

# U 96

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# U-BOAT

## Pack 23

### Assembly Instructions

**Kit 89: The main switchboard**

**Kit 90: Electric air compressor**

**Kit 91: Electric motor room: finishing touches**

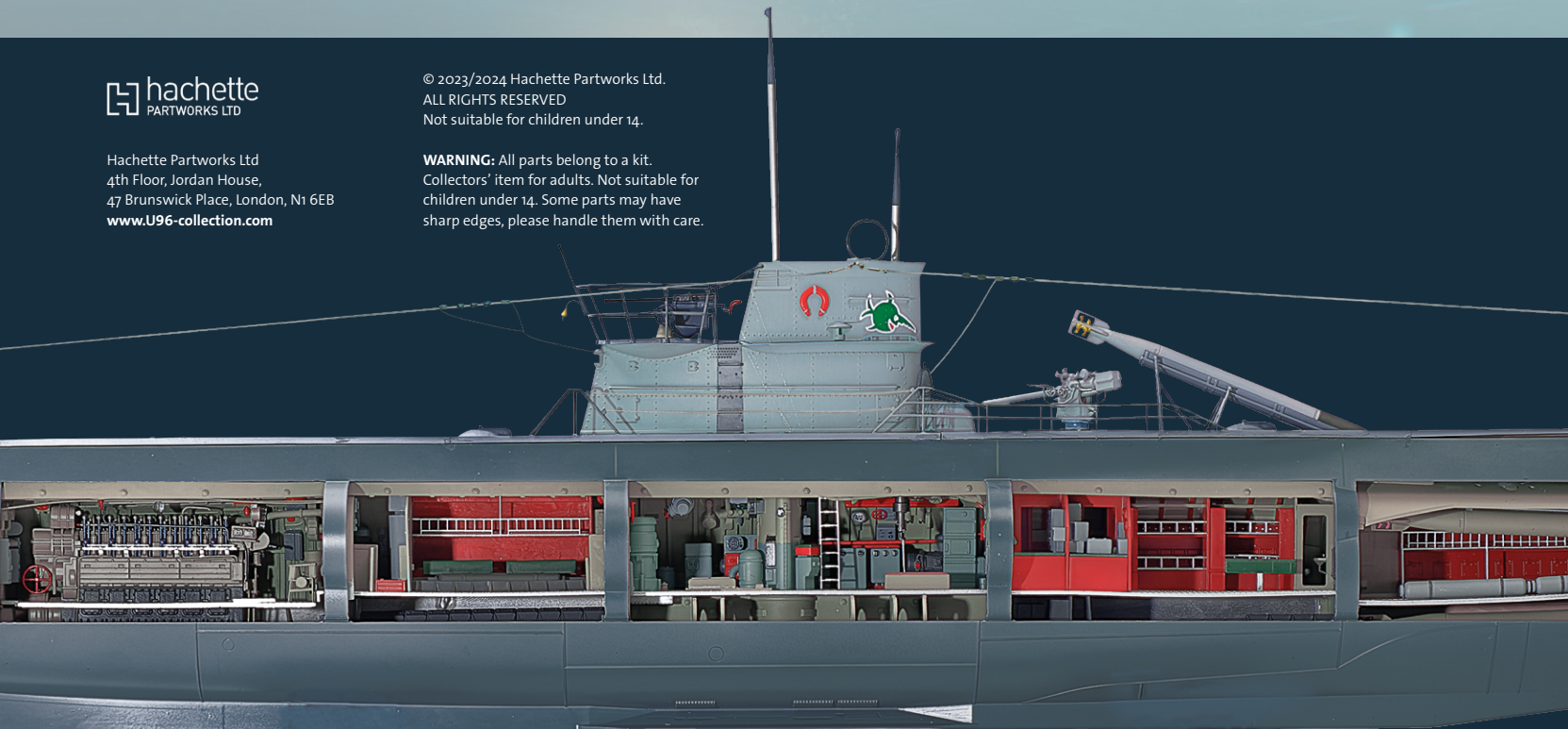
**Kit 92: Adding to the hull**



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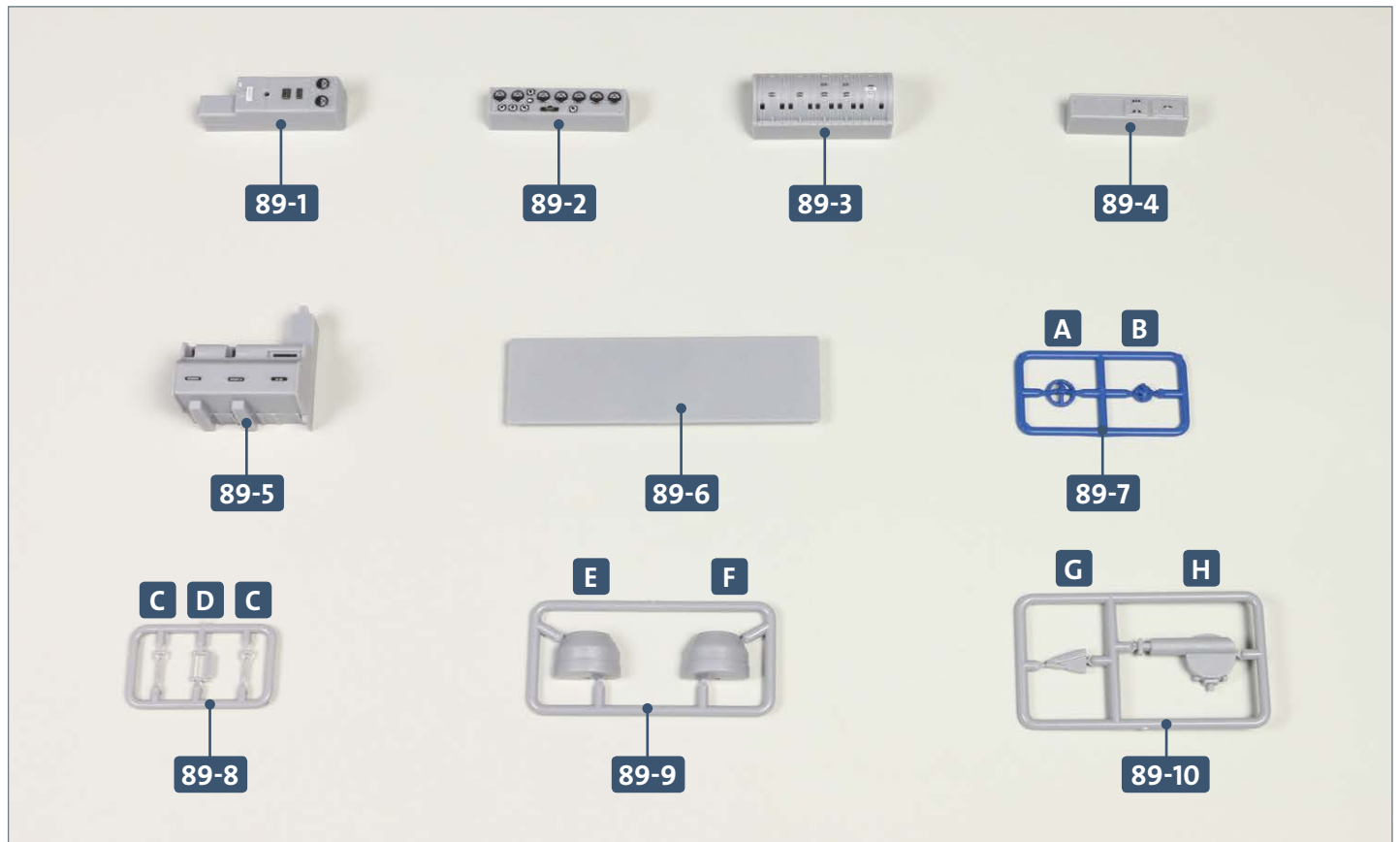
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Not suitable for children under 14.

**WARNING:** All parts belong to a kit.  
Collectors' item for adults. Not suitable for  
children under 14. Some parts may have  
sharp edges, please handle them with care.



# Kit 89: The main switchboard

In this kit, work continues on the electric motor room, including assembly of part of the main switchboard and a clutch attached to the port motor.



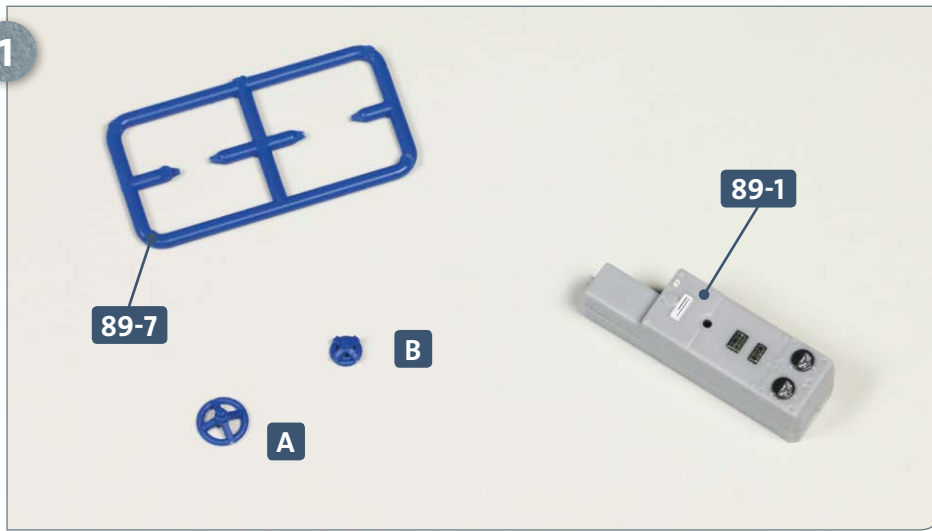
## Parts reference list

Part no.	Name
89-1	Main switchboard field regulators 1 and 2
89-2	Voltmeter and ammeter
89-3	Main switchboard
89-4	Fuse box
89-5	Starter contact and circuit breaker
89-6	Main switchboard rear panel
89-7	Handwheels (A, B)
89-8	Levers (2 x C, D)
89-9	Main clutch (E, F)
89-10	Frame (G, H)

## Kit 89: The main switchboard

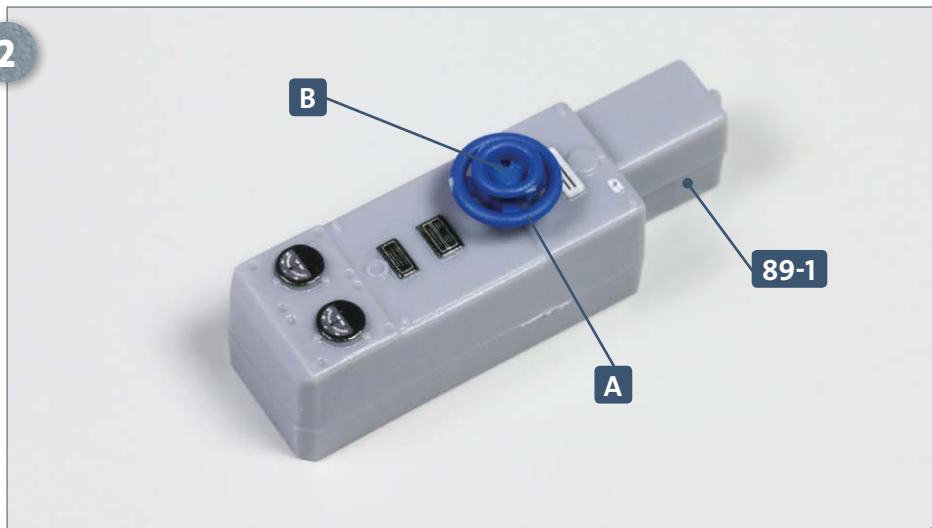
### STAGE 1 → The main switchboard

1



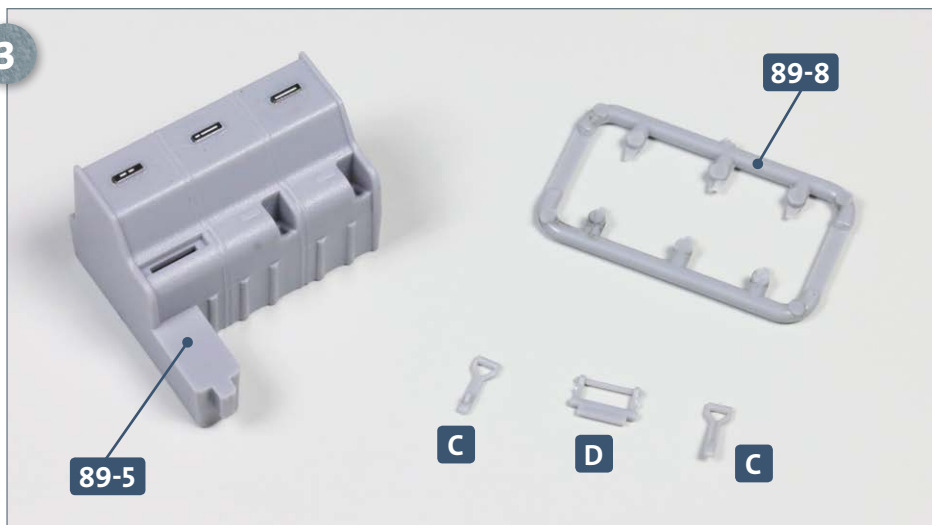
Place the field regulator **89-1** and frame **89-7** on your work surface. Detach the two handwheels **A** and **B** from the frame.

2



Apply some glue to the peg on handwheel **A** and insert it into the central hole of the field regulator **89-1**. The smaller handwheel **B** is glued into the hub of handwheel **A**, as pictured.

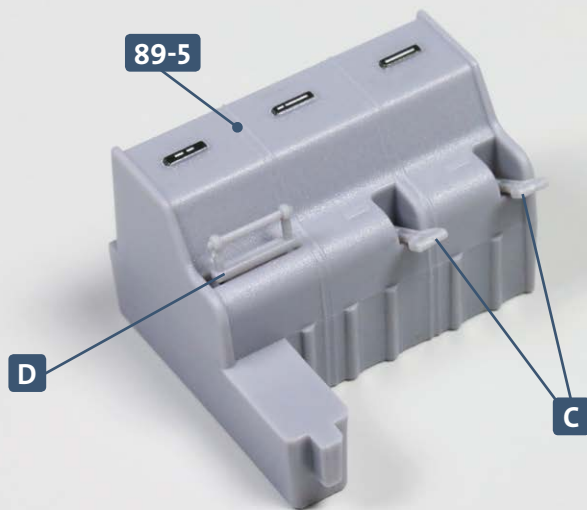
3



Place the starter contact and circuit breaker **89-5** and frame **89-8** on your work surface. Separate the two identical levers **C** and the wide lever **D** from the frame, as shown.

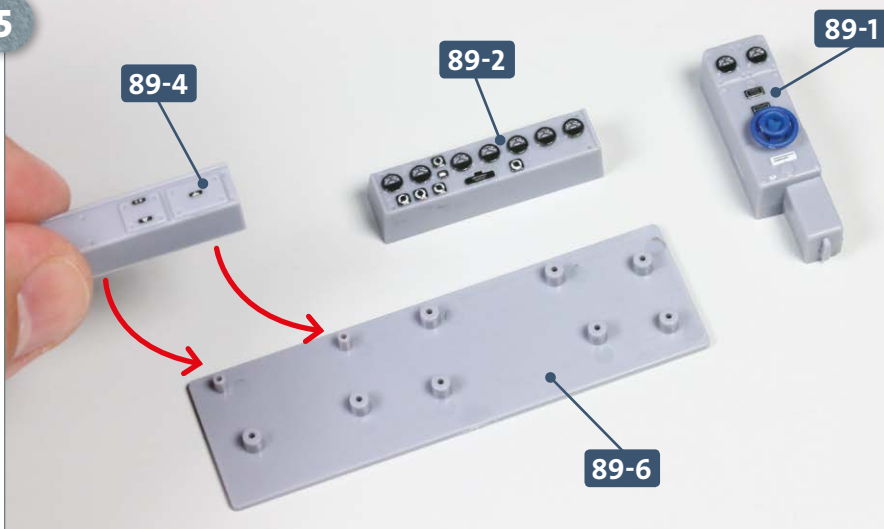
## Kit 89: The main switchboard

4



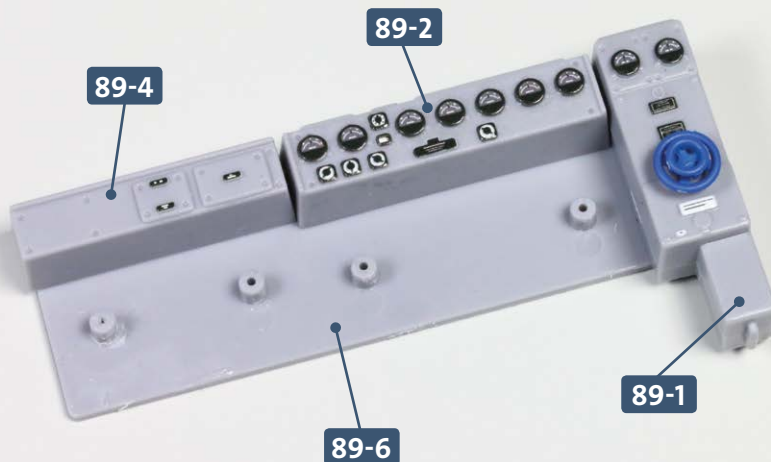
Glue the two levers **C** and lever **D** to the positions on the starter contact and circuit breaker **89-5**, as pictured. Pay attention to the alignment of levers **C**: their pegs should be angled down into the recess.

5



Place the rear switchboard panel **89-6** on your work surface, making sure it is correctly aligned (as pictured). Next to the panel, position the three following components: the field regulator **89-1**, the voltmeter and ammeter **89-2** and the fuse box **89-4**. Apply a little glue to the two raised sockets of the fuse box and attach to the pegs on the panel (as indicated by the two arrows).

6



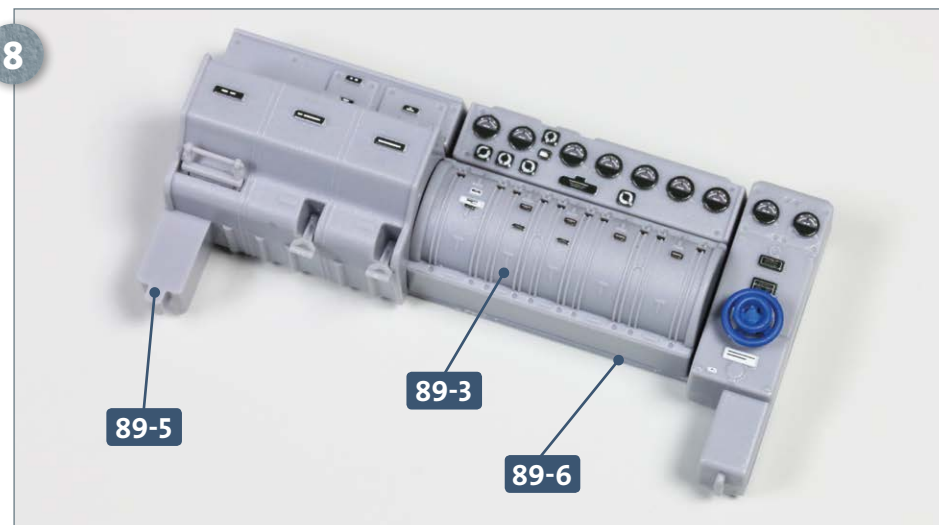
Glue the voltmeter and ammeter **89-2** and the field regulator **89-1** to the rear panel **89-6** next to the fusebox, as pictured, left.



## Kit 89: The main switchboard

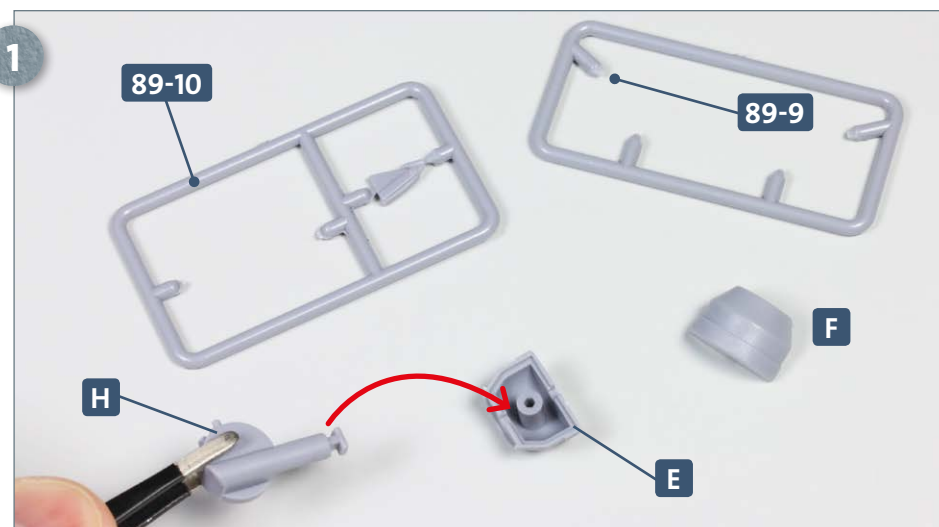


Place the main switchboard **89-3**, the starter contact and circuit breaker **89-5** in position next to the rear panel **89-6**. Apply a little glue inside the raised sockets on the back of part **89-5** and fix to the pegs on the panel **89-6**, as shown by the arrows.



Glue the switchboard **89-3** to the rear panel of the switchboard **89-6** next to the starter contact and circuit breaker **89-5**.

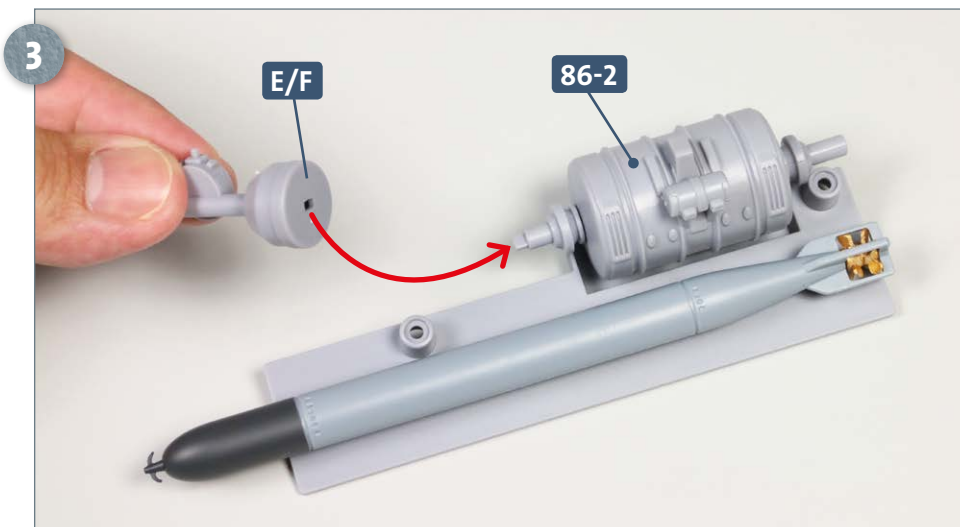
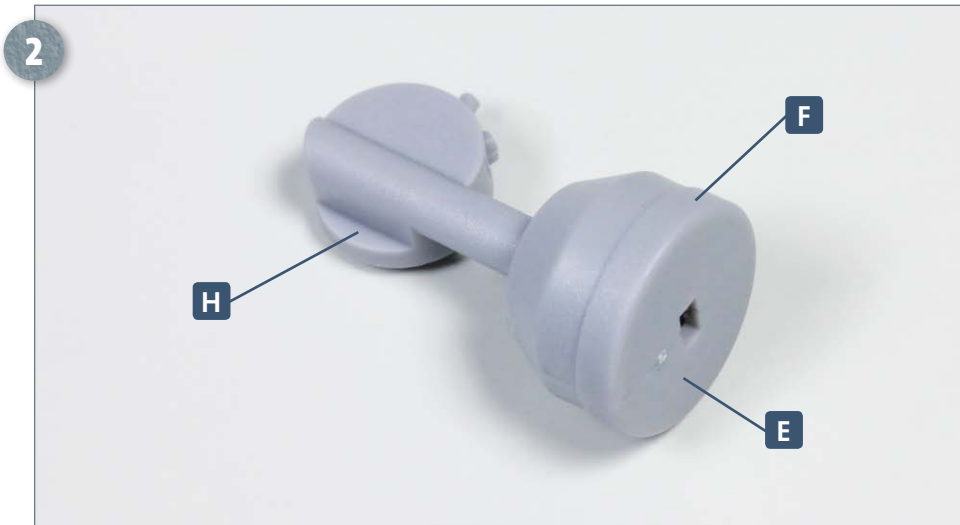
### STAGE 2 → The main clutch



Place frames **89-9** and **89-10** on your work surface. Detach the main parts of the coupling, **E**, **F** and **H**. Apply some glue to the narrow end of **H** and glue it into the recess of part **E**, as indicated by the arrow.

## Kit 89: The main switchboard

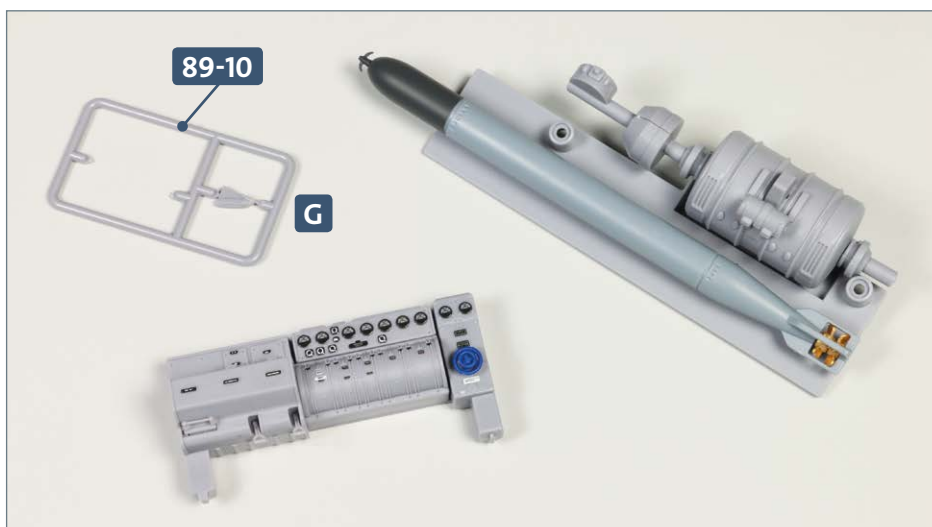
Complete the clutch by gluing part **F** to part **E**, as pictured.



Take the base plate to which you attached the port (L) electric motor **86-2** in kit 87. Apply some glue to the opening in the clutch **E/F** and place it on the shaft of the electric motor, as indicated by the arrow. The inset photograph below shows the clutch **E/F** in place. Hold in the correct position until the glue has set.



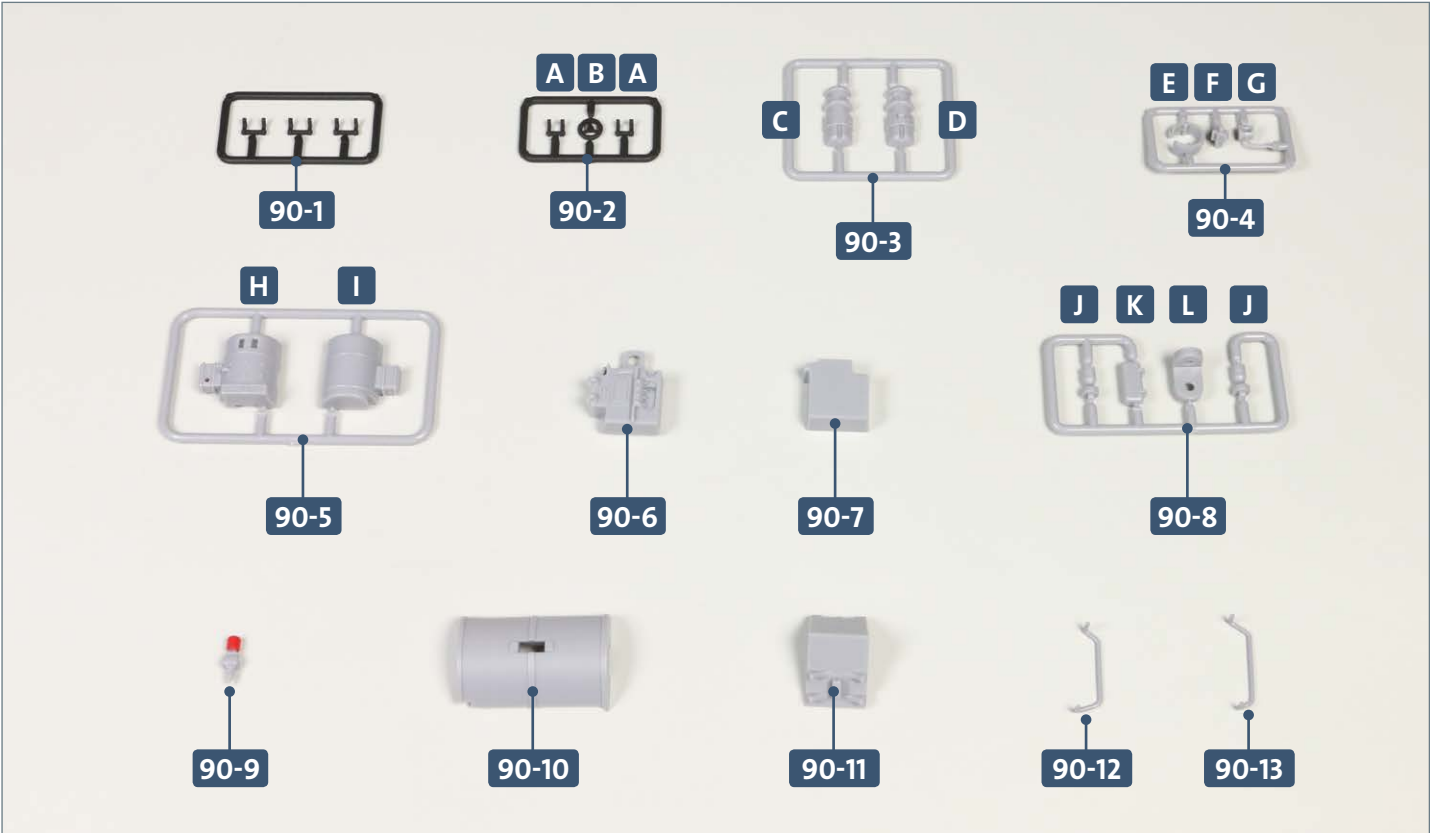
### COMPLETED WORK



The main clutch is now attached to the port (L) electric motor and the main switchboard assembly is taking shape. Keep frame 89-10 with bracket **G** somewhere safe, to be used in kit 91.

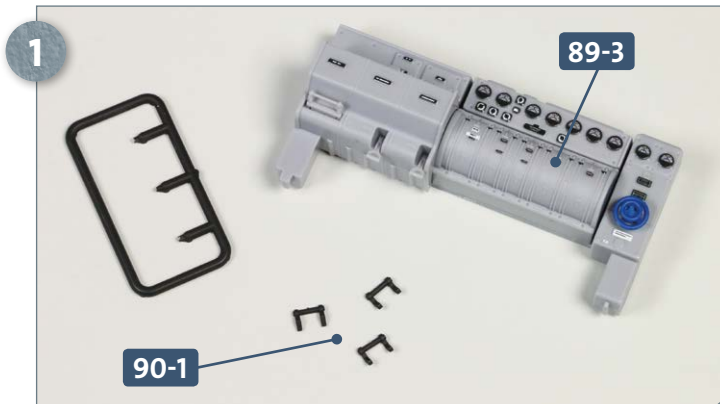
# Kit 90: Electric air compressor

In this kit, you will attach levers to the main switchboard, and assemble the cooling pump and electric air compressor.

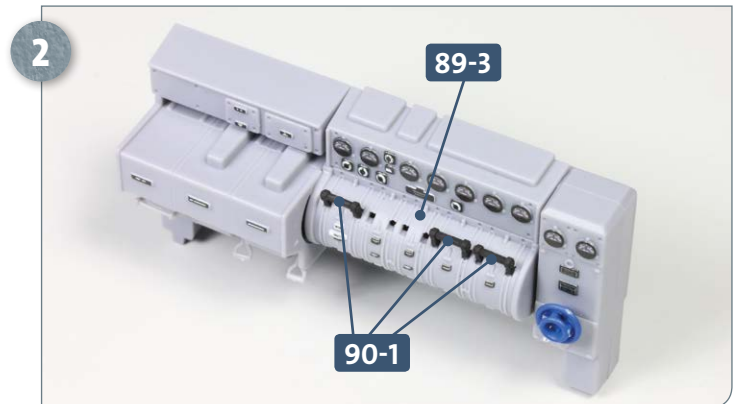


Parts reference list	
Part no.	Name
90-1	Levers (x3)
90-2	Two levers and a handwheel (2 x A, B)
90-3	Cooling pump (C, D)
90-4	Cooling pump attachments (E, F, G)
90-5	Motor housing, electric air compressor (H, I)
90-6	Cylinder housing, electric air compressor
90-7	Cylinder housing, electric air compressor
90-8	Two cylinder covers, cover and bracket (2 x J, K, L)
90-9	Intake manifold, electric air compressor
90-10	Torpedo cell 1
90-11	Electric air compressor base
90-12	Compressed air hose
90-13	Compressed air hose

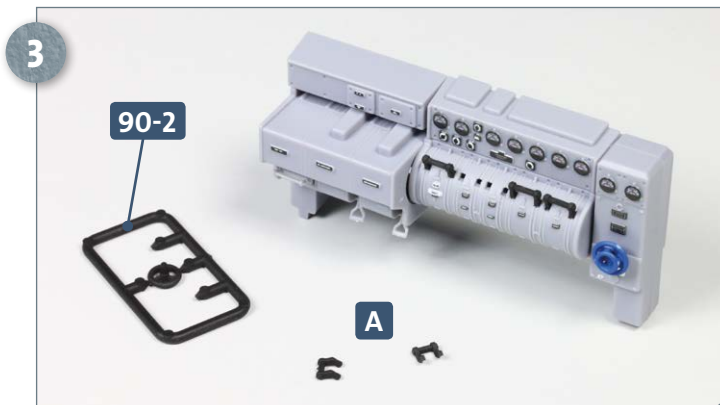
## STAGE 1 → Attaching the levers to the switchboard



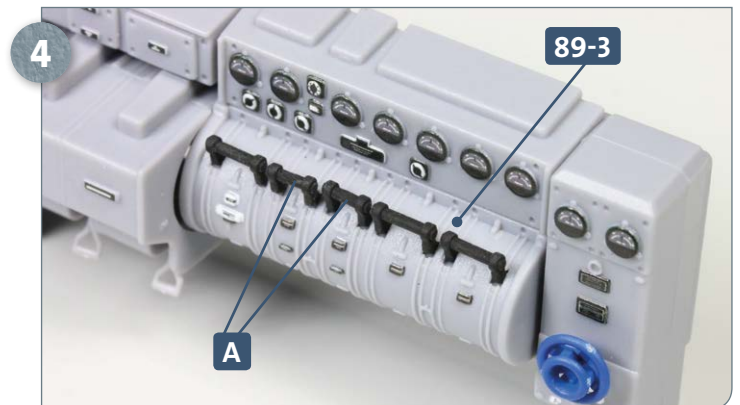
Place the main switchboard assembly **89-3**, from the previous kit, on your work surface. Taking frame **90-1**, detach the three levers.



Glue the three levers **90-1** to the switchboard **89-3**, as pictured.

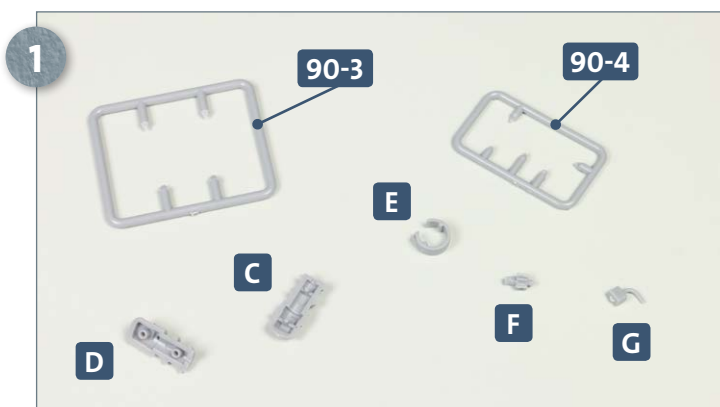


Detach the two smaller levers **A** from frame **90-2**, as pictured.

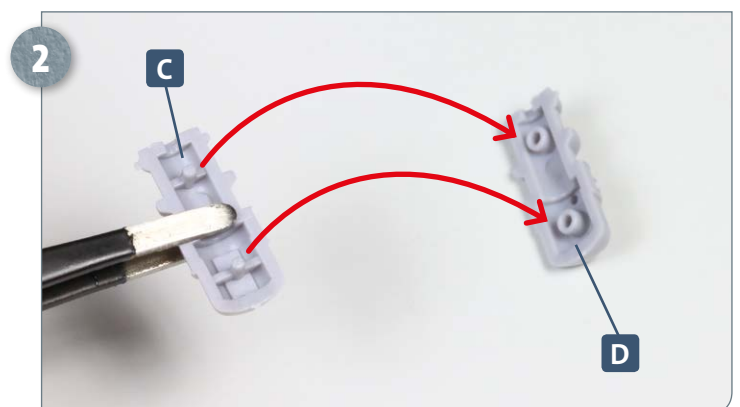


Glue the two smaller levers **A** to the switchboard **89-3**.

## STAGE 2 → Cooling pump assembly



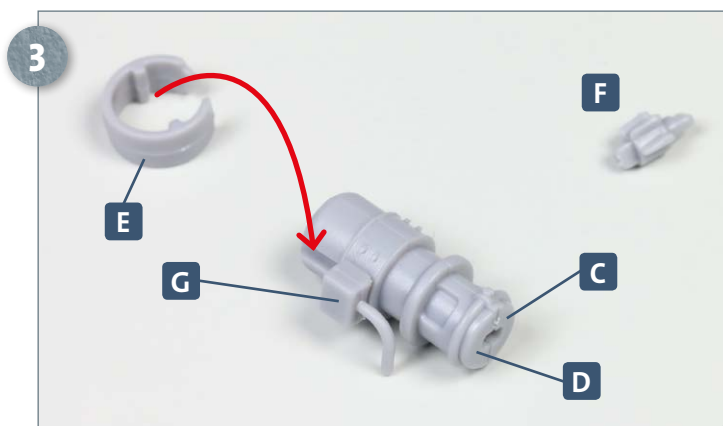
Take frames **90-3** and **90-4** and detach the two halves of the cooling pump, **C** and **D**, and attachments **E**, **F** and **G**.



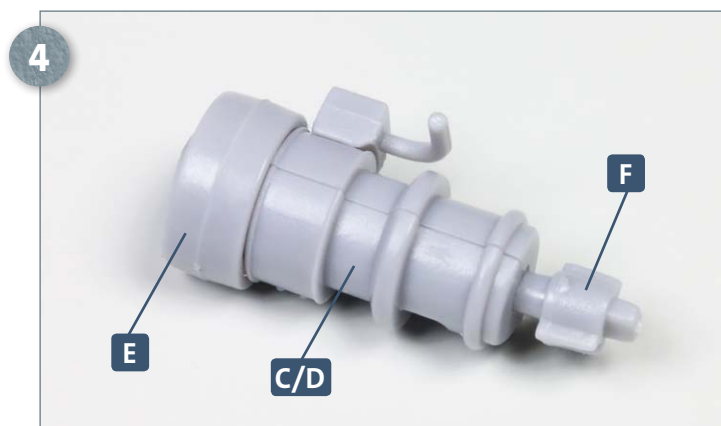
Apply some glue to the two pegs of part **C** and fit them into the corresponding slots in part **D**, as shown by the arrows.



## Kit 90: Electric air compressor

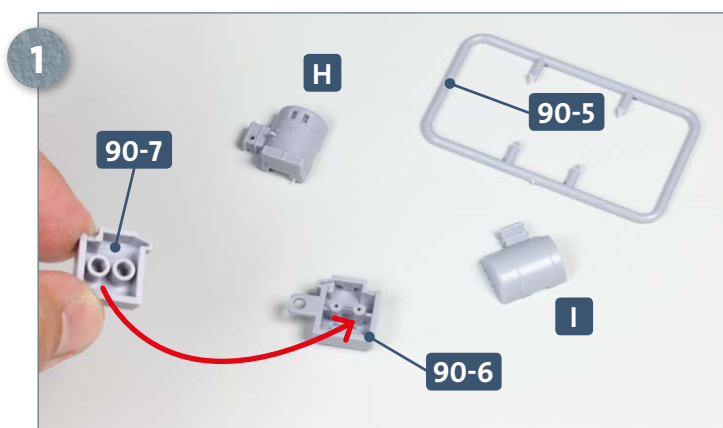


Next glue attachment **G** to the peg of part **D** of the cooling pump. Attachment **E** is then glued to the wider end of the cooling pump, as pictured: the grooves help with correct alignment. See also the photograph in the next step.

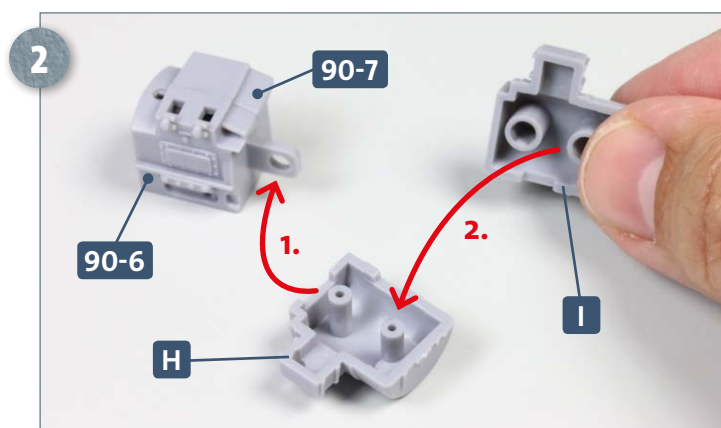


This photograph shows attachment **E** fitted to the cooling pump **C/D**. Next, glue attachment **F** at the other end of the cooling pump. Note how the longer tab fits into the slot formed by parts **C** and **D**.

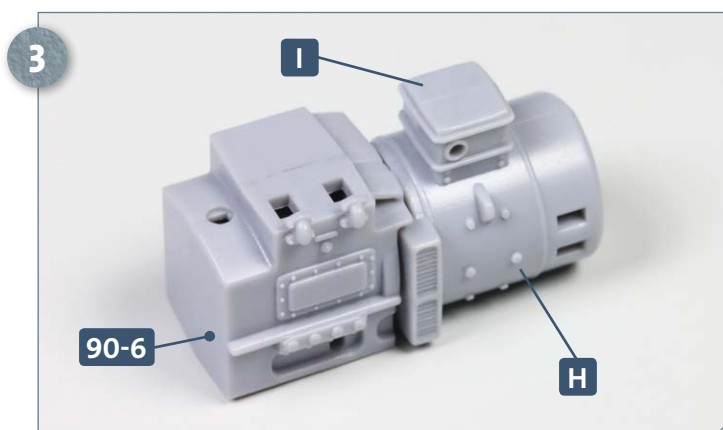
### STAGE 3 → Assembling the electric air compressor



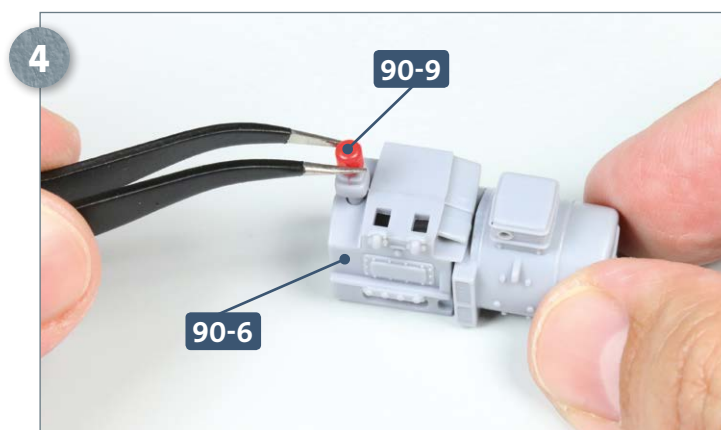
Locate the two halves of the cylinder housing, **90-6** and **90-7**. Apply some glue to the pegs and join the two parts together, as pictured. Detach the two halves of the motor housing, **H** and **I**, from frame **90-5**.



Firstly, fit the peg of the motor housing **H** through the hole in the tab of the cylinder housing **90-6** (arrow 1). Once firmly in place, glue the motor housing **I** to the other half of **H** (arrow 2).



This photo shows the assembled cylinder housing for the electric air compressor. From now on, for simplicity, the combined assembly will be referred to as the electric air compressor **90-6**.

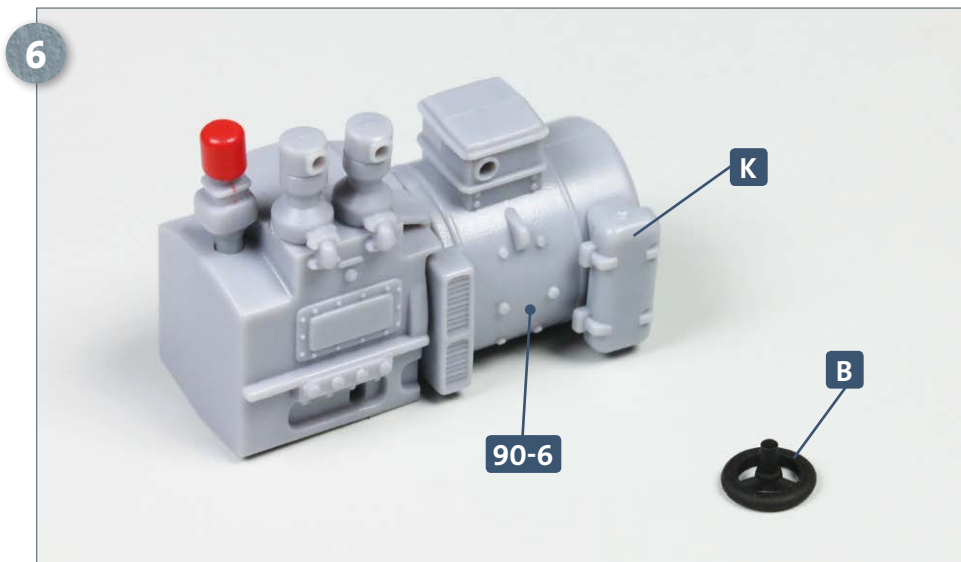


Glue the intake manifold **90-9** into the hole in the electric air compressor **90-6**, as shown above.

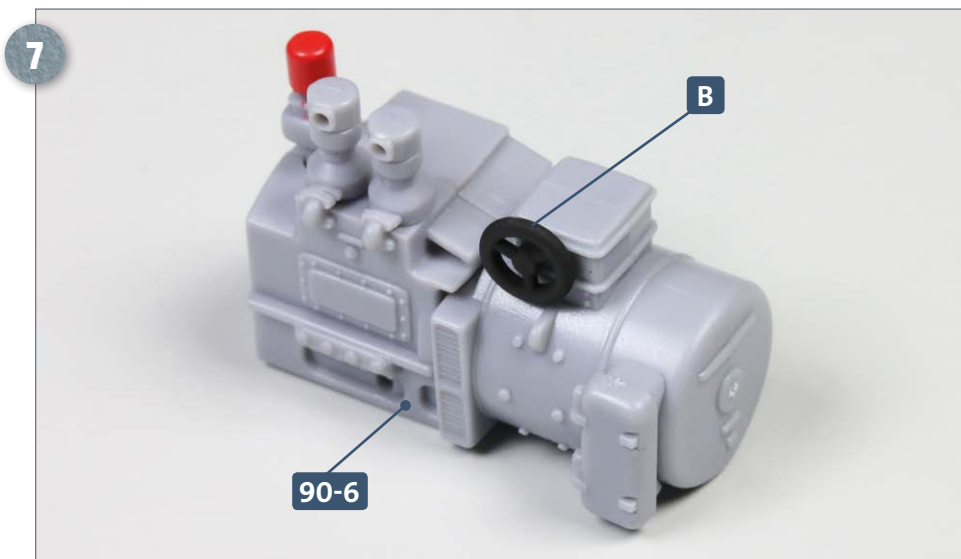
## Kit 90: Electric air compressor



Detach the two identical cylinder covers **J** from frame **90-8** and glue them into the rectangular slots in the electric air compressor **90-6**. Next detach cover **K** from frame **90-8**.



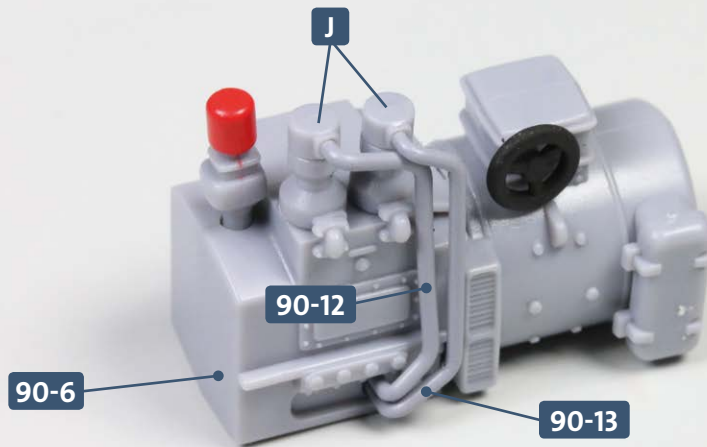
Apply some glue to the two pegs of cover **K** and insert into the slots in the electric air compressor **90-6**, as shown. Detach handwheel **B** from frame **90-2**.



Glue handwheel **B** into the hole at the front of the air compressor **90-6**, as pictured, left.

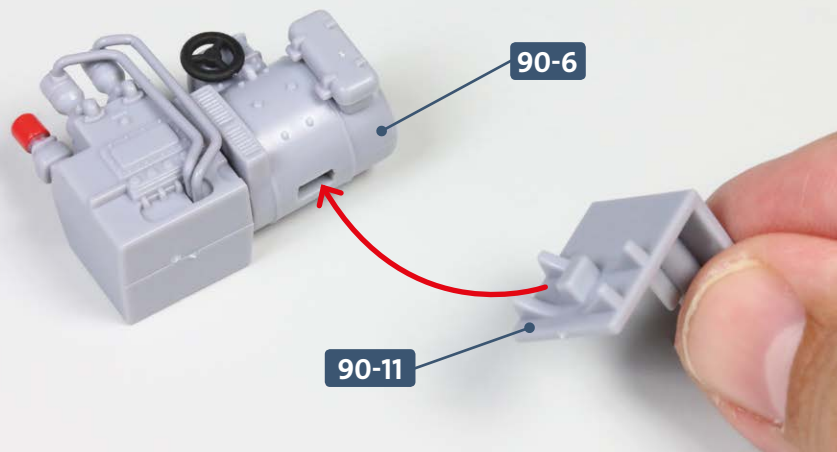
## Kit 90: Electric air compressor

8



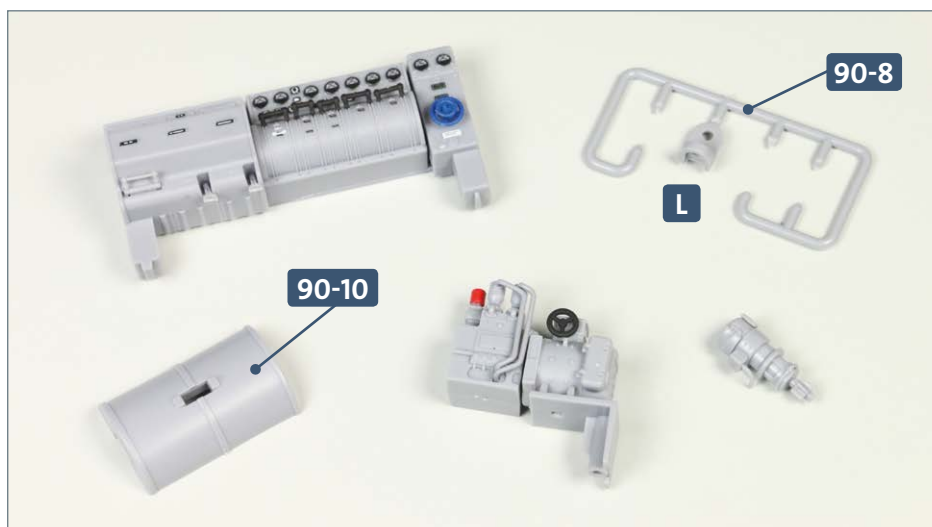
Take the two compressed air hoses **90-12** and **90-13** and test-fit these in position, as shown. They run from the recess at the bottom of **90-6** to holes in the two cylinder covers **J**. Once certain of their correct position, apply a little glue and secure the air hoses in place.

9



Finally, take the base **90-11** and apply some glue to the tab. Insert the tab into the slot on the bottom of the air compressor **90-6**, as shown by the arrow, left.

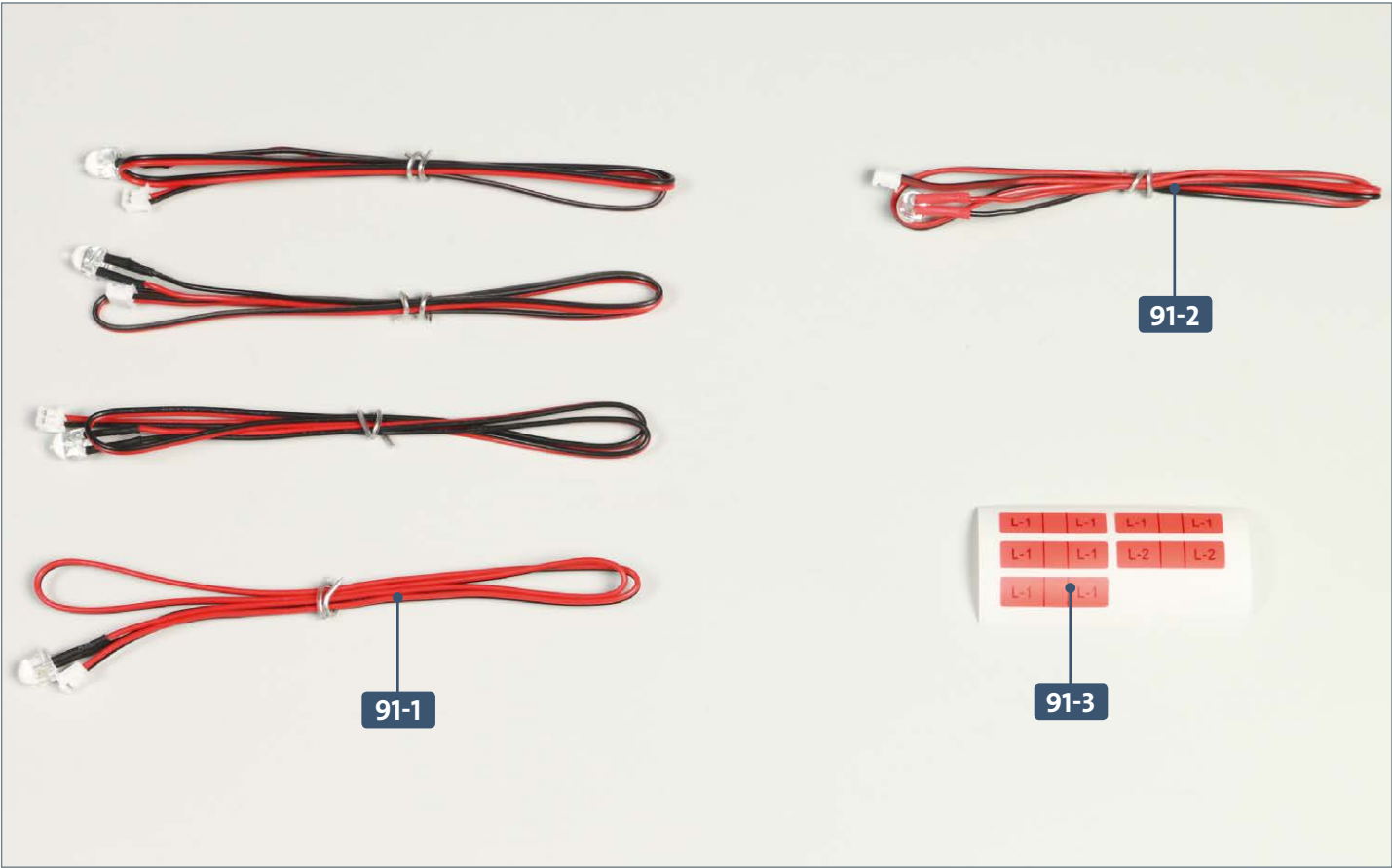
## COMPLETED WORK



You have now completed two more components of the electric motor room; the cooling pump and air compressor. In addition, five levers have been added to the main switchboard. Keep the torpedo cell **90-10** and frame **90-8** in a safe place, for use in a future kit.

# Kit 91: Electric motor room: finishing touches

In this kit, the LEDs of the five supplied cables are inserted into the deckhead of the electric motor room. The assembly of the sixth compartment is completed and is fixed in place.



Parts reference list	
Part no.	Name
91-1	Cables with white LED (x4)
91-2	Cable with red LED
91-3	Five cable labels (4 x L-1, 1 x L-2)

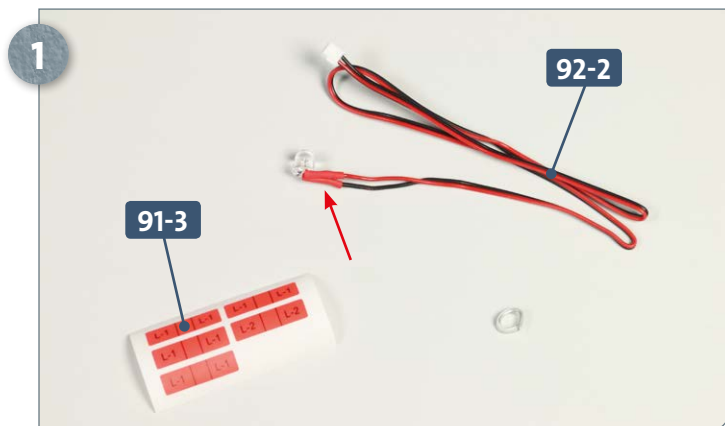


Screws		
Ref	No.	Dimensions
EP	12 + 1	2.3 x 6 mm

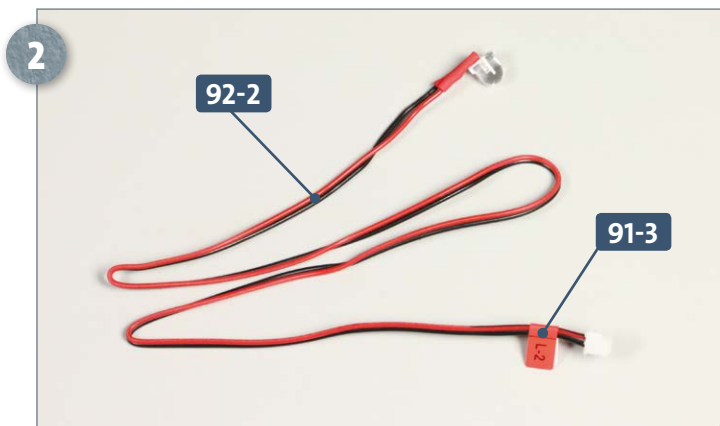


## Kit 91: Electric motor room: finishing touches

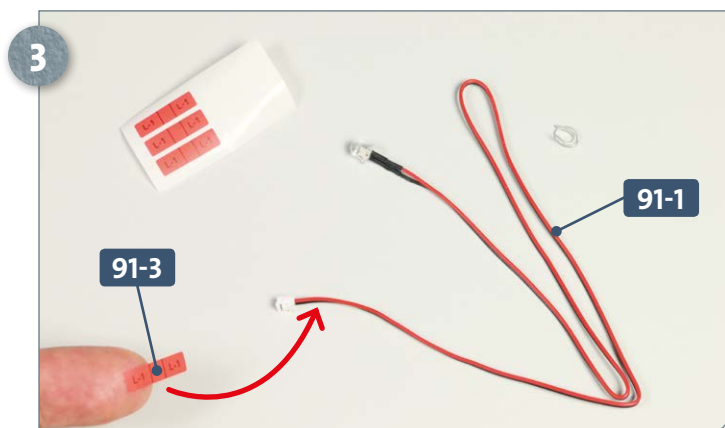
### STAGE 1 → Fitting the LED cables



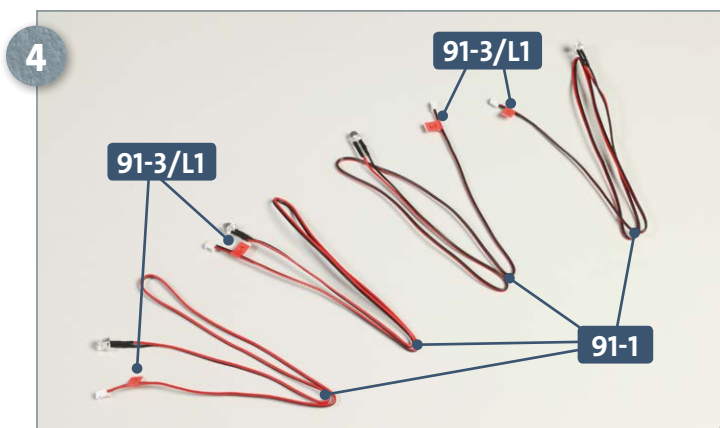
Remove the tie from the red LED cable **92-2** and locate the cable label **91-3**. Note that the red LED has red sleeving (see arrow above).



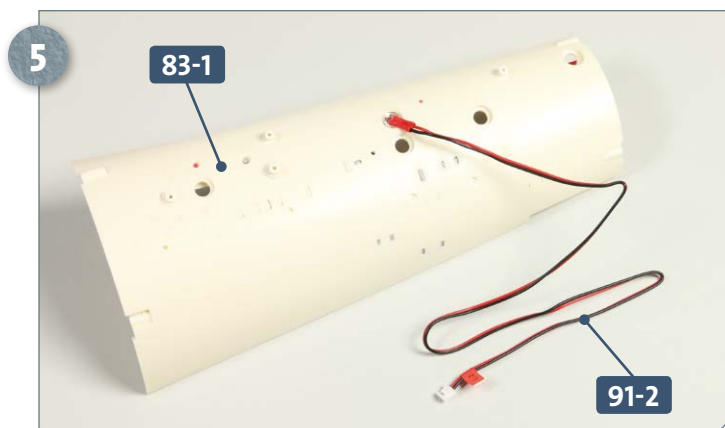
Remove the cable label **91-3** with the label **L2** from the backing film, and attach it to the cable **92-2**, approximately 8mm from the end with the plug.



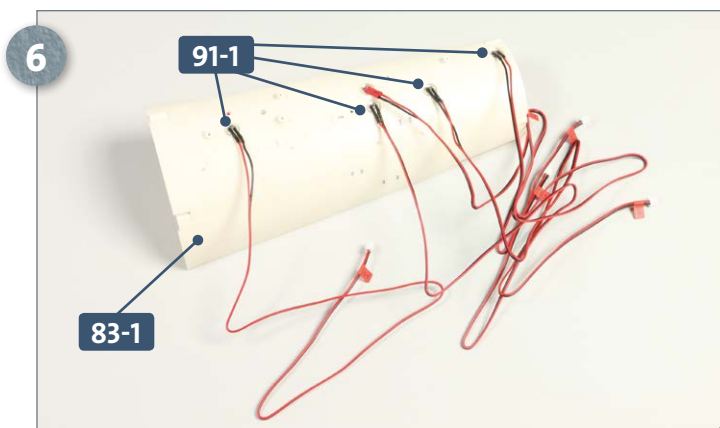
Take one of the white LED cables **91-1** and remove the cable label **91-3** with the label **L1** from the backing film. Stick the label to the cable, approximately 8mm from the end with the plug, as shown.



Repeat the process, labelling the remaining three white LED cables **91-1** with a cable label **91-3/L1**. Check that all five LED cables work by connecting them to the test board **3-8** (refer to kit 43 for instructions on how to do this if needed).

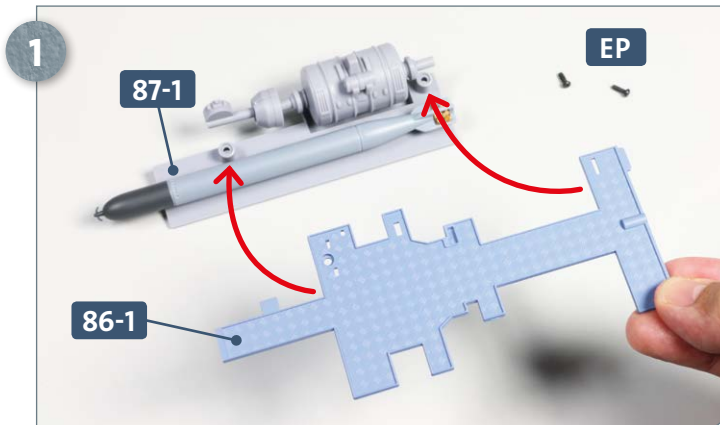


Insert the red LED **91-2** into the hole in the deckhead of the electric motor room **83-1**, as shown.

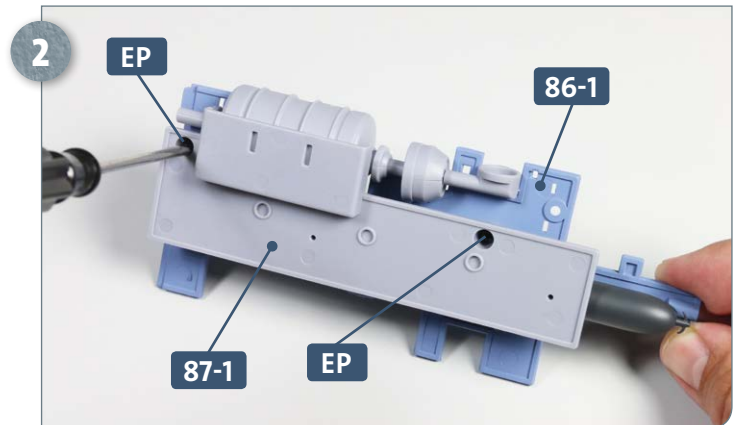


Insert the white LEDs **91-1** into the four other holes in the deckhead panel **83-1**, as pictured.

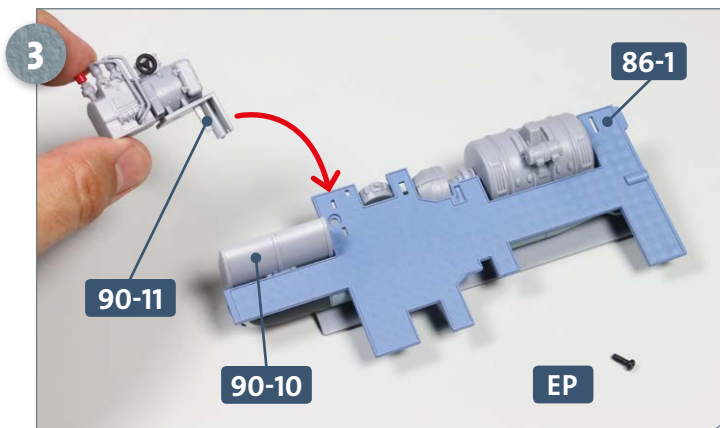
## STAGE 2 → Assembling the sixth compartment



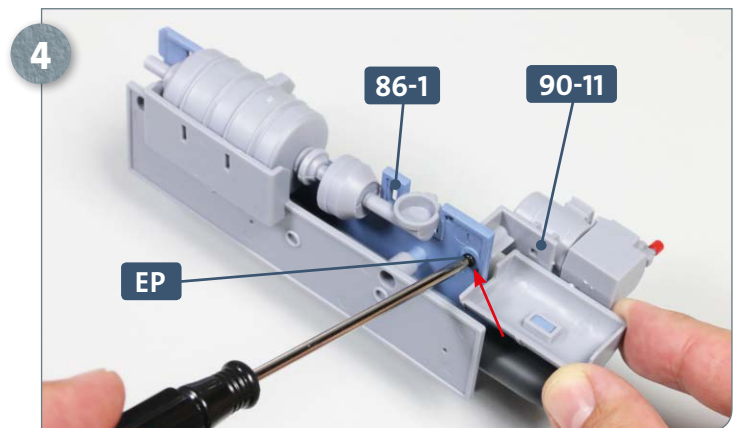
Have ready the base plate **87-1** and two EP screws. Take deck plate **86-1** and place its two mounts on the holes in the base plate, as indicated by the two arrows.



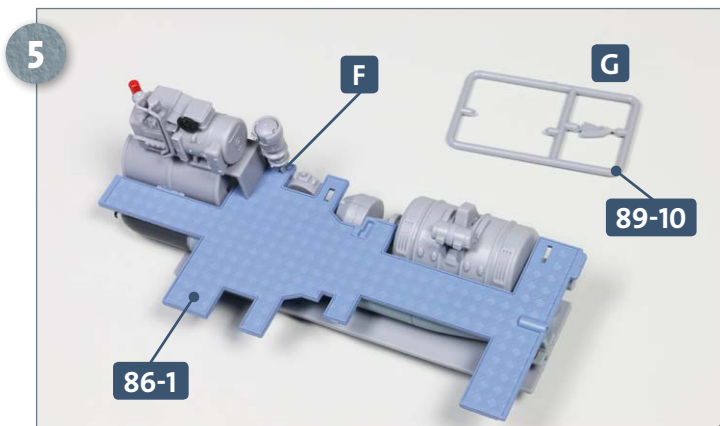
Turn the assembly upside down and attach the base **87-1** to the deck panel **86-1** with the two EP screws, as pictured.



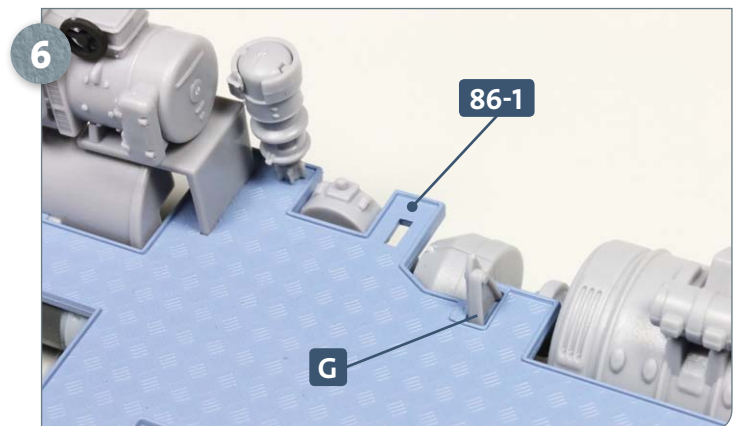
Glue the torpedo cell **90-10** to the side of the deck panel **86-1**. (See also the photograph in the next step and note the notch at one end – see red arrow.) Then, have ready another EP screw. Take the air compressor **90-11** and place the two pegs at the base in the slots of the deck panel.



From below, attach the base of the air compressor **90-11** to the deck panel **86-1** using the EP screw, as pictured.

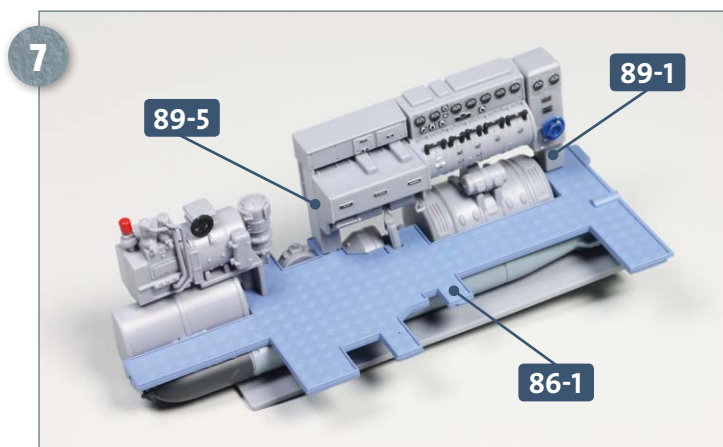


Take the cooling pump, assembled in kit 90, and after applying glue to the peg on part **F** insert it into the slot in the deck panel **86-1**. To ensure the correct orientation, see also the next step. Detach part **G** from frame **89-10**.

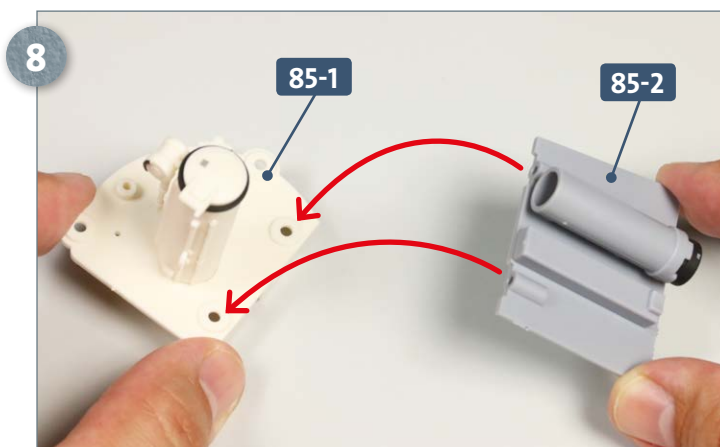


Glue part **G** from frame **89-10** to the deck panel **86-1**, as pictured.

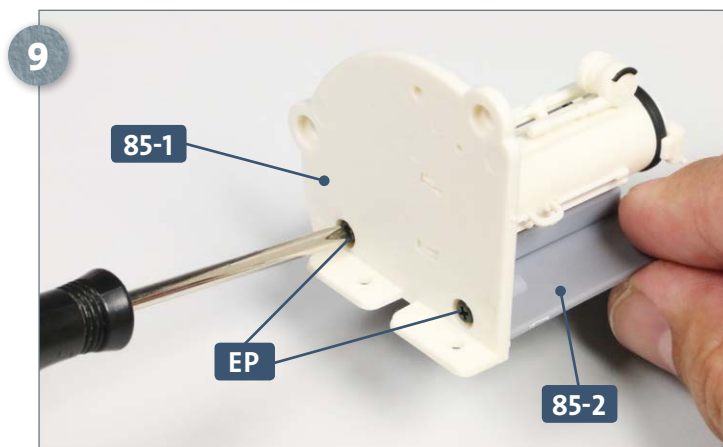
## Kit 91: Electric motor room: finishing touches



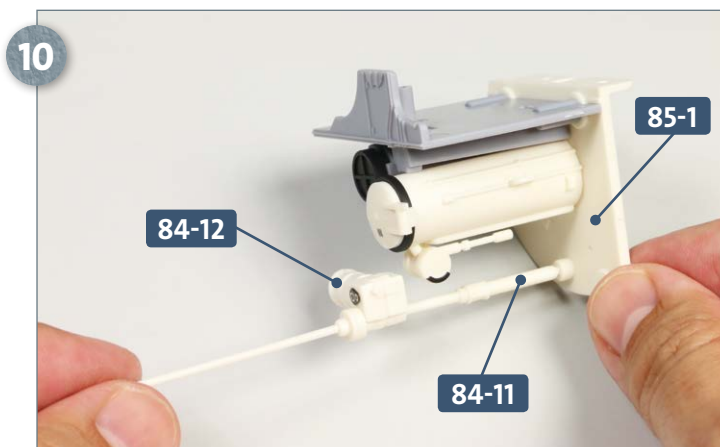
Taking the main switchboard assembly, apply a little glue to the pegs on the bottom of parts **89-1** and **89-5** and fit them into the slots in the deck panel **86-1**.



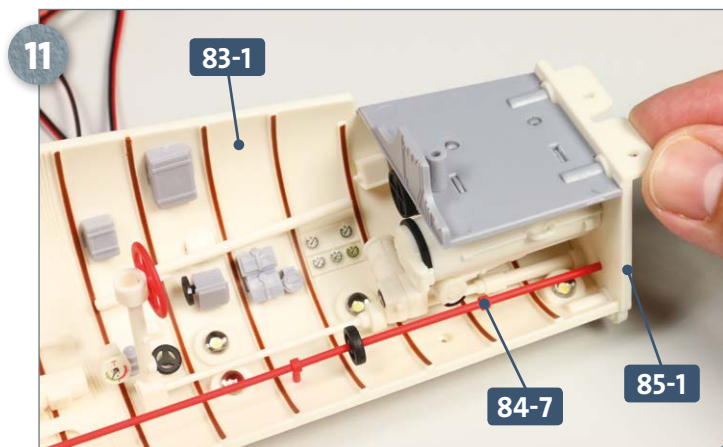
Align the endplate **85-1** and ballast tank **85-2** together, as indicated by the arrows.



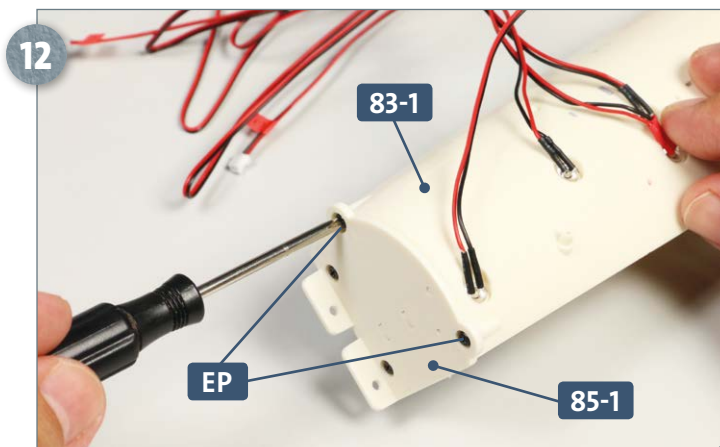
Fix the endplate **85-1** to the ballast tank **85-2**, using two **EP** screws, as pictured.



Take the main rudder motor assembly **84-12** that you built in kit 84. Apply a little glue to the end of the drive shaft **84-11** and insert it into the socket in the endplate **85-1**, as shown. If necessary, slightly enlarge the hole in endplate **85-1** with a small pointed file, or similar.



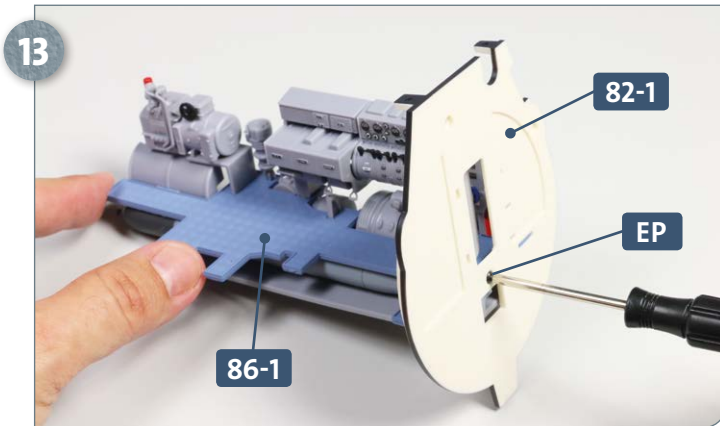
Join the deckhead **83-1** to the endplate **85-1**, making sure that the aft end of the rod **84-7** is inserted into the hole in the endplate. If necessary, enlarge the hole slightly.



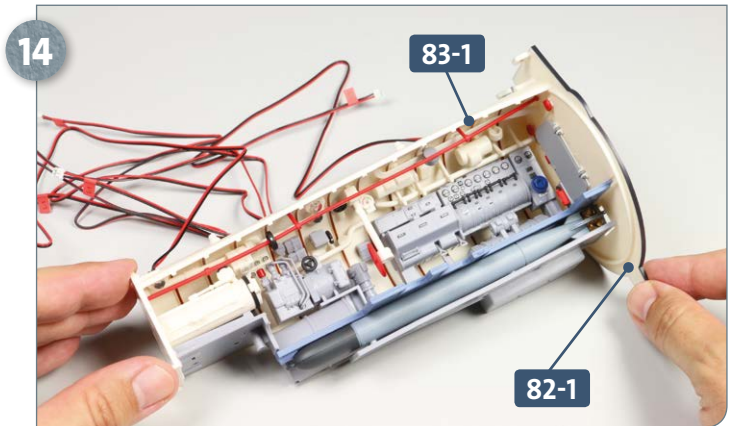
Attach the endplate **85-1** to the deckhead panel **83-1** using two **EP** screws, as pictured.



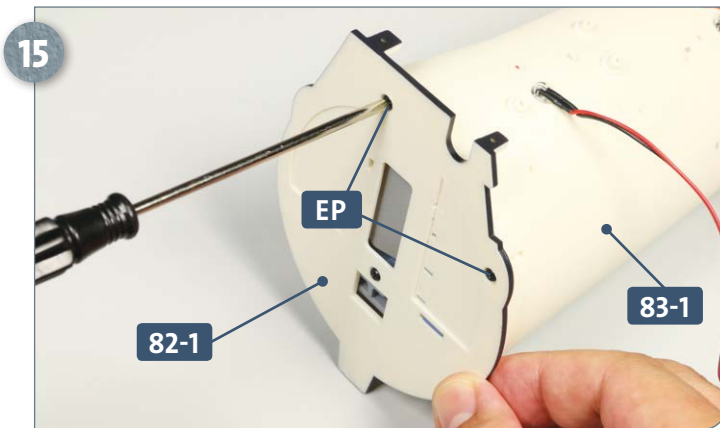
## Kit 91: Electric motor room: finishing touches



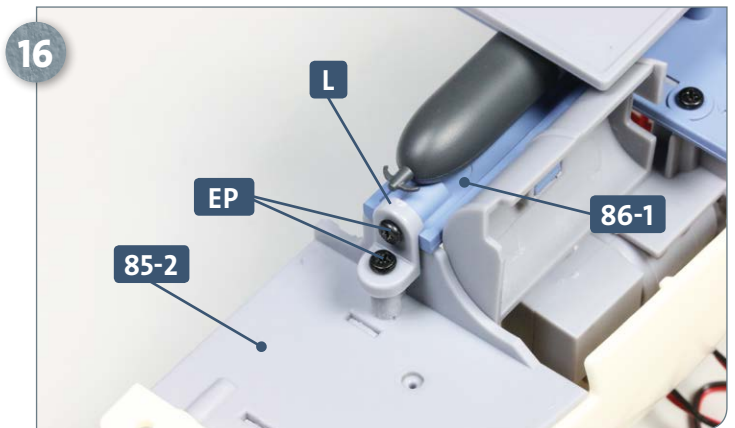
Take the forward bulkhead for the electric motor room **82-1** and fit it to the forward end of the deck panel **86-1**. Fasten in place with an **EP** screw.



Place the forward bulkhead for the electric motor room **82-1** against the forward end of the deckhead panel **83-1**, so that the two holes of each part are aligned.

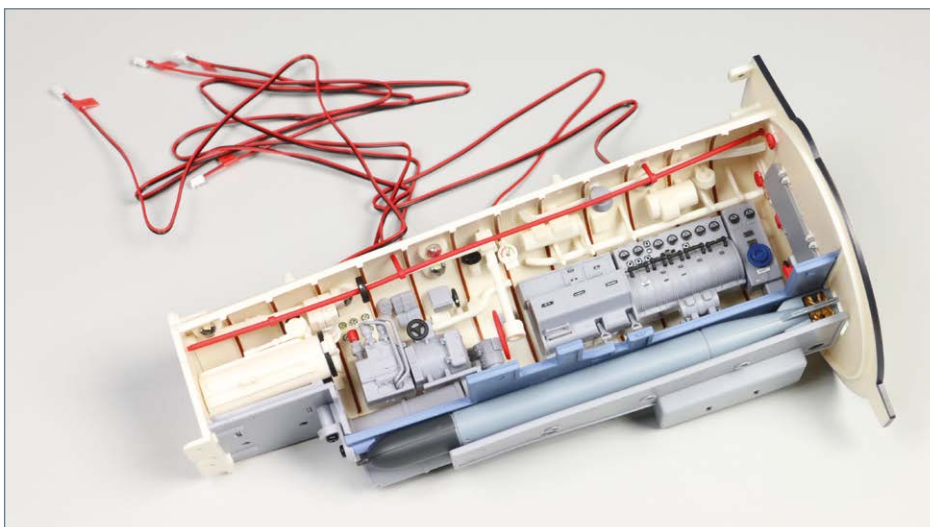


Fasten together using two **EP** screws.



After turning the assembly upside down, place part **L** from frame **90-8** onto the mounts of both the ballast cell **85-2** and the deck panel **86-1**. Fasten in place using two **EP** screws.

### COMPLETED WORK

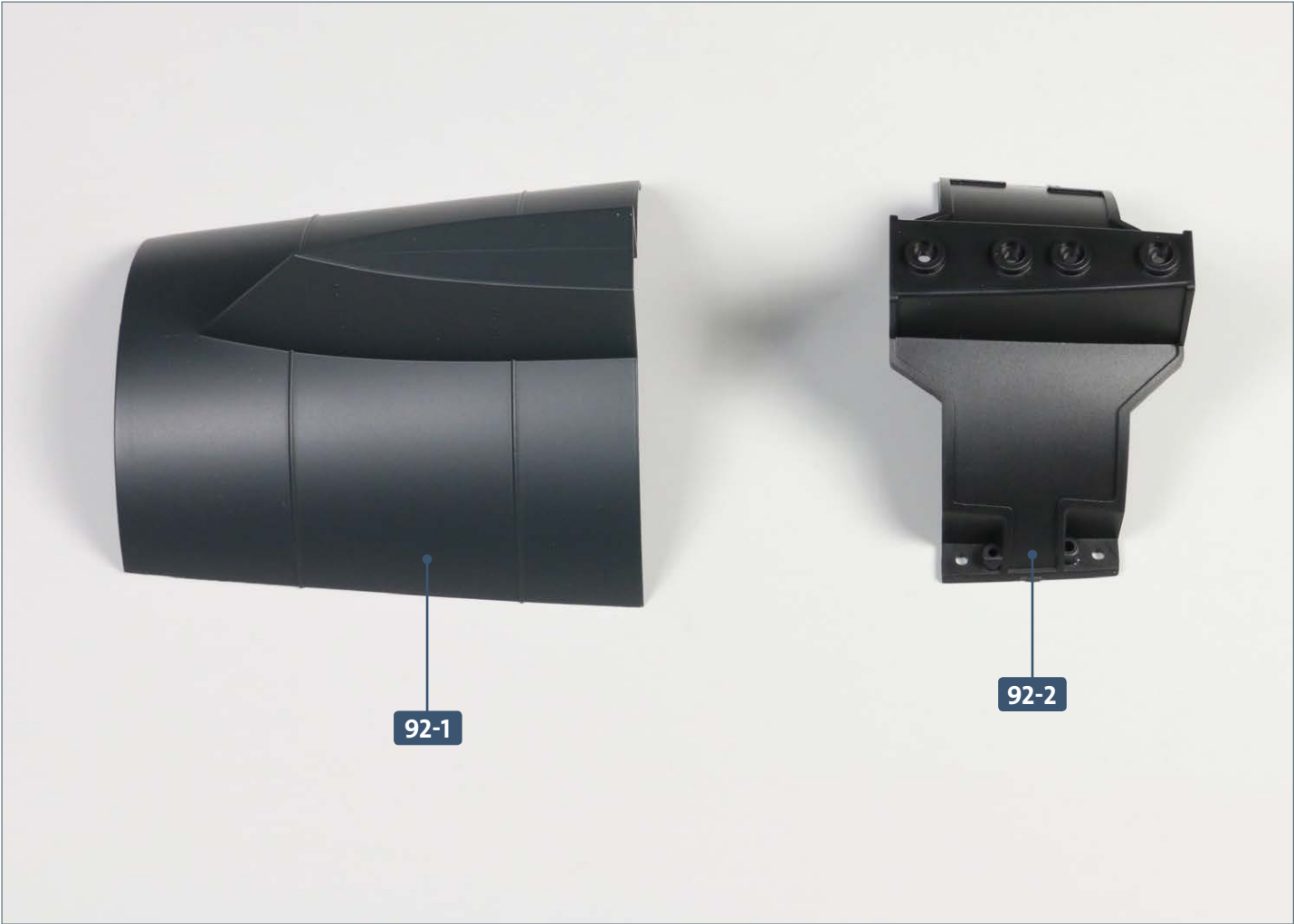


The sixth compartment has now been assembled, with LEDs inserted into the deckhead panel.

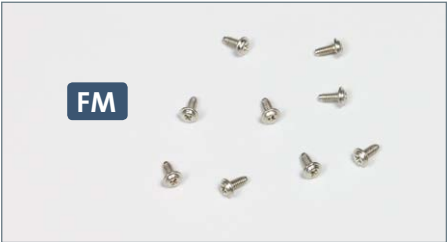


# Kit 92: Adding to the hull

In this kit, you will add another connector and hull plate to the main superstructure.

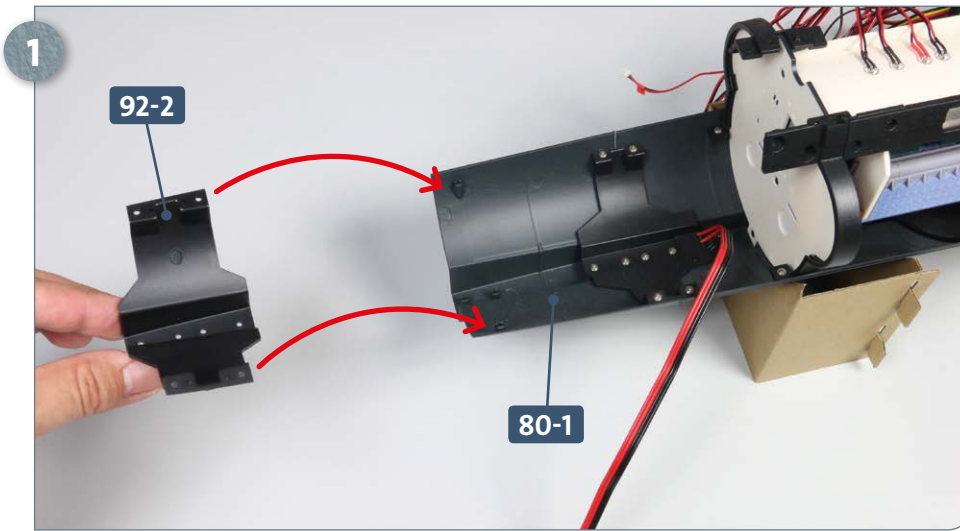


Parts reference list		
Part no.	Name	
92-1	Lower hull plate	
92-2	Connector	



Screws		
Ref	No.	Dimensions
FM	8 + 1	2 x 4 mm (PWD)

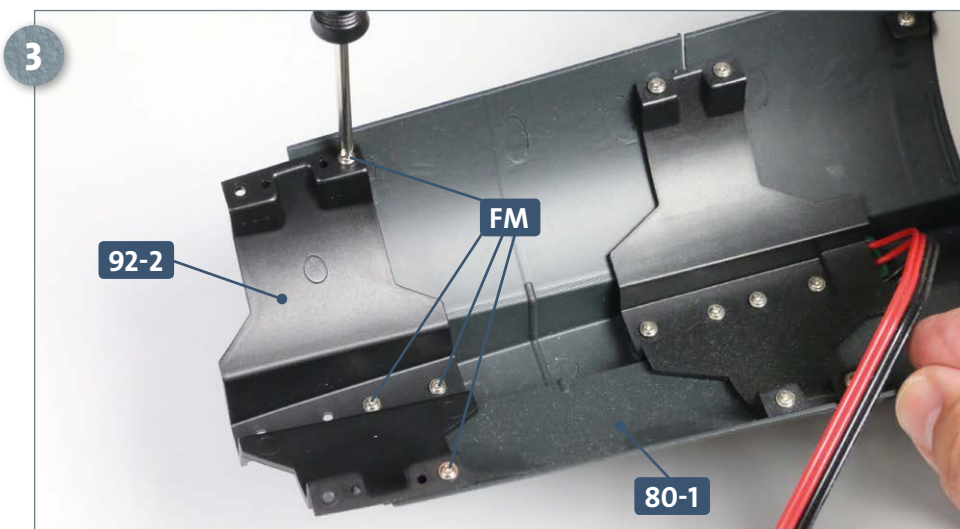
### STAGE 1 → Adding a connector and hull plate



Place the main assembly on your work surface. Taking connector **92-2**, orient it as shown and fit it to the mounts at the rear of the lower hull section **80-1**, as indicated by the arrows.

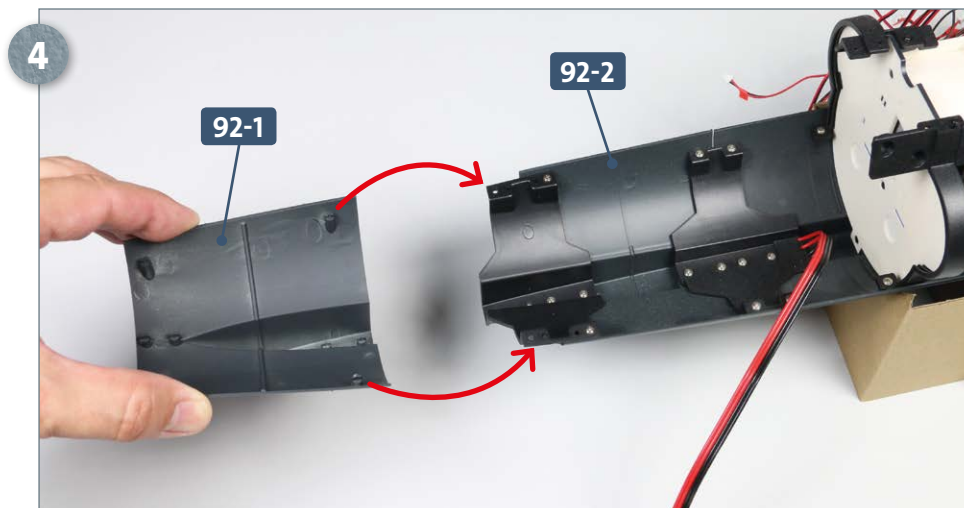


This photograph shows the connector **92-2** correctly positioned against the hull plate **80-1**. Have ready four **FM** screws.

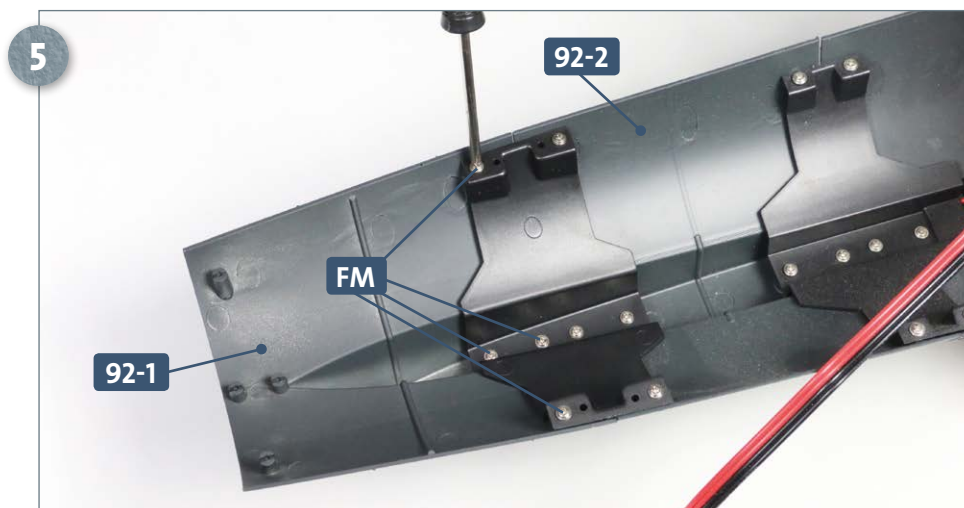


Attach the connector **92-2** to the lower hull section **80-1** using the four **FM** screws.

## Kit 92: Adding to the hull

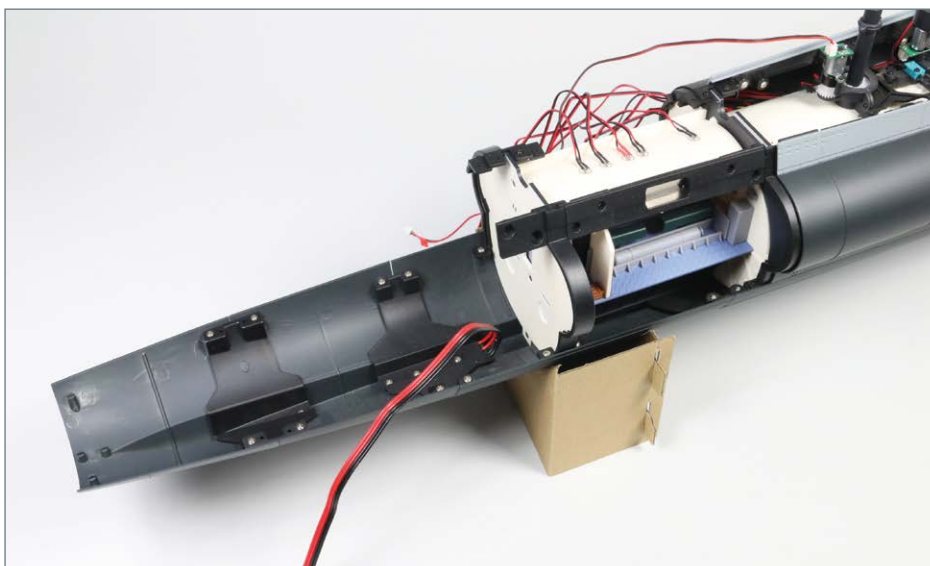


Take the lower hull section **92-1**, orient it as shown, and fit its front mounts to the rearmost holes of the connector **92-2**, as indicated by the arrows.



Fasten the hull section **92-1** to the connector **92-2** using four **FM** screws.

## COMPLETED WORK



A connector and an additional hull section have now been added to the aft end of the main assembly.