

EXPERIMENT MANUAL

# TrainBots

## 2-IN-1 STEAM MAKER KIT

*All  
aboard  
and full  
steam ahead!*

*Build 2  
STEAMPUNK  
INSPIRED ROBOTS!*



THAMES & KOSMOS

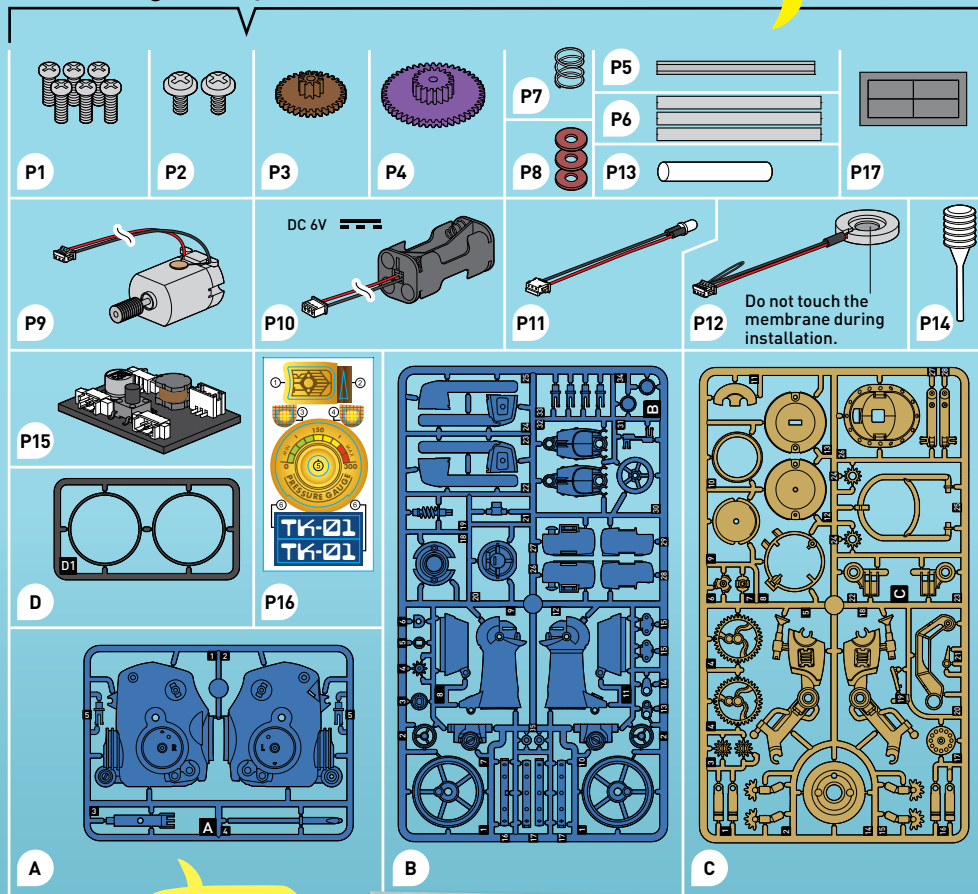


## KIT CONTENTS

*Good to know!*

Do you have any questions or are you missing any parts? Our tech support team will be happy to help you!  
support@thamesandkosmos.com  
or 1-800-587-2872

What's in your experiment kit:



*Wow!*

That's a lot  
of parts!

## Checklist:

✓	No.	Description	Quantity	Item No.
<input type="radio"/>	P1	Screw	6	726803
<input type="radio"/>	P2	Wide-head screw	2	726803
<input type="radio"/>	P3	Gear 32/10T (brown)	1	726803
<input type="radio"/>	P4	Gear 48/18T (purple)	1	726803
<input type="radio"/>	P5	Metal pin (hexagonal)	1	726803
<input type="radio"/>	P6	Metal pin (round)	3	726803
<input type="radio"/>	P7	Spring	1	726802
<input type="radio"/>	P8	Washer	3	726802

### **i** YOU WILL ALSO NEED:

Scissors or diagonal cutters,  
nail file, small Phillips-head  
screwdriver (PH1 size  
recommended), 4 AAA  
batteries (1.5-volt, type LR03),  
marker, ruler



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### TIP

**ADDITIONAL INFORMATION  
CAN BE FOUND IN THE  
CHECK IT OUT  
SECTIONS ON PAGES  
30, 31, 42, AND 43.**



✓ No.	Description	Quantity	Item No.
○ P9	Electric motor	1	726805
○ P10	Battery compartment	1	726807
○ P11	Cable with LED	1	726804
○ P12	Ultrasonic atomizer	1	726804
○ P13	Cotton roll	1	726802
○ P14	Pipette	1	726802
○ P15	Circuit board	1	726796
○ P16	Sticker sheet	1	726806
○ P17	Foam sticker sheet	1	726802
○ A	Frame A with parts A1 - A5	1	726797
○ B	Frame B with parts B1 - B35	1	726798
○ C	Frame C with parts C1 - C28	1	726799
○ D	Frame D with part D1	1	726800

*Let's go!*



## SAFETY INFORMATION



**WARNING!** Not suitable for children under 3 years. Choking hazard — small parts may be swallowed or inhaled.

Store the experiment material and assembled models out of the reach of small children.

**WARNING:** This toy is only intended for use by children over the age of 8 years, due to accessible electronic components. Instructions for parents or caregivers are included and shall be followed.

**WARNING.** This kit contains functional sharp edges or points. Do not injure yourself!

Warning. To be used under the direct supervision of an adult. Keep the toy out of reach of children under 8 years old.

Keep packaging and instructions as they contain important information.

Assembly must be performed under adult supervision.

Do not pick up the vehicle during operation.

Keep hands, hair, and clothing away from the tires and tracks when the robot is powered on.

Avoid hitting people, animals, and household furniture with the robot.

### SAFETY FOR EXPERIMENTS WITH BATTERIES

- › The wires are not to be inserted into socket-outlets. Never perform experiments using household current! The high voltage can be extremely dangerous or fatal!
- › To operate the models, you will need four AAA batteries (1.5-volt, type LR03), which could not be included in the kit due to their limited shelf life.
- › The supply terminals are not to be short-circuited. A short circuit can cause the wires to overheat and the batteries to explode.
- › Different types of batteries or new and used batteries are not to be mixed.
- › Do not mix old and new batteries.
- › Do not mix alkaline, standard (carbon-zinc), or rechargeable (nickel-cadmium) batteries.
- › Batteries are to be inserted with the correct polarity (+ and -). Press them gently into the battery compartment. See page 40. This page shows how the batteries are inserted, removed, and changed.
- › Always close battery compartments with the lid.
- › Non-rechargeable batteries are not to be recharged. They could explode!
- › Rechargeable batteries are to be removed from the toy before being charged.
- › Exhausted batteries are to be removed from the toy.
- › Dispose of used batteries in accordance with environmental provisions, not in the household trash.
- › Avoid deforming the batteries.
- › The toy is not to be connected to more than the recommended number of power supplies.
- › As all of the experiments use batteries, have an adult check the experiments or models before use to make sure they are assembled properly. Always operate the motorized models under adult supervision. After you are done experimenting, remove the batteries from the device compartments.

### NOTES ON DISPOSAL OF ELECTRICAL AND ELECTRONIC COMPONENTS

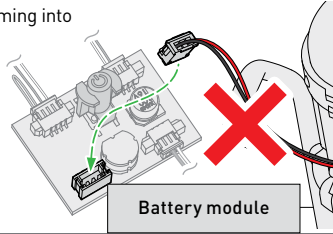
The electronic components of this product are recyclable. For the sake of the environment, do not throw them into the household trash at the end of their lifespan. They must be delivered to a collection location for electronic waste, as indicated by the following symbol:

Please contact your local authorities for the appropriate disposal location.



## OPERATING TIPS

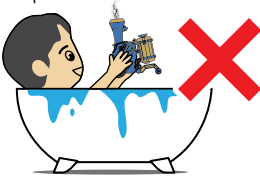
1. Keep the circuit board dry. Avoid coming into contact with moisture.
2. Do not connect the battery module cable to the circuit board while the circuit board is accessible (Wait until the model is closed). It can be dangerous.
3. Do not touch the circuit board when it is powered on.



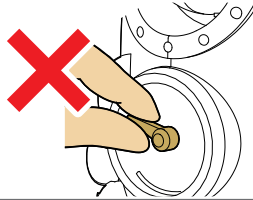
Do not cover the chimney with your fingers or obstruct it with other objects. This could prevent the mist from escaping and cause moisture to pool around the atomizer. If this occurs, you can find troubleshooting instructions on page 44.



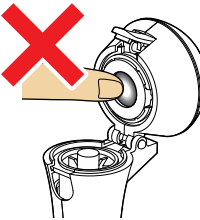
1. Only handle your TrainBots model with dry hands. Do not handle it with wet hands.
2. TrainBots is not a toy for the bathtub or pool.



Do not touch the pressure gauge needle while your TrainBots model is powered on. This could damage it.



Do not touch the ultrasonic atomizer when the chimney is open.



Only fill the water tank with water. Scented oils and any other types of liquids will damage it.



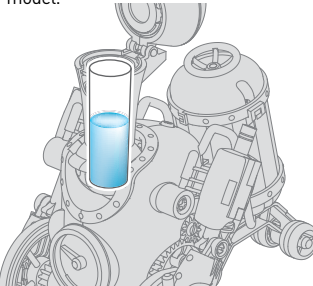
Make sure the chimney is open when you are filling the tank. Do not pour water into the closed chimney.



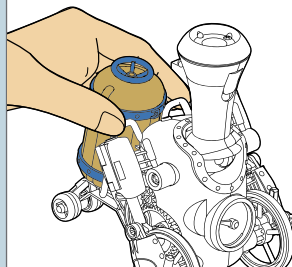
Only use the enclosed pipette (P14) for filling the water tank. Be careful not to overfill the tank; if it overflows, the circuit board may become damaged.



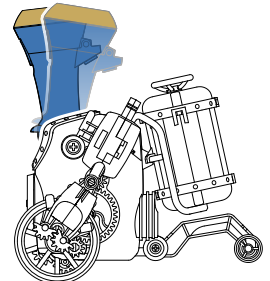
Make sure there is water in the tank before powering on your TrainBots model.



When handling your robot, lift it by the battery pack on its back, and make sure to keep it upright to avoid spillage.



When adjusting the angle of the chimney, only move it as far as shown in the picture below. Otherwise, the model could break.







## IMPORTANT INFORMATION

# Dear Parents and Supervising Adults,

Children want to be amazed, understand, and create new things. They want to try everything out and do it for themselves. They want to know! They can do all of this with Thames & Kosmos experiment kits. We hope you and your child have a lot of fun experimenting with your TrainBots!

— Before building and experimenting, read the instructions with your child and discuss the safety information together. Stand by to assist your child with any challenging steps of assembly or usage.

— If your child is working on a table, give them something to work on to prevent damage to the furniture.

— Fill the TrainBots model on a waterproof surface. Hold it upright and do not tilt it to avoid spilling and damage to the electronics.

— Particular care must be taken when cutting the plastic parts out of the frames, as sharp points can be created. These can be removed with the help of scissors or diagonal cutters and a nail file. Please supervise your child whenever they are using scissors or diagonal cutters.

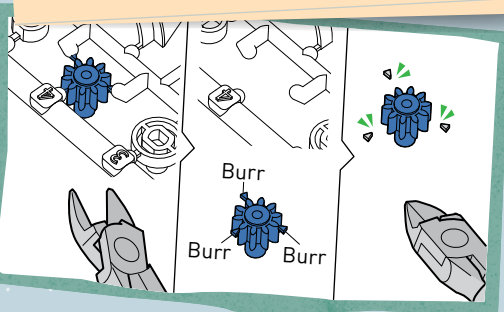
— We wish you and your child lots of fun with your TrainBots!



### TIP

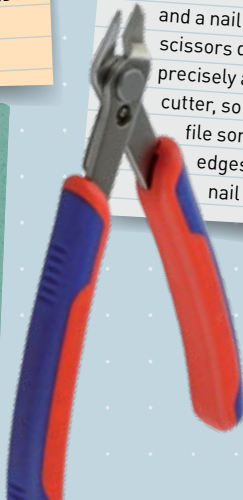
#### IMPORTANT:

DO NOT SEPARATE THE PARTS UNTIL THEY ARE NEEDED.  
REMOVE EXCESS MATERIAL (BURRS) BEFORE ASSEMBLY  
USING DIAGONAL CUTTERS OR A NAIL FILE.



#### The right tool:

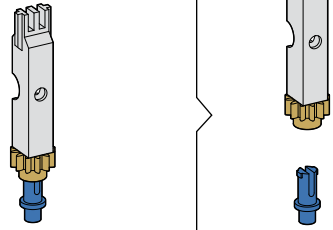
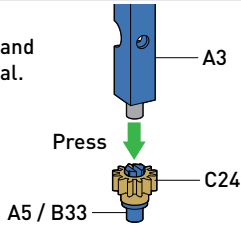
It is best to cut the plastic parts out of their frames with a small diagonal cutter. If you don't have this tool at home, you can use scissors and a nail file. Normal scissors do not cut as precisely as a diagonal cutter, so you may have to file some of the rough edges down with the nail file.



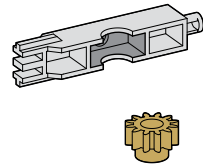
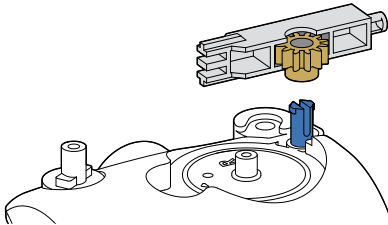
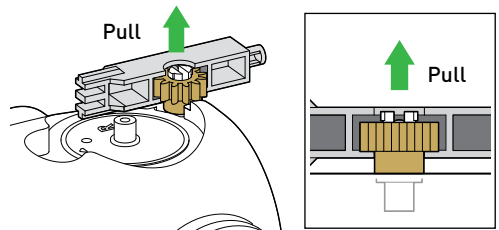
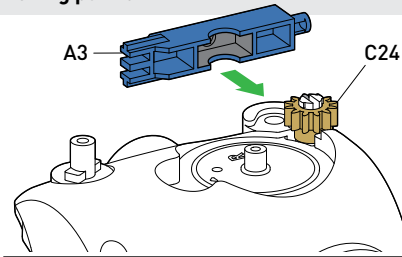
## USING THE A3 TOOL

### Separating A5 and B33

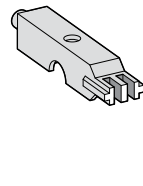
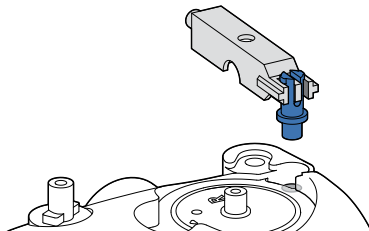
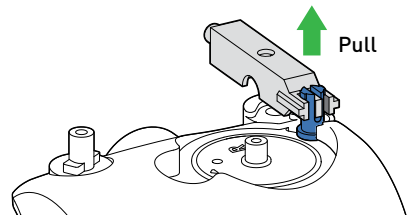
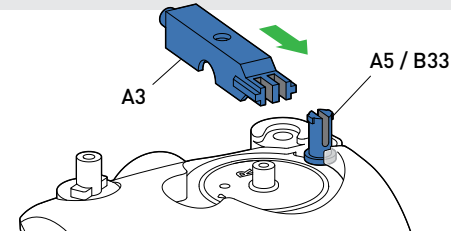
Note: Parts A5 and B33 are identical.



### Removing part C24



### Removing parts A5 and B33



# TrainBot

AND THE COOL  
POWER OF STEAM

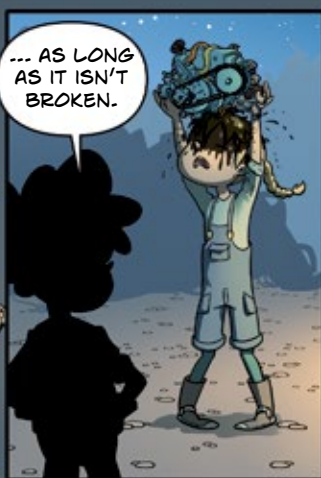
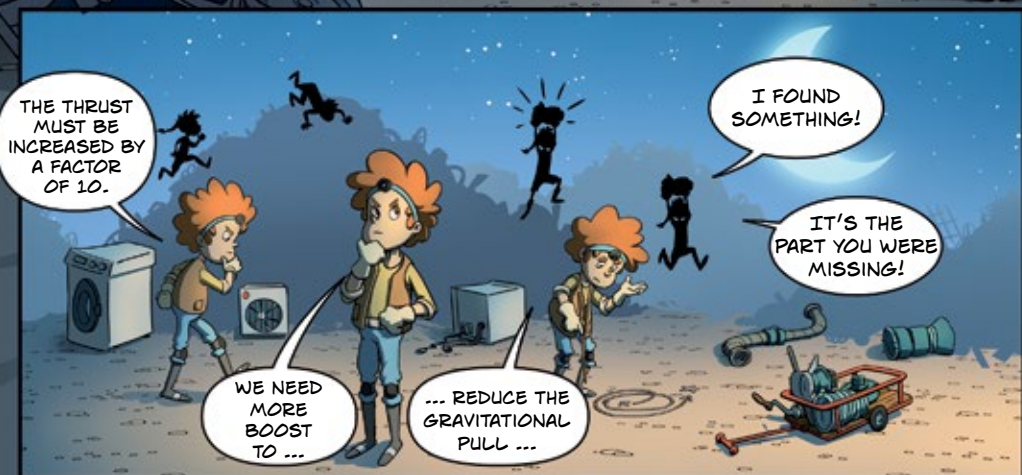




IT'S QUIET IN THE JUNKYARD.  
EVERYONE HAS GONE TO SLEEP ...  
... EXCEPT TOM AND IZZY.

HERE, WHERE OTHER PEOPLE JUST  
SEE JUNK, OUR HEROES SEE  
ENDLESS POSSIBILITIES.

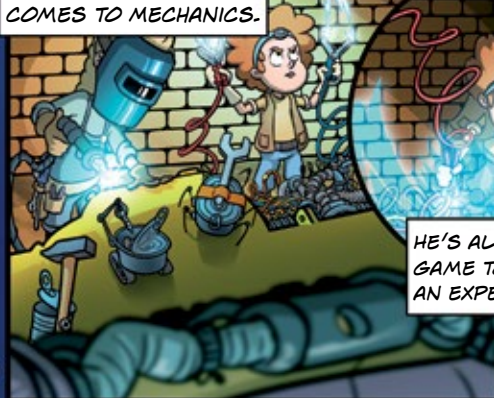
# TOM & IZZY



IZZY CAN REPAIR ANYTHING. SHE IS A GENIUS WHEN IT COMES TO MECHANICS.

TOM, ON THE OTHER HAND, IS A SCIENTIST THROUGH AND THROUGH.

TOGETHER, THESE TWO CAN BUILD ANYTHING!



HE'S ALWAYS GAME TO TRY OUT AN EXPERIMENT!



YES!  
WE DID IT!

NOTHING CAN  
STOP  
US NOW!



WHERE  
SHOULD WE FLY  
TO FIRST?

WHEREVER WE  
WANT!

WE CAN GO  
ANYWHERE!







WE MADE IT, TOM!  
(COUGH)

(COUGH)  
HI, THERE. ARE YOU THE  
ONE WHO SENT US THE  
EMERGENCY  
SIGNAL?!

YES!  
WELCOME!  
I AM EARL  
EXHAUST.

EVERYTHING HERE IS  
POWERED BY WOOD FUEL, AND  
WE NEED LOTS OF FIREWOOD TO  
CREATE ENERGY - WHICH IS ALSO  
REQUIRED TO POWER THE ROBOTS  
THAT DO ALL OF THE WORK!

THAT EXPLAINS  
ALL OF THE CARBON  
DIOXIDE IN THE  
ATMOSPHERE.

BURNING THE WOOD  
CONVERTS THE STORED CHEMICAL  
ENERGY IN IT INTO HEAT ENERGY, BUT WE  
ARE RUNNING OUT OF TREES ... AND WOOD  
FUELS THE ROBOTS THAT CUT DOWN THE  
TREES ... WHOSE WOOD FUELS  
THE ROBOTS ...

(SIGH)  
... AND SO  
ON.

THAT'S  
QUITE A  
CYCLE!

HMM  
---

I WAS HOPING THAT  
YOU COULD HELP ME COME UP  
WITH A MORE SUSTAINABLE  
SOLUTION THAT I COULD  
PRESENT TO OUR LEADER -  
SOVEREIGN SMOG.

CLEAN  
ENERGY!!!

WE CAN  
ALSO HELP YOU  
CLEAN UP YOUR  
ATMOSPHERE  
USING ...





Let's go!

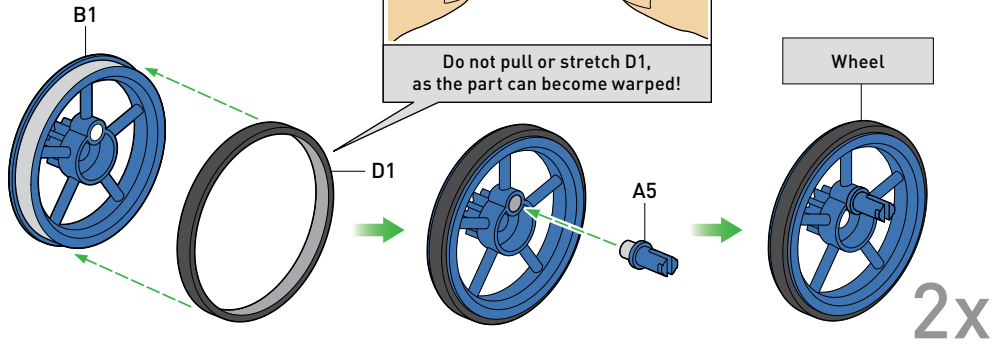
It's time to assemble  
your TrainBot!

# Full Steam Ahead!

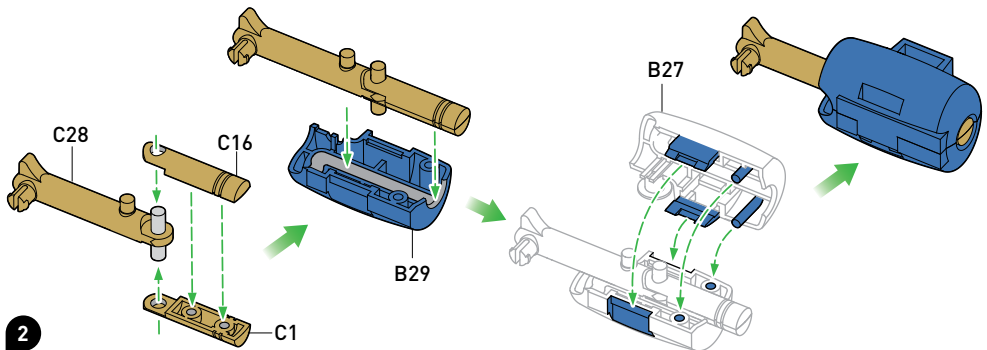
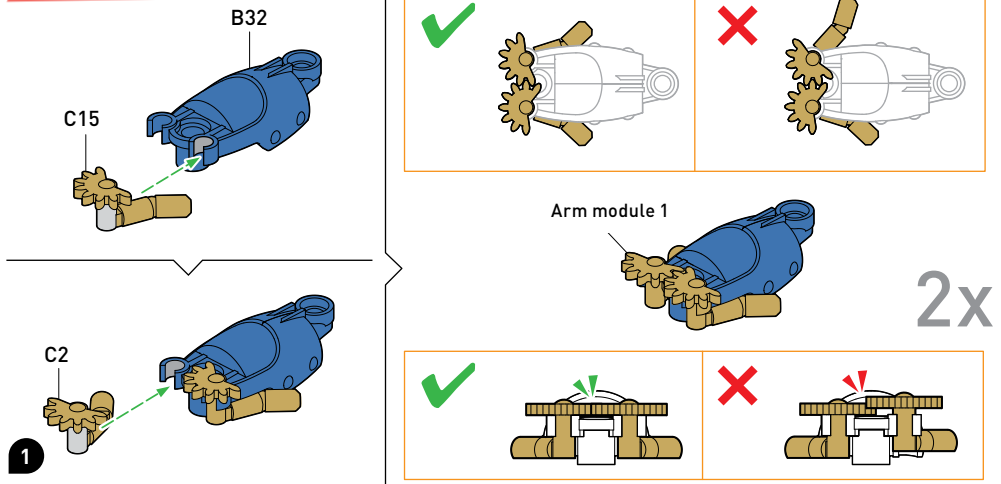
First, we will build the different modules that make up your TrainBot. After that, you can decide whether you want to finish the build by putting it in train mode or bot mode. Want to know how your TrainBot produces its cool steam? You will find out at the end of the assembly instructions.



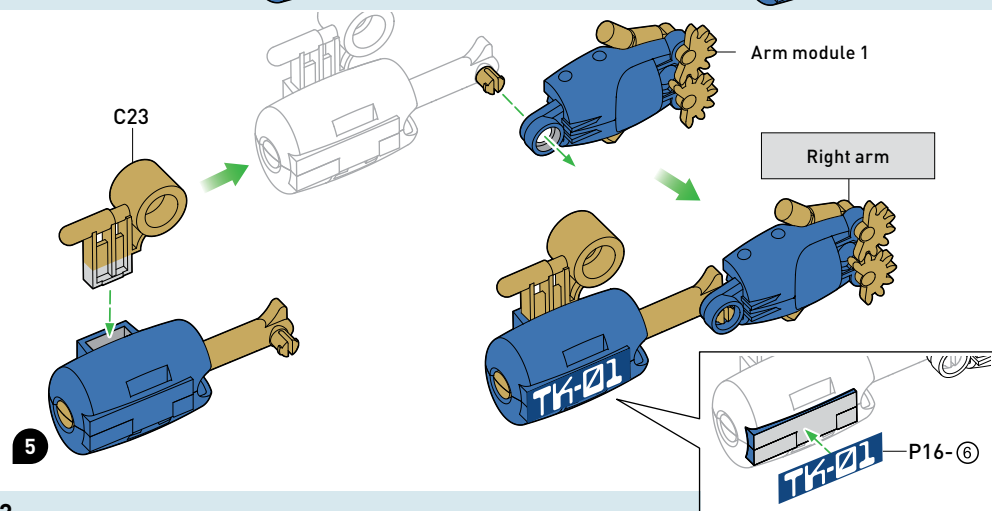
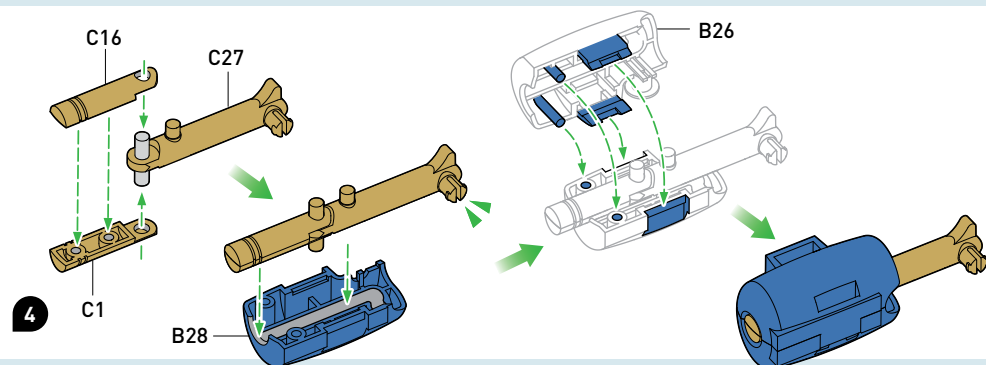
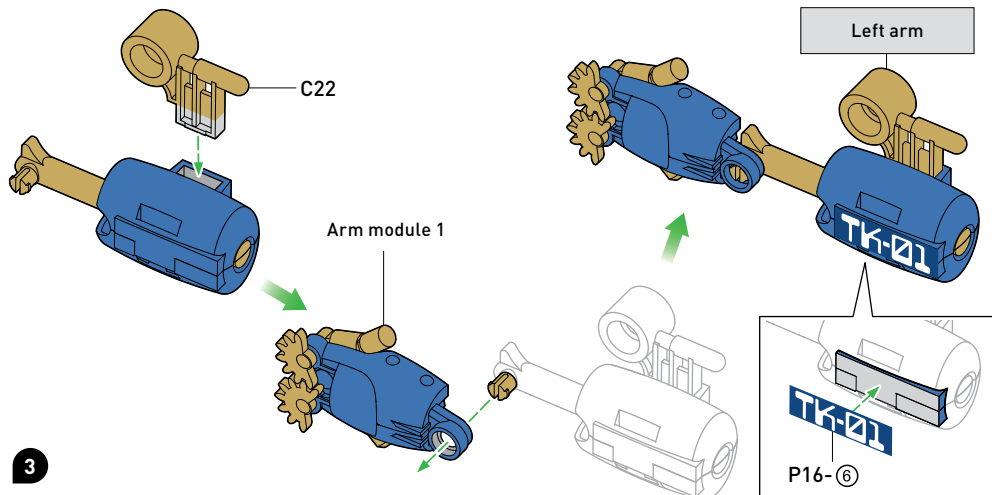
## WHEEL ASSEMBLY



## ARM ASSEMBLY



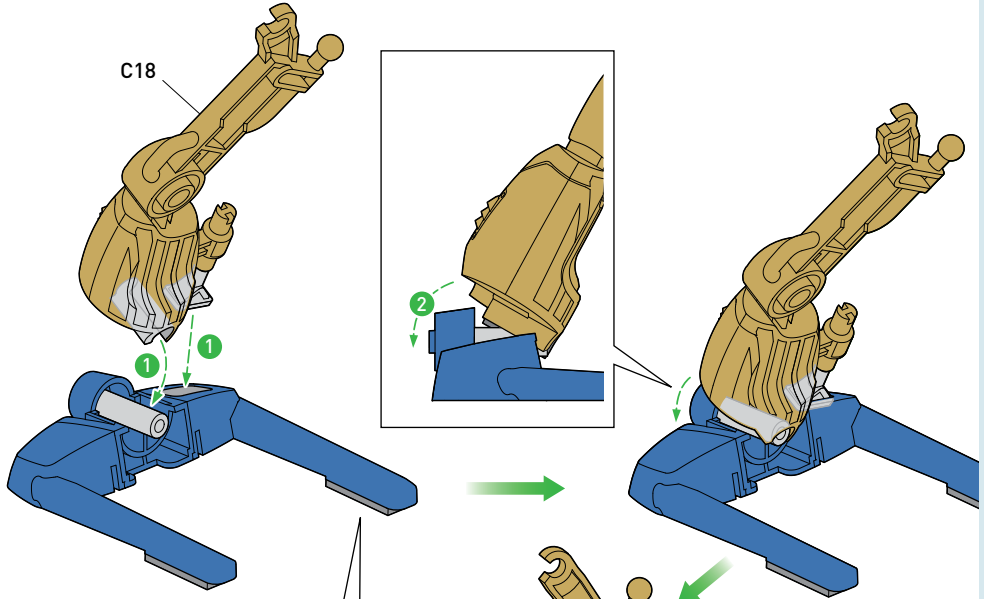
## ARM ASSEMBLY



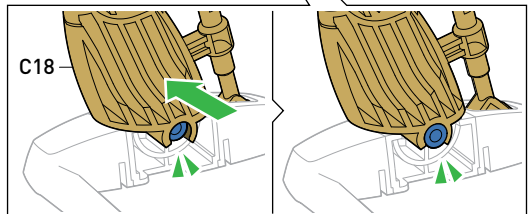
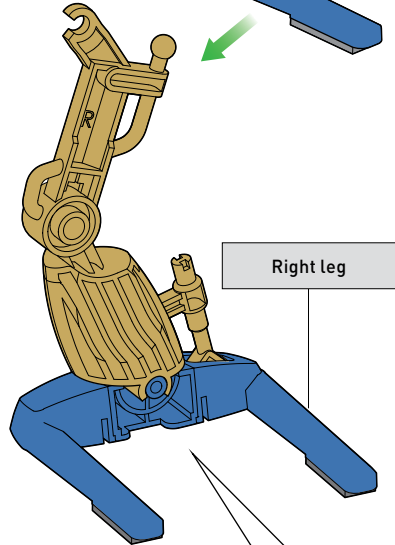
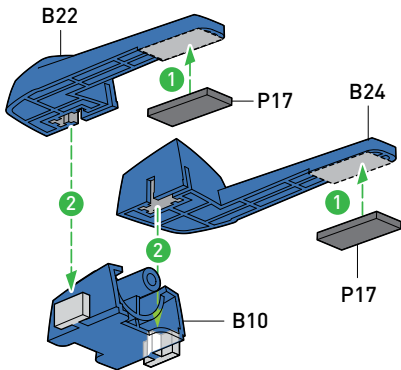




# LEG ASSEMBLY

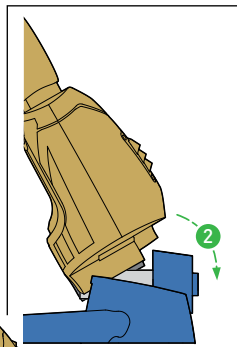
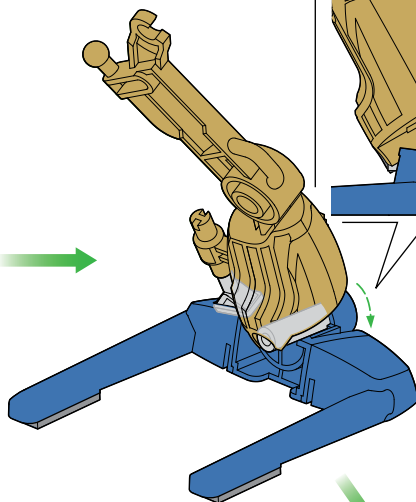
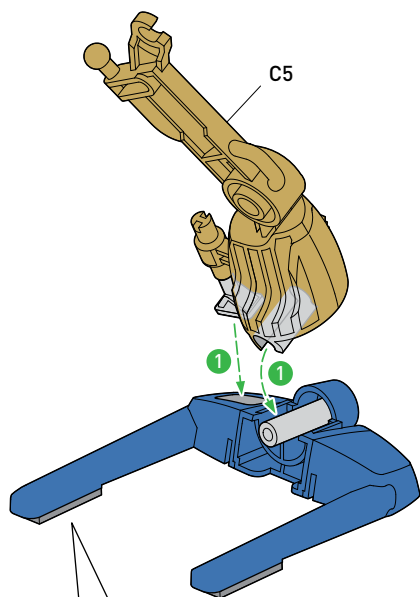


Pay close attention to the order of each step, indicated in the green circles.

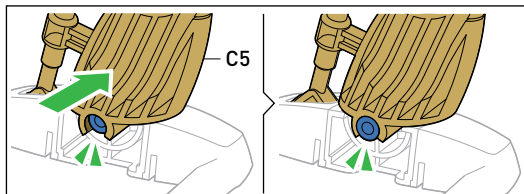
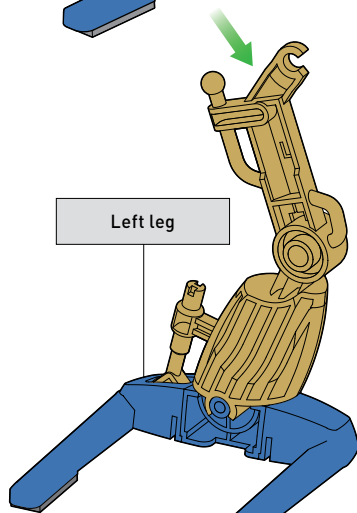
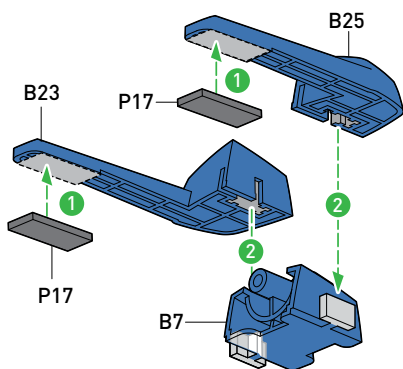


Make sure that C18 is pushed all the way in.

## LEG ASSEMBLY



Pay attention to the order indicated in the green circles.

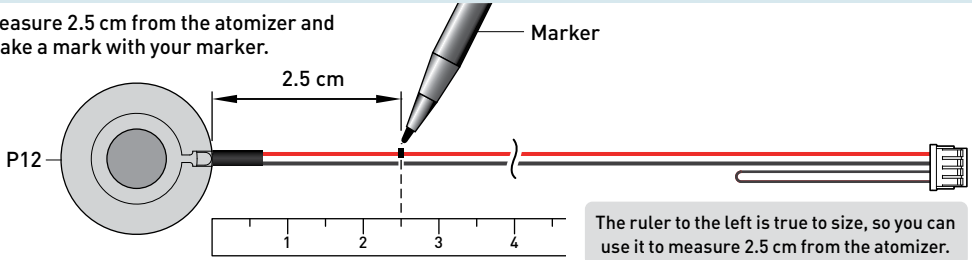


Make sure that C5 is pushed all the way in.

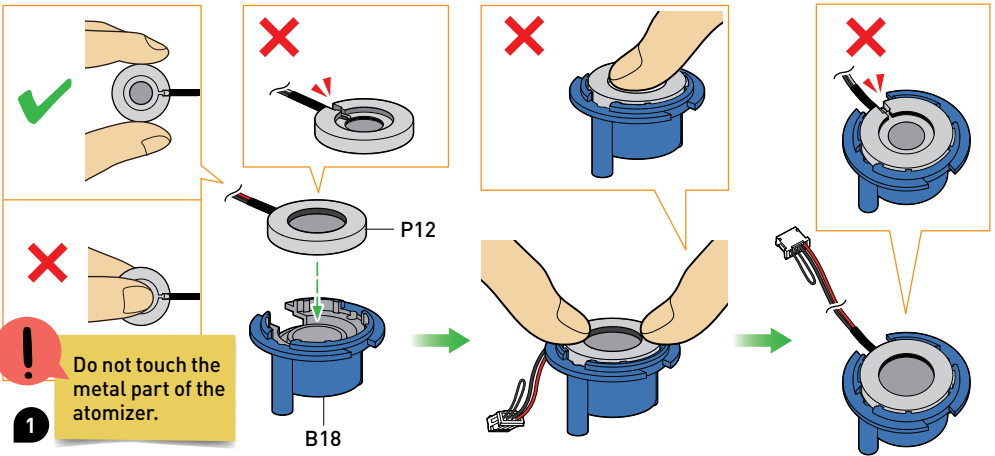


## HEAD ASSEMBLY

Measure 2.5 cm from the atomizer and make a mark with your marker.

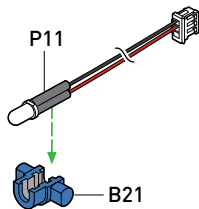


If P12 is placed in the wrong direction, the chimney will not produce vapor.

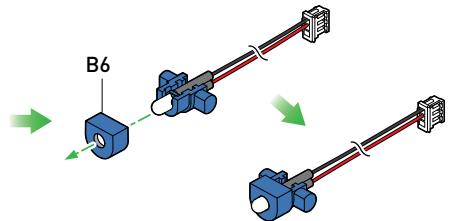
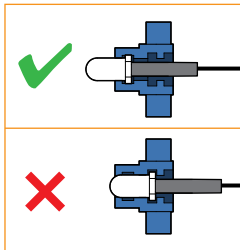


1

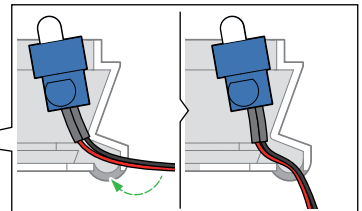
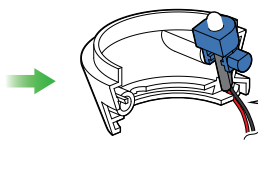
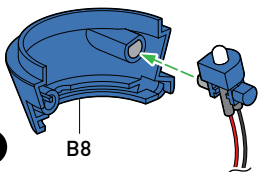
Do not touch the metal part of the atomizer.



2



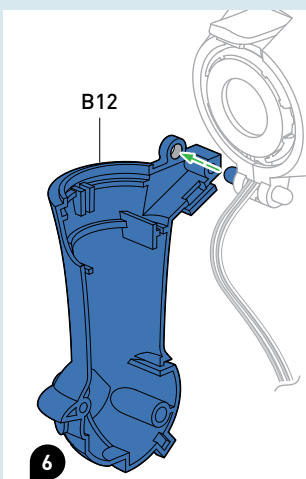
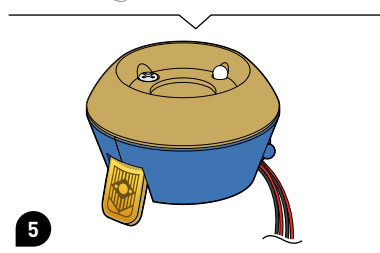
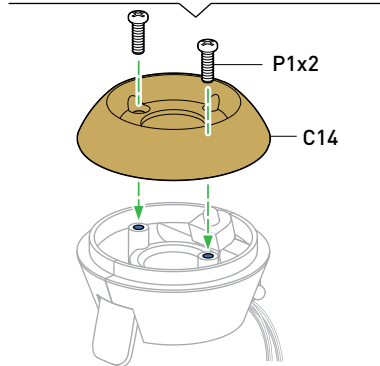
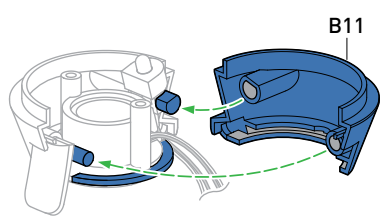
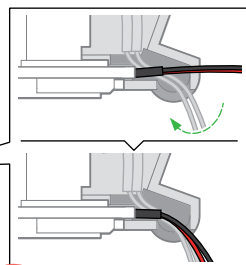
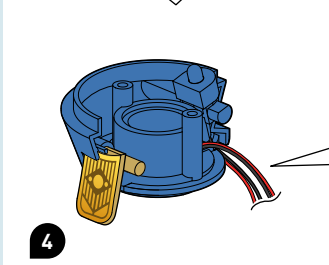
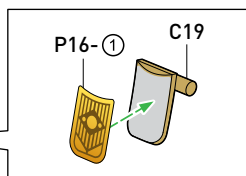
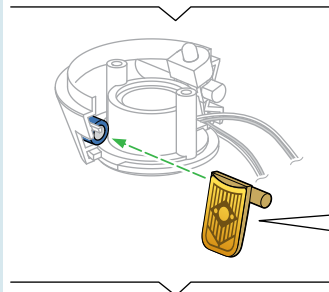
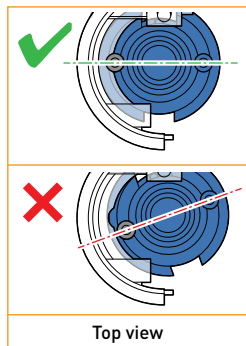
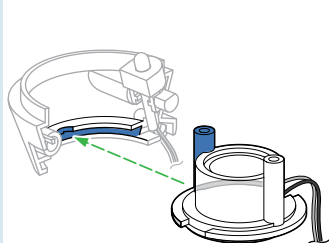
3



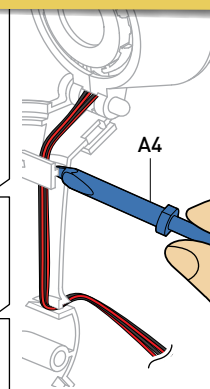
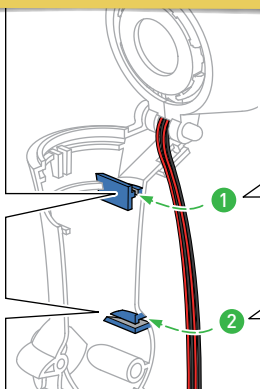
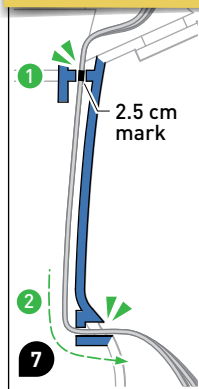


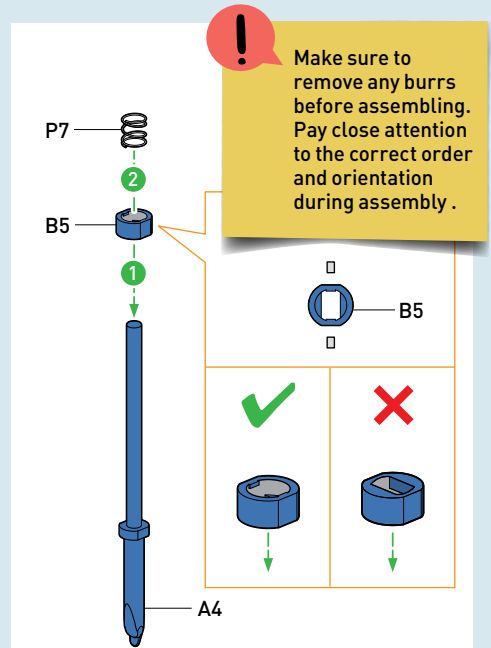
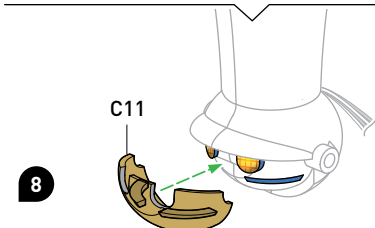
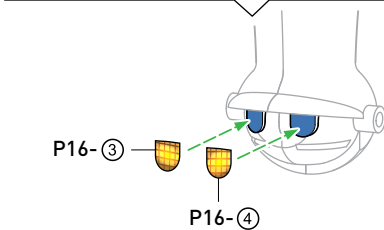
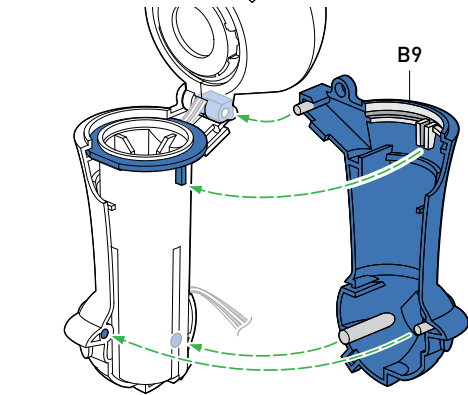
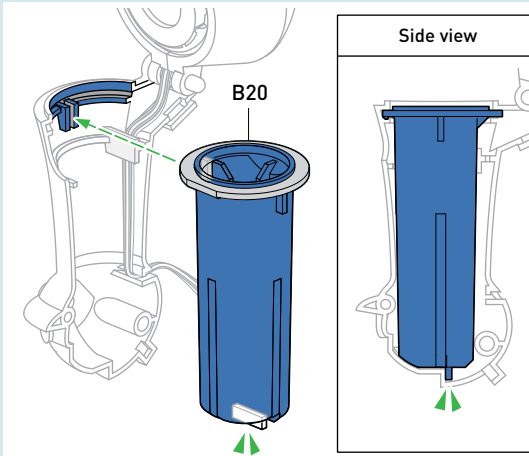


## HEAD ASSEMBLY

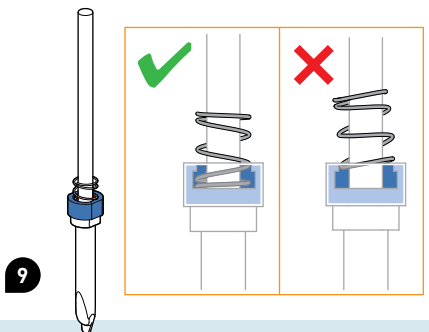
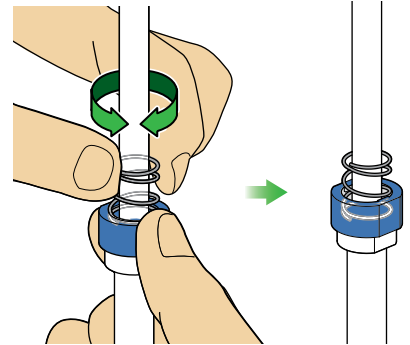


**!** Pay close attention to the order of each step below, indicated in the green circles. Align the mark you made on the atomizer's wire with uppermost slot in B12. The wire for the LED should be tucked in next to the atomizer's wire. Use A4 to push the wires in.





Twist the spring until it locks into place.



## HEAD ASSEMBLY

A4

10

**IMPORTANT:** Only remove A4 (and not P7 or B5)

Pull to remove

A4

P13

11

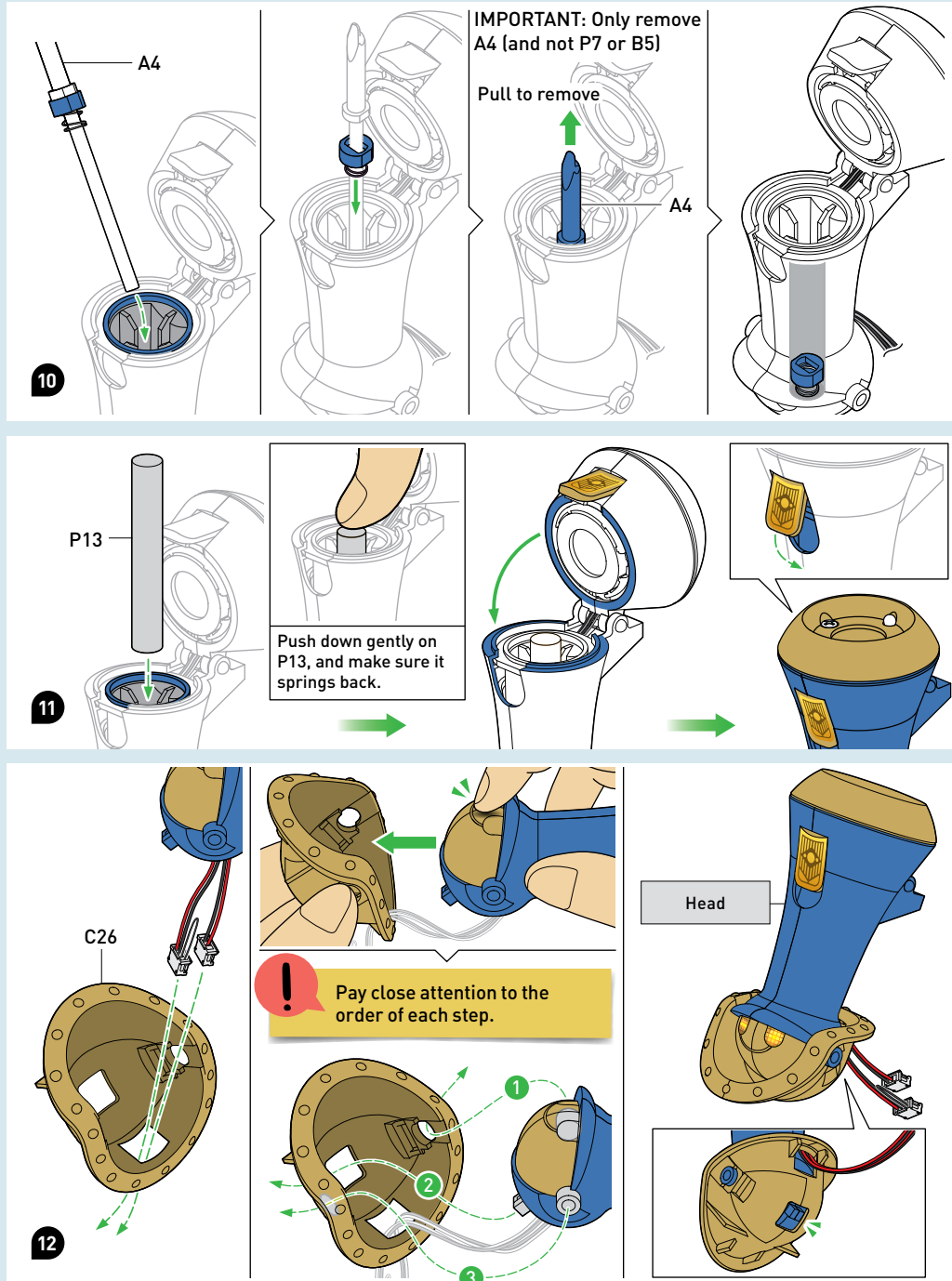
Push down gently on P13, and make sure it springs back.

Head

C26

12

**!** Pay close attention to the order of each step.

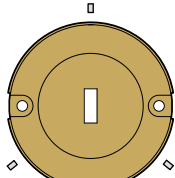




## BATTERY MODULE ASSEMBLY

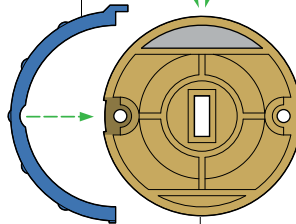


Make sure to remove any burrs before assembly.

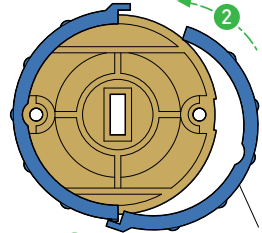


C13

B17

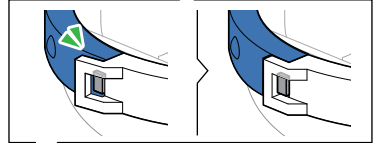


C13

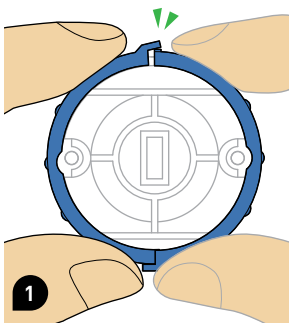


1

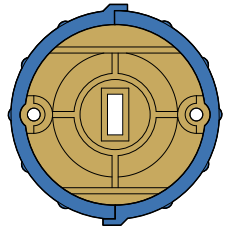
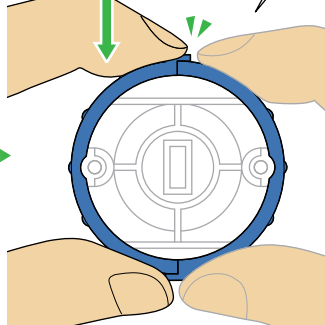
B17



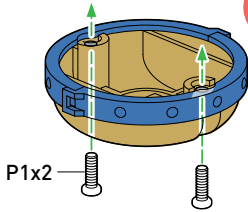
Press



1

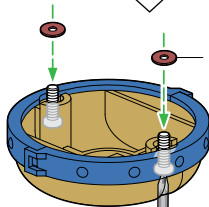


Pay close attention to the order of each step.



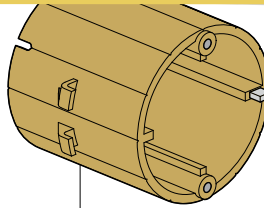
P1x2

P8x2

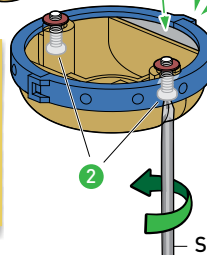


2

Screwdriver

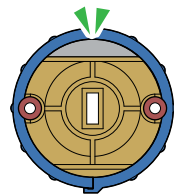


C8

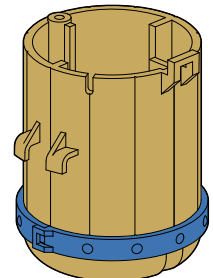


2

Screwdriver



Top view

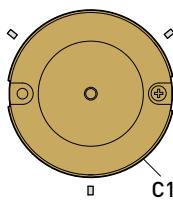


## BATTERY MODULE ASSEMBLY



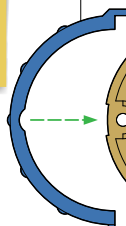
Make sure to remove any burrs before assembly.

3

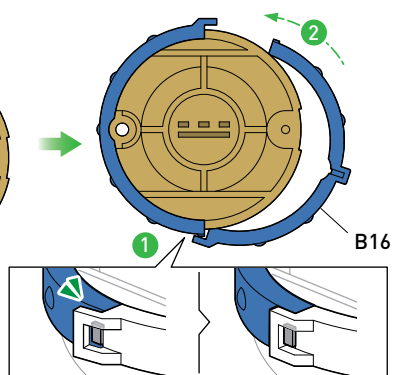


C12

B17



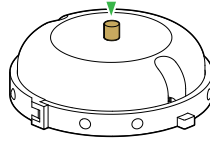
C12



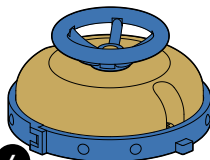
B16



B30



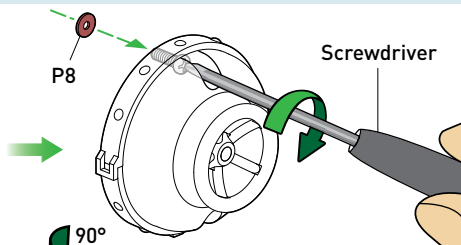
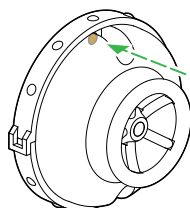
4



P1

P8

Screwdriver

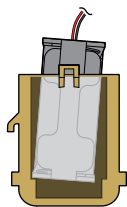
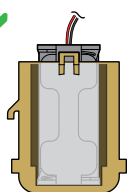
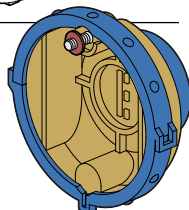


90°

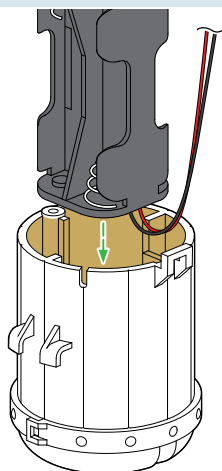


Hold the washer (P8) on top of the hole in C12 and use the screwdriver to screw in P1. P1 should screw into P8.

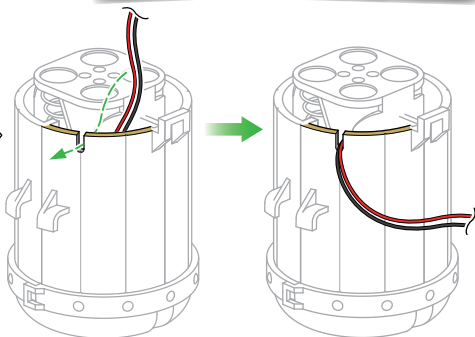
5

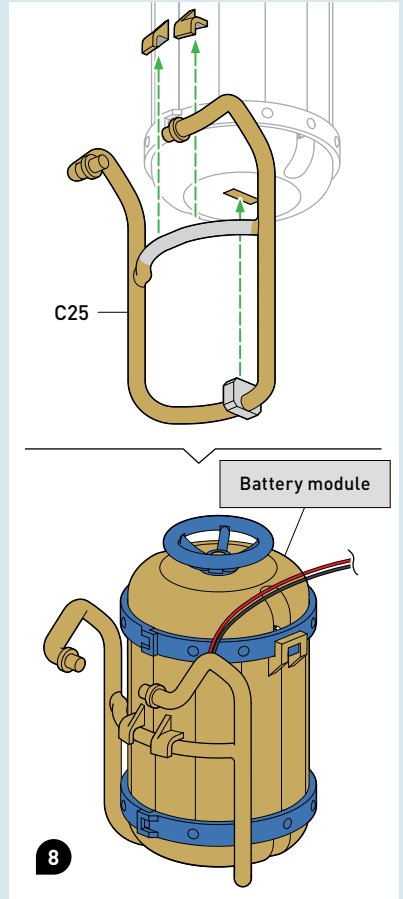
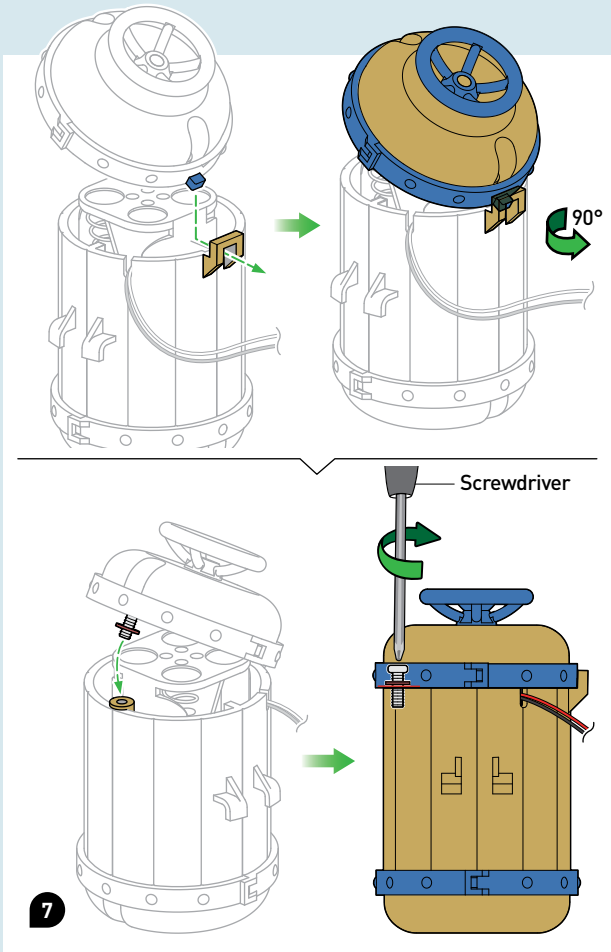


6



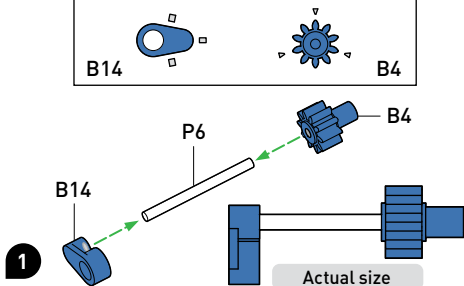
Do not insert the batteries yet. You will install the batteries later. (See page 40 for more details.)



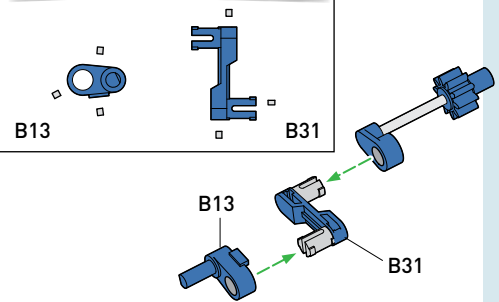


## TRANSMISSION ASSEMBLY

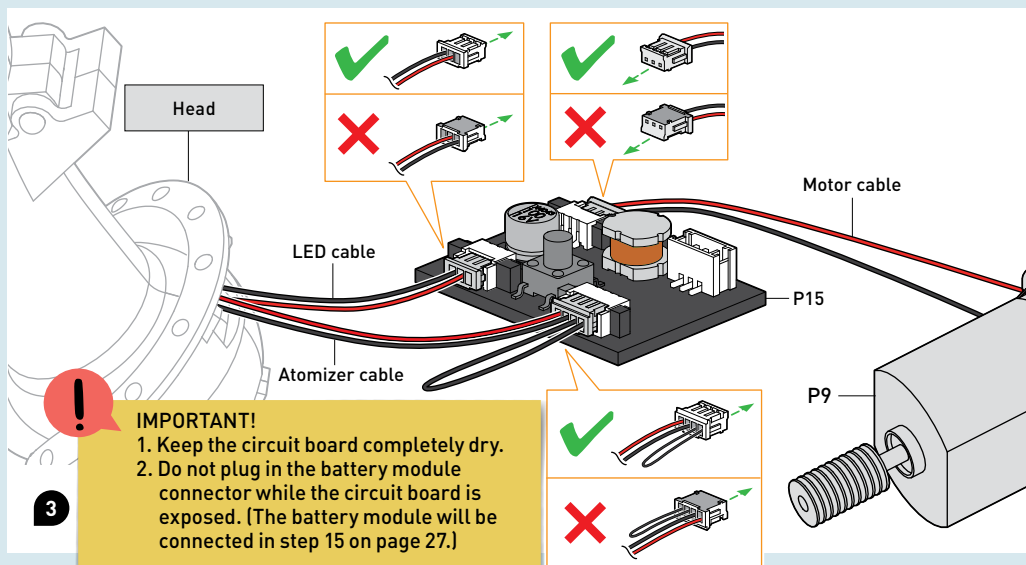
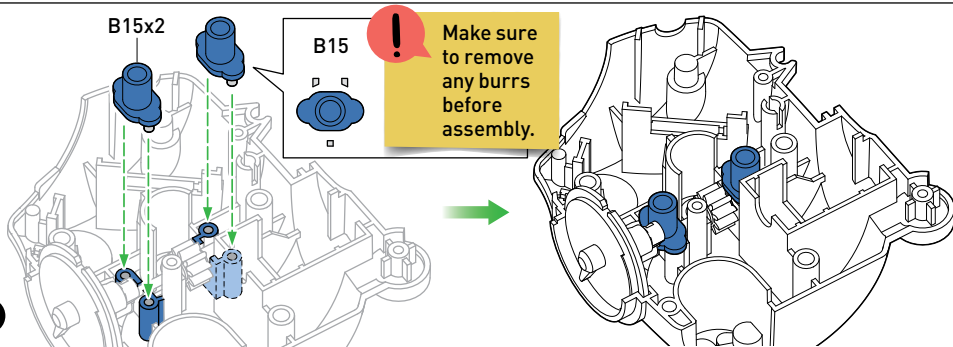
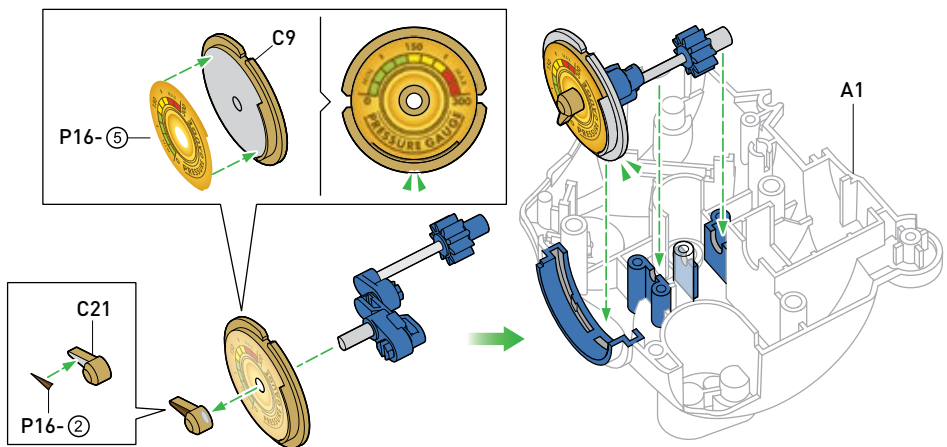
**!** Make sure to remove any burrs before assembly.



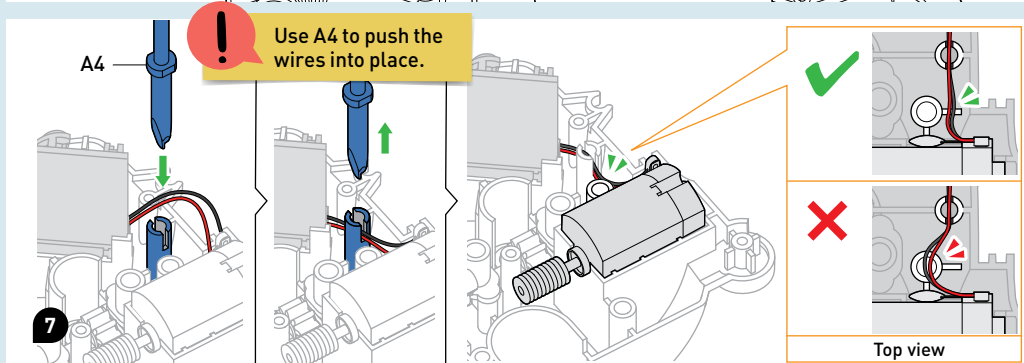
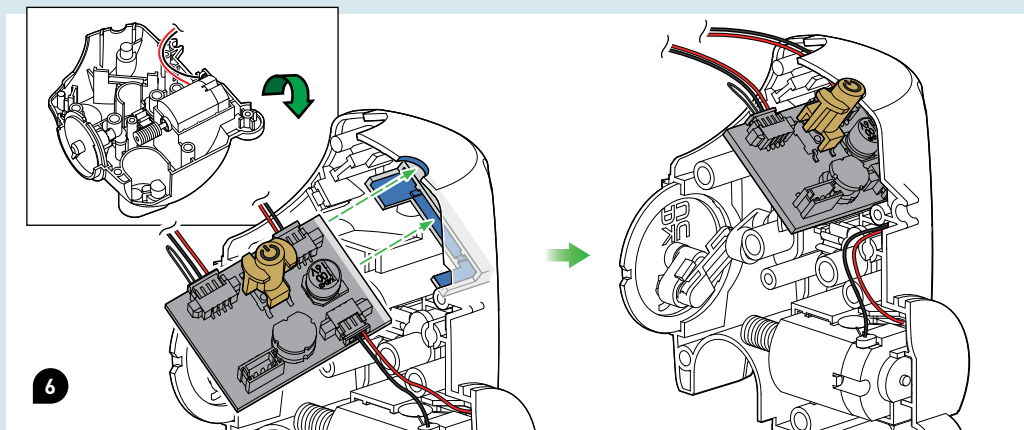
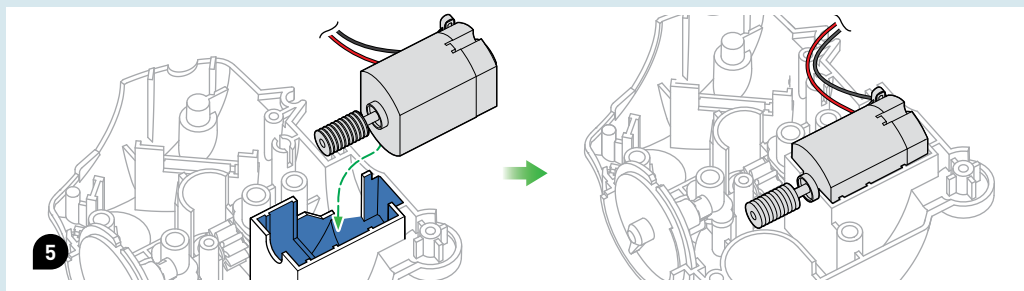
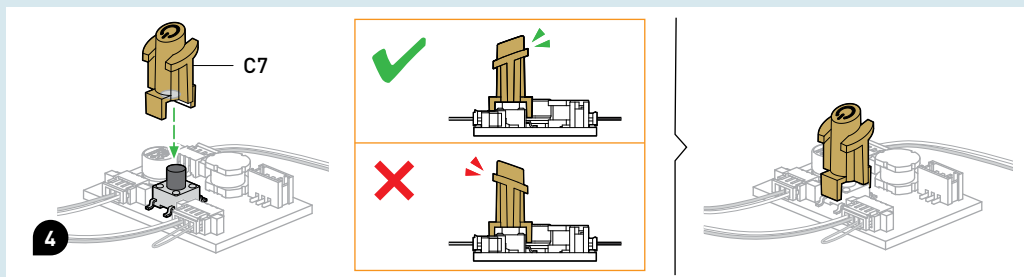
**!** Make sure to remove any burrs before assembly.

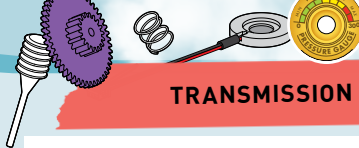


## TRANSMISSION ASSEMBLY

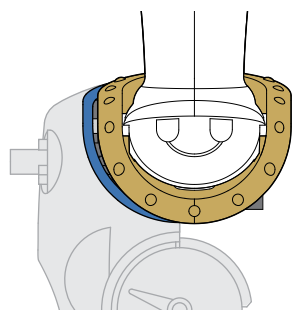
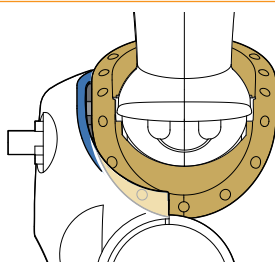
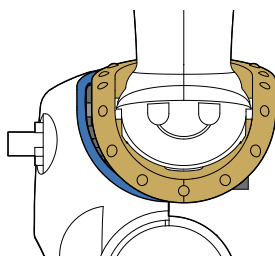
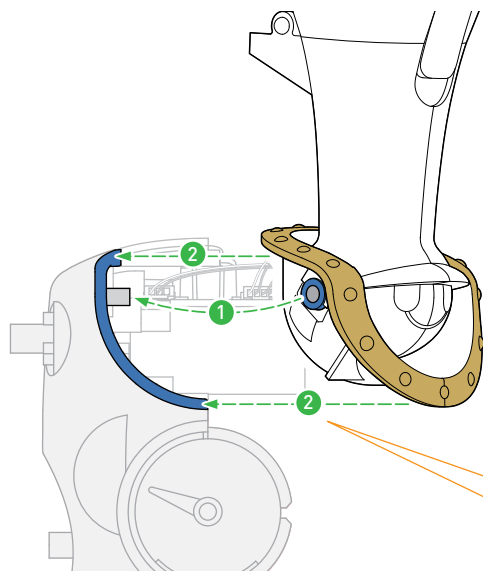




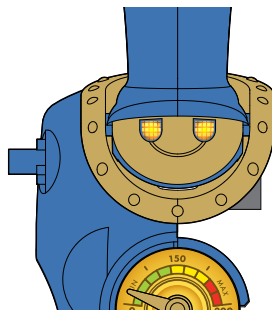




## TRANSMISSION ASSEMBLY



Press



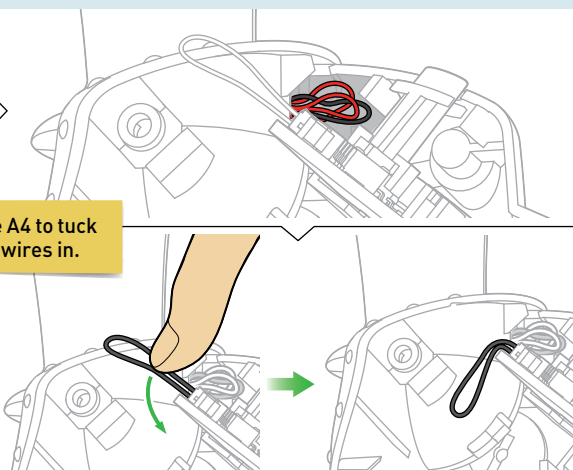
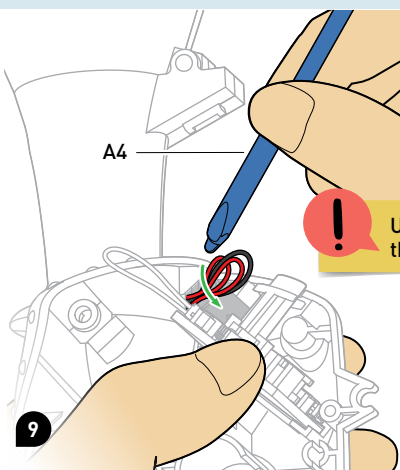
8

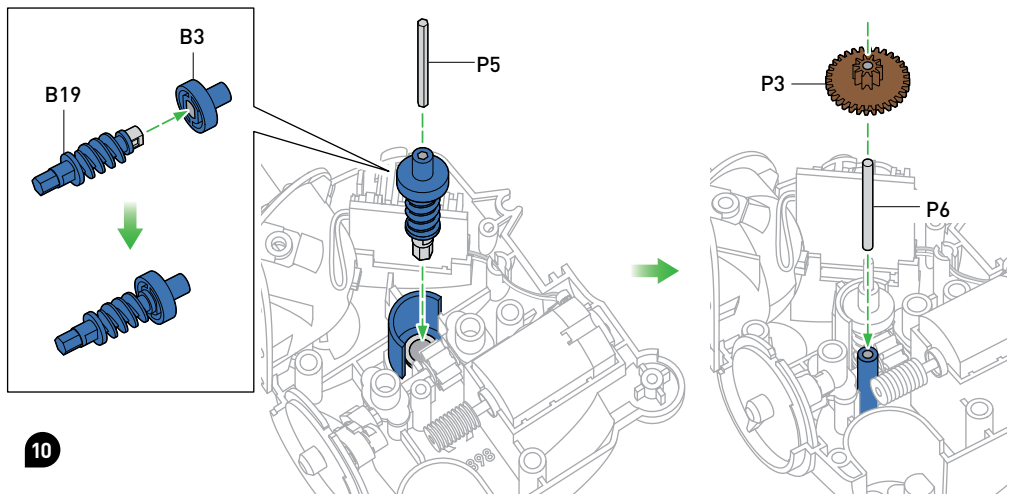
A4



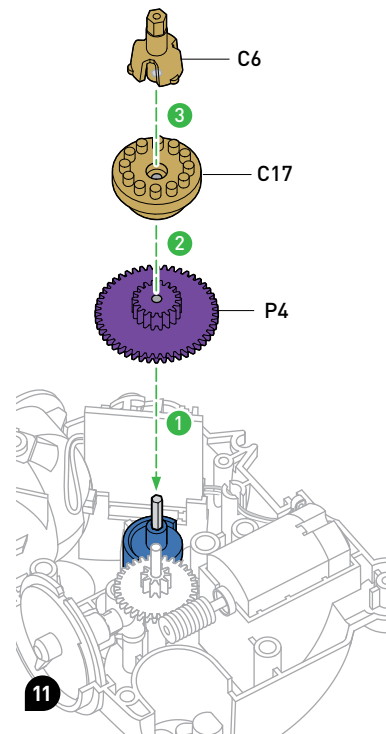
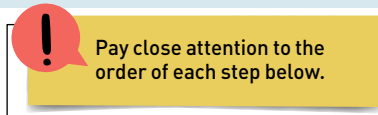
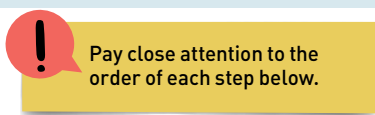
Use A4 to tuck the wires in.

9

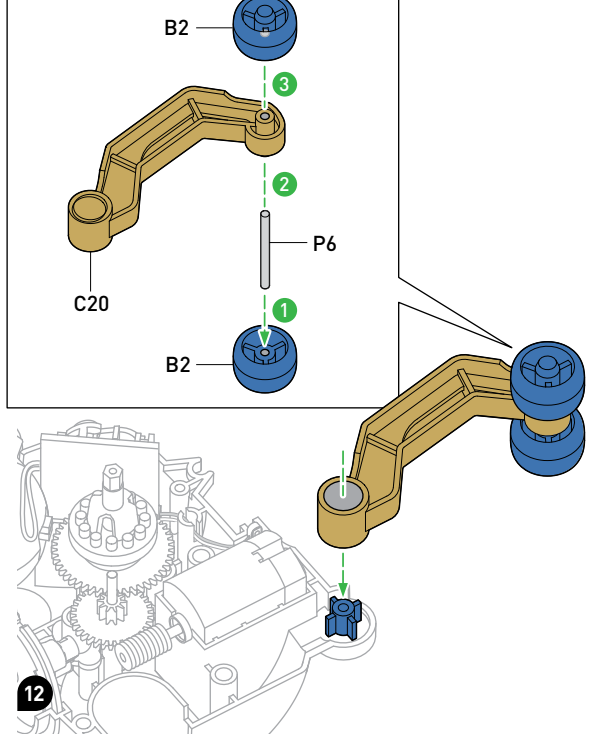




10



11

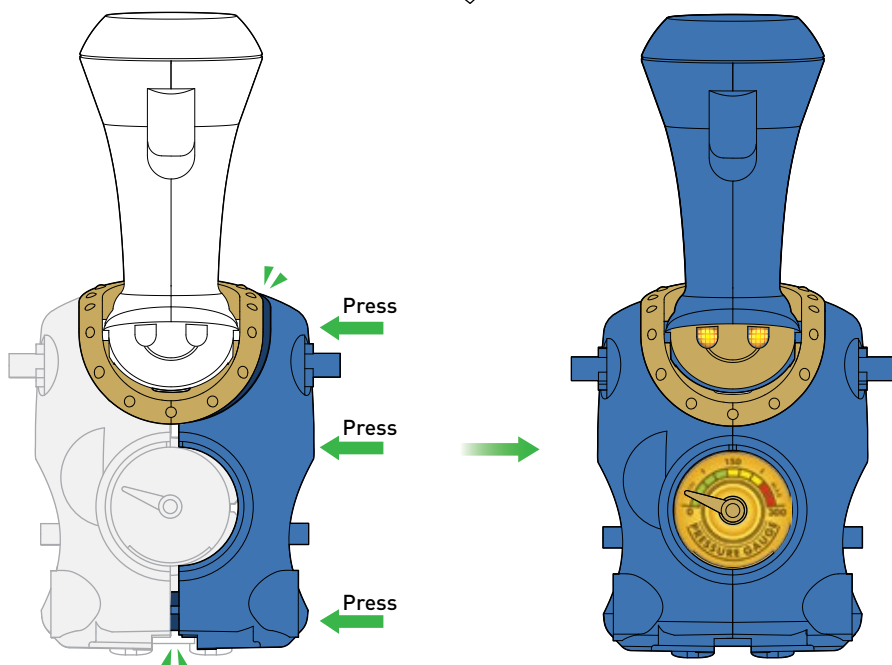
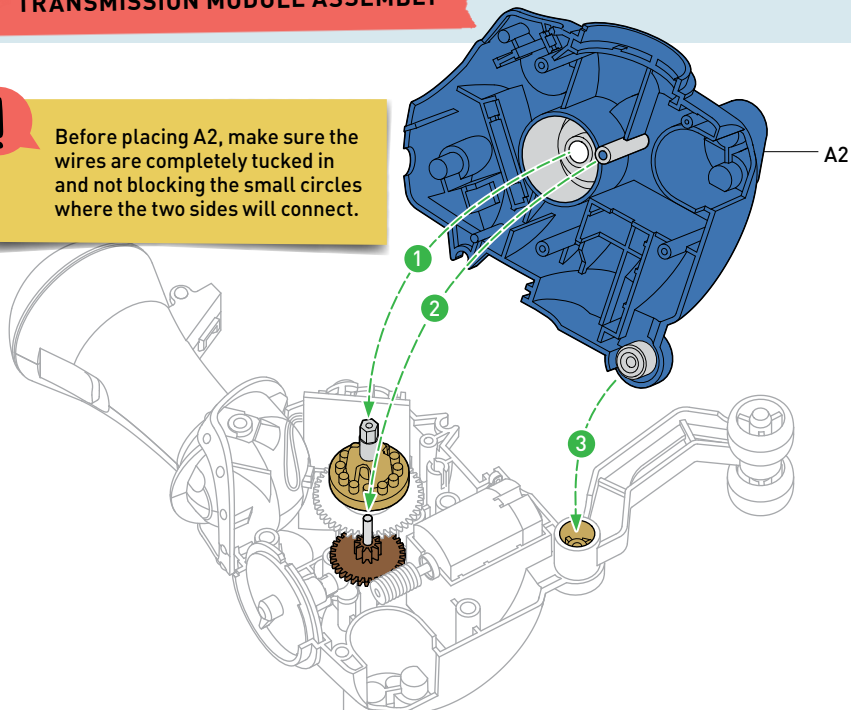


12

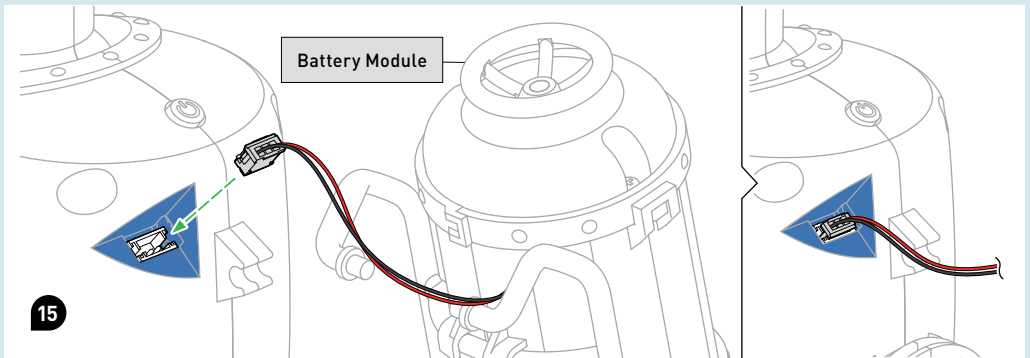
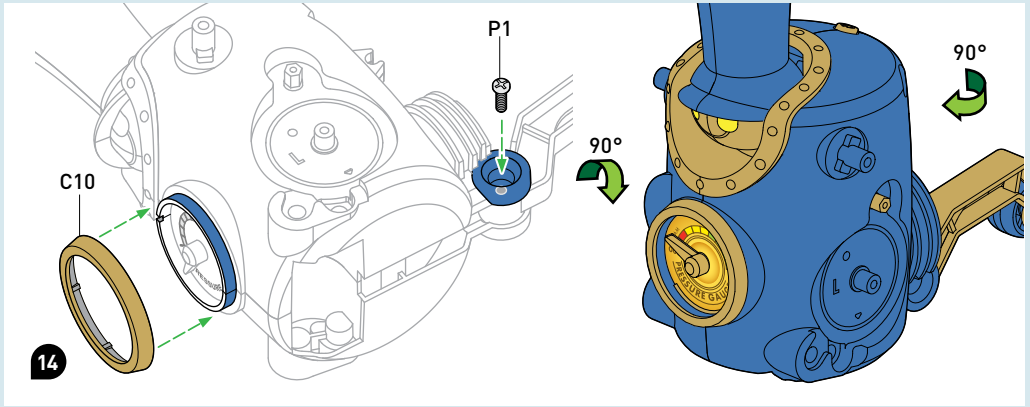
## TRANSMISSION MODULE ASSEMBLY



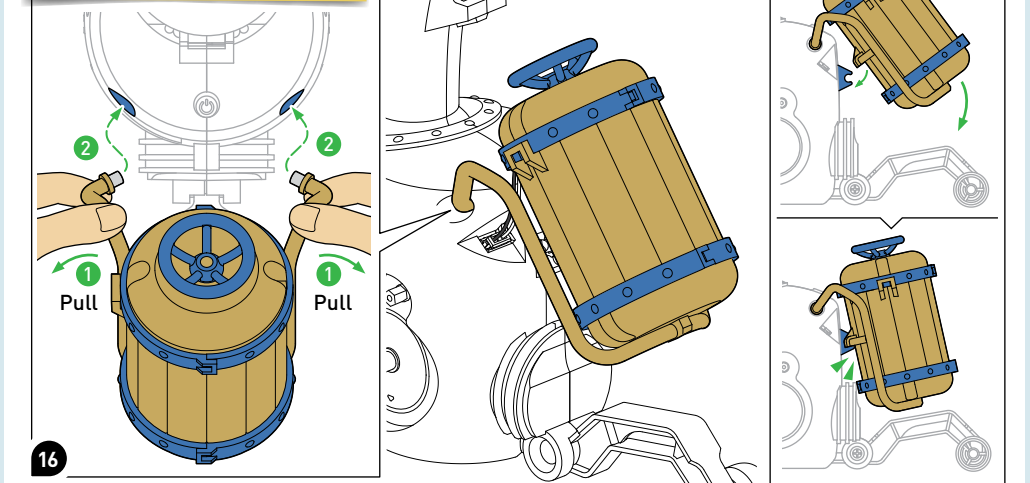
Before placing A2, make sure the wires are completely tucked in and not blocking the small circles where the two sides will connect.







**!** Pay close attention to the order of each step below.



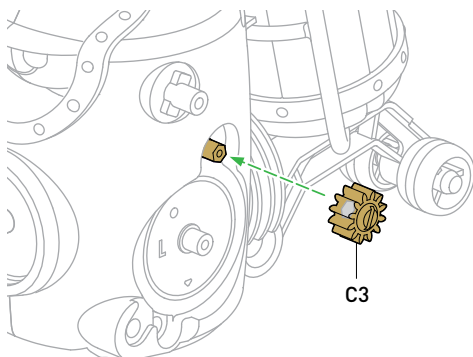
# TRANSMISSION ASSEMBLY



Make sure to remove any burrs before assembly.



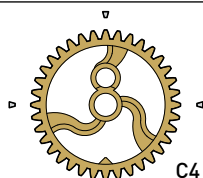
C3



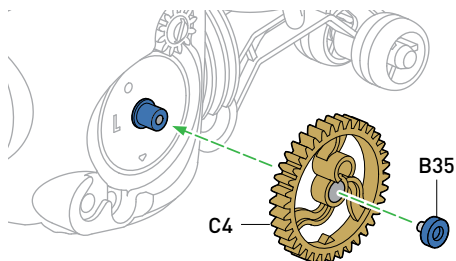
C3



Make sure to remove any burrs before assembly.

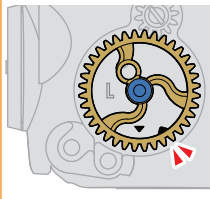
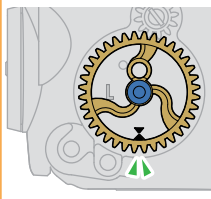


C4



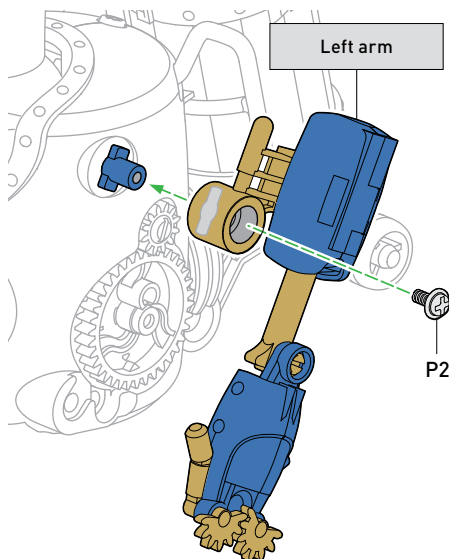
C4

B35

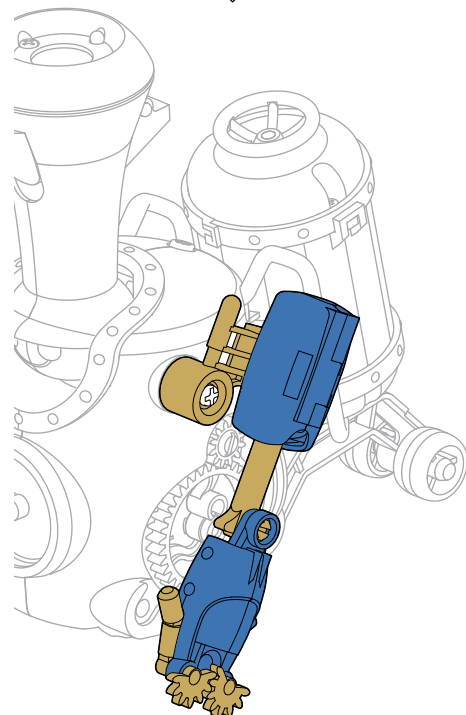


17

Left arm

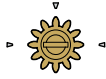


P2

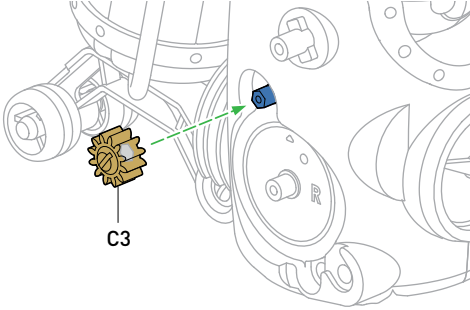




Make sure to remove any burrs before assembly.



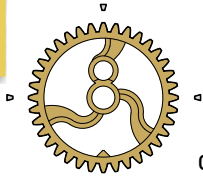
C3



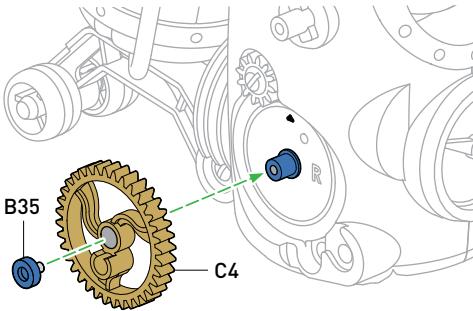
C3



Make sure to remove any burrs before assembly.

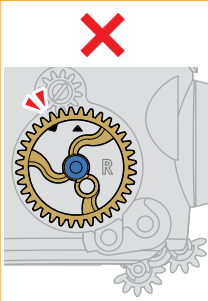
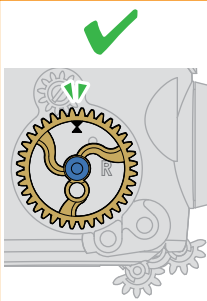


C4

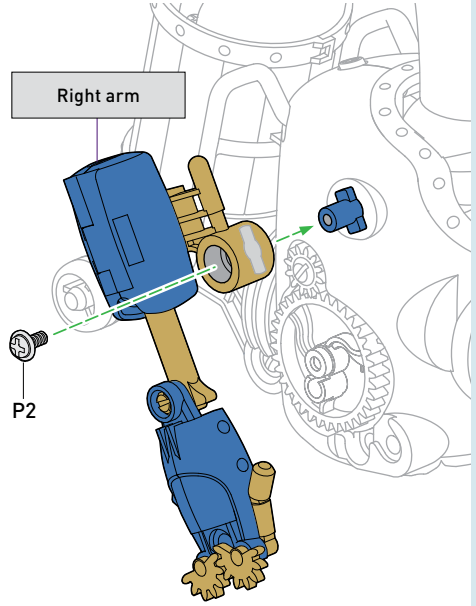


B35

C4

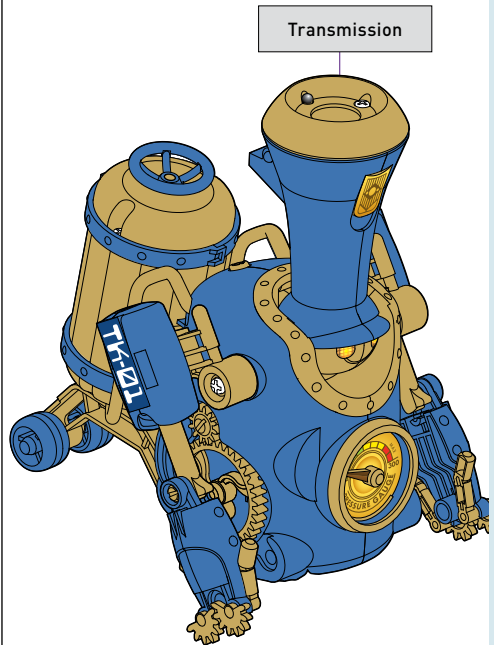


18



Right arm

P2



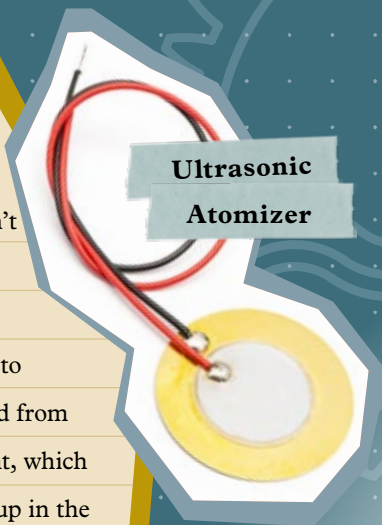
Transmission



## How does TrainBot create “steam?”

Your TrainBot may look like a real steam engine, but don't be fooled! No water is actually heated — instead, a cool modern technology creates the mist.

Real **steam locomotives** rely on the expansion of steam to provide the force needed to move. Heat, usually generated from burning coal, brings water in the boiler to its boiling point, which creates steam. As liquid water turns to gas, steam builds up in the boiler, creating pressure. Steam moves the pistons, which turn the wheels, causing the train to move along the track. Steam exits through the chimney, along with smoke from the heat source. Your TrainBot stays cool. Rather than heat, your TrainBot houses an **ultrasonic atomizer**, which relies on the **piezoelectric effect**. Piezoelectric materials create an electric voltage when they are forced to change shape. The effect can also be reversed: when these special materials have an electric voltage applied to them, they change shape. That's what's going on in your TrainBot! An electric signal creates **ultrasonic waves** (sound waves that have frequencies higher than the human ear can hear) on the disc of the atomizer. The water on the surface of the atomizer takes the shape of these waves, causing tiny droplets to form. The droplets rise and exit via the chimney as a cool mist.



Ultrasonic  
Atomizer



Sound waves



# Fog, Smoke, and Steam

While steam and smoke may look the most alike, it is smoke and fog that have more in common. From a physical perspective, both fog and smoke are **aerosols**, which means they are very small particles that have been dispersed in air or gas. But steam is different: it is water in its **gaseous state of matter**.



**Smoke**

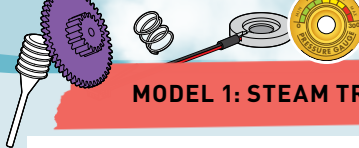
**SMOKE** is a collection of airborne particles that are released when a material undergoes incomplete combustion, meaning there is not enough oxygen to burn the fuel completely into water and carbon dioxide. These particles are too small to see with your eyes individually, but when they come together, you see them as smoke.

... **FOG** consists of tiny water droplets or ice crystals that are suspended in the air near the ground. In other words, fog is a cloud that is touching the Earth's surface.

**STEAM** is water in its gaseous form, which is produced by heating liquid water to 100 degrees Celsius or higher. In its pure form, steam is colorless, but as steam cools and condenses, it becomes visible as **water vapor**, producing a white cloud.



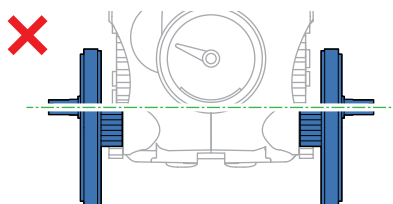
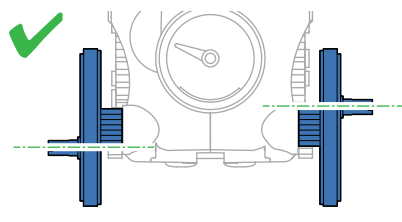
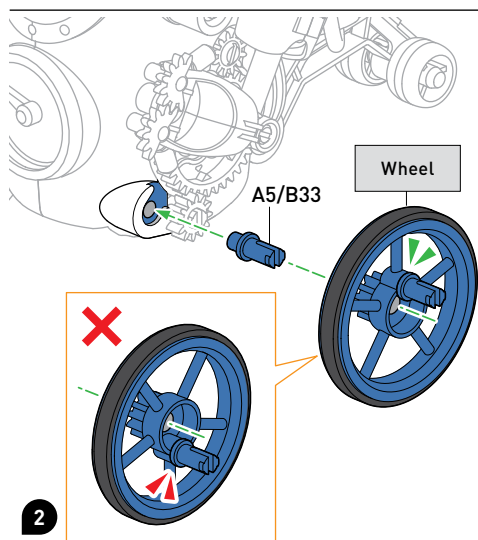
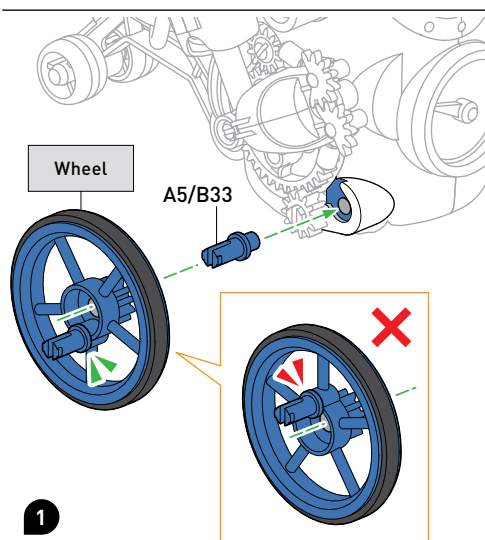
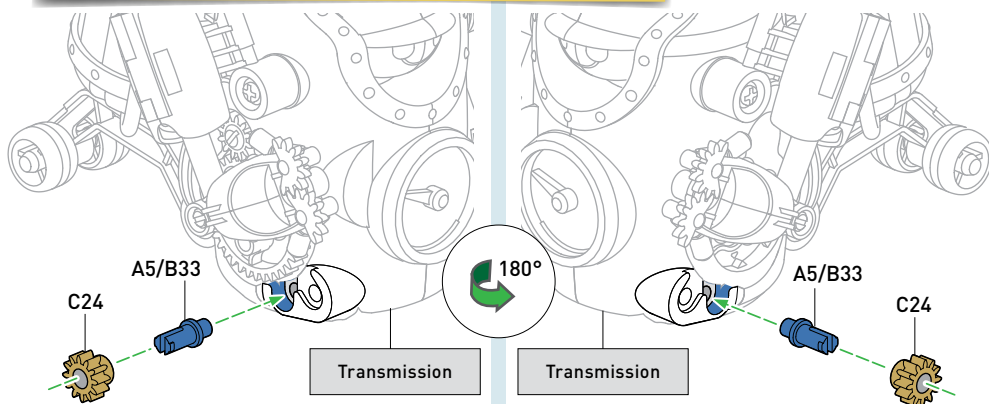
**Steam**

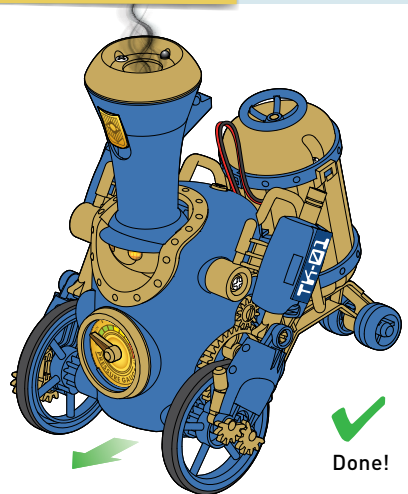
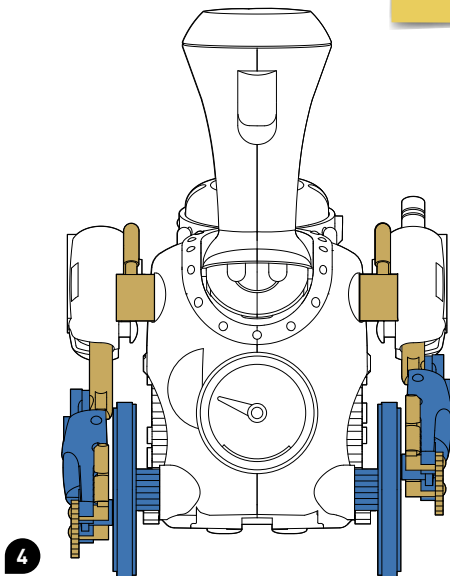
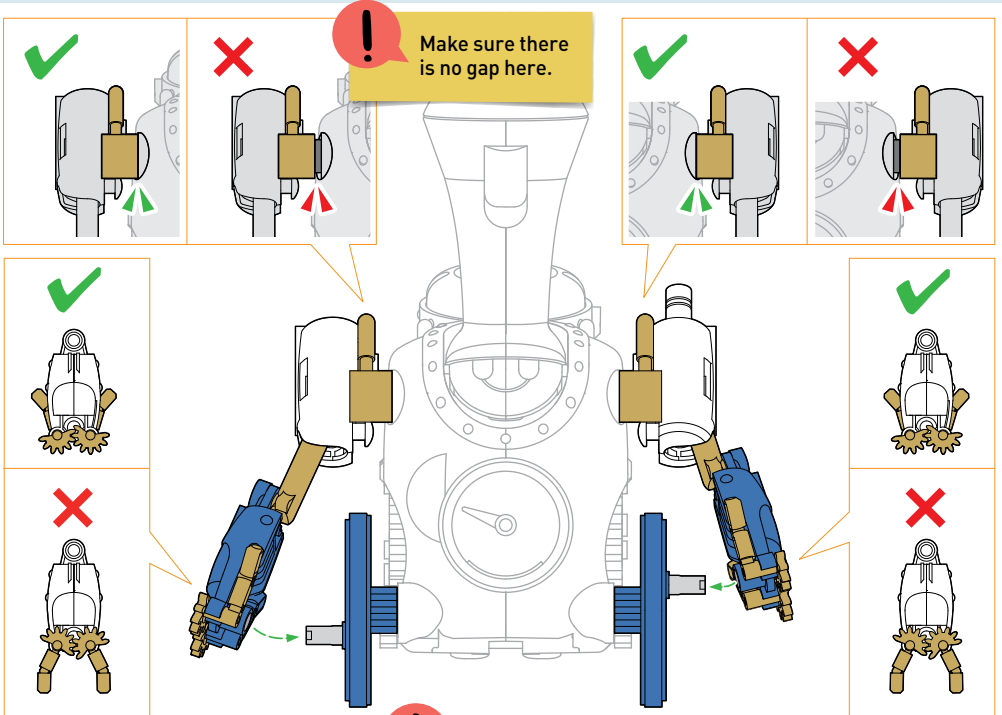


## MODEL 1: STEAM TRAIN

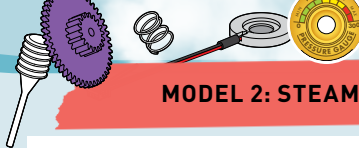


Make sure A5/B33 are oriented and inserted correctly, or the wheels of your steam train may not rotate smoothly.

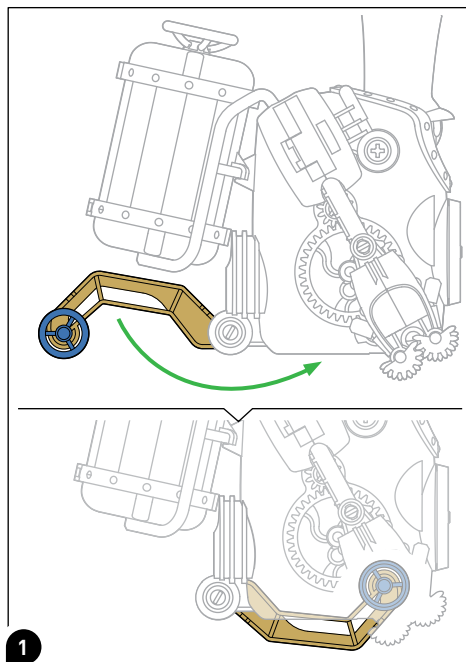




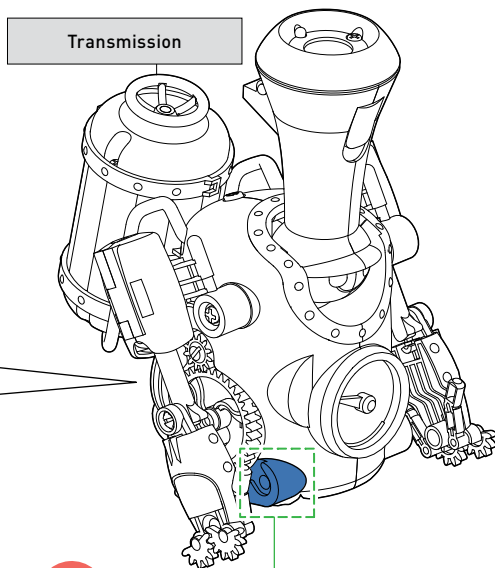
Pages 40-41 explain how to get your steam train rolling.



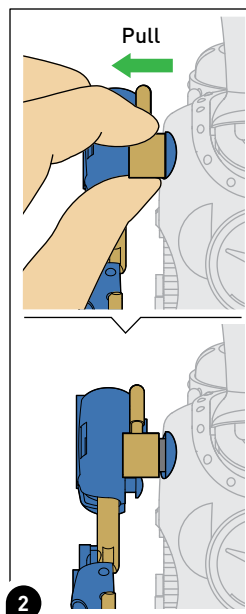
## MODEL 2: STEAM ROBOT



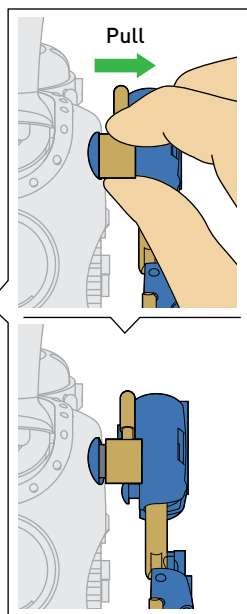
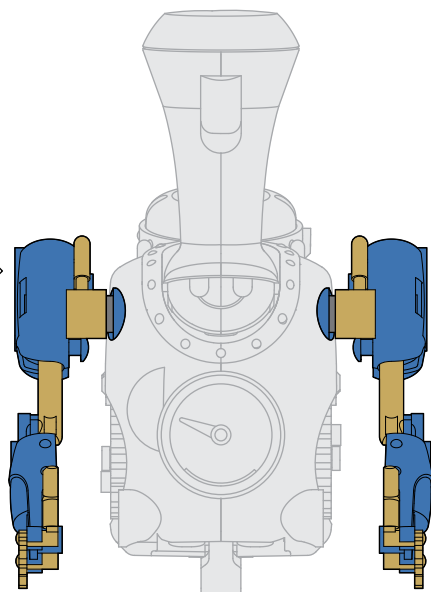
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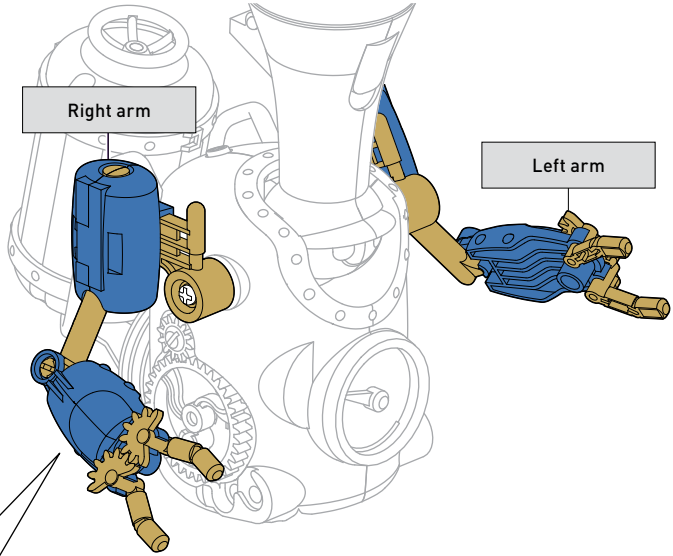
If your TrainBot is in steam train mode, first remove the parts from steps 1 & 2 on page 32.



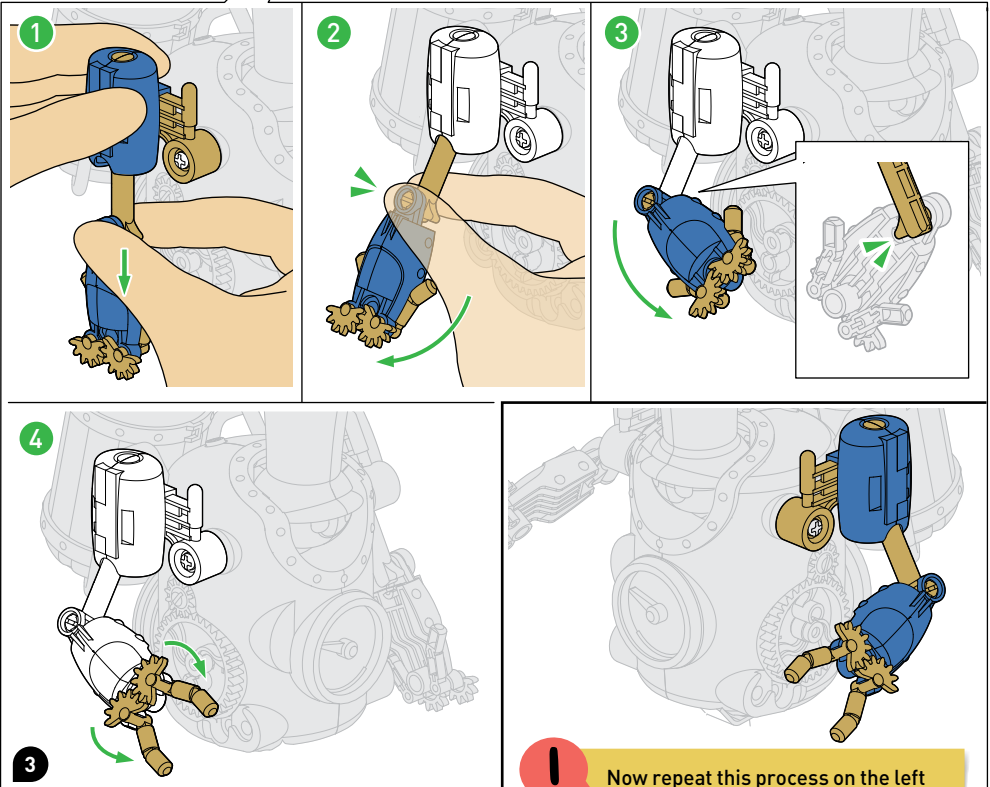
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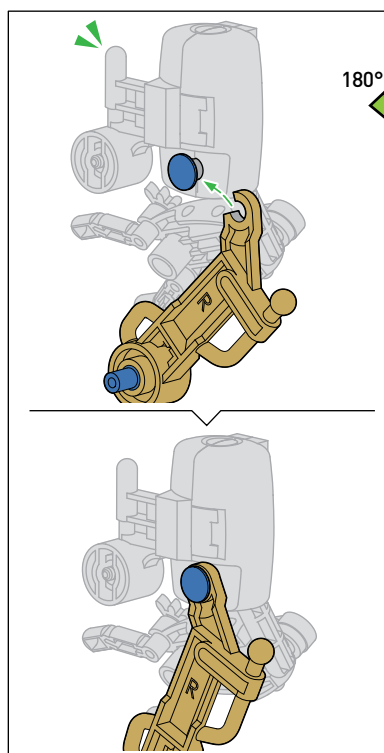
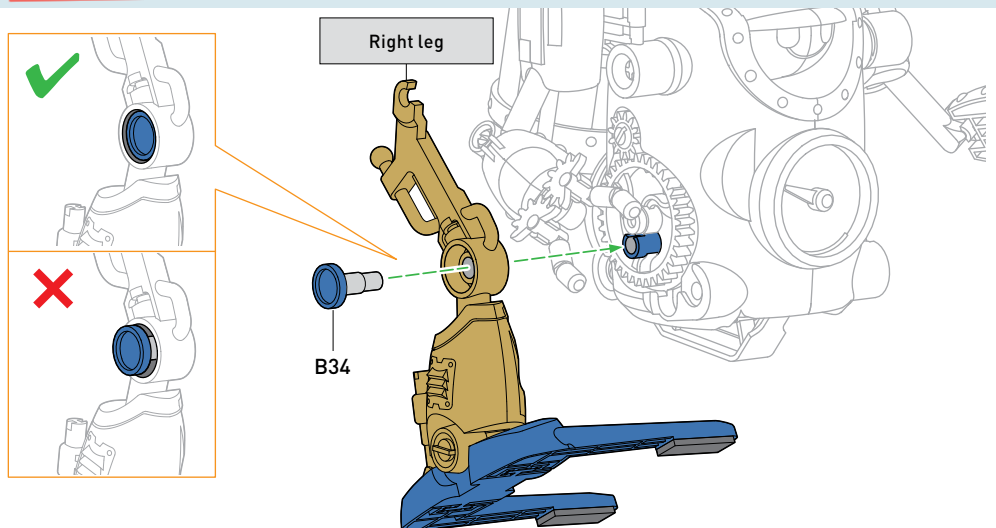


Unlike in the steam train model, in the steam robot model, the hands can be rotated into the forward position.

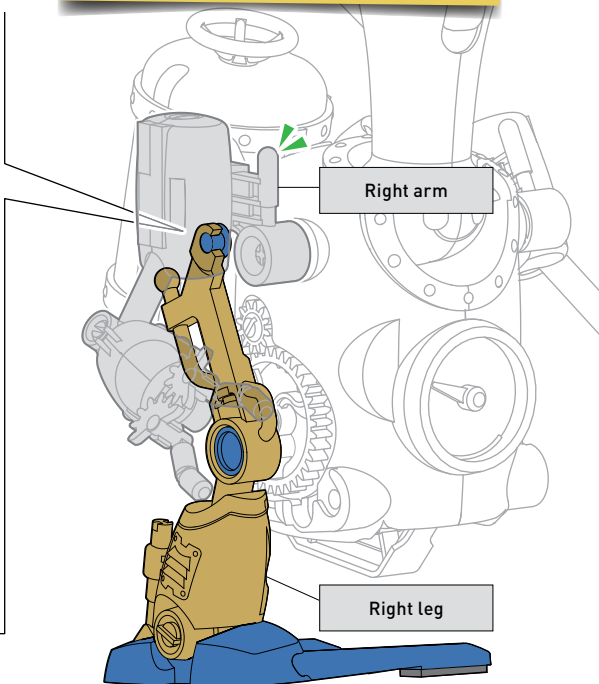


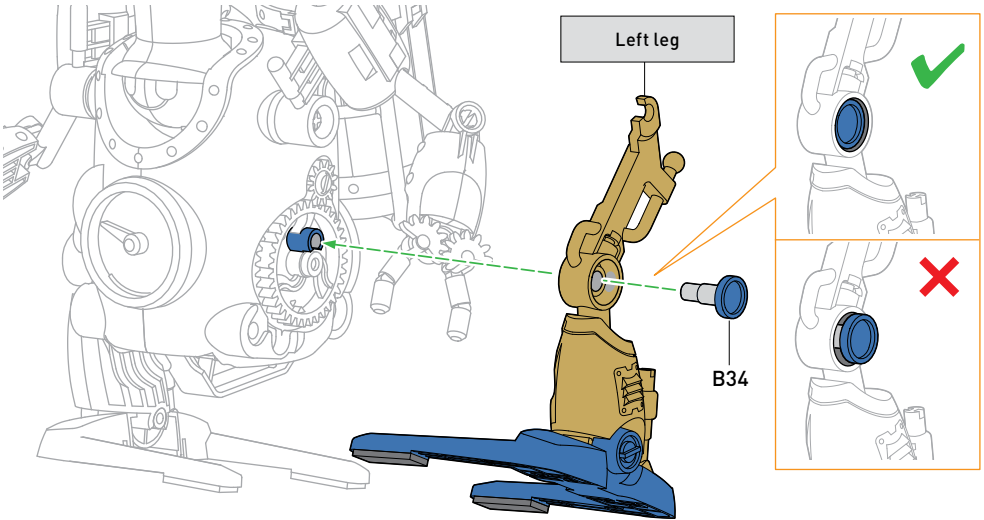
**!** Now repeat this process on the left side to create the robot's left hand.

## MODEL 2: STEAM ROBOT

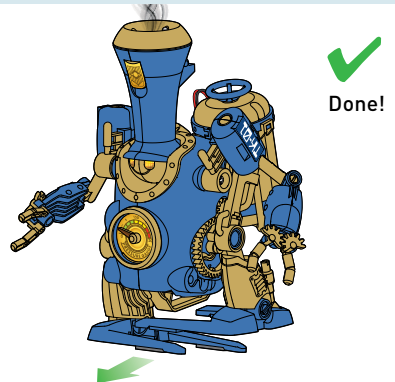
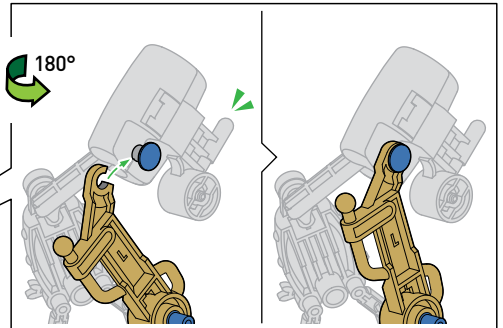
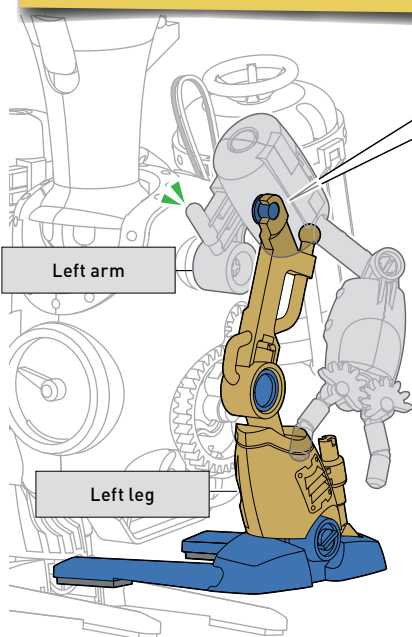


**!** Before assembly, make sure that the right arm is rotated outward. Turn the robot around to connect the right leg to the right arm as shown.





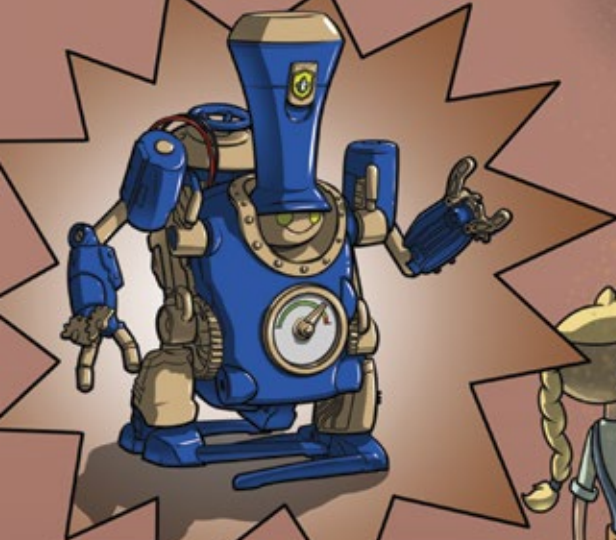
**!** Before assembly, make sure that the left arm is rotated outward. Turn the robot around to connect the left leg to the left arm as shown.



5

6

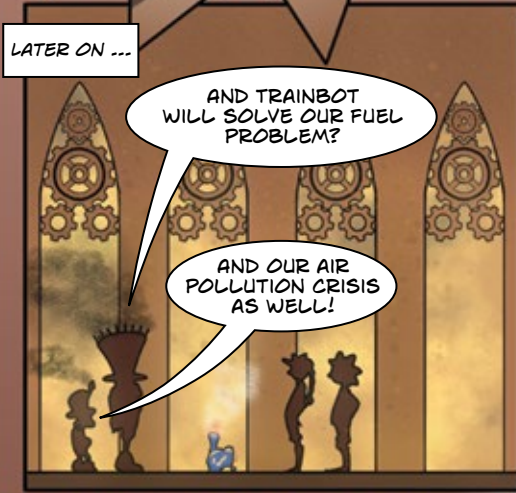
Pages 40–41 explain how to get your steam robot walking.



IT CERTAINLY LOOKS IMPRESSIVE! BUT WILL IT SOLVE OUR PROBLEM?

IT SURE WILL!

TO THE SOVEREIGN'S PALACE!



LATER ON ...

AND TRAINBOT WILL SOLVE OUR FUEL PROBLEM?

AND OUR AIR POLLUTION CRISIS AS WELL!

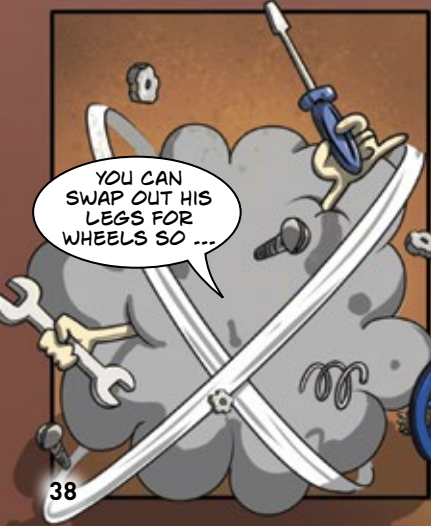


AND HE DOESN'T NEED TO BURN WOOD TO OPERATE?

NOPE!

BUT WHAT CREATES THE ENERGY TO OPERATE?

ELECTRICITY! AND LOOK ...



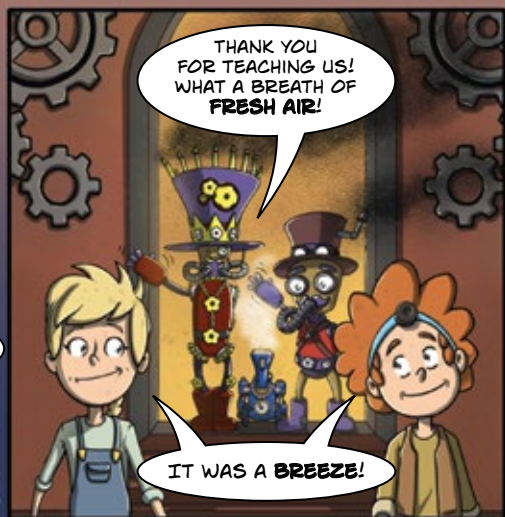
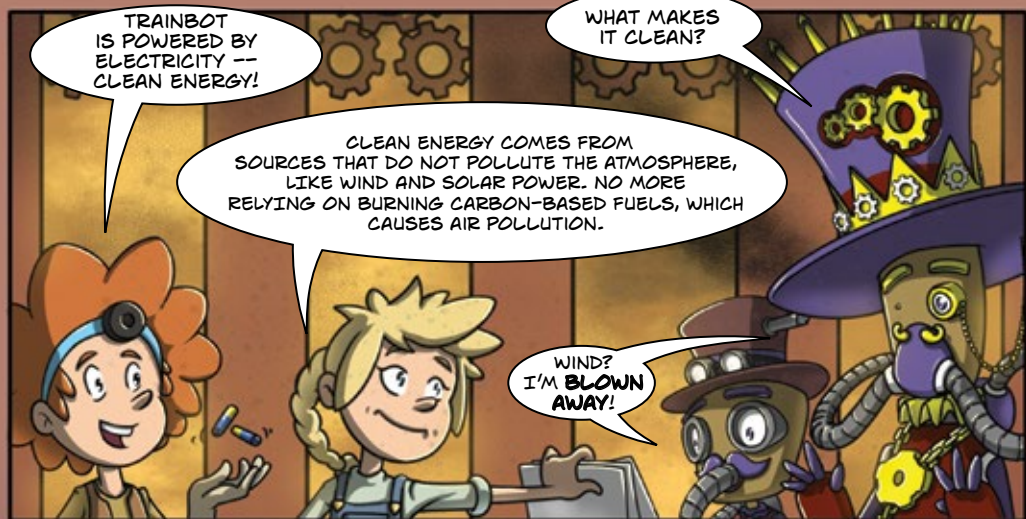
YOU CAN SWAP OUT HIS LEGS FOR WHEELS SO ...



... SO IT CAN GET WHERE IT NEEDS TO GO EVEN FASTER! MAGNIFICENT! LET'S FIND IT AN AX SO SO IT CAN START CUTTING TREES RIGHT AWAY. WE NEED WOOD!

YOU DON'T NEED WOOD!

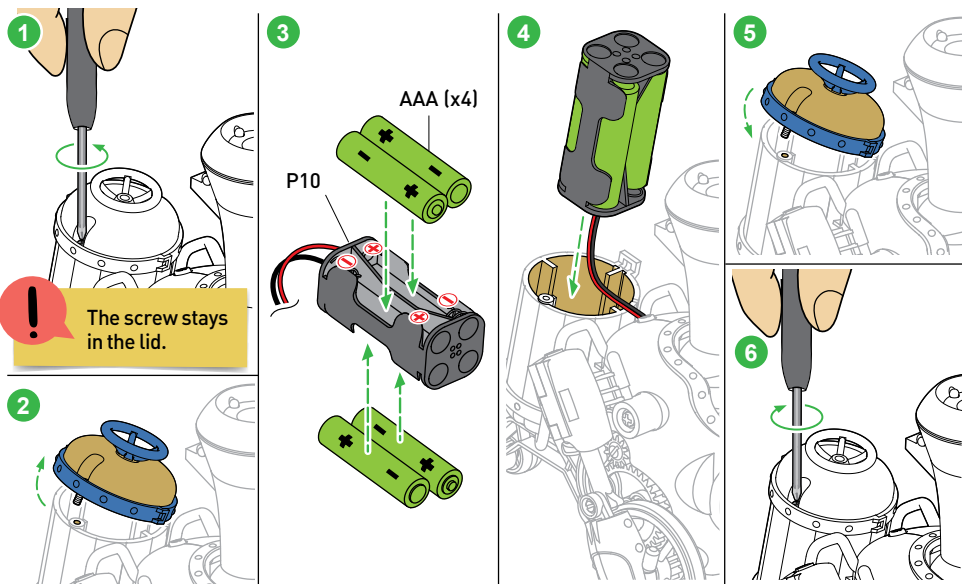






## INSERTING & CHANGING THE BATTERIES

Battery installation and removal should only be performed by an adult or under close adult supervision. Batteries must be inserted with the correct polarity (+ and -) and pressed gently into the battery compartment. Please note the instructions on the correct handling of batteries and battery-operated devices on page 2.

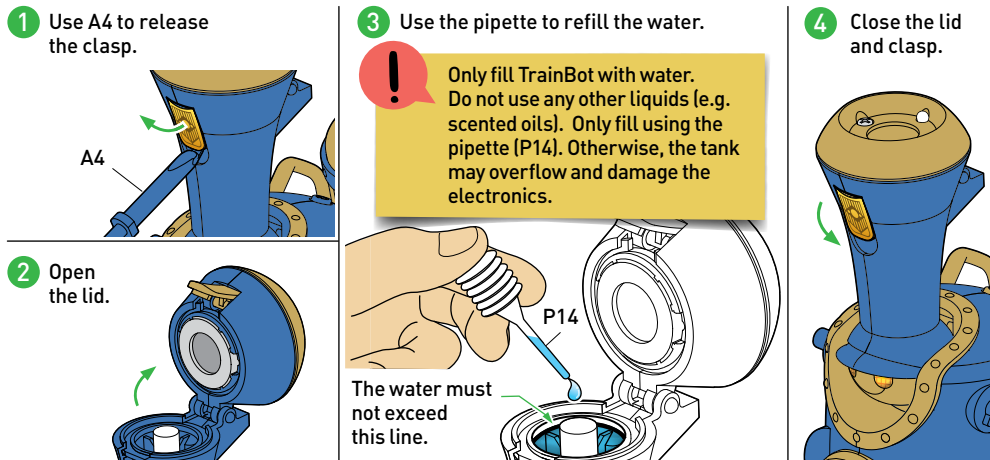


## FILLING THE WATER TANK

**A**



Power off your TrainBot before opening the lid!



## FILLING THE WATER TANK

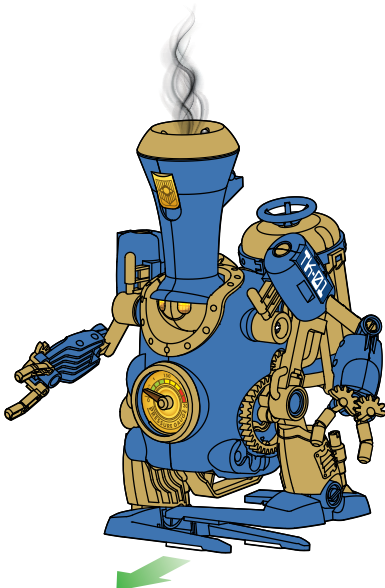
### B Three “Steam” Modes

TrainBot has three different modes for creating vapor. In modes 1 and 2, your robot moves while creating vapor. In mode 3, it creates vapor while standing still.

Cycle through the different modes using the button behind the chimney.

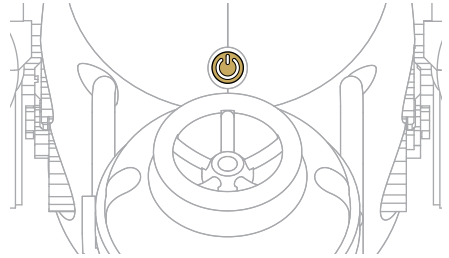
- Press the button once for mode 1. (The LED will flash once.)
- Press the button again for mode 2. (The LED will flash twice.)
- Press the button again for mode 3. (The LED will flash three times)

The orange LED illuminates the vapor, which can be better observed in the dark, but be careful not to accidentally knock your TrainBot over, because the water can spill out.



### C Powering Off Your TrainBot

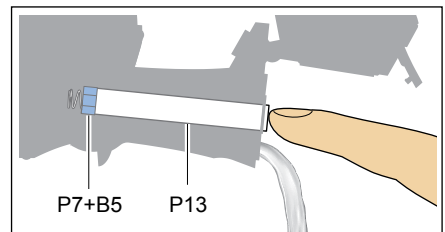
To power off your TrainBot, press and hold the button for three seconds.



While TrainBot functions similarly to a humidifier, it is only a toy. To humidify a room, use a commercially available air humidifier.



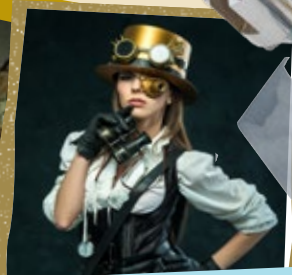
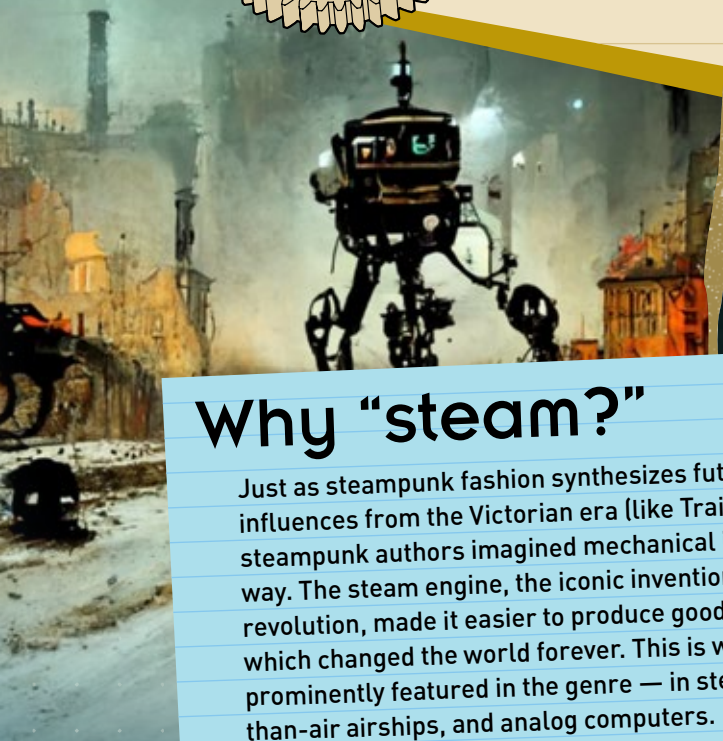
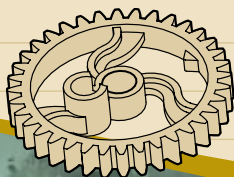
When you are done playing, check to see if any water remains in TrainBot's chimney. Power off TrainBot, open the lid of the chimney, hold your finger on P13 to keep P13, B5, and B7 from falling out, and tip TrainBot over. This will allow P13 to dry and stay clean.





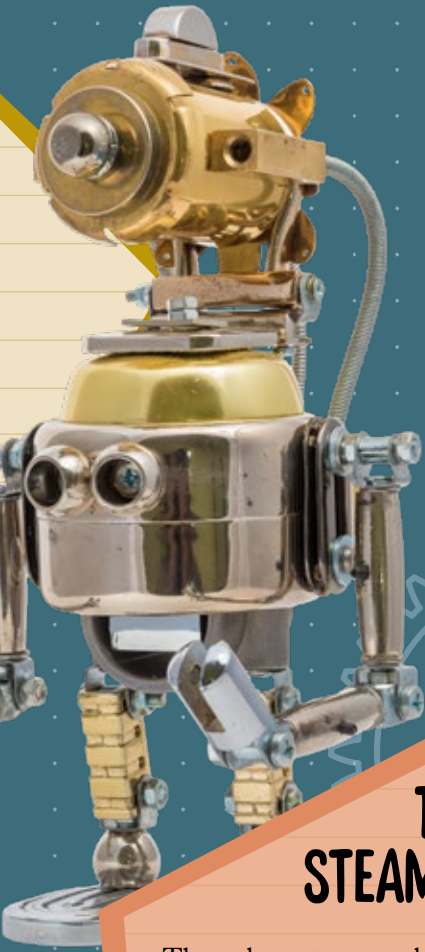
## Steam-powered robots?

Since steam locomotives have been around for so long, surely robots powered by steam must have existed, right? Unfortunately, not in real life. But science fiction authors have long imagined a world in which 19th-century industrial, steam-powered machinery powers newfangled technology. Over the years, this gave rise to a new genre of literature: **steampunk**. Famous works of steampunk are **The Time Machine**, by H. G. Wells and **Twenty Thousand Leagues Under the Sea**, by Jules Verne.



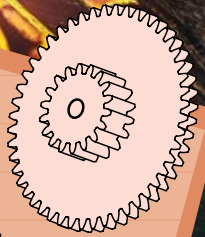
## Why “steam?”

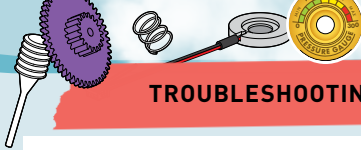
Just as steampunk fashion synthesizes futuristic styles with influences from the Victorian era (like TrainBot's top hat), steampunk authors imagined mechanical innovations the same way. The steam engine, the iconic invention of the industrial revolution, made it easier to produce goods in large quantities, which changed the world forever. This is why steam power is so prominently featured in the genre — in steam cannons, lighter-than-air airships, and analog computers.



## THE STEAMPUNK LOOK

These days, steampunk isn't only found in books and movies, but in fashion too. Steampunk festivals showcase costumes with pocket watches, welding goggles, and parasols mixed with futuristic elements like ray guns, rocket packs, and robotic pets in polished brass, iron, wood, and other materials that were common in the Victorian era. These mimic the use of raw materials that were used by Victorian engineers and tinkerers to create steam-powered apparatuses.





## TROUBLESHOOTING

### What should I do if my TrainBot won't turn on?

1. Check to make sure the batteries are inserted fully and with the correct polarity. For additional information on installing the batteries, please refer back to the instructions on page 40.
2. Check to make sure the cables are correctly connected and pushed all the way in. To review the steps on connecting the battery module to the circuit board, see page 27. For the motor, atomizer, and LED, see page 22.

### Why don't I see steam rising from the chimney?

1. Make sure there is water in TrainBot's chimney. See page 40 for instructions on how to properly fill the robot's chimney with water, using the enclosed pipette (P14).
2. Make sure the ultrasonic atomizer is installed correctly in TrainBot's head. Instructions for the head assembly begin on page 15. Check to make sure the atomizer cable is inserted into the correct port on the circuit board. The red wire must be on the left side, and it must be pushed all the way in.
3. Check for water on the atomizer. If water drops have collected on the atomizer, steam will not rise. You can soak up the water drops using a cotton swap or simply wait for it to dry. Do not turn TrainBot upside down or shake it, as this could cause water to come into contact with the electronic components and damage them.

### When I power my TrainBot on, the LED flashes five times. What does that mean?

This means that it is time for a battery change. Ask an adult to help you remove the old batteries and install new batteries.

### The robot makes a squealing noise. What does that mean?

This means that the water tank is empty. Use the pipette and fill the water tank, as shown on page 40. If you still hear the sound after filling the tank, it could be an indication that the cotton roll (P13) is too deep in the tank. Using your fingers, gently pull it out a tiny bit before closing the lid.

### The top of the chimney is wet. Is this okay?

Yes, this is normal. Carefully dry the chimney with a tissue before too much water collects. If water drops have collected on the atomizer, steam will not rise. You can soak up the water drops using a cotton swap or simply wait for it to dry. Do not turn TrainBot upside down or shake it, as this could cause water to come into contact with the electronic components and damage them.







This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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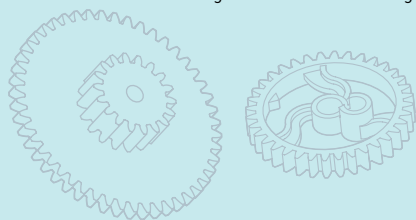
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