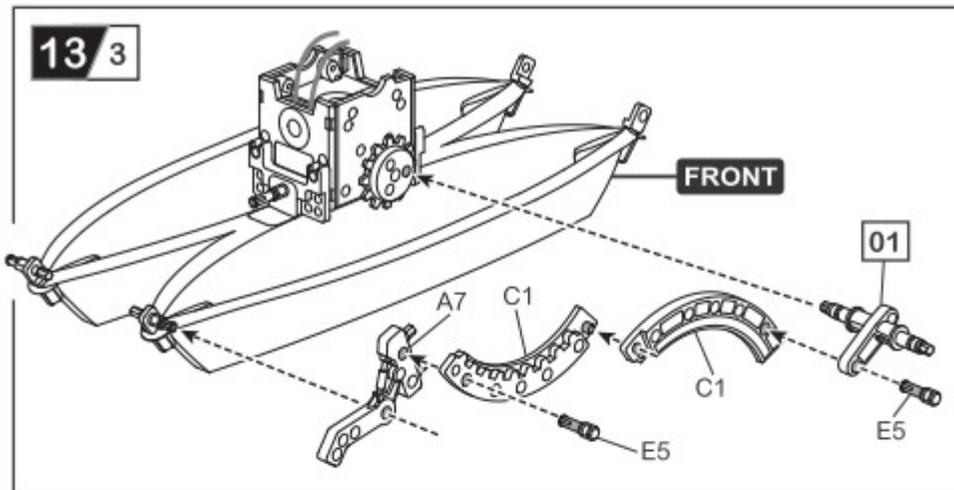
E6

C6

Primero, monte las siguientes piezas antes de montar el "Surf-bot".

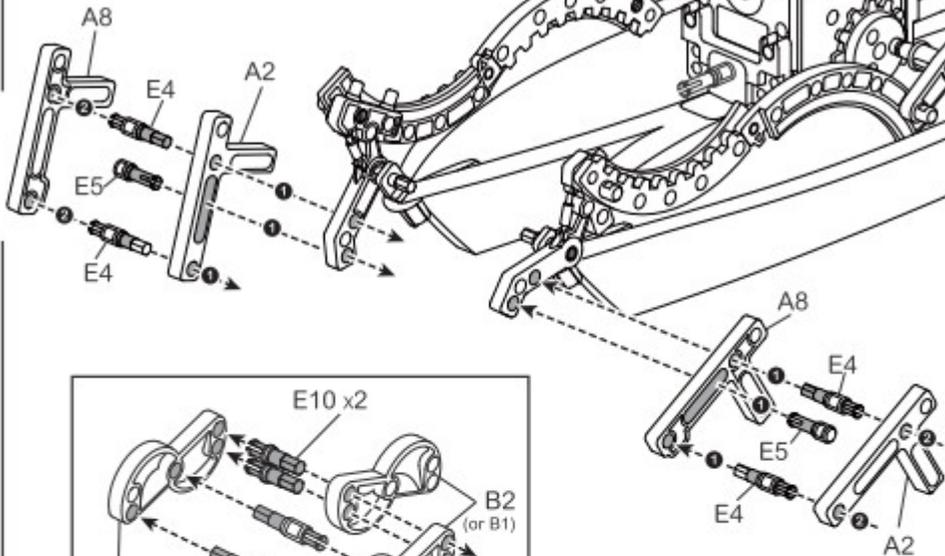
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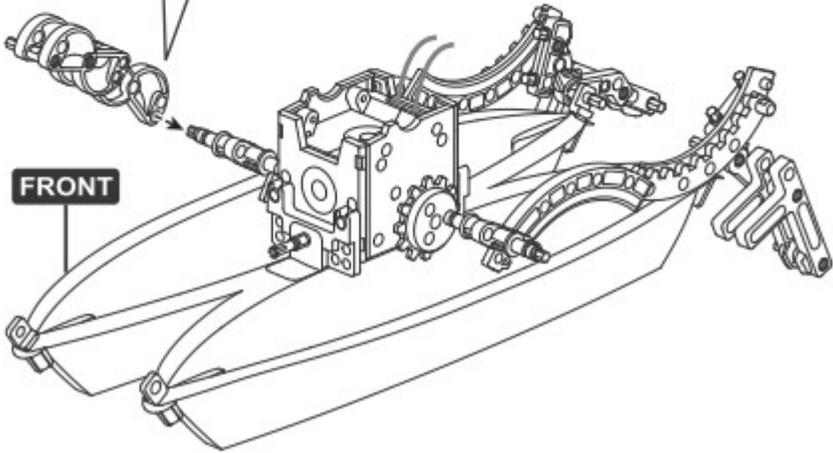
13 / 5

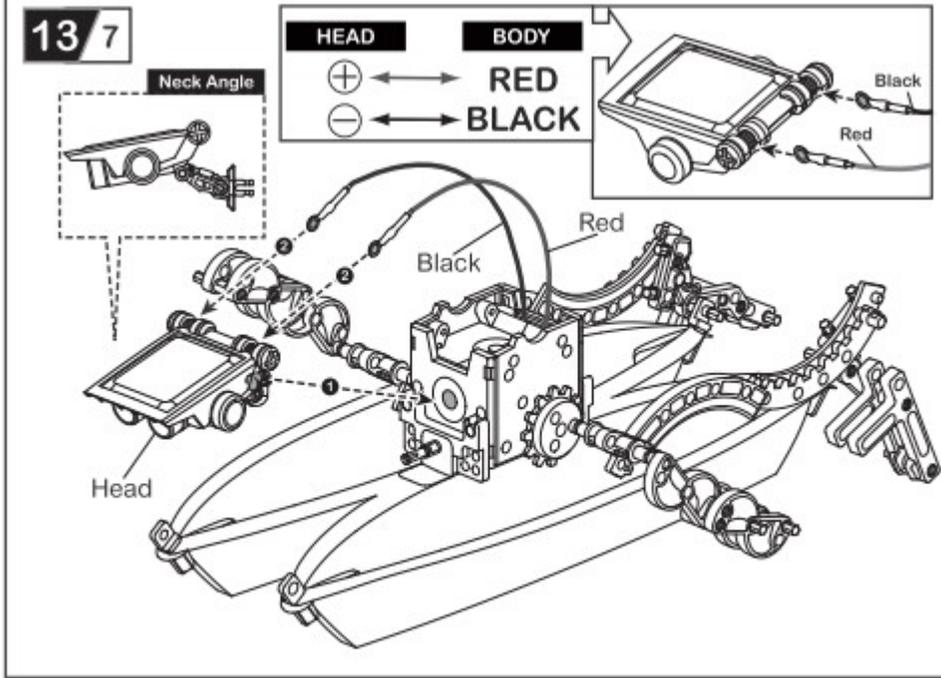
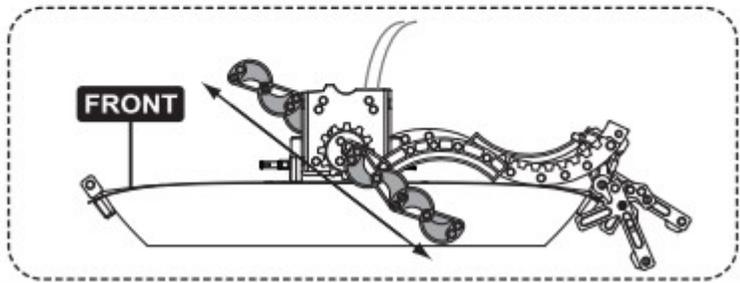
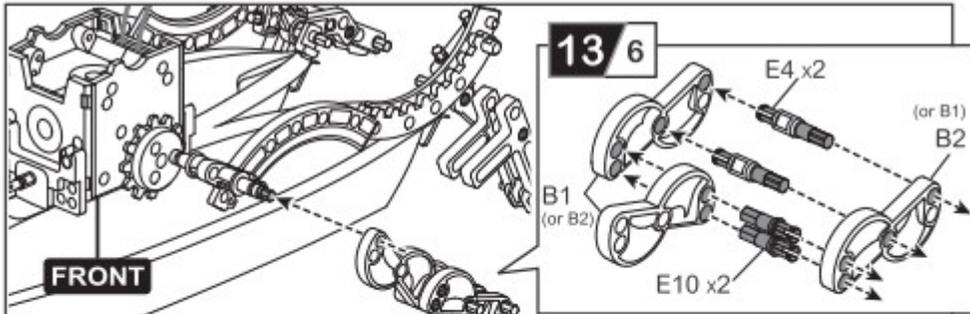
BACK



Turn  
180°

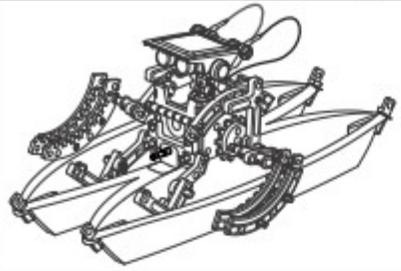
FRONT



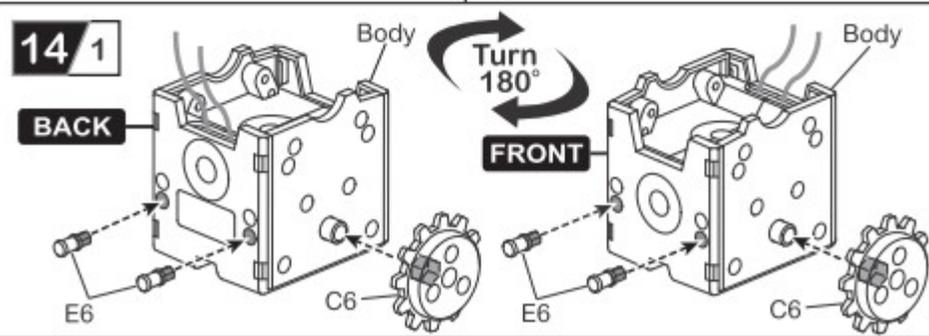
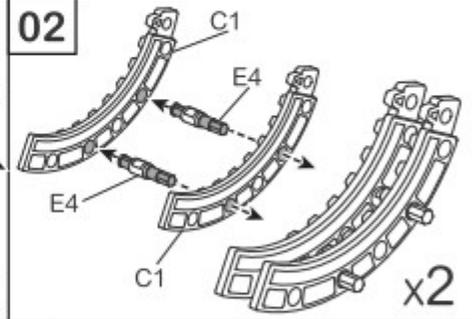
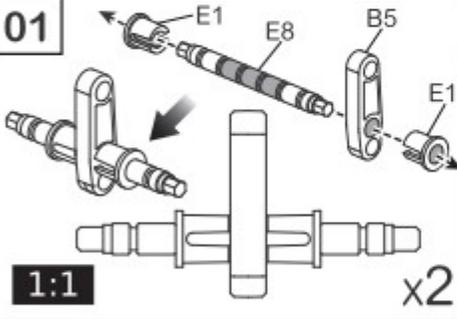
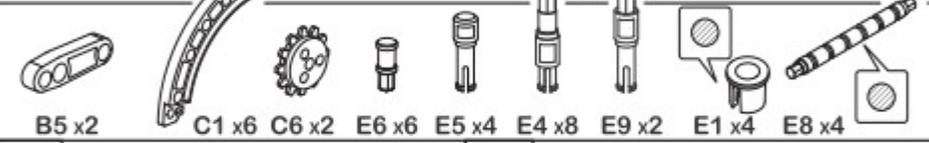
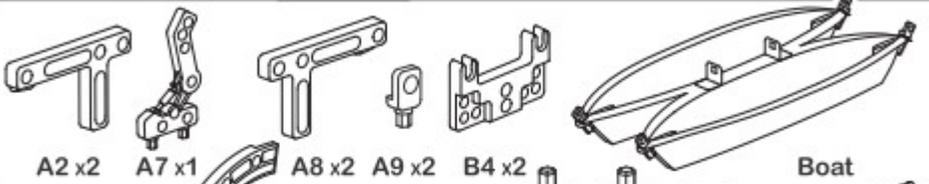
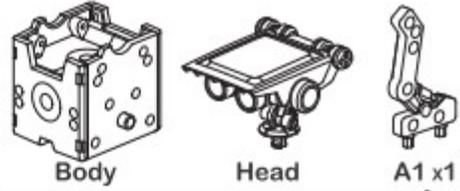


# 14 Row-bot Assembly

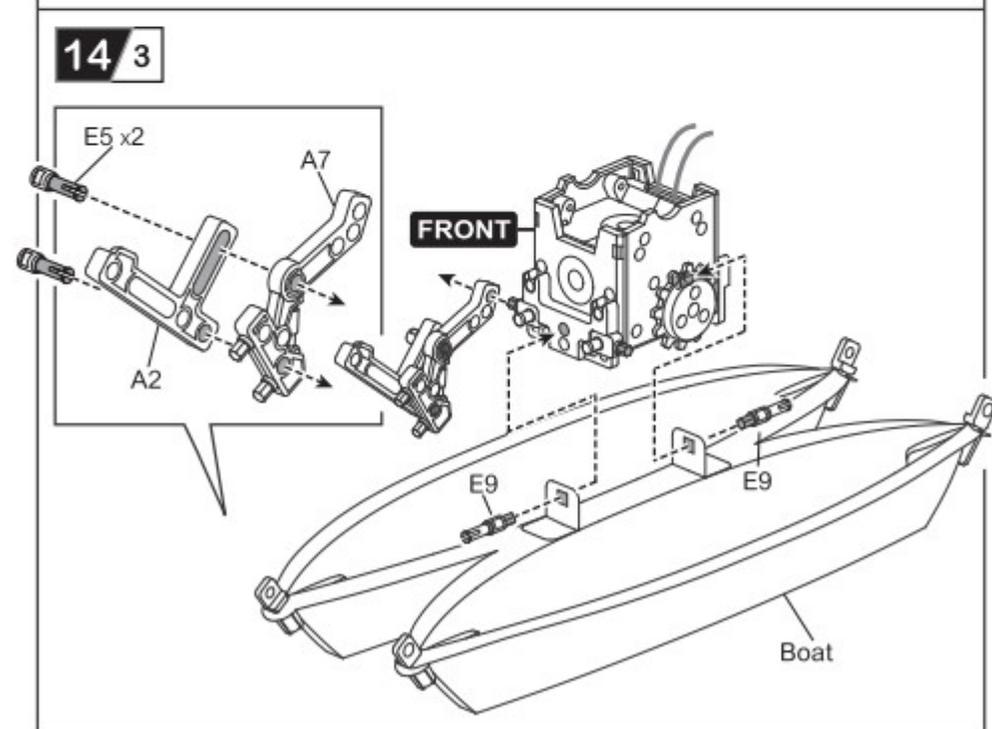
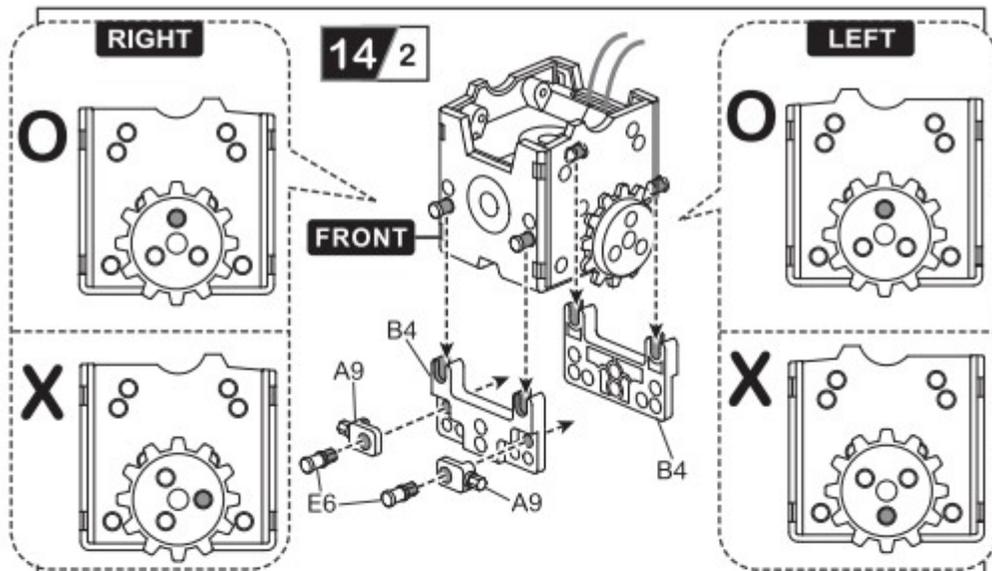
# Level 2

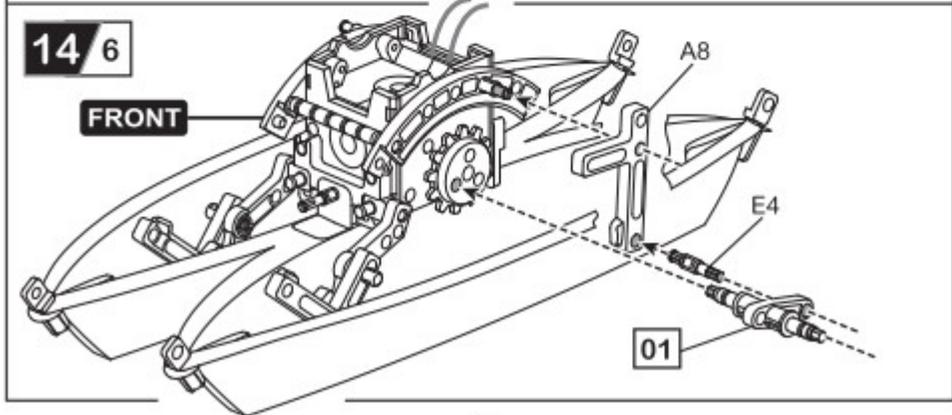
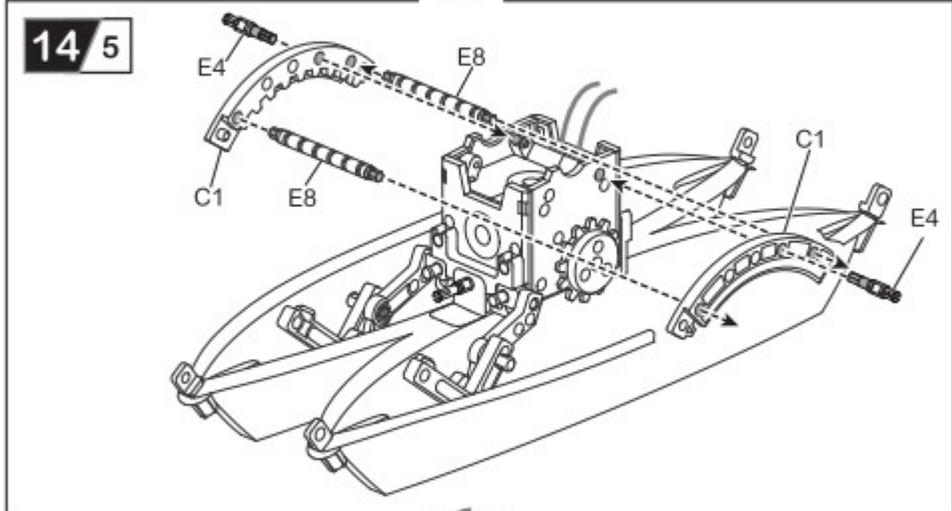
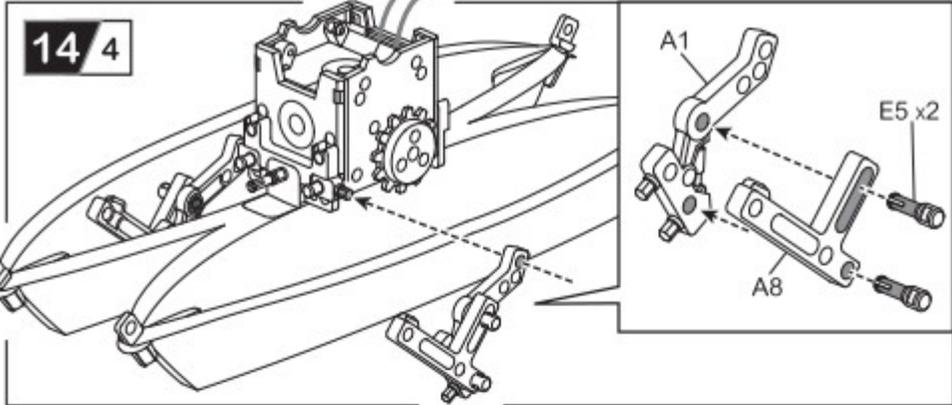


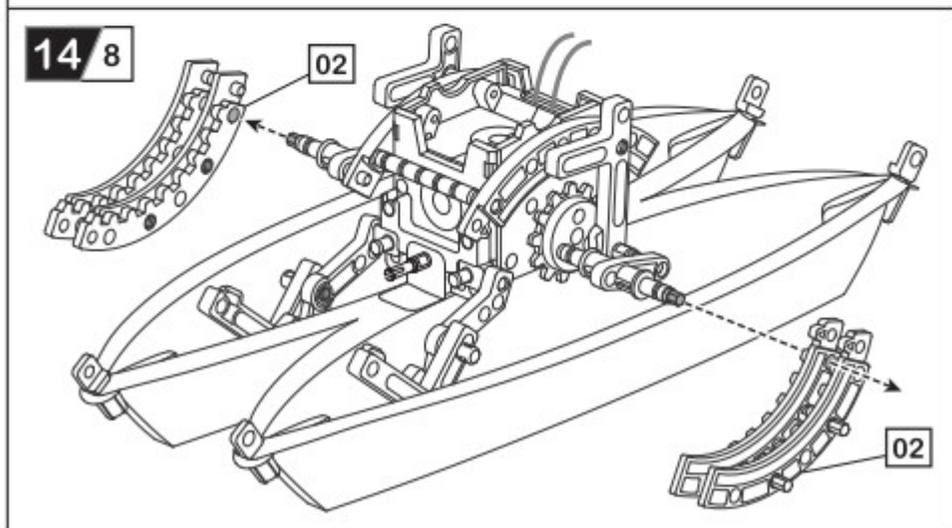
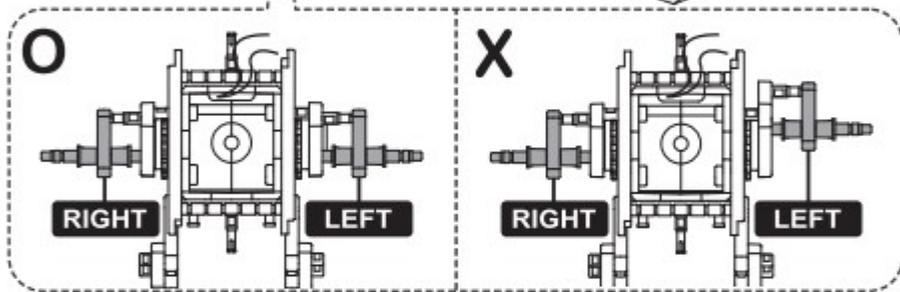
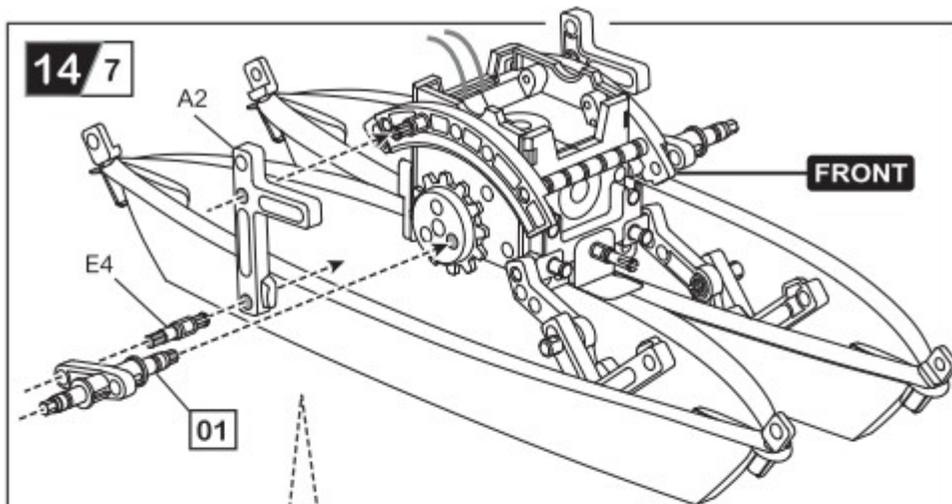
Prepare the below parts first before you assemble the "Row-bot".

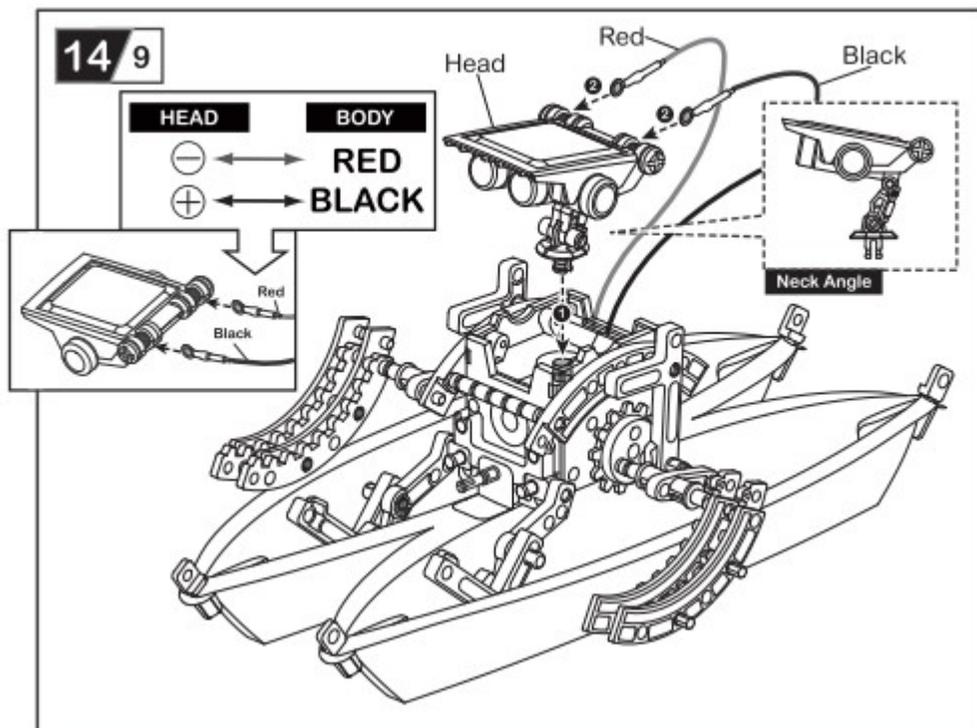


Primero, monte las siguientes piezas antes de montar el "Row-bot".



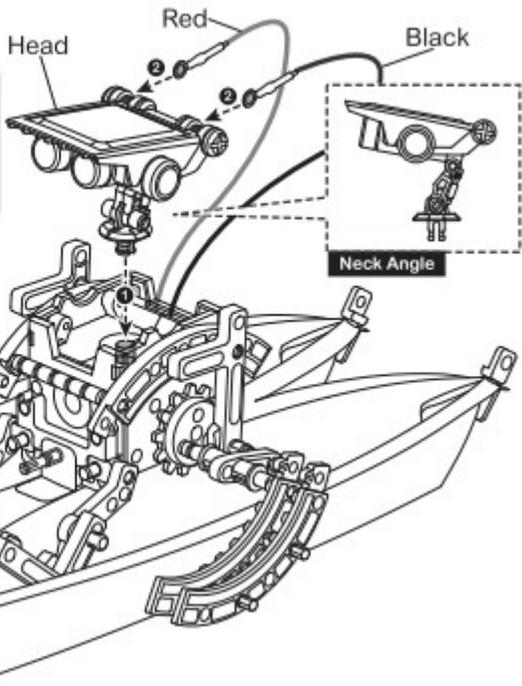




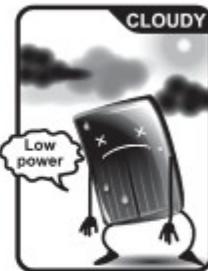


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HEAD BODY  
 - ↔ +  
 RED BLACK  
 + ↔ -  
 BLACK RED



**It's time to have some FUN !**



1. Take outside under direct sunlight. Best results are obtained when operated on a sunny day.
2. For indoor fun, use a 50 watt halogen light. The product will not run on a cloudy day, shaded locations, indirect sunlight, or under a Fluorescent light.

**¡Es hora de divertirse un poco!**

1. Váyase fuera en la luz solar directa. Obtendrá los mejores resultados durante un día soleado.
2. Para el uso en interiores, utilice una bombilla halógena de 50 W. El robot no funcionará en caso de muchas nubes, a la sombra, en luz solar indirecta o luz fluorescente.

- 14 solar robots
- Educational
- Robotistic
- Mechanical
- Scientific & Fun

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**14 in 1** EDUCATIONAL  
**SOLAR ROBOT** KIT

4350006151