

# OPTIMUS PRIME



## Pack 01

### BUILD INSTRUCTIONS

ASSEMBLING THE HEAD - PART 1

ASSEMBLING THE HEAD - PART 2

ASSEMBLING THE HEAD - PART 3

ASSEMBLING THE HEAD - PART 4

ASSEMBLING THE HEAD - PART 5

ASSEMBLING THE CHEST

TESTING THE ELECTRONICS

**AGORA**  
MODELS®

# Advice from the experts

---

 **Please keep ALL unused screws as they may be required in a later stage.**

Please make sure you don't mix up the screws. They look quite similar, but the threads do vary slightly. Using the wrong screws may damage the parts.

When securing parts together using multiple screws, fit each screw loosely to ensure all the parts are correctly aligned before gently tightening them firmly, but not overtight, in the order in which you placed them.

The screwdriver can be magnetized by stroking it with a magnet (fridge magnet, etc.) enabling it to hold the screws and make assembly easier.

If a screw is tight going into a metal part, do not force it as you may shear the head off. Remove it and put a tiny smear of Vaseline, soap or light oil on the thread. That will lubricate it and make it easier to drive home.

Some parts will require a little glue for assembly. Please apply glue sparingly and use a cocktail stick so that you don't use too much nor apply the glue too heavily. We recommend superglue gel or Extra Thin Liquid modeling glue. Where possible, parts should be test-fitted in place before gluing.



Look out for the glue symbol and apply glue to the red area indicated in the picture.

During the course of this build, you will receive many pieces that you will assemble immediately – following the instructions in the corresponding stage – and other pieces that you should store in the tray supplied, for use in future assembly stages.

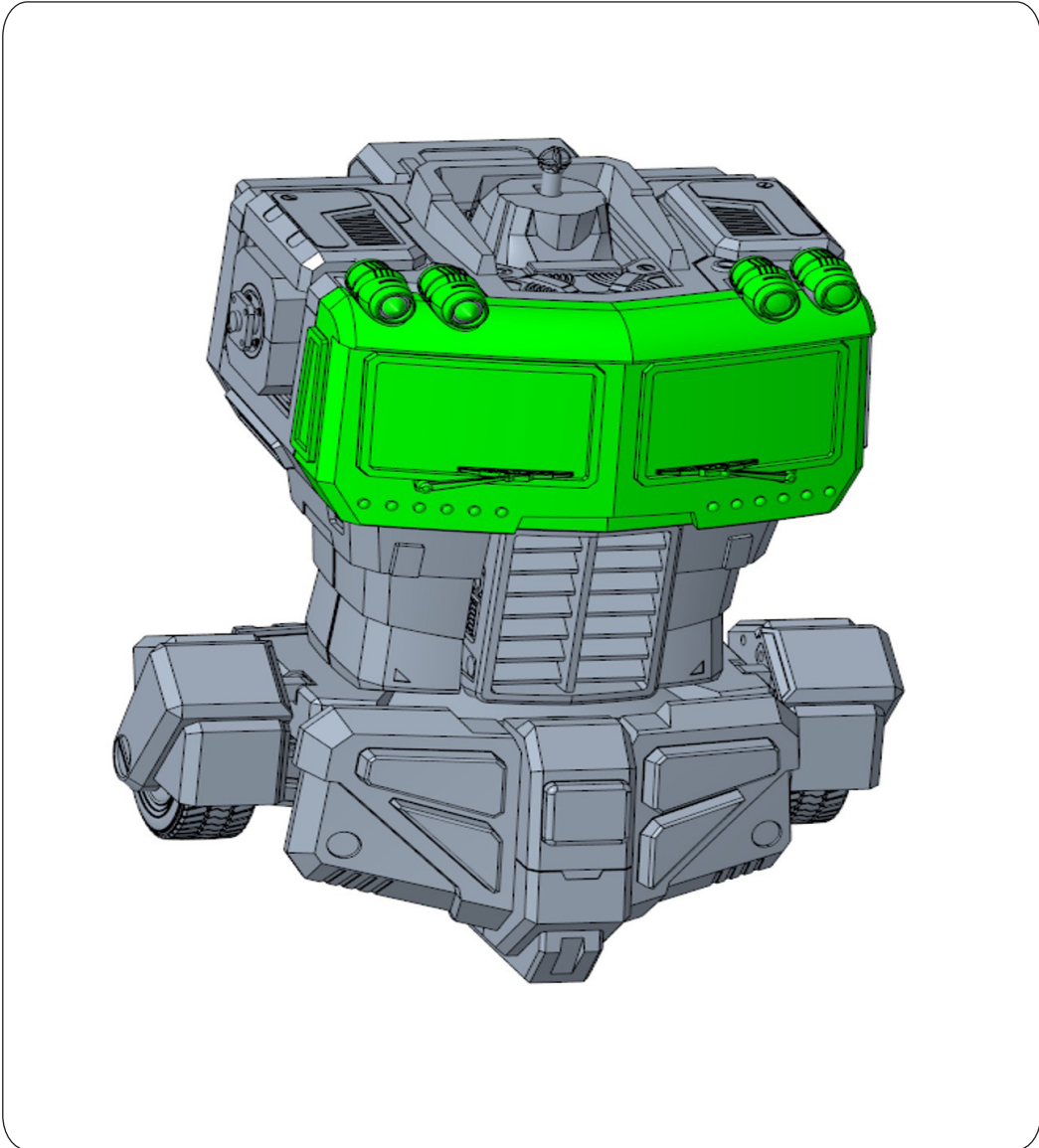
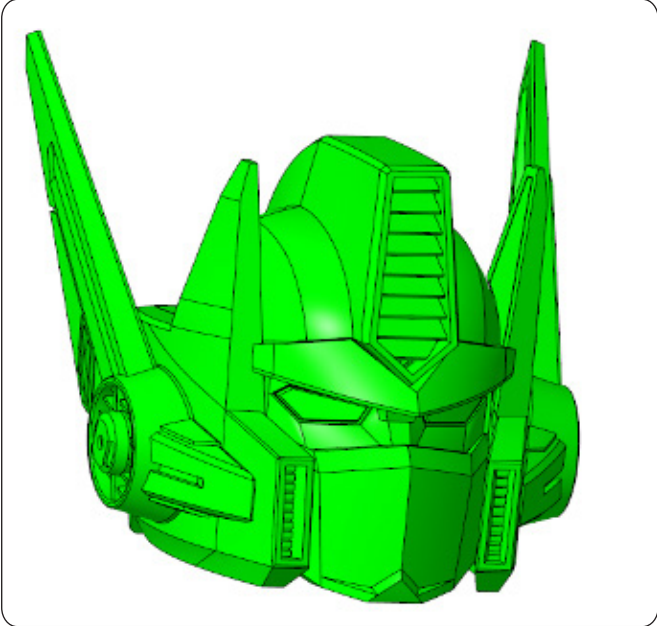
Always protect the paint finish on components by placing a cutting mat, sheet of white paper or soft cloth on your work surface.

Left and Right! When building your Optimus Prime, the left or right hand side refers to each side as viewed by Optimus Prime. Optimus Prime's left arm is on the viewer's right.



**WARNING:** Some parts are assembled using magnets. These magnets can cause serious injury if they are swallowed. Keep away from children. If you suspect a magnet has been swallowed, seek medical help straight away.

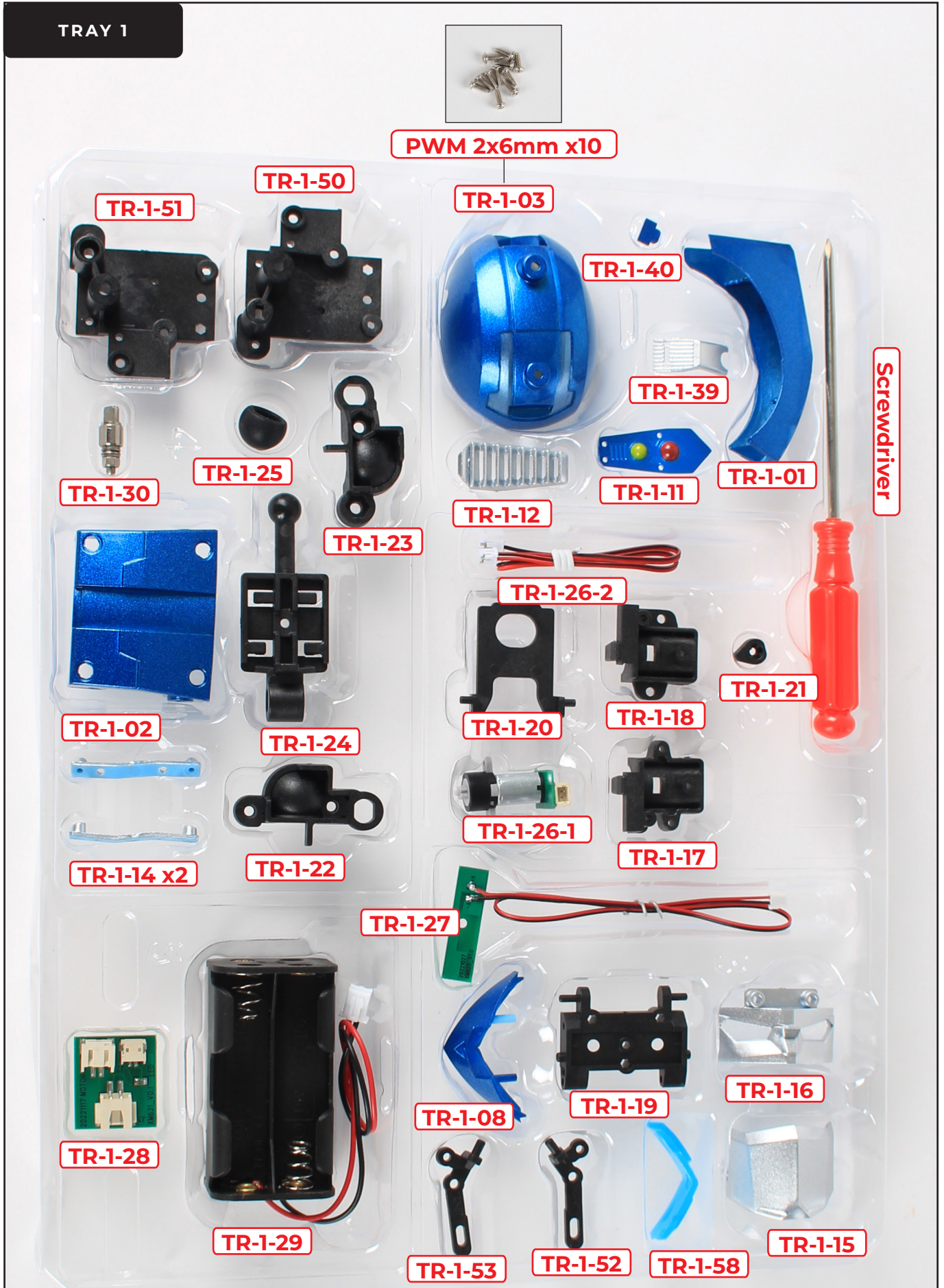
# Pack 1 : Building the Head & Chest





# Pack 1 Parts

TRAY 1





# Pack 1 Parts

TRAY 2





# Pack 1 Parts

TRAY 3

TR-1-47

TR-1-63 x4

TR-1-56

TR-1-57

TR-1-46 x4

TR-1-36

TR-1-38

TR-1-49

TR-1-37

TR-1-35

TR-1-49

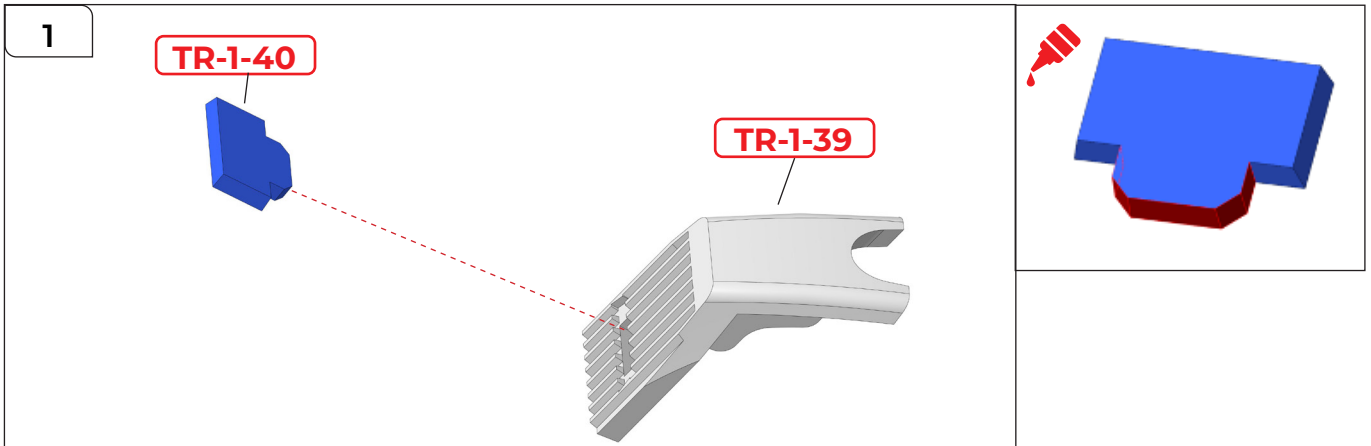
TR-1-37

TR-1-48

TR-1-62

TR-1-64  
x4

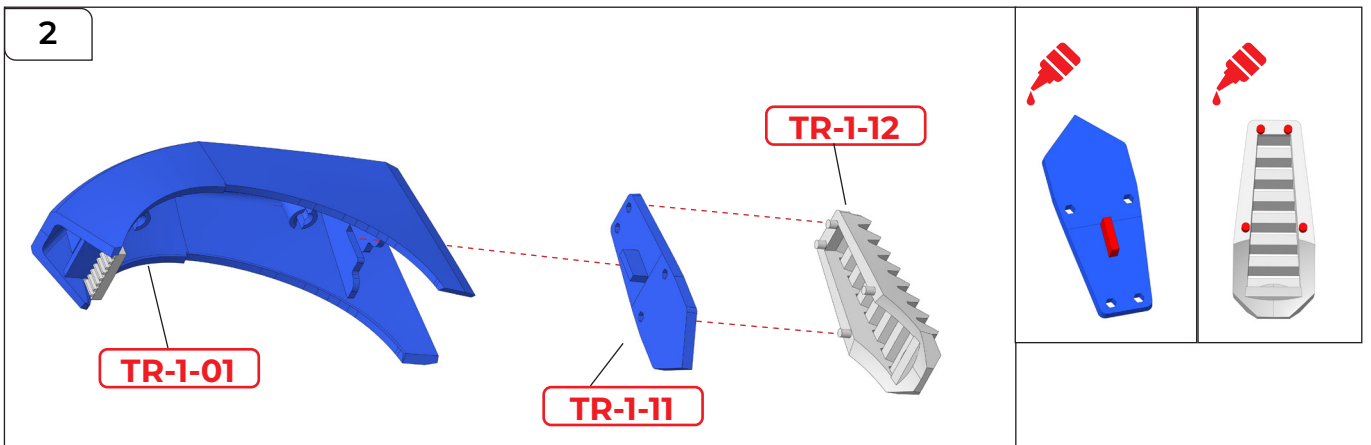
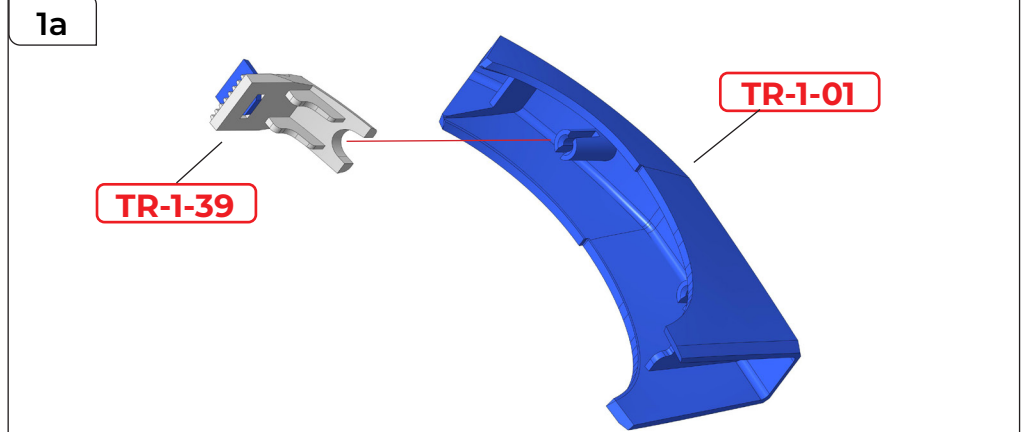
# Assembling the Head – Part 1



## STEP 1

Glue TR-1-40 as shown in red in the image above right before pushing into place on TR-1-39.

Push TR-1-39 into place on TR-1-01

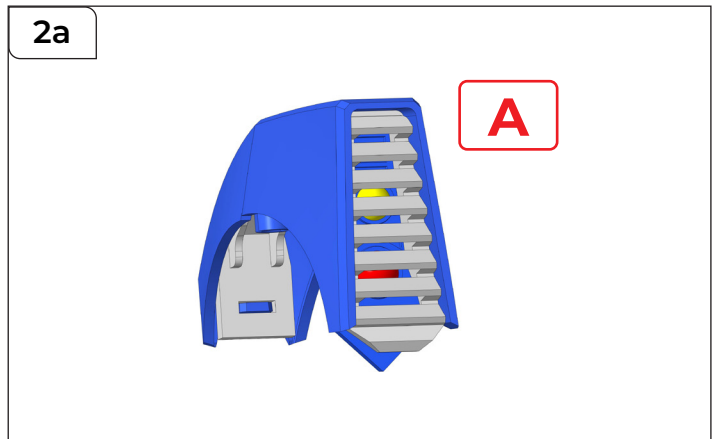


## STEP 2

Glue parts TR-1-11 and TR-1-12 as shown in red, above right.

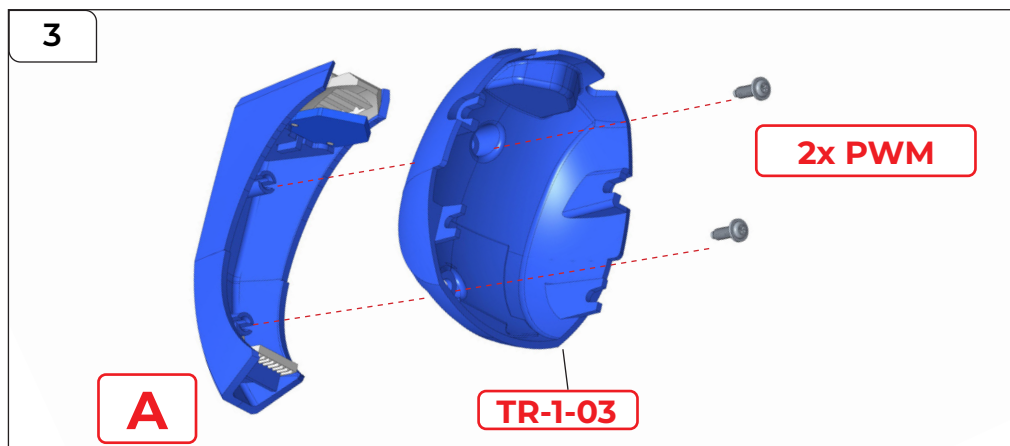
Push TR-1-11 and TR-1-12 onto TR-1-01.

The image on the right shows how your assembly should look. This will be referred to as assembly 'A'.





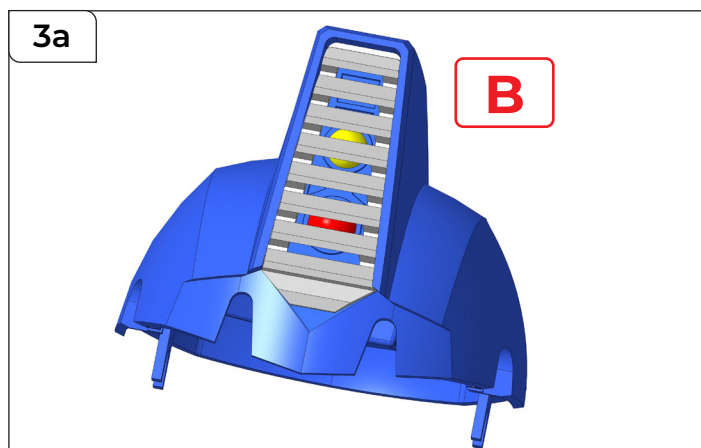
# Assembling the Head – Part 1



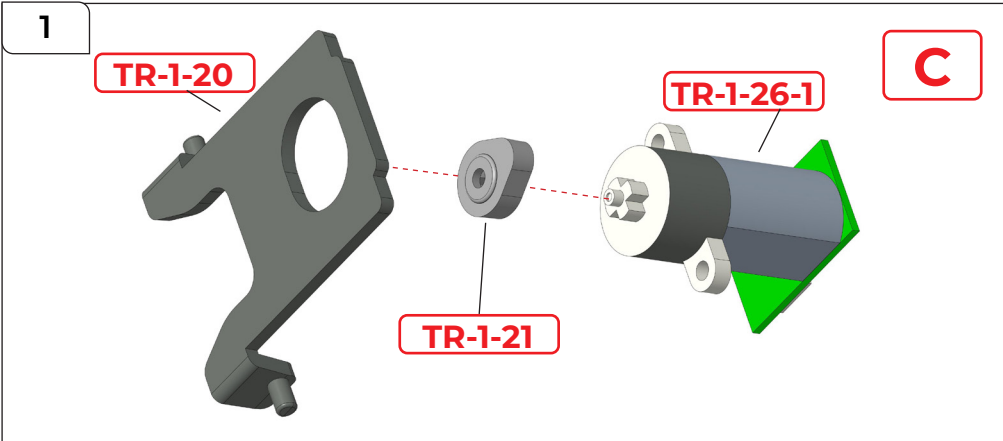
## STEP 3

Push assembly A onto TR-1-03 and fix with 2x PWM screws.

Your completed assembly, shown in the image on the right, will be referred to as assembly B.



# Assembling the Head – Part 2



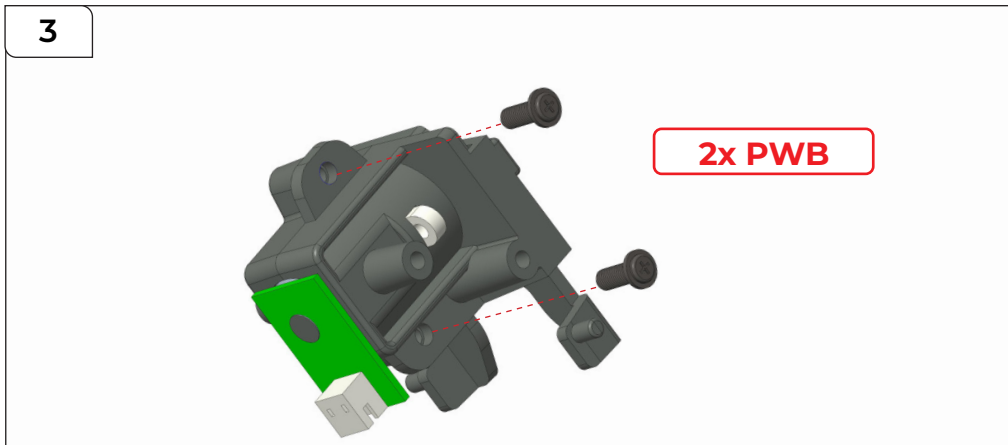
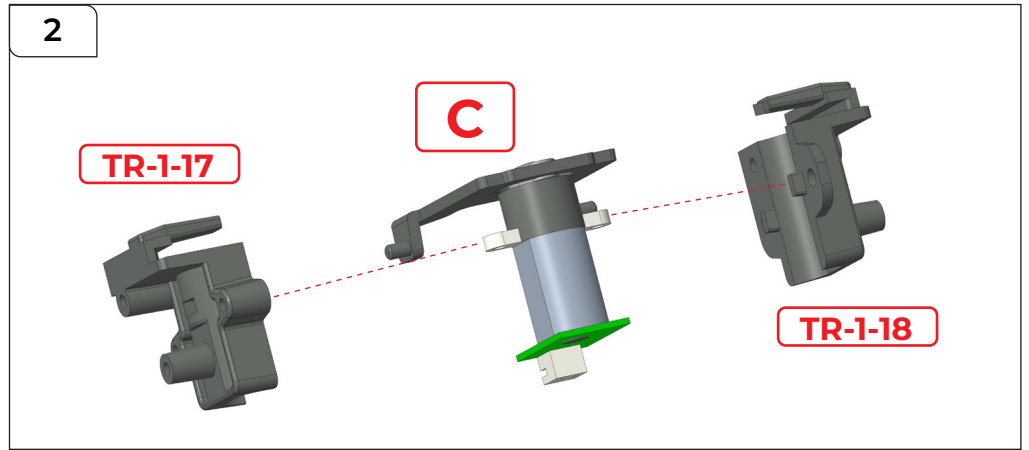
## STEP 1

Place TR-1-21 on TR-1-26-1, then place TR-1-20 onto TR-1-26-1.

The assembly you have created will be referred to as assembly C.

## STEP 2

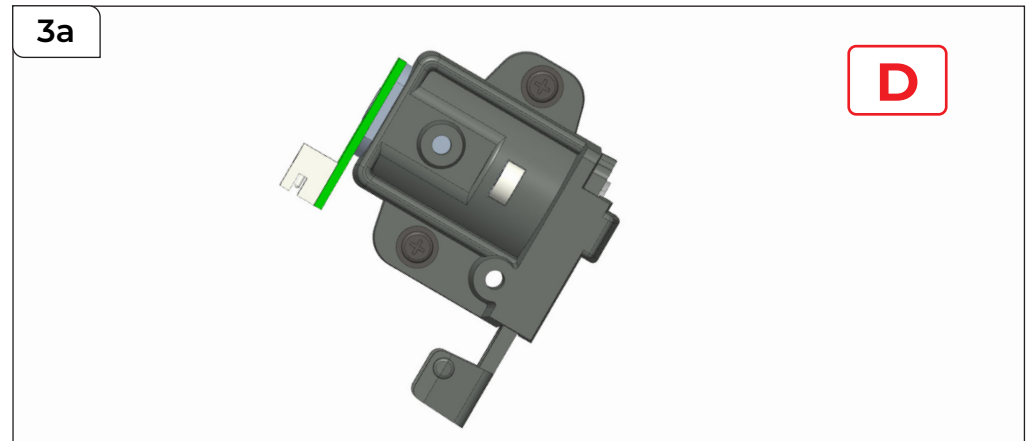
Place assembly C in between TR-1-17 and TR-1-18 as shown.



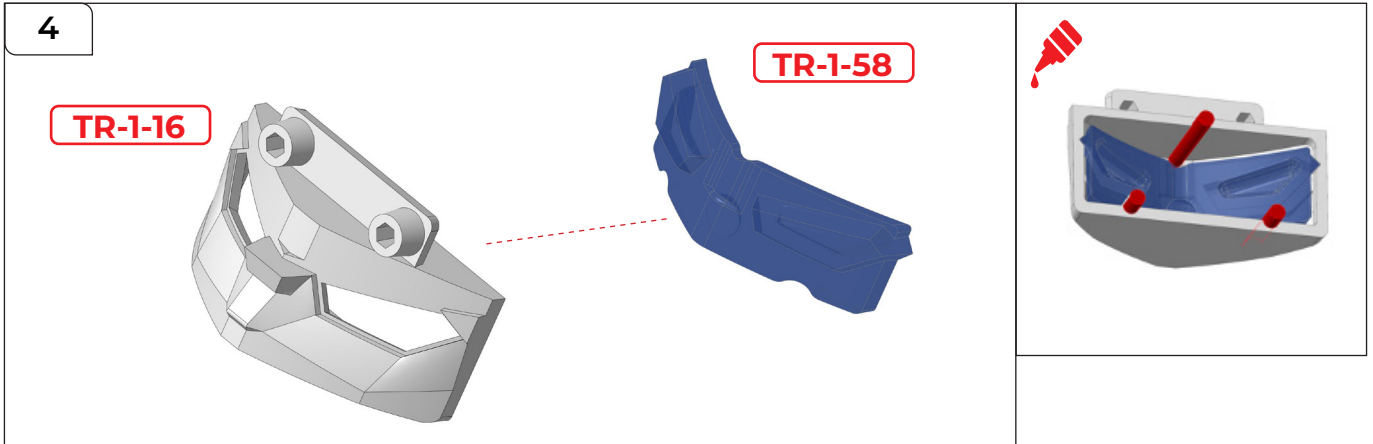
## STEP 3

Secure the parts together using 2 x PWB screws.

This assembly will be referred to as assembly D, shown in 3a, right.

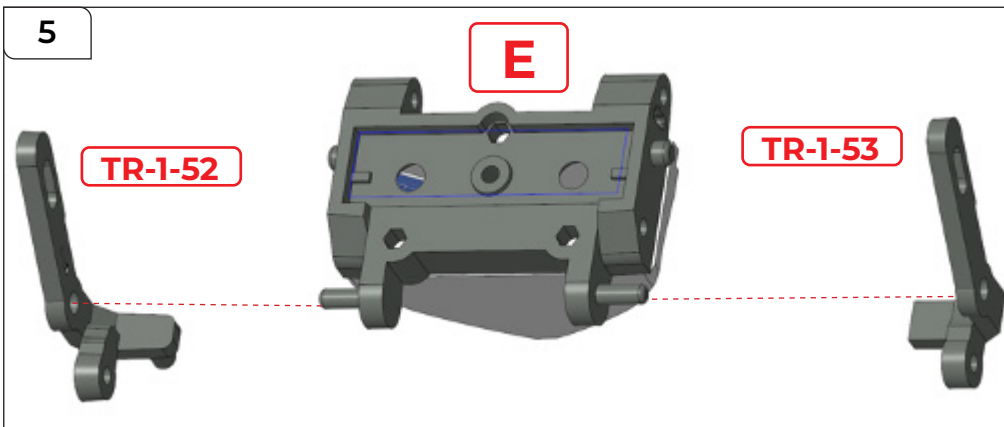
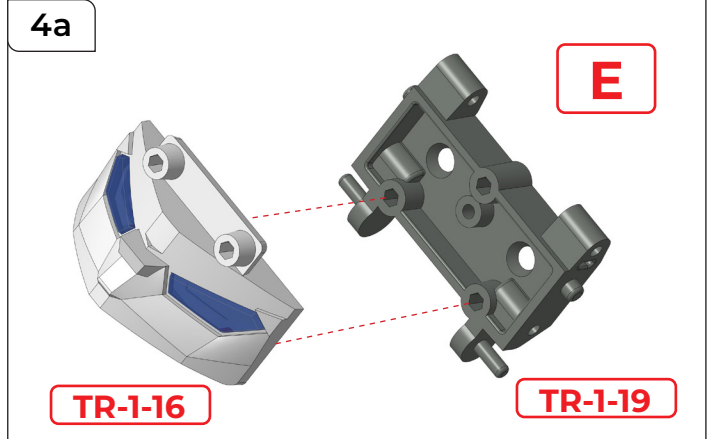


# Assembling the Head – Part 3



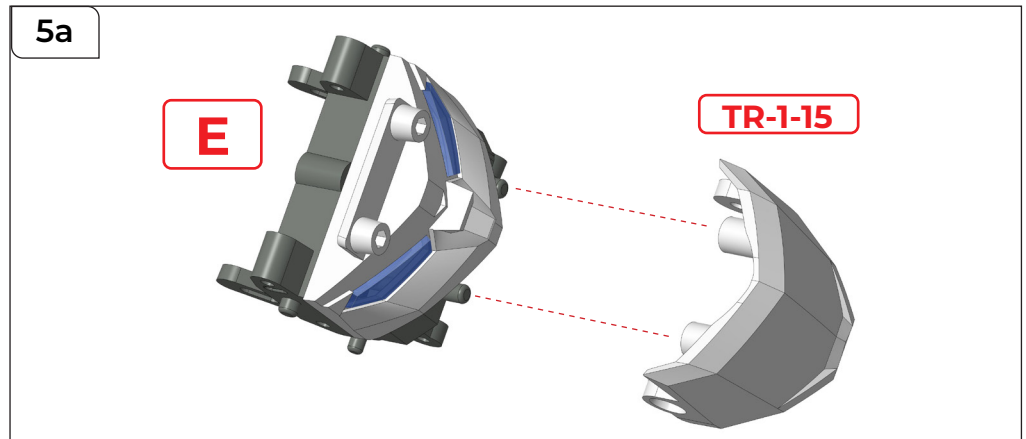
## STEP 4

Push TR-1-58 and TR-1-16 together as shown.  
Glue the areas shown in red, then push TR-1-16 onto TR-1-19.  
This assembly will be referred to as E.



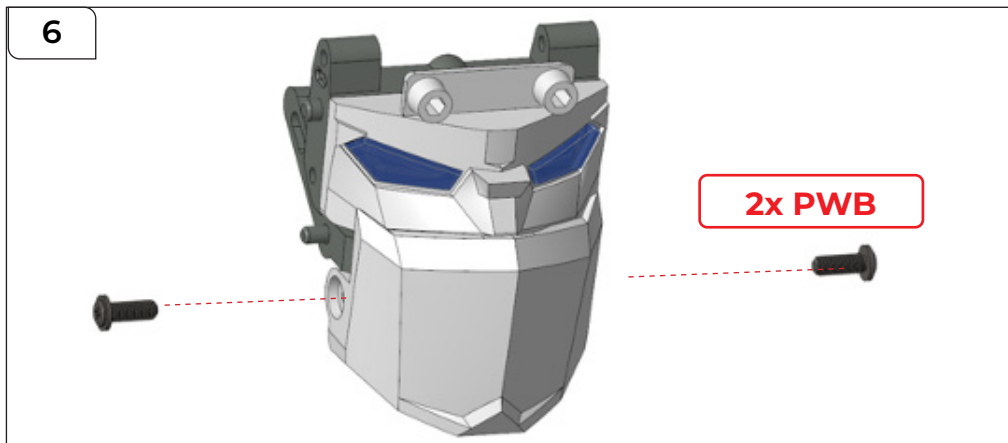
## STEP 5

Push TR-1-52 and TR-1-53 onto E, then push TR-1-15 onto E as shown.





## Assembling the Head – Part 3

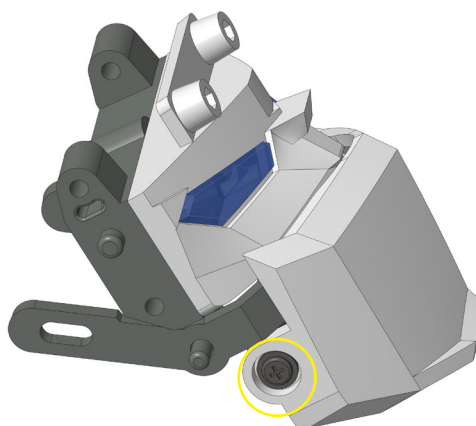


### STEP 6

Secure the parts together using **2 x PWB** screws.

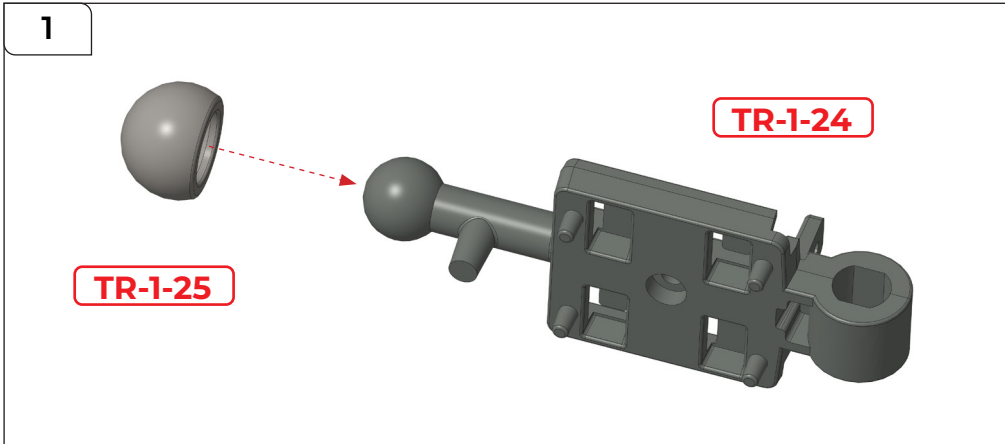
The mask has now been attached to the head.

6a



E

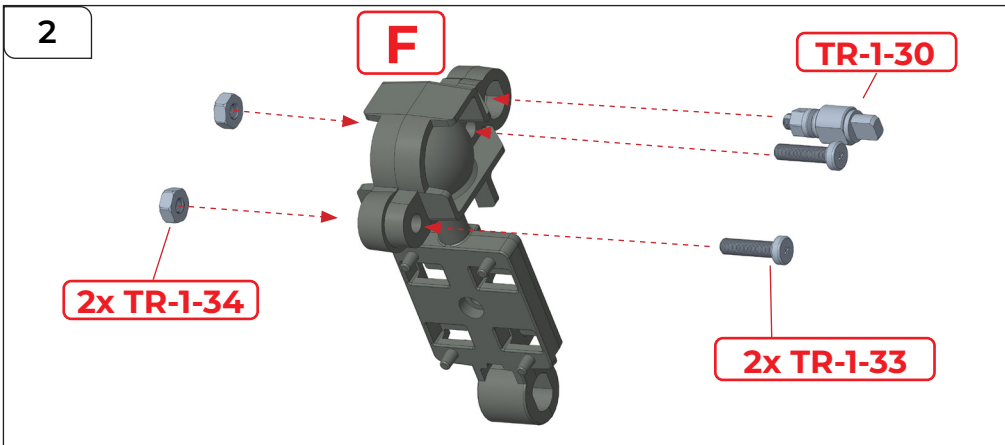
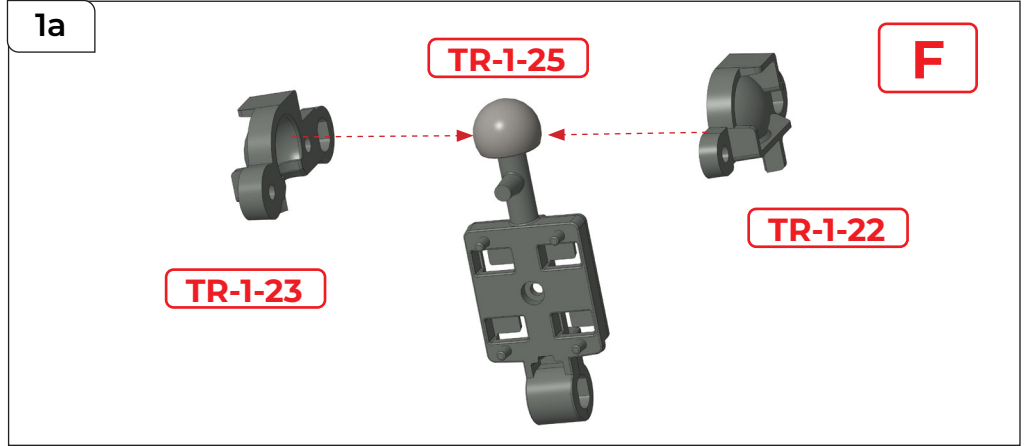
# Assembling the Head – Part 4



## STEP 1

Push TR-1-25 onto TR-1-24.

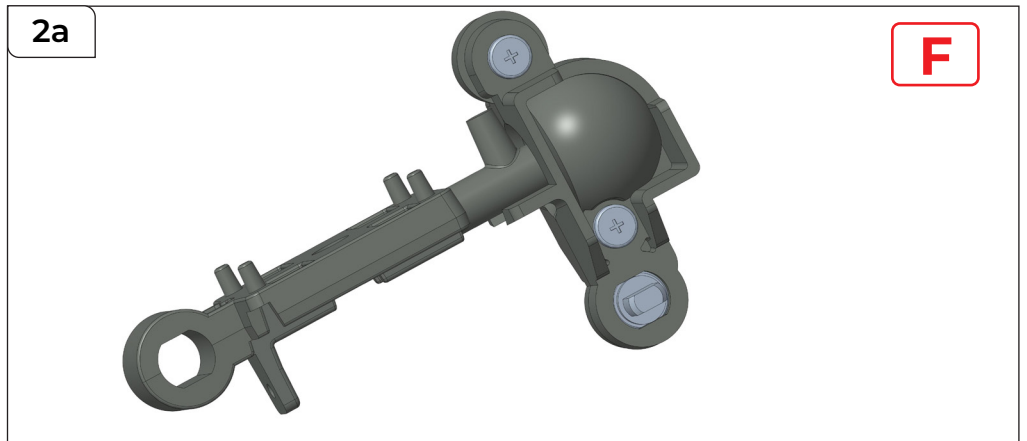
Place TR-1-23 and TR-1-22 onto TR-1-25 as shown.



## STEP 2

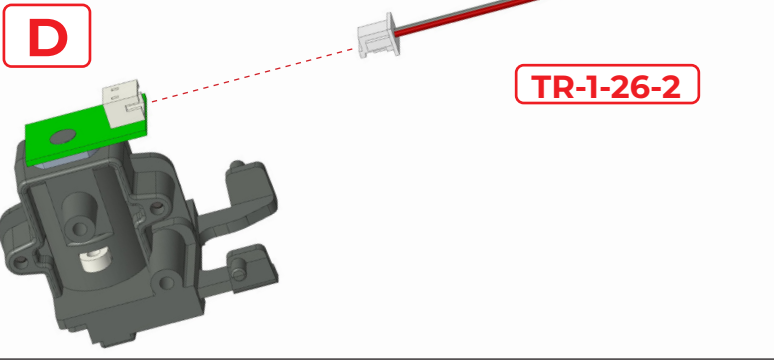
Push 2 x TR-1-33 through F and fix in place using 2x TR-1-34 nuts.

Push TR-1-30 into F as shown (the larger end faces out).



# Assembling the Head – Part 4

3



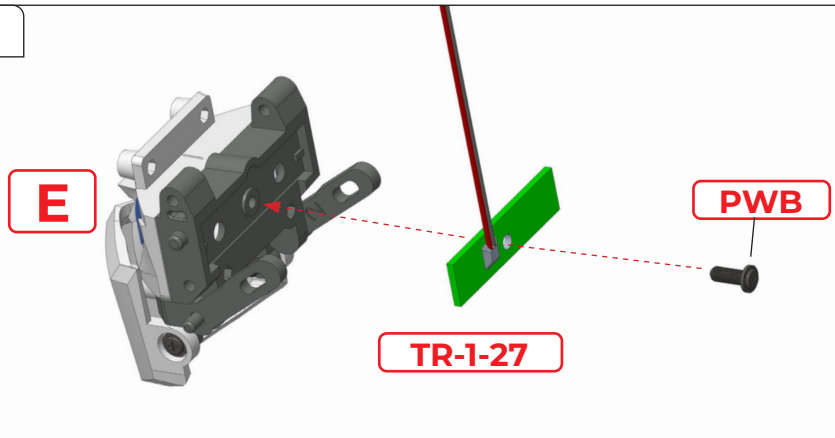
**STEP 3**

Take part TR-1-26-2 and plug it into the socket on D.

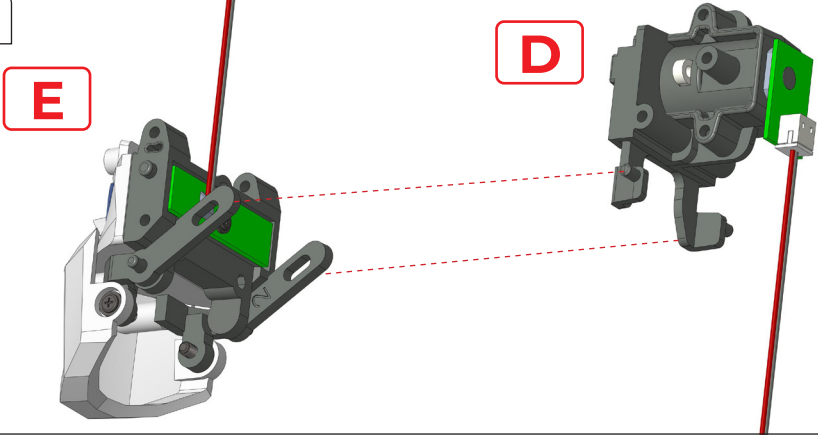
**STEP 4**

Take part TR-1-27 and fix it to E using 1x PWB screw.

4



5

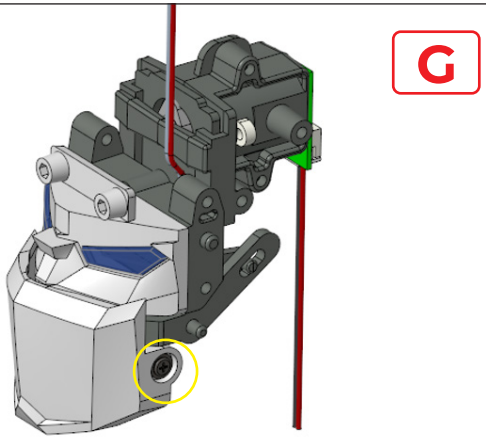


**STEP 5**

Attach E to D by sliding the notches over the posts as shown.

This assembly will be called G.

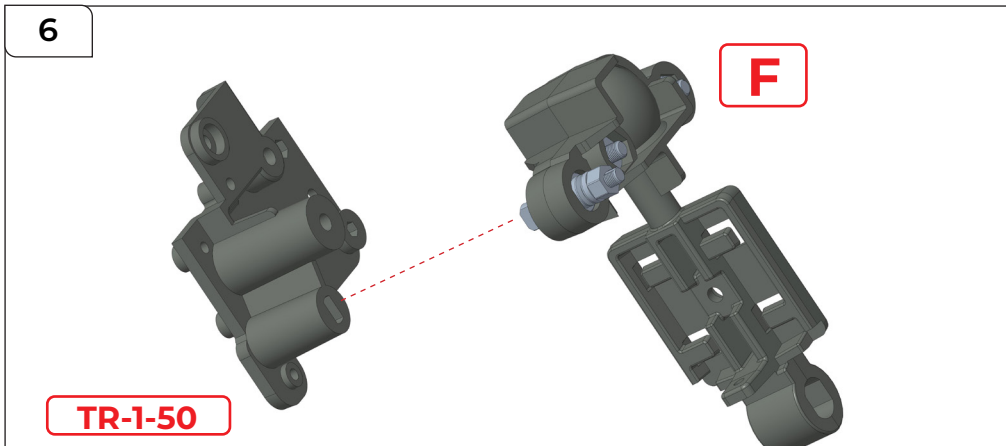
5a



**G**

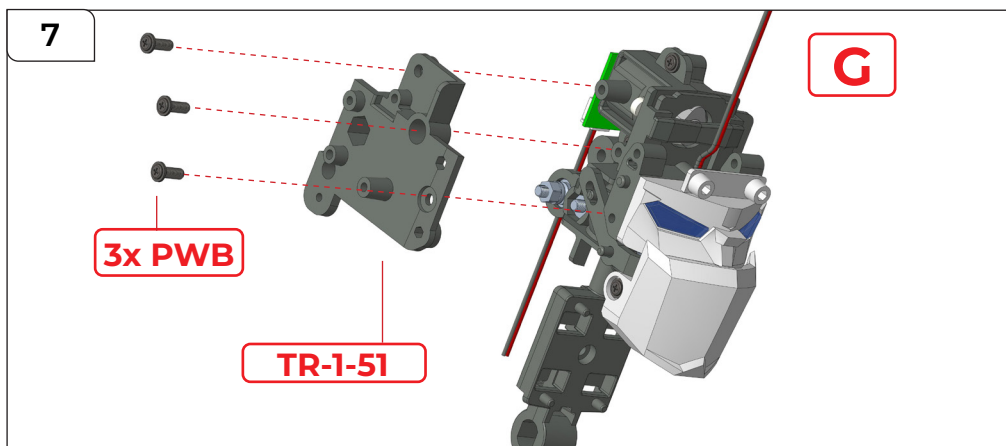
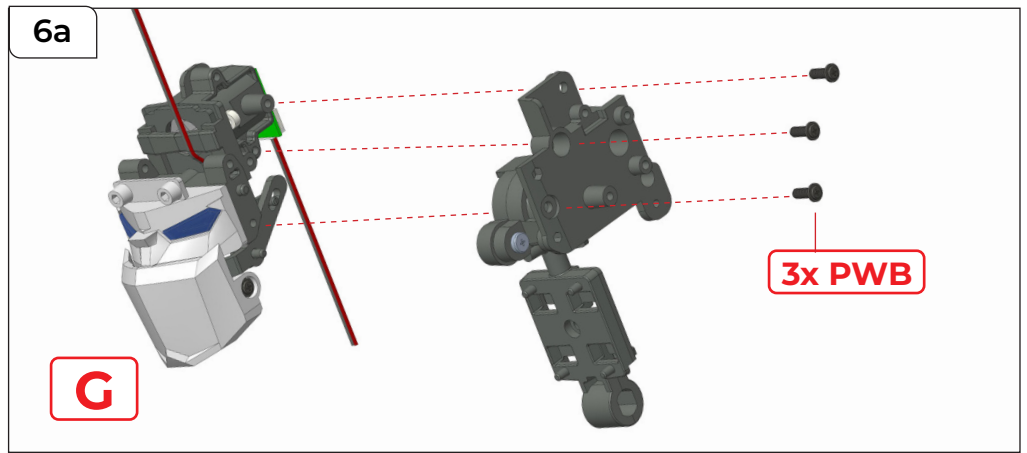


# Assembling the Head – Part 4



## STEP 6

Push TR-1-50 onto F, then fix it to G using 3 x PWB screws.



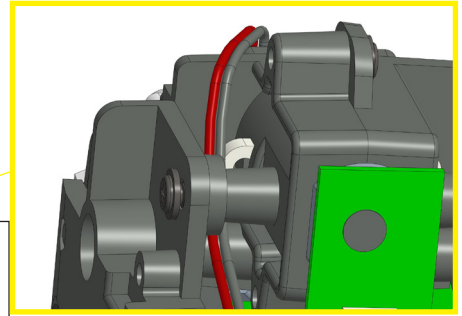
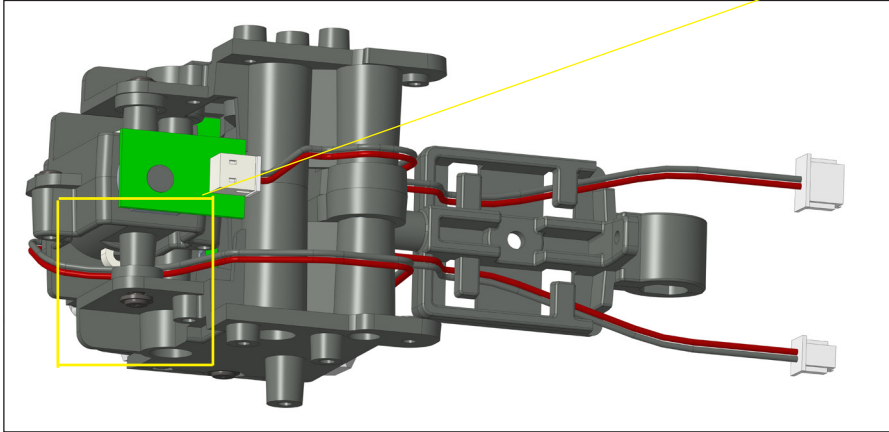
## STEP 7

Push TR-1-51 onto F and then fix it to G using 3 x PWB screws. Ensure the cable is placed as shown on the next page.

# Assembling the Head – Part 4

## STEP 7 cont...

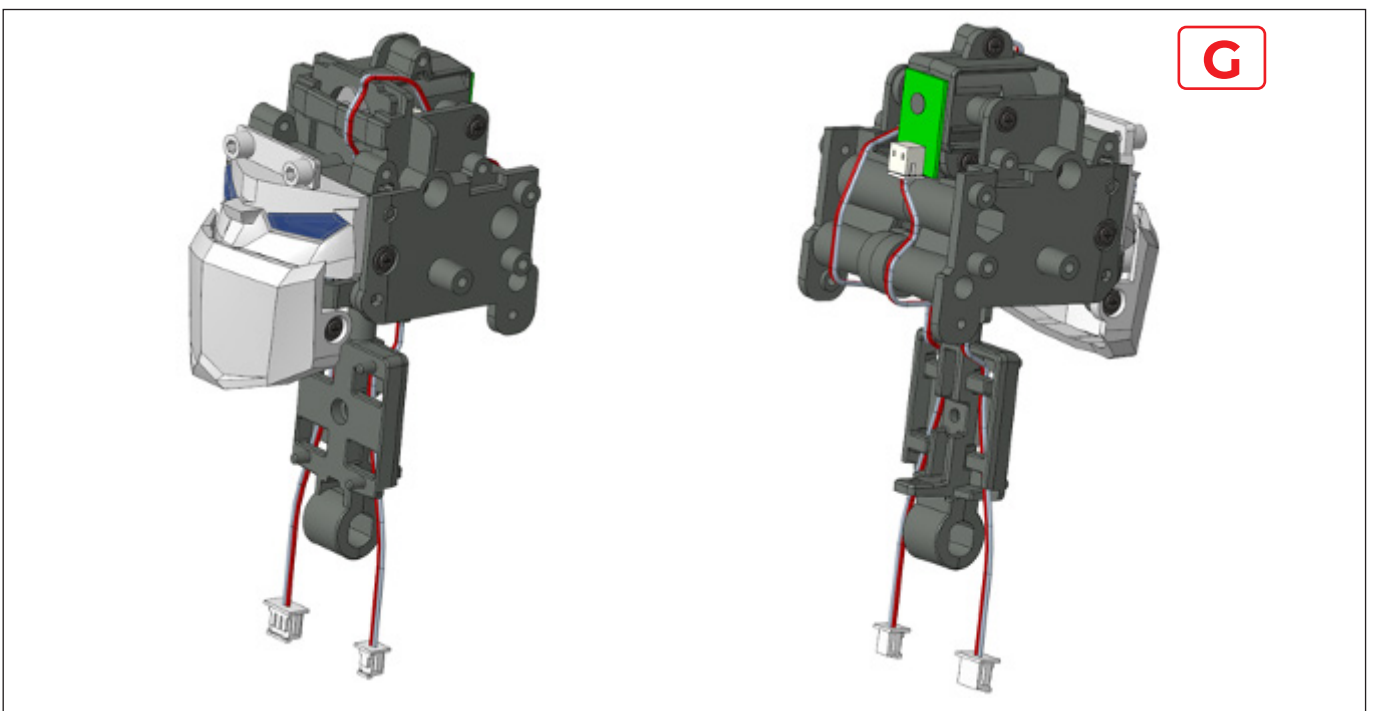
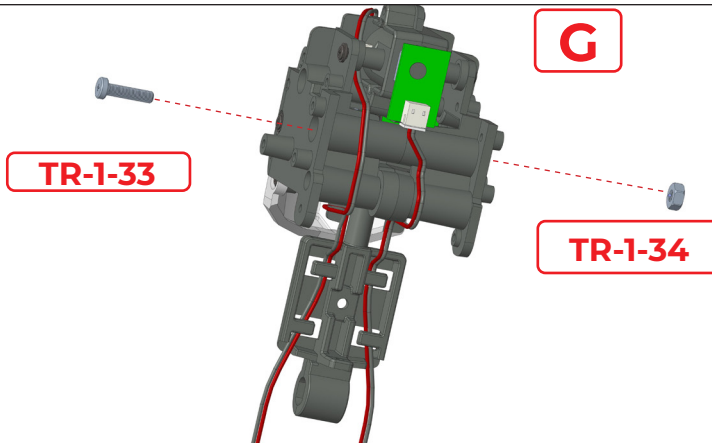
These two images show how the cable should run when the parts have been fixed together.



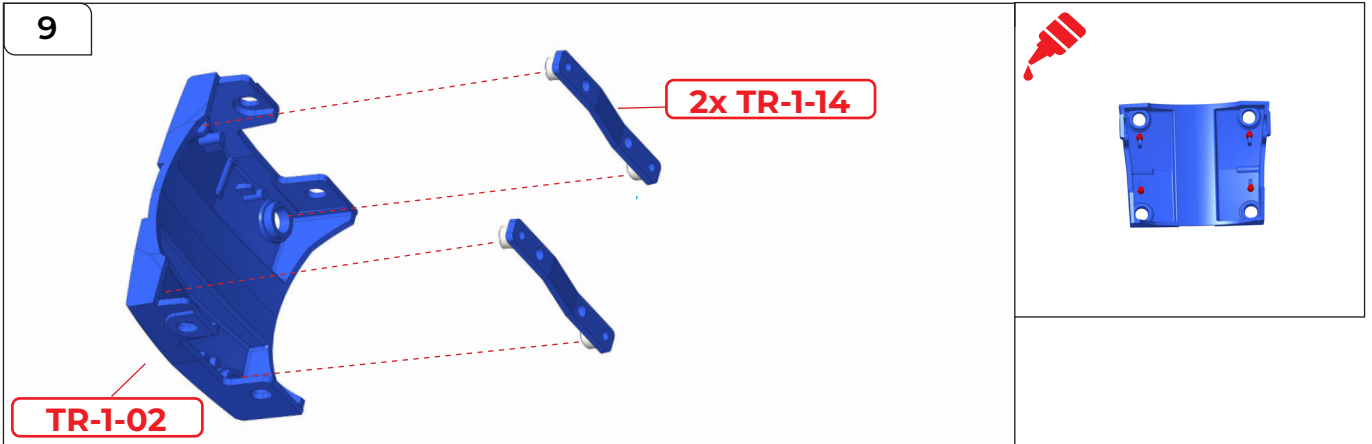
## STEP 8

Push 1x TR-1-33 bolt through G as shown and secure with 1x TR-1-34 nut.

8

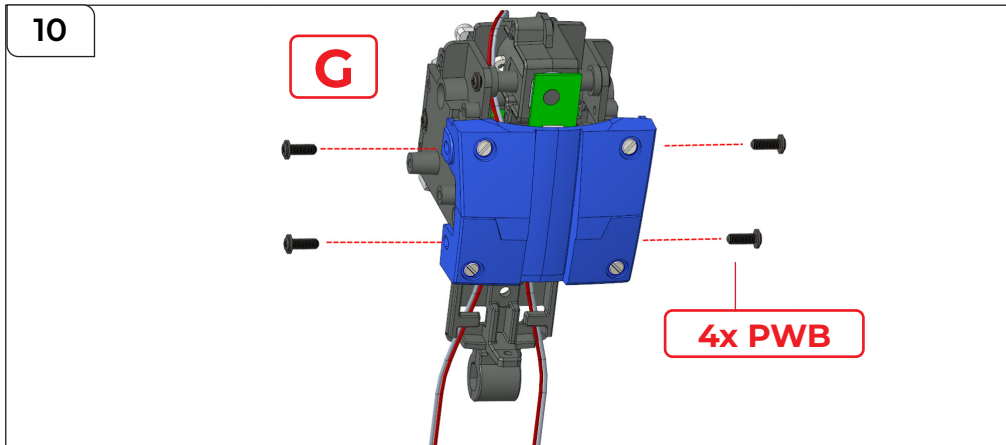
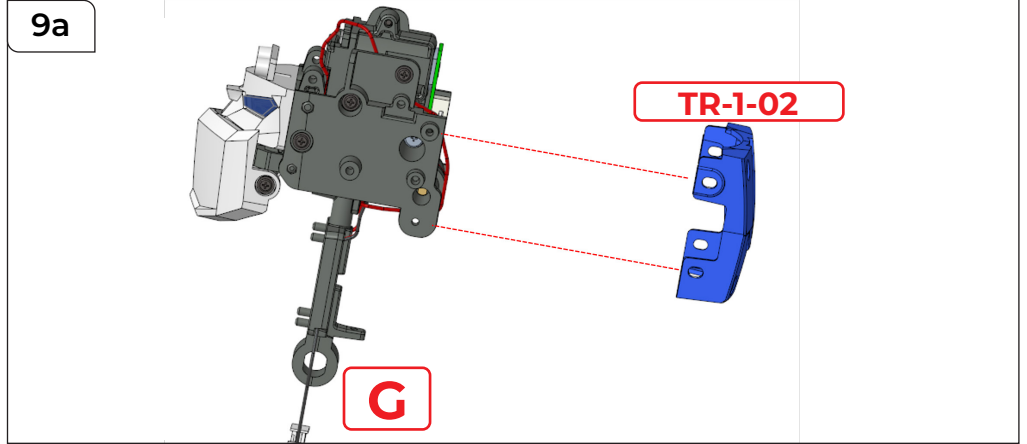


# Assembling the Head – Part 4



## STEP 9

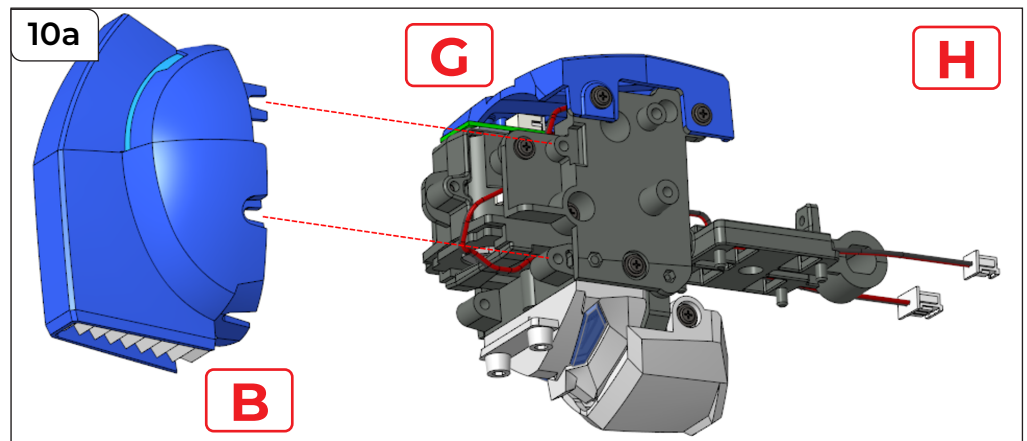
Glue TR-1-02 as shown above right, before fixing 2x TR-1-14 into position, then push TR-1-02 onto G.



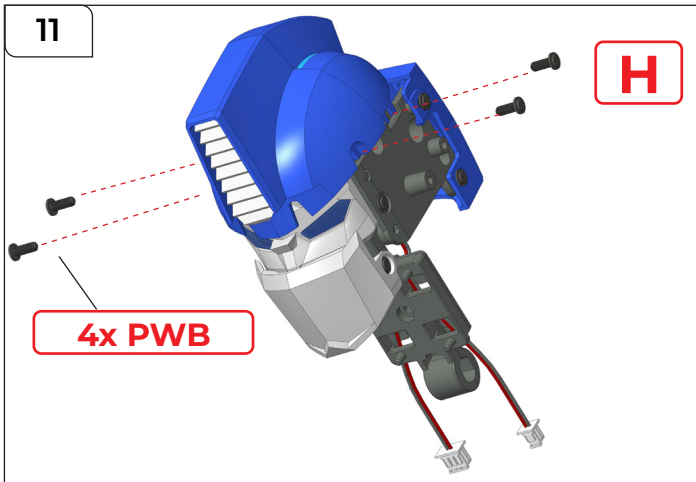
## STEP 10

Fix TR-1-02 in place using 4x PWB screws.

Push B onto G to make a new assembly we will call H.



## Assembling the Head – Part 4



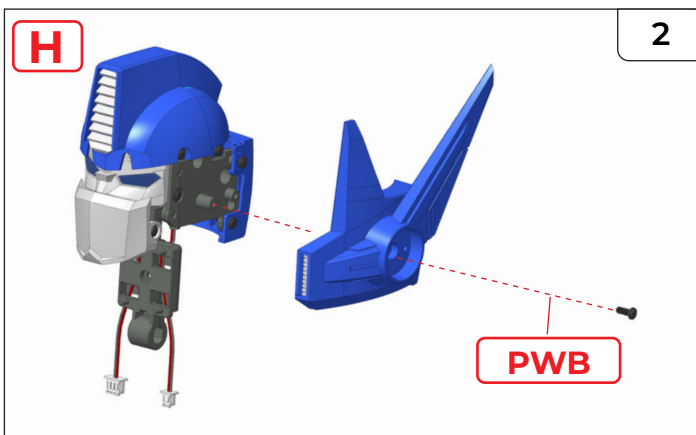
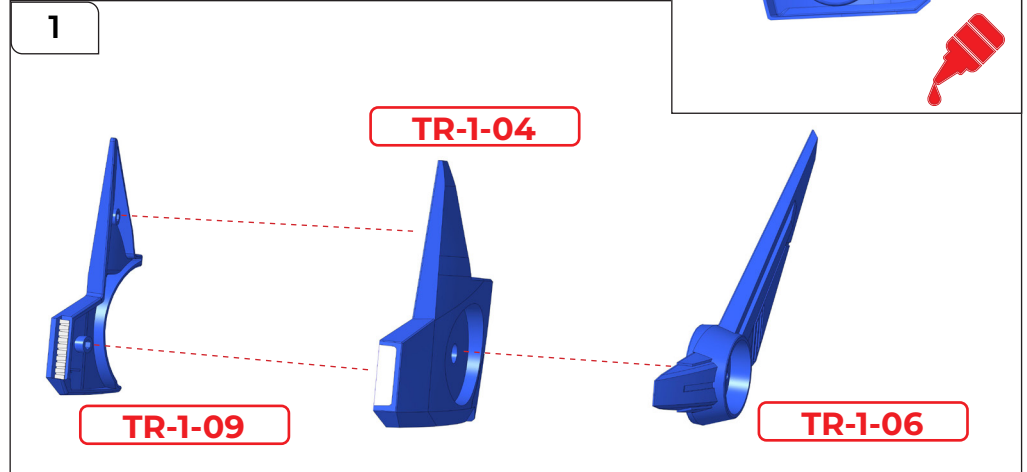
### STEP 11

Fix B to G using 4x PWB screws.

## Assembling the Head – Part 5

### STEP 1

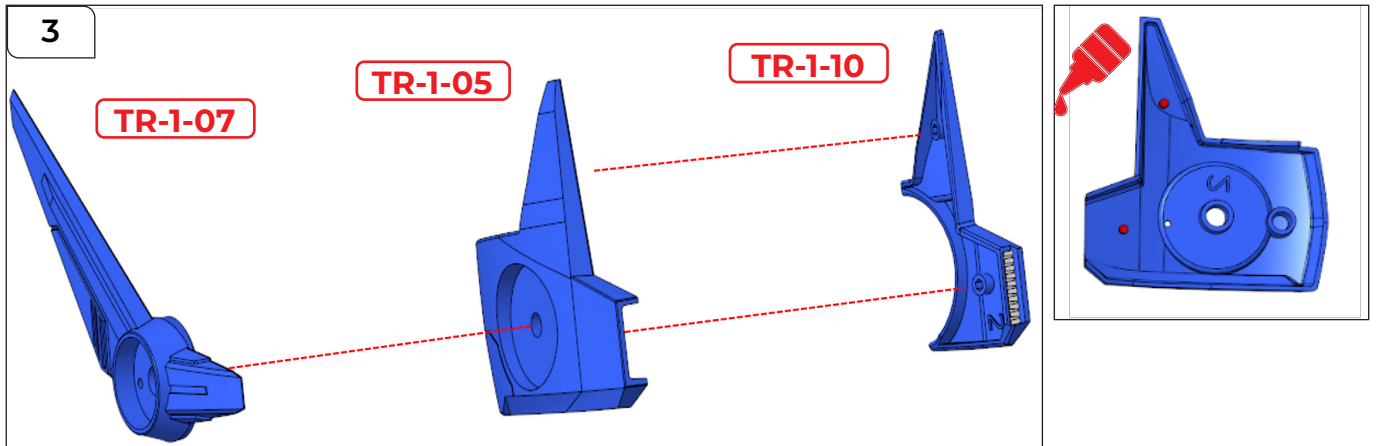
Glue TR-1-04 as shown, then push TR-1-09 and TR-1-06 onto either side of TR-1-04.



### STEP 2

Secure the assembly from step 1 onto H using 1x PWB screw.

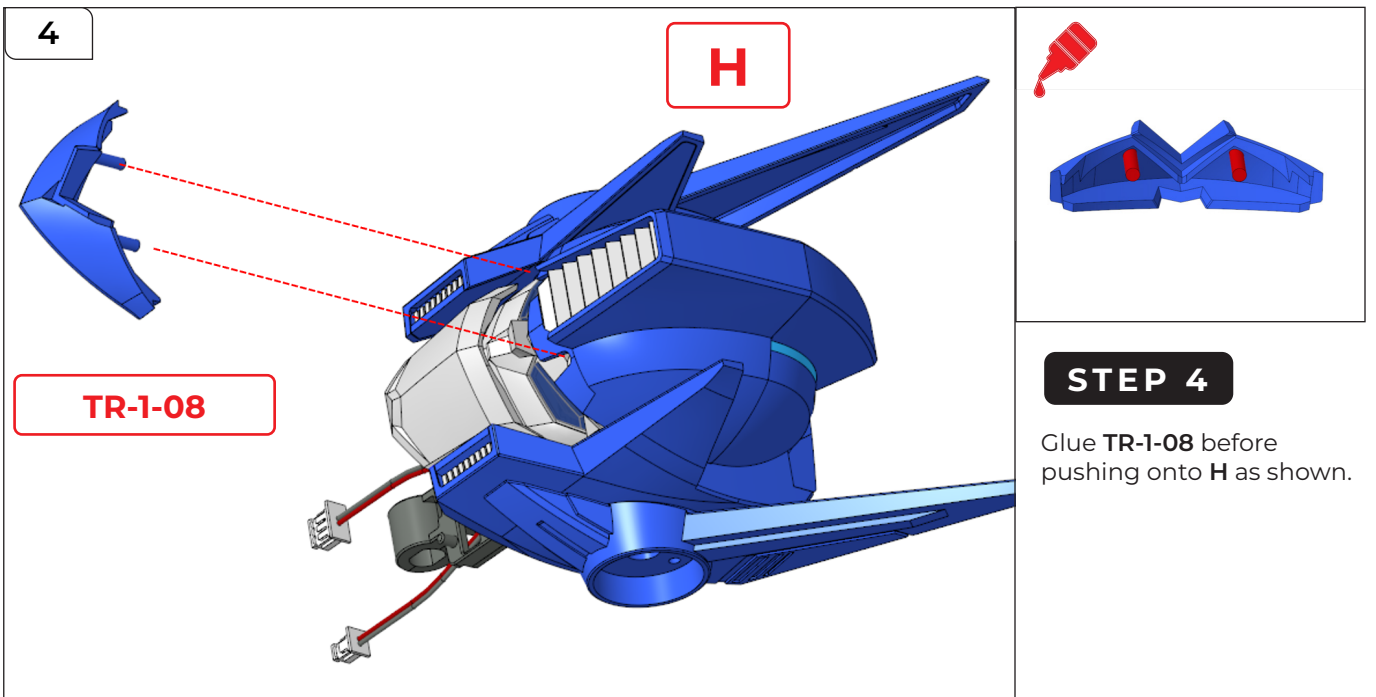
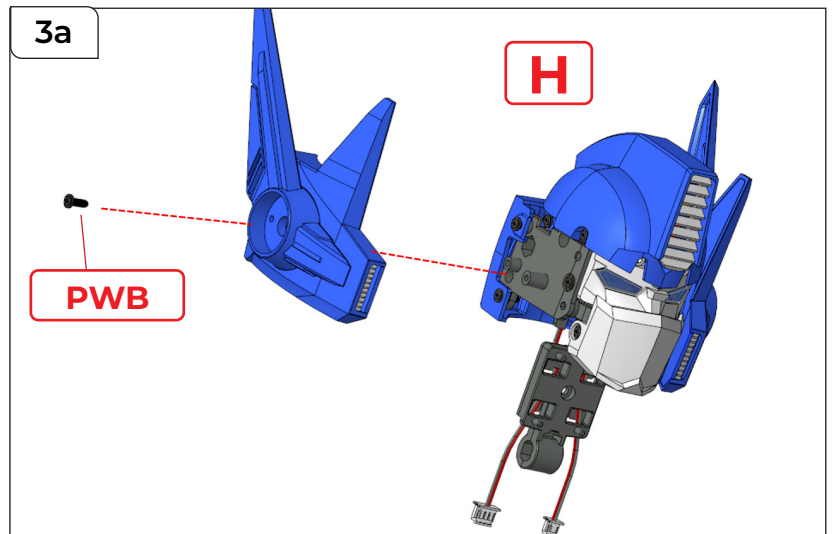
# Assembling the Head – Part 5



## STEP 3

Glue TR-1-05 as shown, then push TR-1-07 and TR-1-10 onto either side.

Secure the assembly onto H using 1x PWB screw.

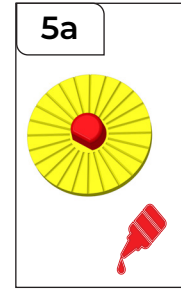
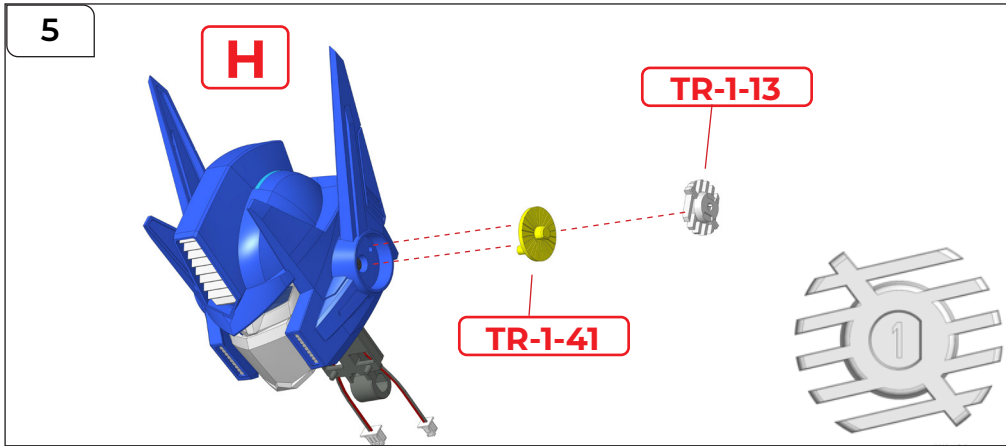


## STEP 4

Glue TR-1-08 before pushing onto H as shown.

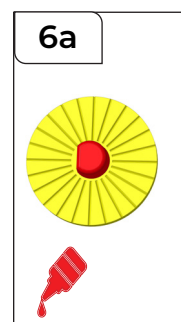
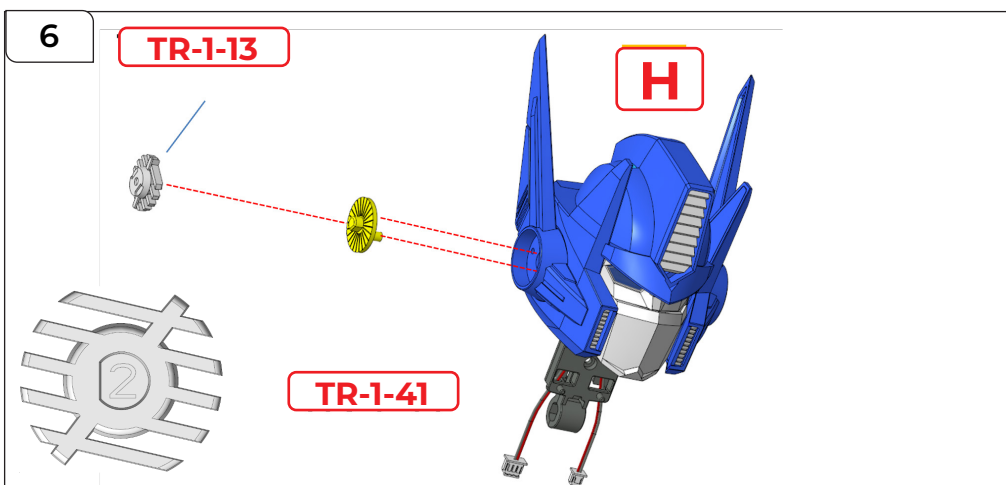
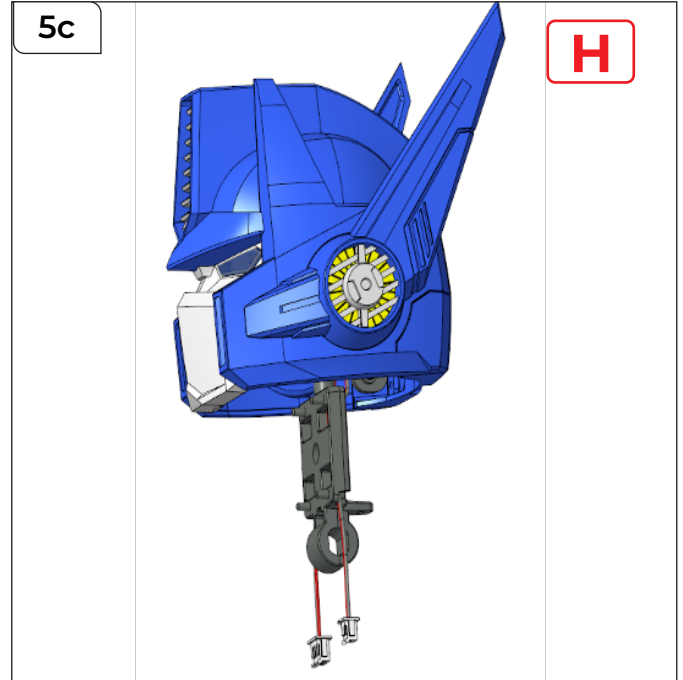


# Assembling the Head – Part 5



## STEP 5

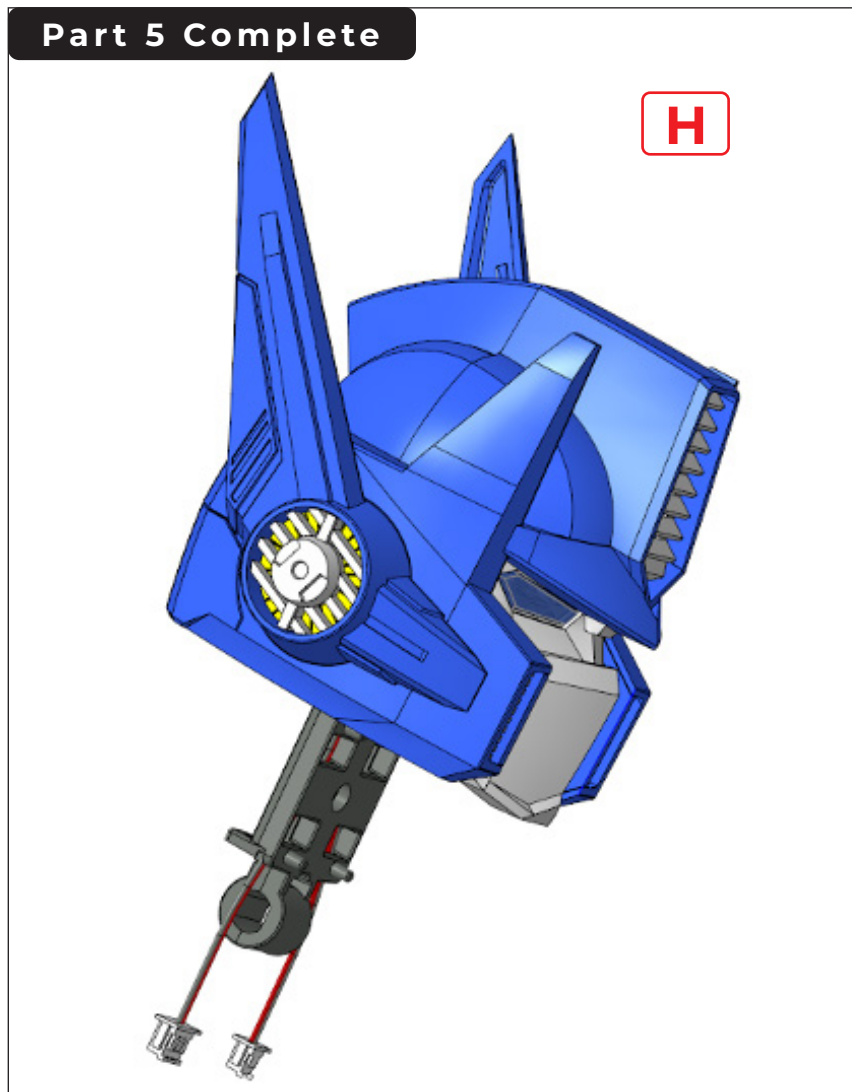
Attach **TR-1-41** to **H** as shown in 5 and then glue **TR-1-41** as shown in 5a. Push **TR-1-13** into place on top (the number 1 faces inside).



## STEP 6

Attach **TR-1-41** as shown in 6, then glue **TR-1-41** as shown in 6a. and push **TR-1-13** into place on top (the number 2 faces inside).

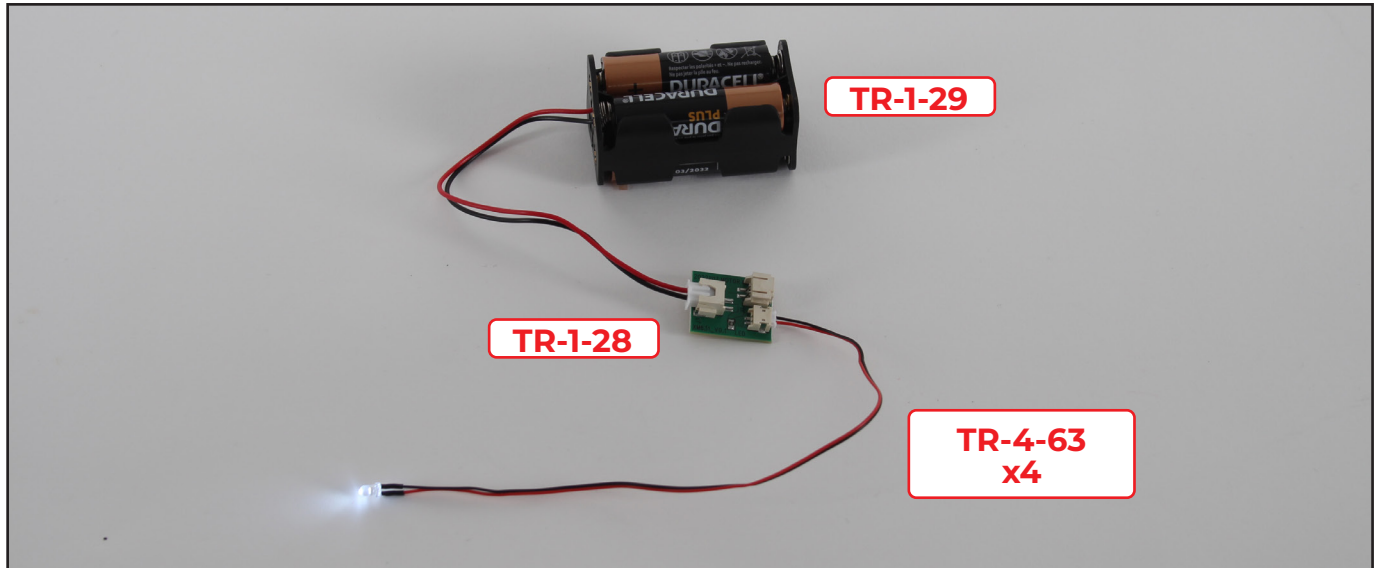
## Assembling the Head – Part 5



## Assembling the Chest

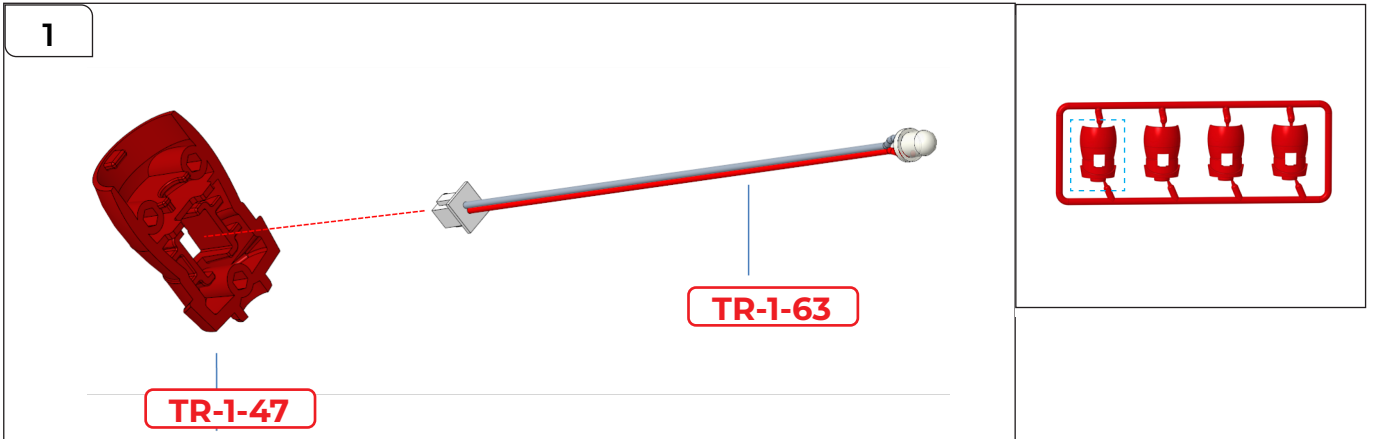
---

In the next steps, you will assemble the headlights and the chest. Before you begin, please test the LEDs are working correctly. Plug the battery box (TR-1-29) into the circuit board (TR-1-28), then plug the LEDs, one at a time, into the smallest plug on the circuit board. When plugged in, all four LEDs should light up.



**Note:** Once the LEDs are assembled in the chest, they will be glued in place. It will be difficult to replace a faulty or broken LED if they are tested after assembly.

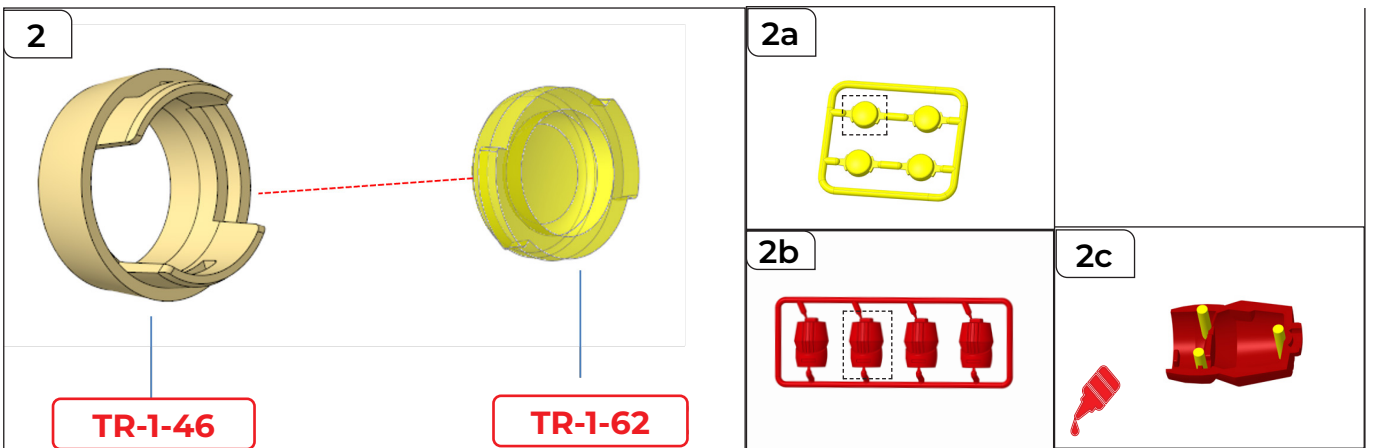
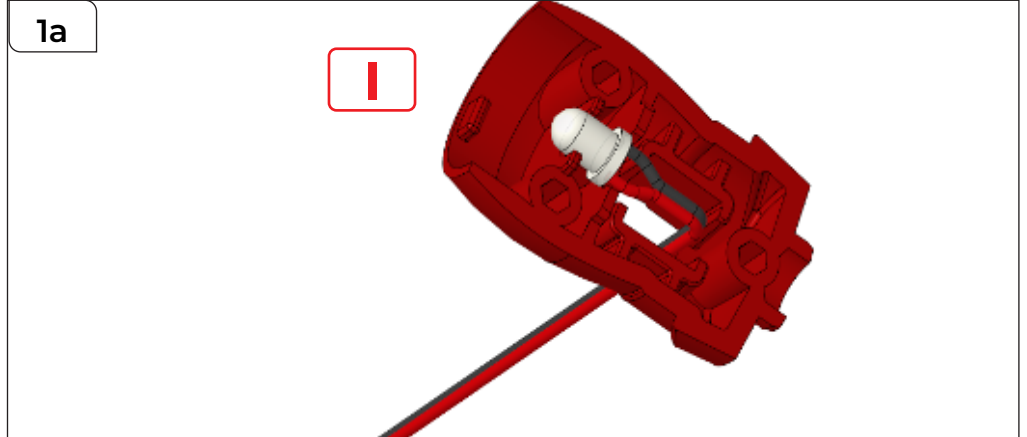
# Assembling the Chest



## STEP 1

Cut one part of TR-1-47 from the sprue.

Insert 1x TR-1-63 into TR-1-47 (Length = 200mm) as shown in 1a.

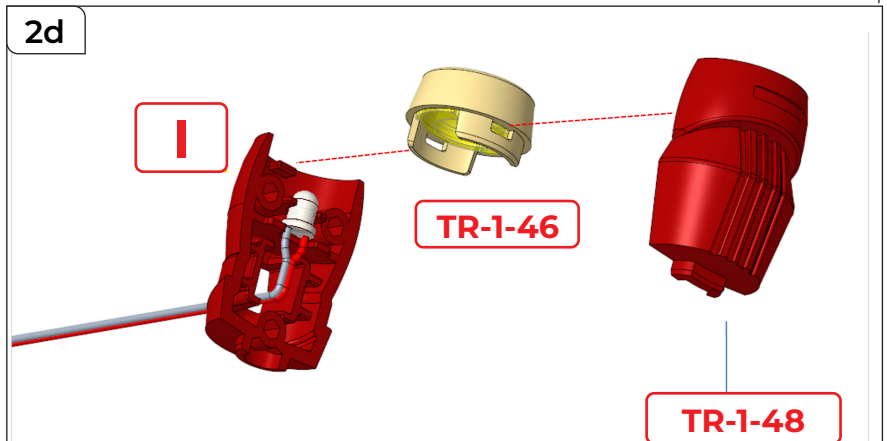


## STEP 2

Cut 1x part TR-1-62 from the sprue (2a), push it onto TR-1-46, then place on I.

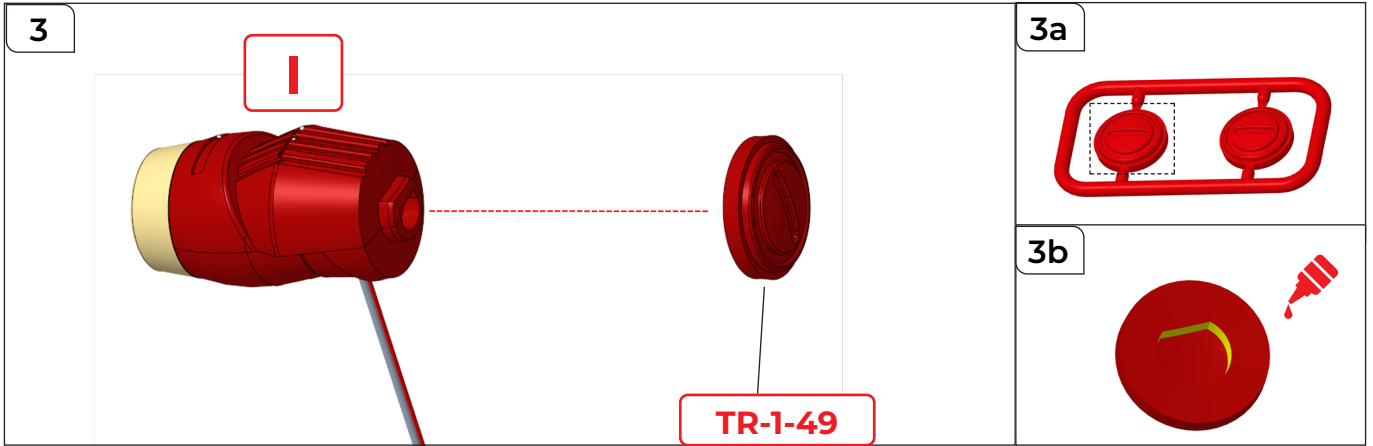
Cut another part TR-1-48 from the sprue (2b) and glue as shown in 2c.

Place TR-1-48 onto I.



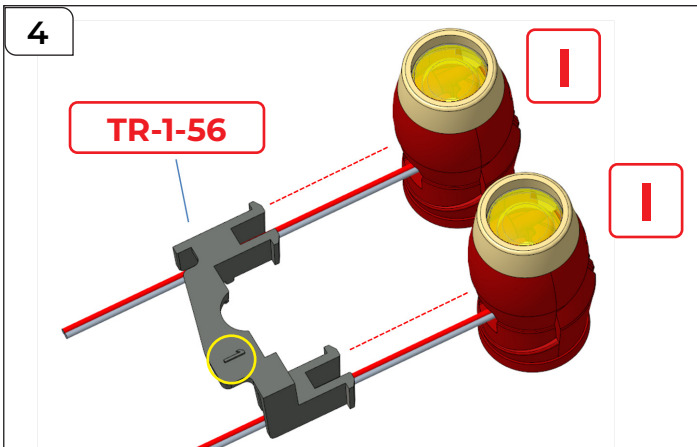
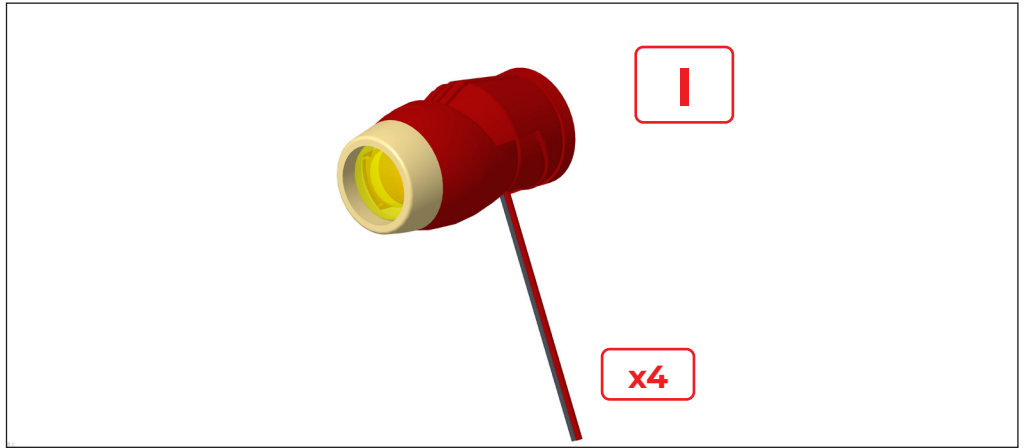


# Assembling the Chest



## STEP 3

Cut 1x TR-1-49 from the sprue (3a) and glue as shown in 3b, then push onto I. Repeat steps 1-3 to make 4 sets.



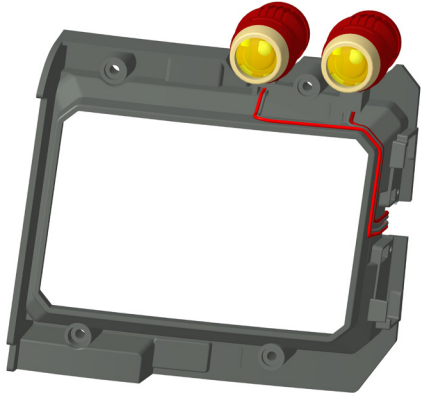
## STEP 4

Push 2x sets of I into TR-1-56 (marked No.1, circled above) until they click into place. Glue as shown in 4a and fix onto TR-1-37 (also marked No.1, circled).



# Assembling the Chest

5



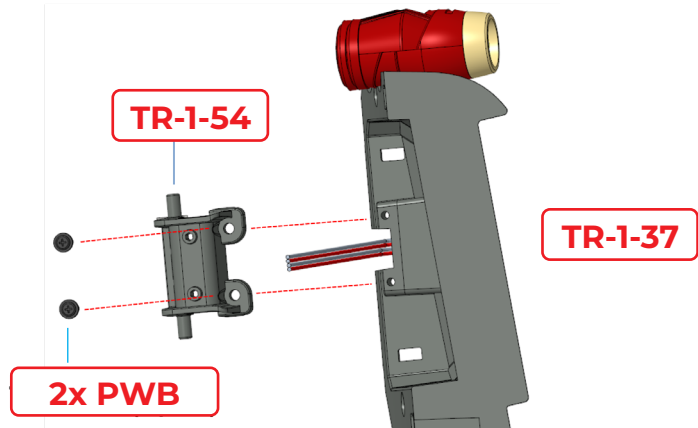
## STEP 5

Route the cables as shown.

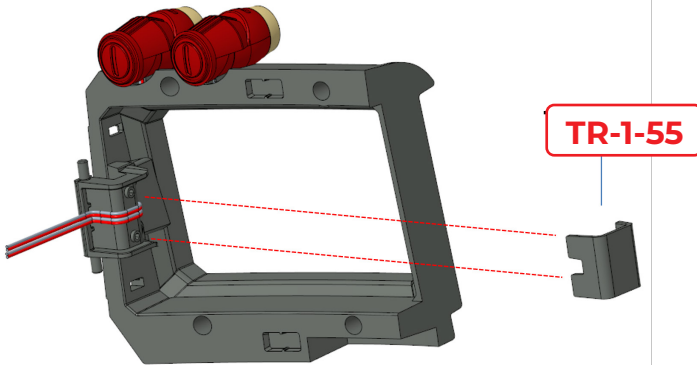
## STEP 6

Place **TR-1-54** onto **TR-1-37** and fix in place using **2x PWB** screws.

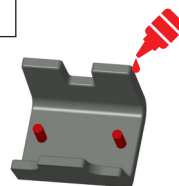
6



7



7a



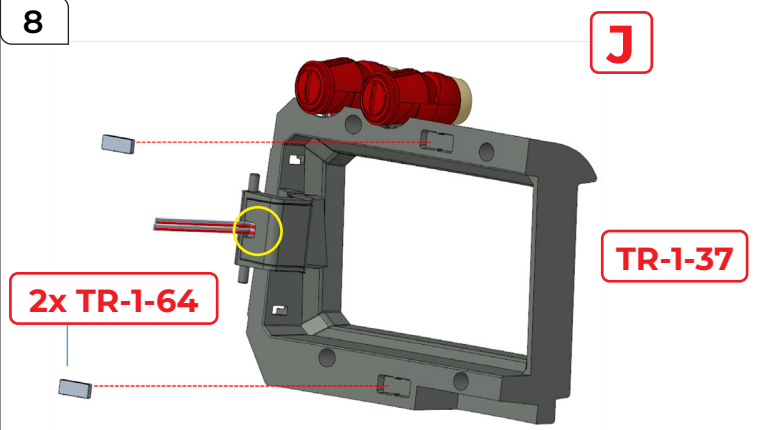
## STEP 7

Glue **TR-1-55** as shown in 7a, then position on **TR-1-54**. Check that the cables pass through the cut-out recess circled in step 8 below.

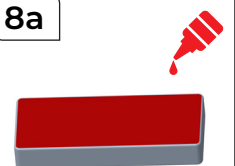
## STEP 8

Glue 2x magnets **TR-1-64** as shown in 8a, then fix to **TR-1-37**. Parts **TR-1-64** are the same on both sides.

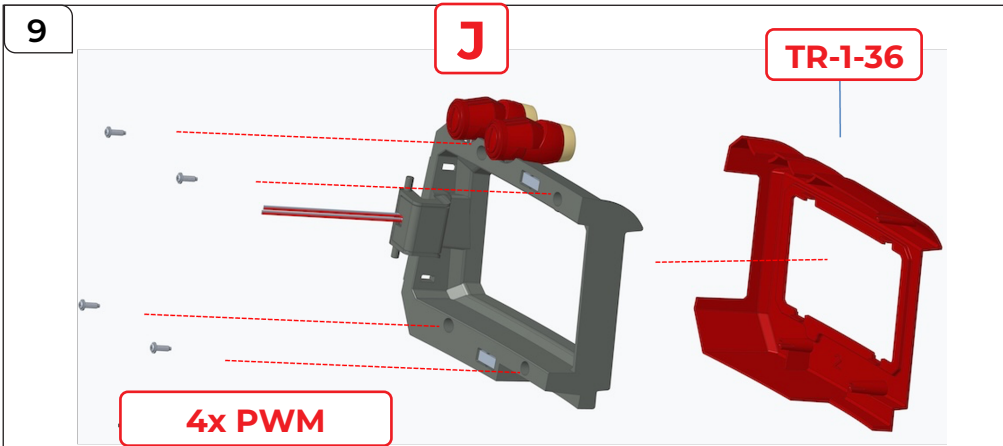
8



8a



# Assembling the Chest

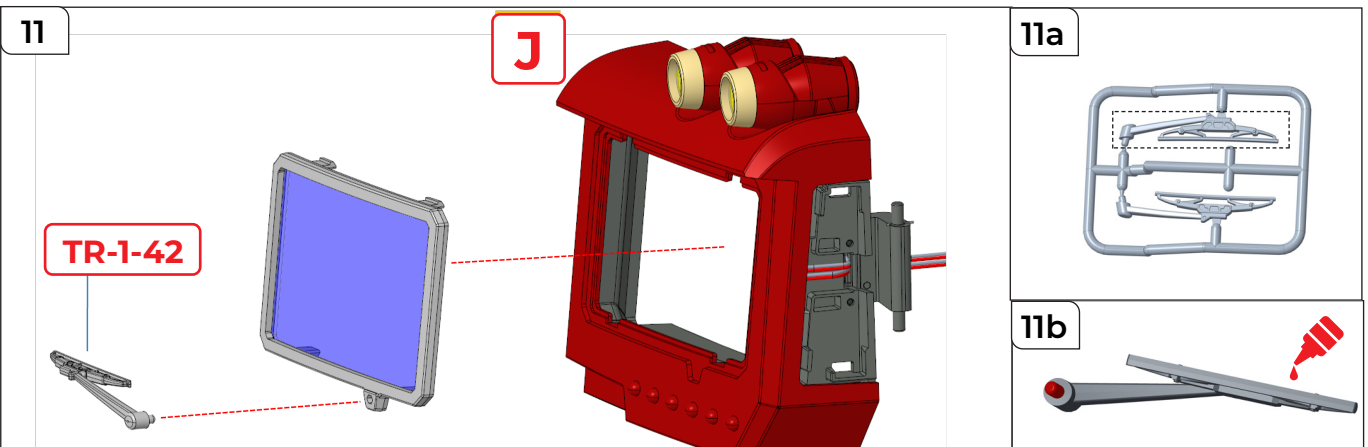
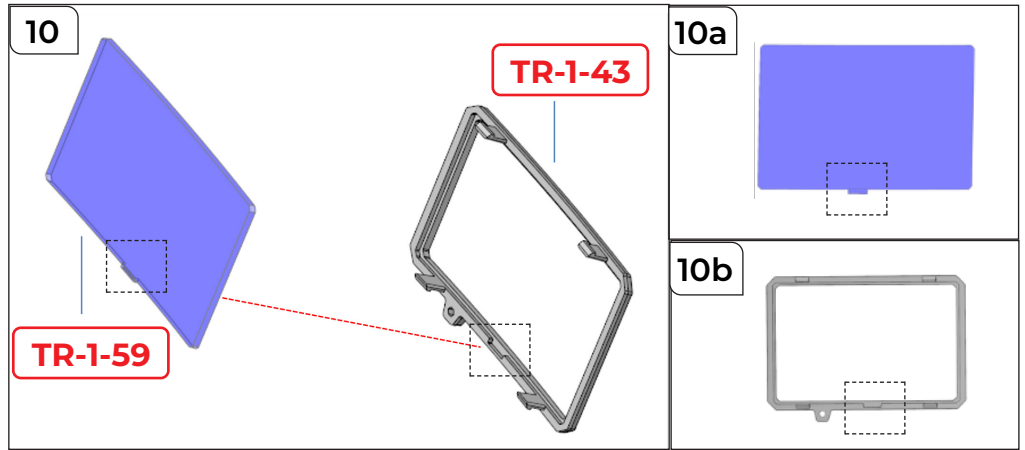


## STEP 9

Position TR-1-36 onto J, then secure it in place using 4x PWM screws.

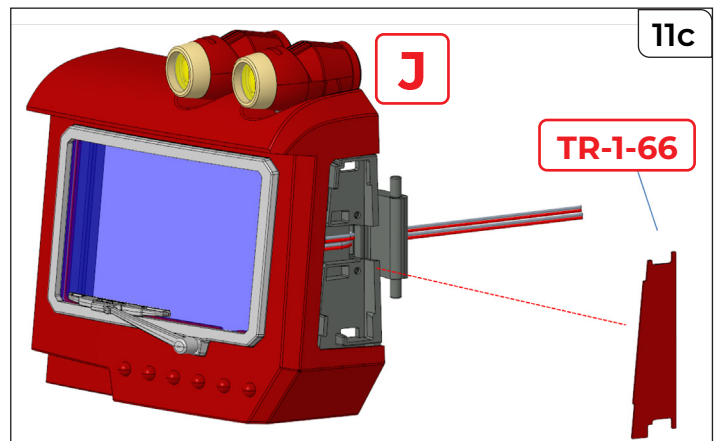
## STEP 10

Align the notch on TR-1-59 with the recess on TR-1-43 (highlighted, and shown in 10a & 10b), and push together to assemble the left side-window.

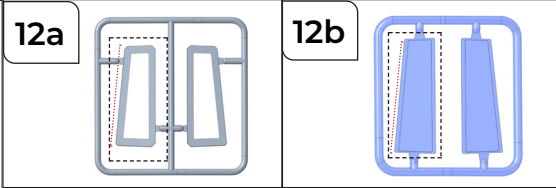
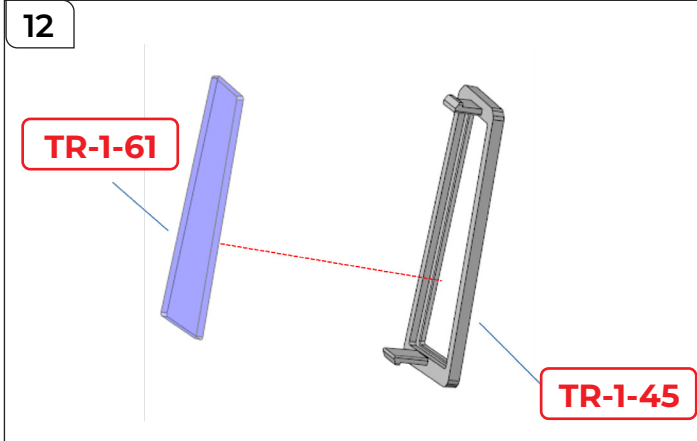


## STEP 11

Position the left side-window on J. Cut 1x TR-1-42 from the sprue (11a) and glue as shown in 11b before fixing it to the left side-window. Remove the protective backing from TR-1-66 before placing onto J (11c).



# Assembling the Chest

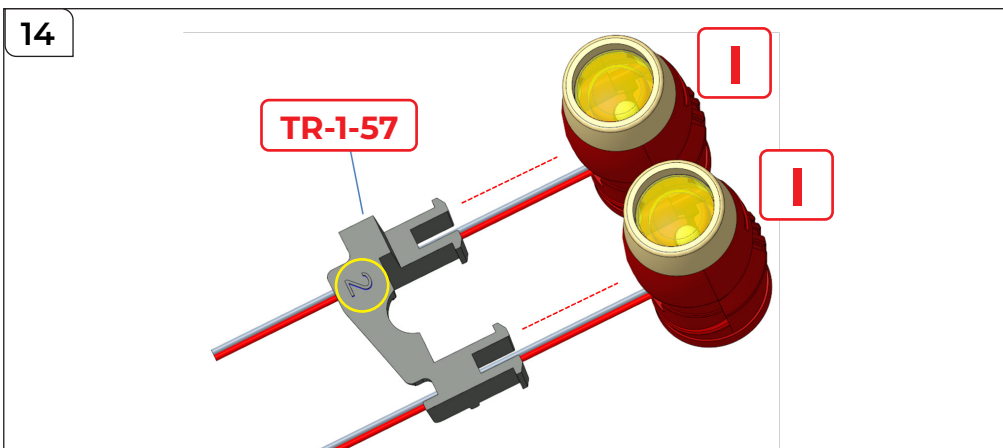
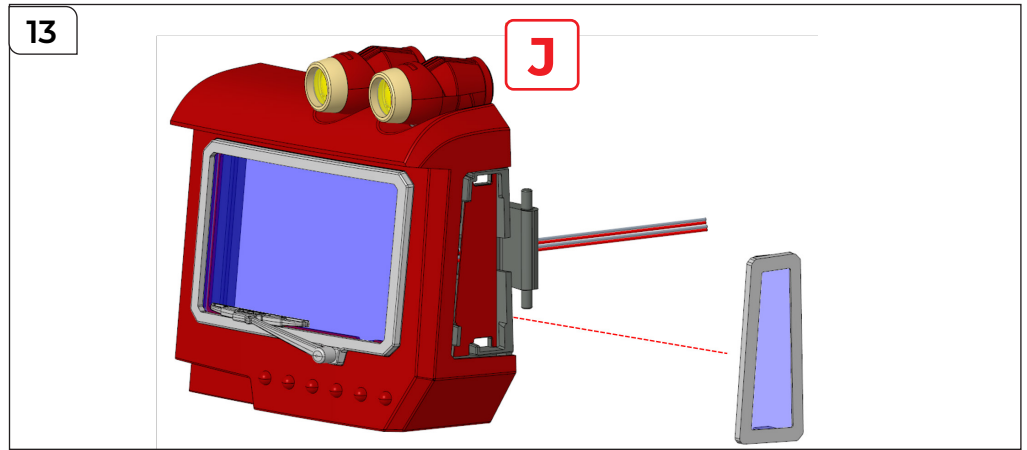


## STEP 12

Cut 1x TR-1-45 and 1x TR-1-61 from their sprues, match their shapes and push together as shown in 12. TR-1-61 fits into the recess on TR-1-45.

## STEP 13

Place the assembly from step 12 into position on J as shown. Push firmly until it clicks into place.

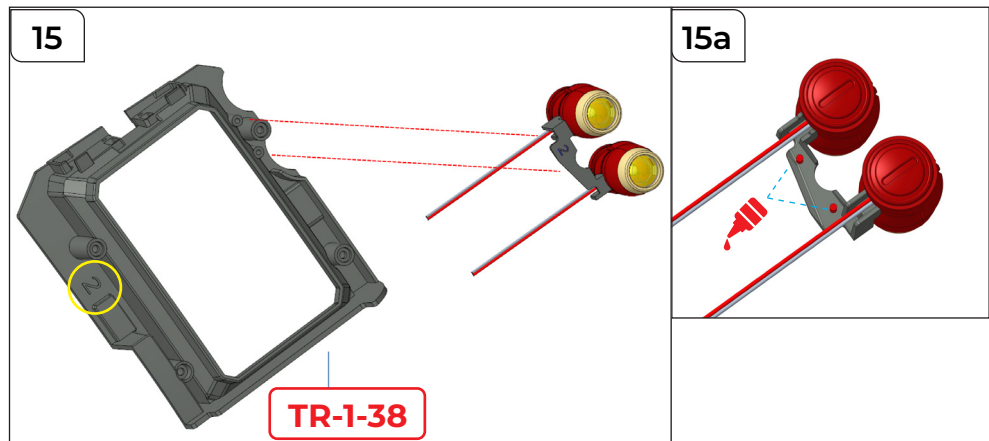


## STEP 14

Place the remaining 2 sets of I into TR-1-57 (marked No. 2, circled) until they click into place.

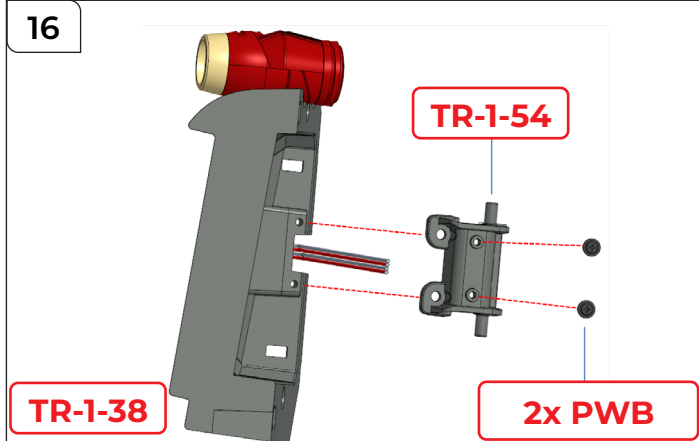
## STEP 15

Glue the assembly from step 14 as shown in 15a, then fix to TR-1-38 (also marked No. 2).



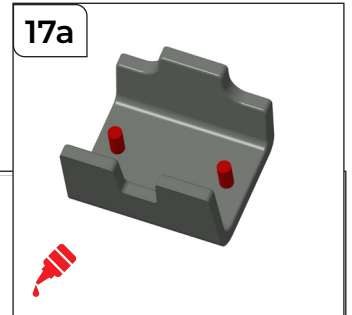


# Assembling the Chest



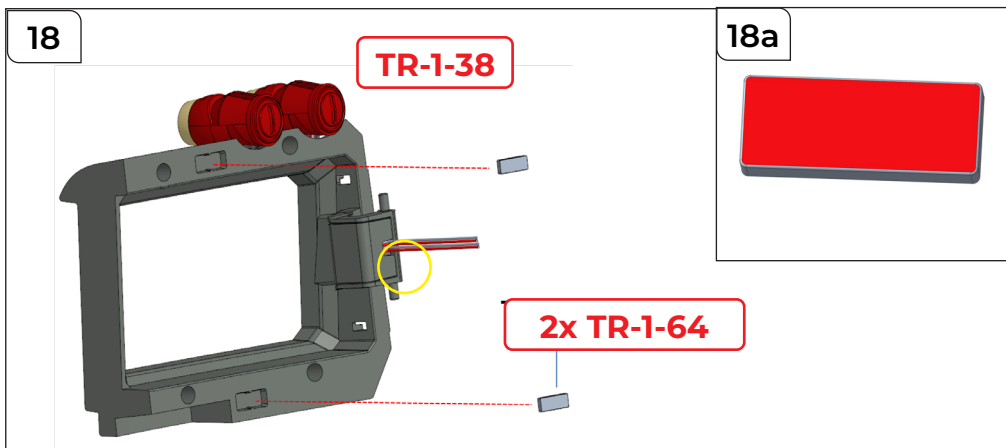
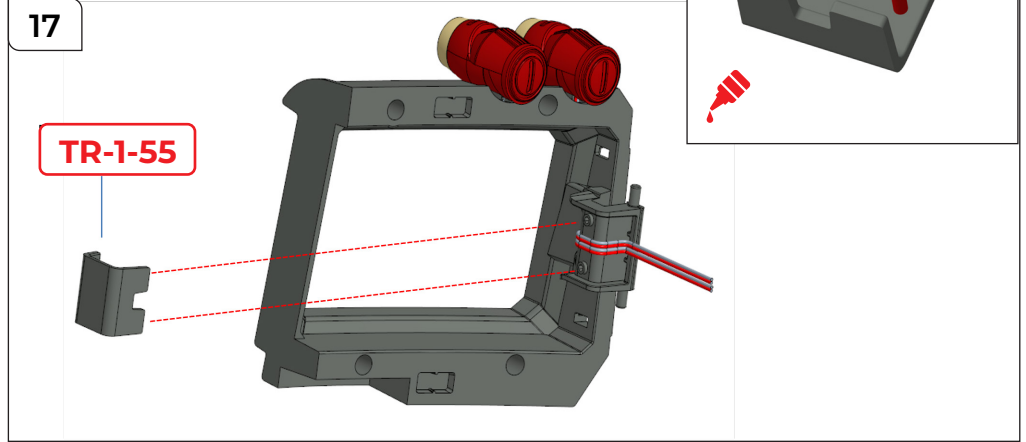
## STEP 16

Place **TR-1-54** on **TR-1-38** and secure in place using **2x PWB** screws.



## STEP 17

Glue **TR-1-55** as shown in 17a, then position onto **TR-1-54**, checking that the cable projects through the notch (circled in step 18 below).



## 18a

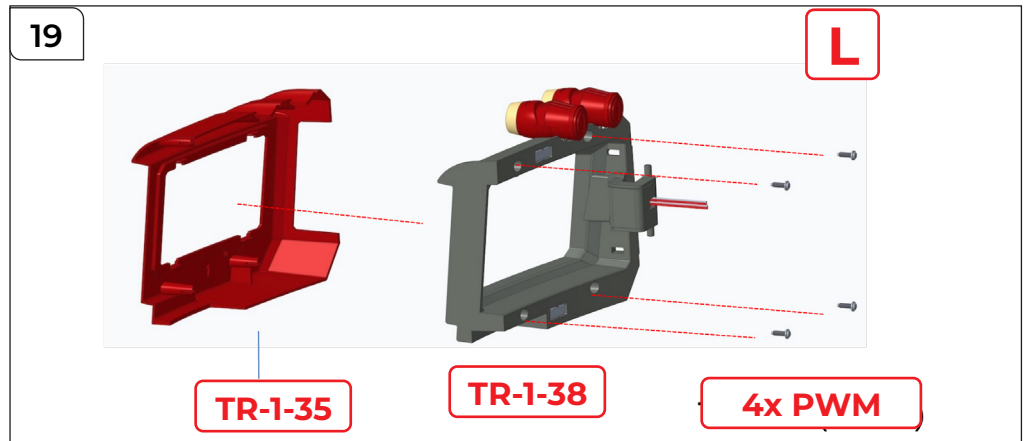


## STEP 18

Glue 2x magnets **TR-1-64** as shown in 18a (these parts are the same on both sides), then fix to **TR-1-38**.

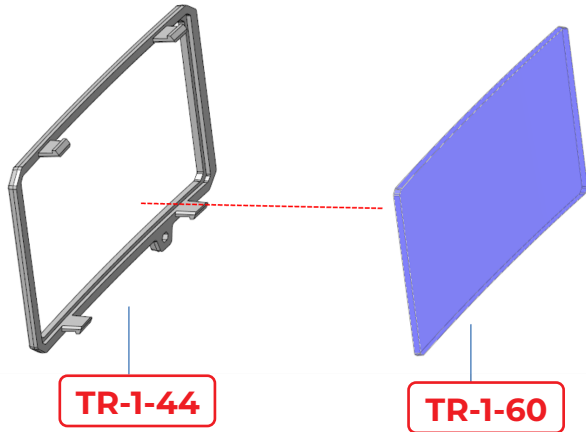
## STEP 19

Place **TR-1-35** onto **TR-1-38** and secure in place using **4x PWM** screws.



# Assembling the Chest

20



TR-1-44

TR-1-60

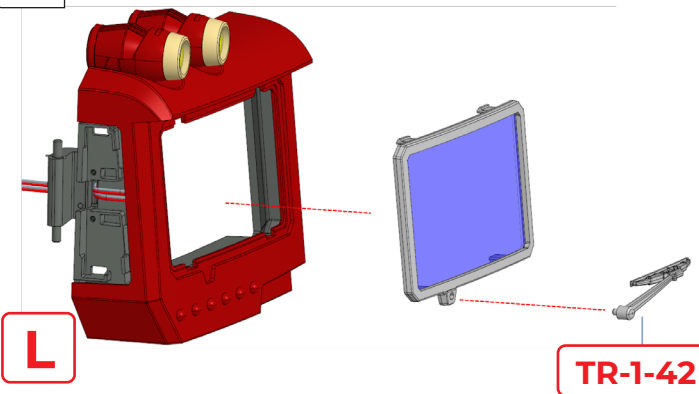
## STEP 20

Push TR-1-60 into the recess on TR-1-44 to assemble the right side-window.

## STEP 21

Position the right side-window onto L. Cut another 1x TR-1-42 from the sprue, glue as shown in 21b then fix into place on the window frame.

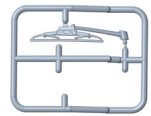
21



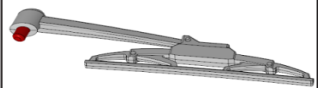
L

TR-1-42

21a



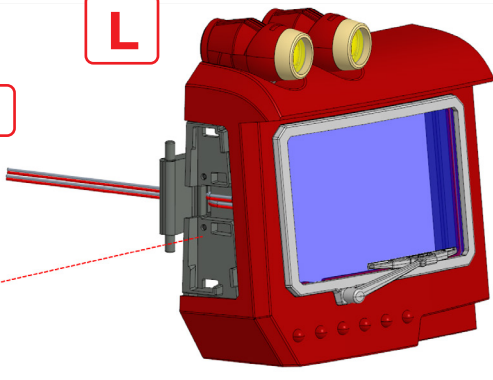
21b



22

L

TR-1-67



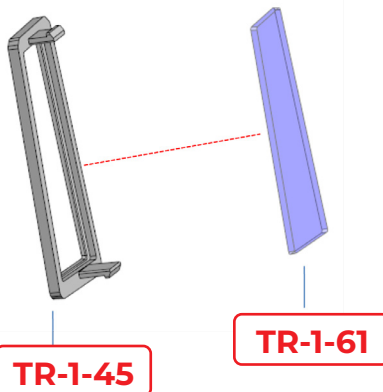
## STEP 22

Remove the protective backing from TR-1-67 before fixing it to L.

## STEP 23

Cut TR-1-45 and TR-1-61 from their sprues. Matching their shapes, fit TR-1-61 into the recess on TR-1-45.

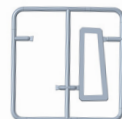
23



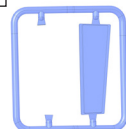
TR-1-45

TR-1-61

23

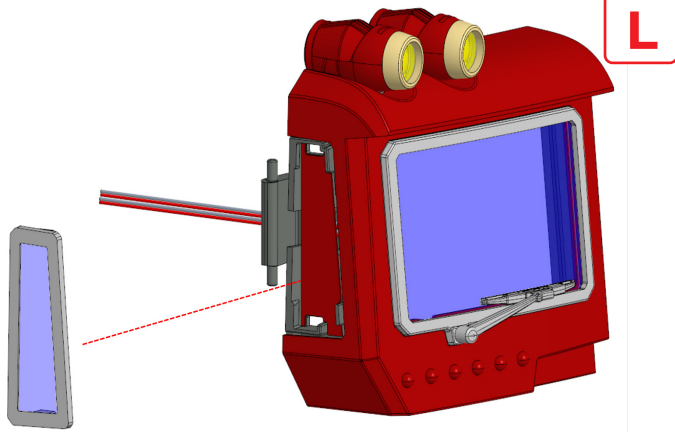


23



# Assembling the Chest

24

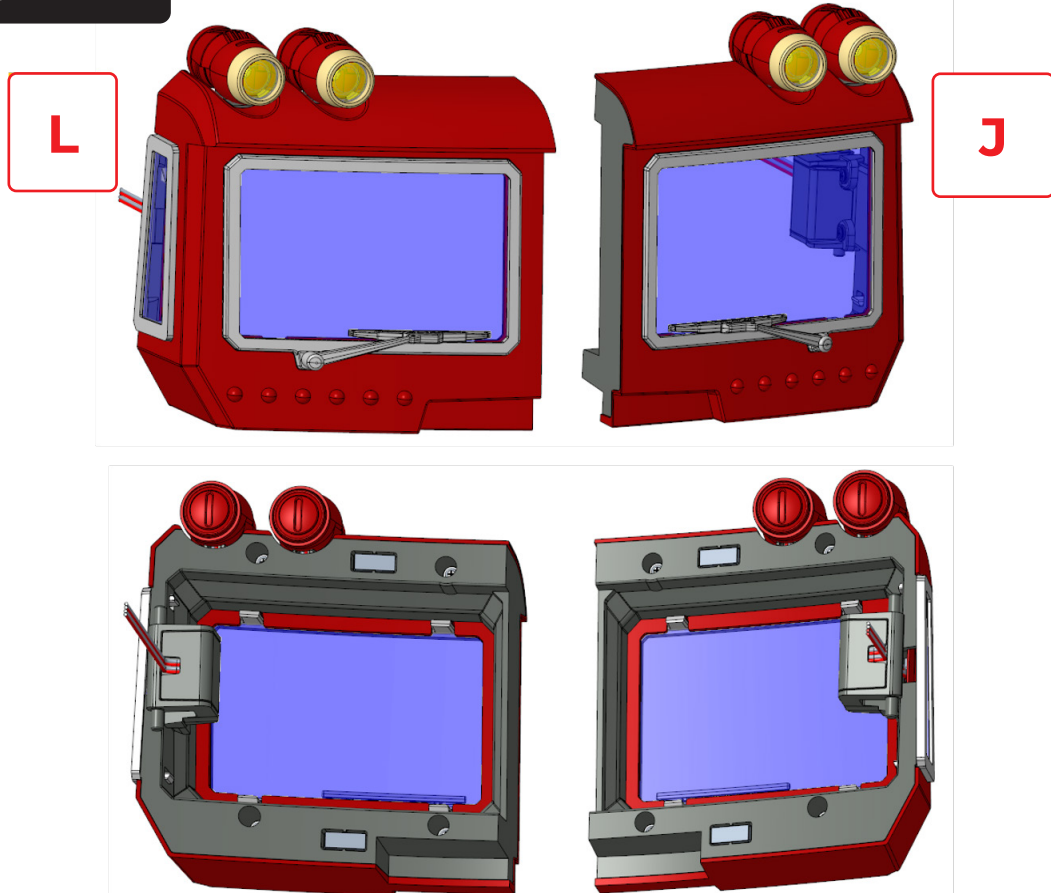


## STEP 24

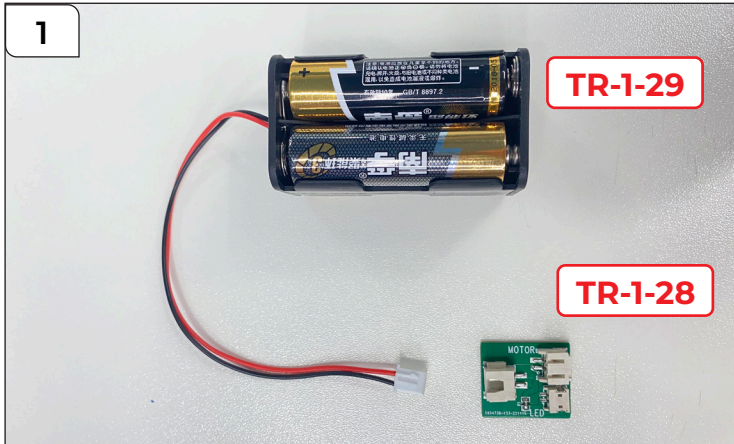
Push the assembled window from step 23 onto L until it clicks into place.

The left and right side-windows are now complete!

## CHEST COMPLETE



# Testing the Electronics

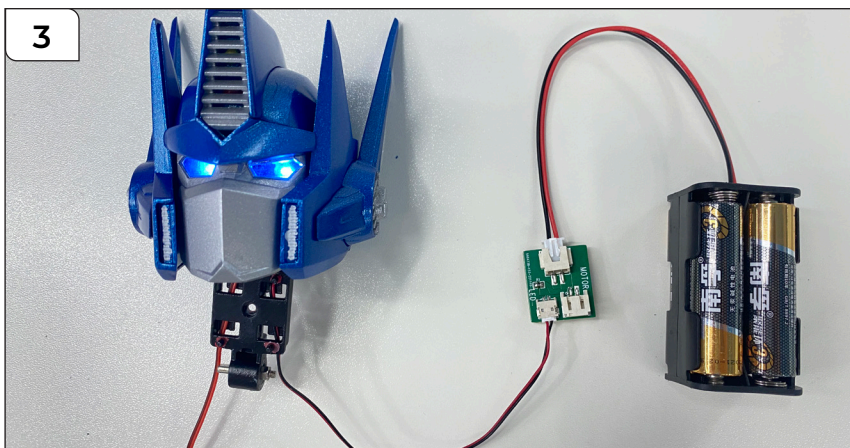
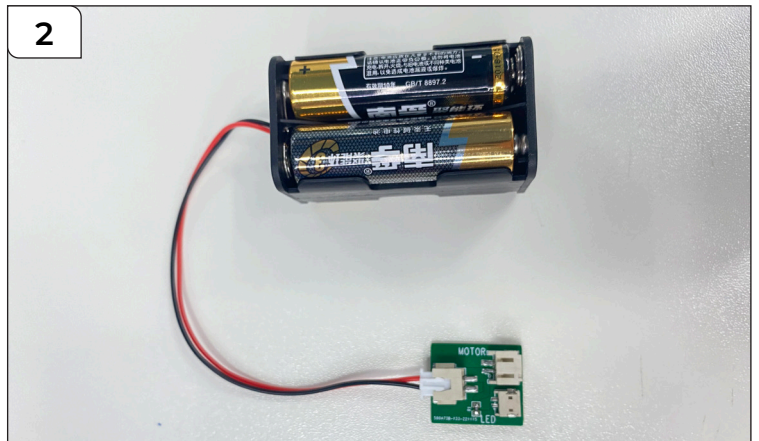


## STEP 1

Take the battery holder **TR-1-29** and the PCB **TR-1-28**. Insert 4x AA batteries into the battery holder.

## STEP 2

Connect the plug into the socket on the PCB as shown.

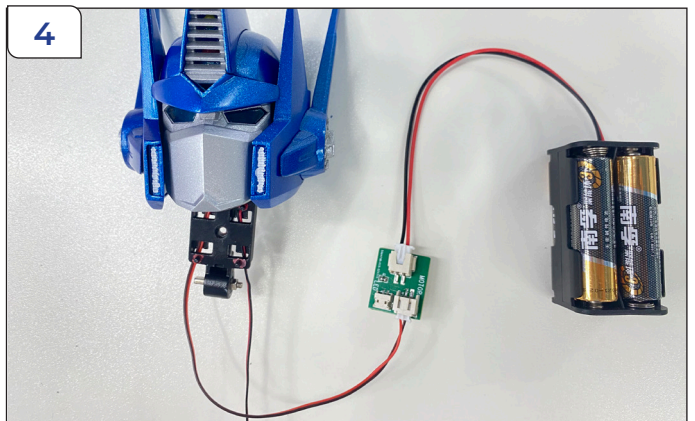


## STEP 3

Take the assembled head and plug the left-hand cable into the PCB. The eyes should light up as shown.

## STEP 4

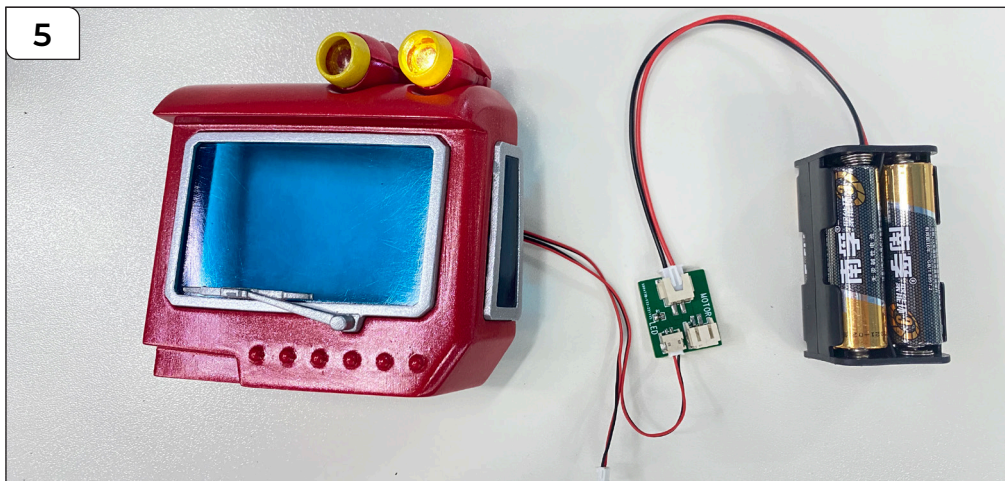
Connect the right-hand cable from the head to the PCB. The motor should operate, moving the mask up and down.





## Testing the Electronics

5



### STEP 5

Take the left & right-chest windows and connect the cables, one at a time, to the PCB. The four headlights should light up. Here we show just one of the headlights, please check all four are working correctly.

PACK 1 COMPLETE

