

Pack 20 Assembly Instructions

Kit 77: Another motor

Kit 78: Contact wire

Kit 79: The next hull section

Kit 80: Assembling the fifth compartment

Hachette

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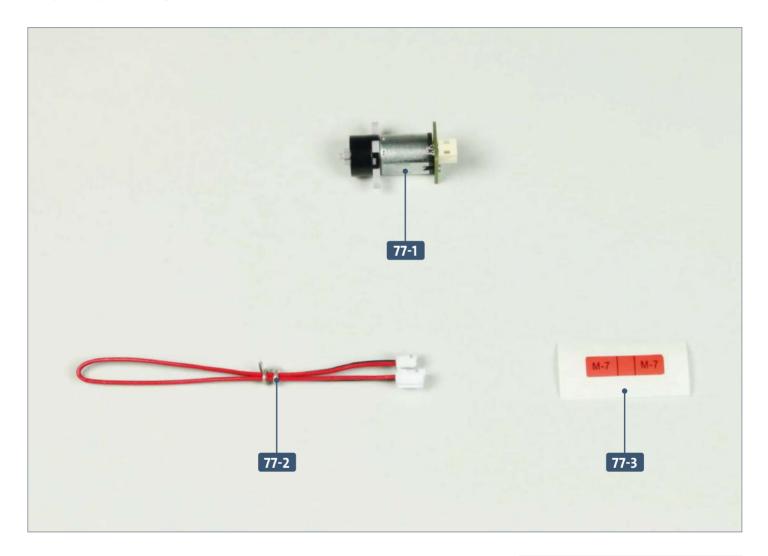
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WARNING: All parts belong to a kit. Collectors' item for adults. Not suitable for children under 14. Some parts may have sharp edges, please handle them with care.

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Kit 77: Another motor

In this kit, the second motor for the navigation periscope is given a cable and attached to the periscope mount. The periscope assembly is then fixed to the hull structure.



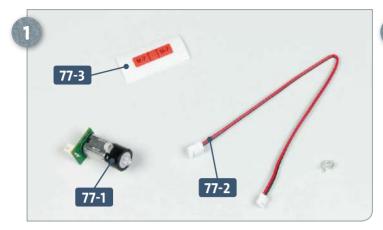


Screws		
Ref	No.	Dimensions
BP	2 + 1	1.7 x 6 mm
СР	4 + 1	2 x 4 mm

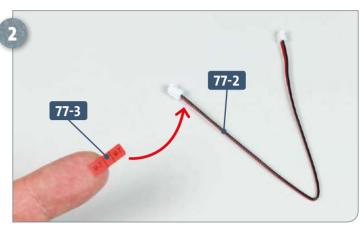
Parts reference list		
Part no.	Name	
77-1	Motor	
77-2	Cable	
77-3	Cable label	

Kit 77: Another motor

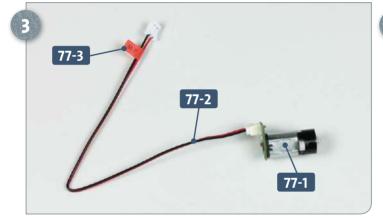
STAGE 1 \rightarrow Attaching the motor and final assembly of the navigation periscope



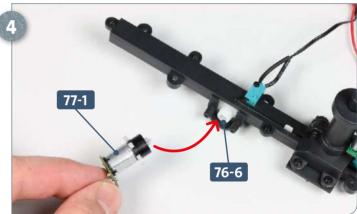
Place the motor **77-1** and cable label **77-3** on your work surface. Take the cable **77-2** and remove the wire wrap, as shown in the photograph above.



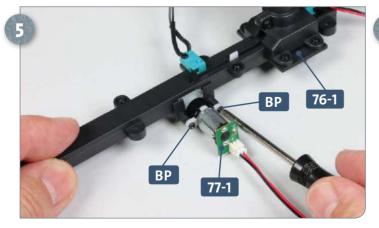
Peel the M7 cable label 77-3 from the backing paper, and wrap it around the cable 77-2, approximately 8mm from the larger of the two connectors.



Fit the other end of the cable **77-2** into the socket of the motor's PCB **77-1**, as pictured above.



Place the navigation periscope assembly on your work surface. Fit the hub of the motor **77-1** so that it engages with the cog **76-6**, as indicated by the arrow.



Attach the motor **77-1** to the lower part of the mount **76-1** with two **BP** screws.



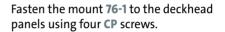
Place your model on your work surface. Position the navigation periscope assembly on top of the deckheads of the second and third compartments, as indicated by the arrows.

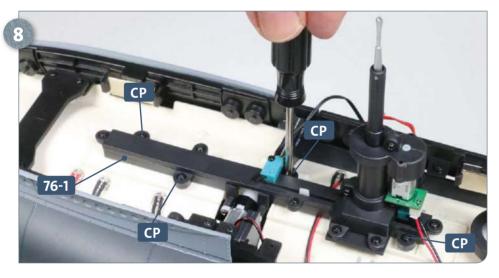
Kit 77: Another motor

 28-5
 34-1

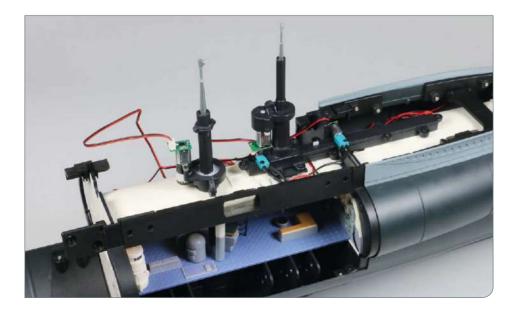
 70-1
 43-4

This photograph shows the lower part of the navigation periscope assembly **76-1** correctly installed above the deckhead of the second and third compartments, **28-5** and **34-1**. Make sure that the cables **43-4** (see arrow) and **77-2** are routed as shown in the image.





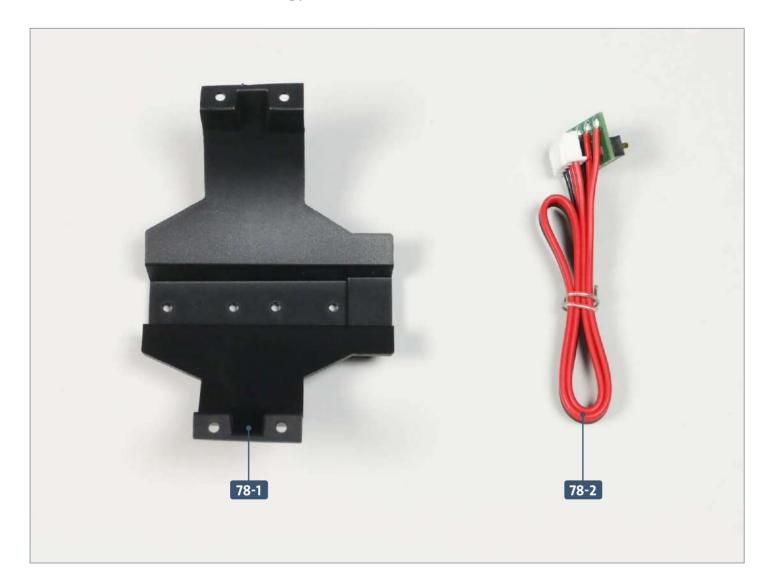
COMPLETED WORK



The navigation periscope assembly, with added motor, has now been attached to the main structure.

Kit 78: Contact wire

In this kit, the contact wire and a connecting piece are fitted to the hull of the submarine.



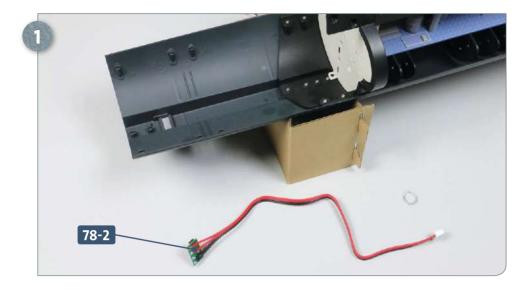
Parts reference list		
Part no.	Name	
78-1	Connector	
78-2	Contact wire	



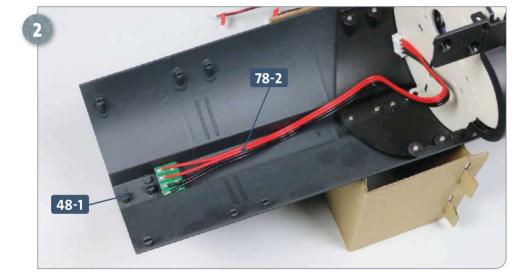
Screws		
Ref	No.	Dimensions
FM	4 + 1	2 x 4 mm (PWD)

Kit 78: Contact wire

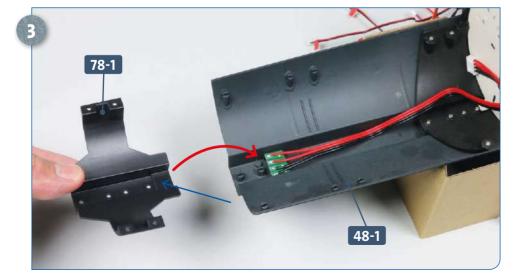
STAGE 1 \rightarrow Attaching the contact wire and connector



Place the model on your work surface so that you have access to the aft end. Prepare the contact wire **78-2**, removing the wire wrap as shown.



Place the contact board at the end of the cable **78-2** inside the hull, so that the contacts sit in the opening of the hull section **48-1**.

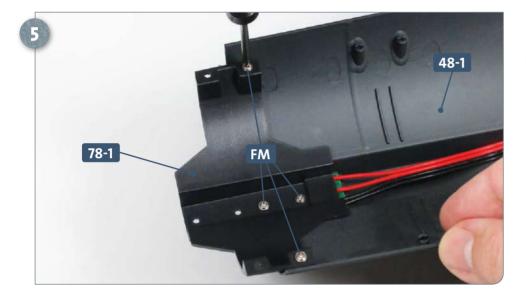


Take the connector **78-1** and fit it onto the aft end of the hull section **48-1**, as indicated by the red arrow. Pay close attention to the correct orientation by noting the ledge at one end of section **78-1** (see blue arrow).

Kit 78: Contact wire



This photograph shows the connector **78-1** in place against the hull plate **48-1**. The ledge at the forward end of the connector, indicated by the arrow, is positioned over the contact wire board **78-2**, as shown. Have ready four **FM** screws.



Fasten the connector **78-1** to the aft hull plate **48-1** using the four **FM** screws. Once fixed in place, the connector also holds the contact wire board in position.

COMPLETED WORK



A contact circuit board and connector have now been added to the main assembly.

Kit 79: The next hull section

A section of the port (L) side hull is provided with this kit. You will test the two motors operating the navigation periscope.

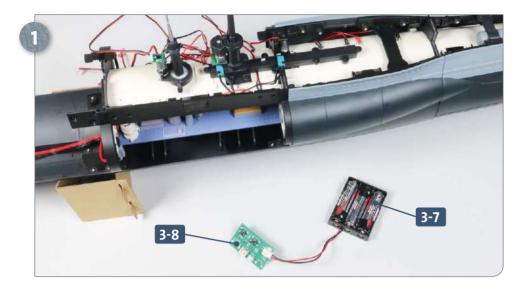


Parts reference list		
Part no.	Name	
79-1	Port (L) hull section	

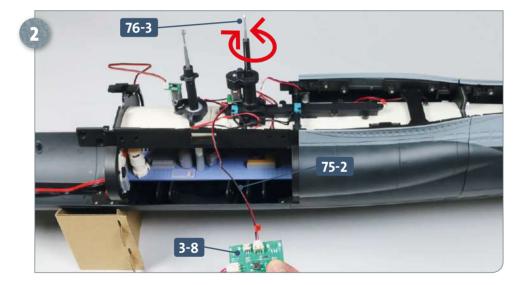
Note: The hull section **79-1** is not going to be added to the assembly in this kit – it will be attached to the hull in kit 81.

Kit 79: The next hull section

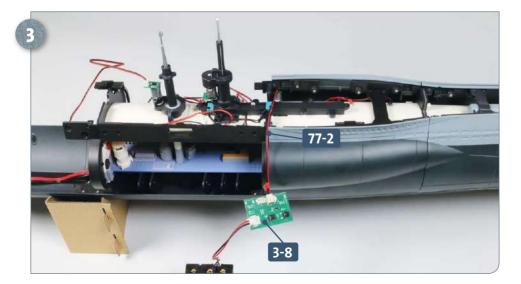
STAGE 1 \rightarrow Testing the navigation periscope motors



Place the model on your work surface so that you can access the aft end. Prepare the test board **3-8** by connecting the battery compartment **3-7**.

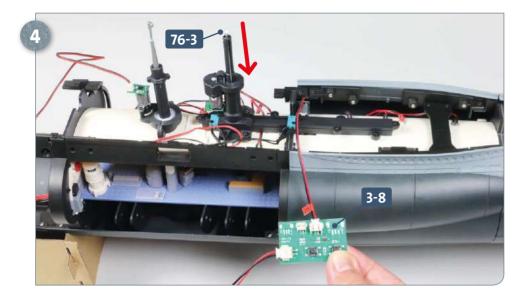


Insert cable **75-2**, labelled **M-6**, into the large socket on the test board **3-8**. Now, press the button on the test board labelled **S-1**: this should rotate the periscope **76-3** in a clockwise direction. Pressing **S-2** should turn it anticlockwise. When you are happy the motor is working correctly, carefully disconnect **75-2** from the test board.



Now connect cable **77-2**, labelled **M-7**, to the large socket on the test board **3-8**, as pictured, left.

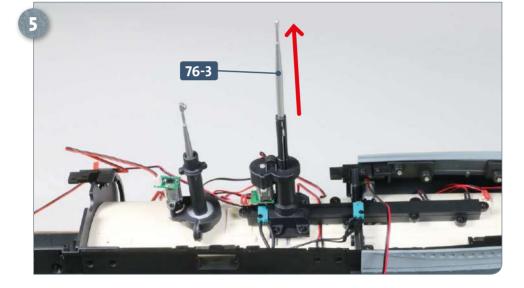
Kit 79: The next hull section



Press button **S-2** on the test board **3-8**, making the periscope **76-3** retract, as shown in the photo, left.

Note: as the limit switches are not yet operational, it is important to run the motor as little as possible as over-use could cause damage to the cogs.

Holding down button **S-1** extends the periscope **76-3**. When sure that the periscope is working correctly, carefully disconnect the circuit board and store it safely until it is needed again at a later stage.



COMPLETED WORK



The testing of the two motors for the navigation periscope has been completed. The supplied hull section (not pictured) will be added in a later kit.

In this kit, you will assemble the components of the engine room, screwing or gluing them together. Another lower hull section is also added to the main assembly.

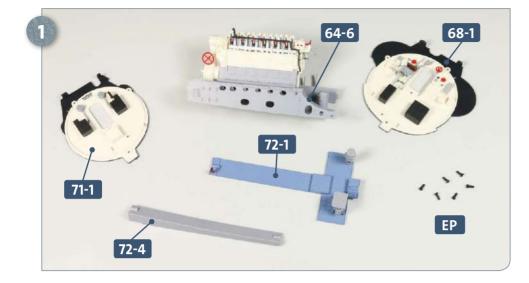


Parts reference list		
Part no.	Name	
80-1	Lower hull section	

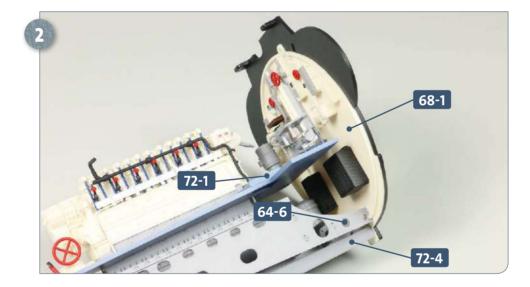


Screws			
Ref	No.	Dimension	
FM	4 + 1	2 x 4 mm (PWD)	
EP	10 + 1	2.3 x 6 mm	

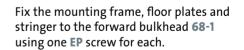
STAGE 1 \rightarrow Assembling the engine room

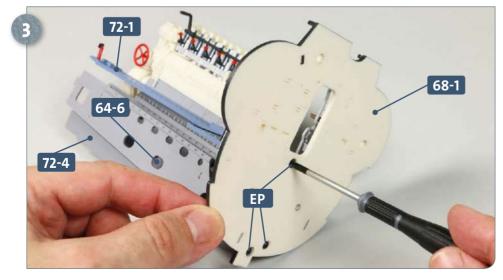


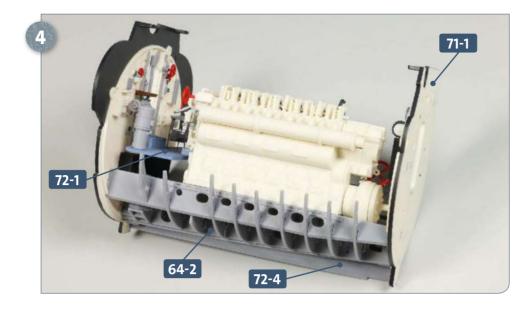
Place the following components on your work surface: the engine and its mounting **64-6**, which contains holes for the screws; the forward and aft bulkheads **68-1** and **71-1**; the floor plates **72-1**; the stringer **72-4** and six **EP** screws.



One at a time, fit the forward section of the engine mounting frame **64-6**, the floor plate **72-1** and the stringer **72-4** into the corresponding slots in the forward bulkhead **68-1**, as pictured. Note the orientation of the stringer **72-4**.

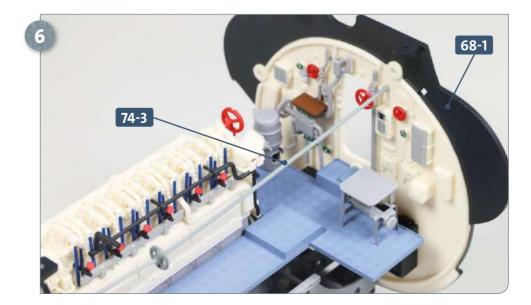




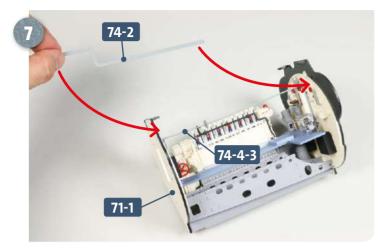


Turn the assembly around in order to add the aft bulkhead **71-1**: the aft portion of the engine mounting frame **64-2**, the floor plates **72-1** and the stringer **72-4** all fit into the corresponding slots in the bulkhead.

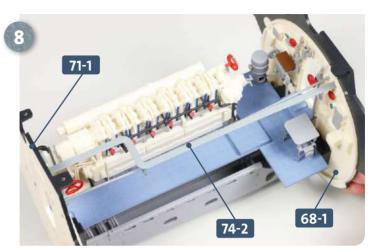
Fix the components in place using **EP** screws.



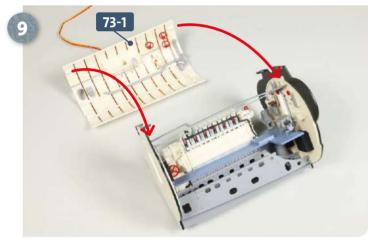
Take the line you assembled back in kit 74. Apply some glue to the front end, on the tip of **74-3**, and fit it into the recess in the forward bulkhead **68-1**.



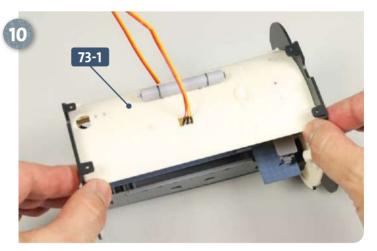
The aft end of the pipe **74-4-3** is glued into the recess in the aft bulkhead **71-1**. Take the power lines **74-2** and apply some glue to both ends, before fitting them between the two bulkheads.



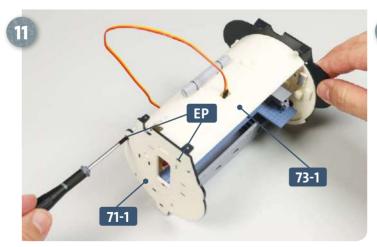
This photograph shows the lines **74-2** correctly fitted into the slots of the forward **68-1** and aft **71-1** bulkheads.



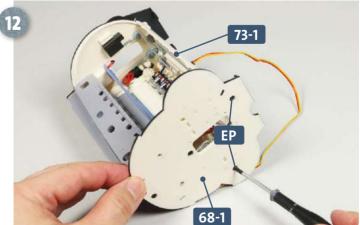
Next, prepare to fit the engine room deckhead panel **73-1**. This will be inserted from the back, between the two bulkheads, as indicated. You may find it helpful to read to the end of this section before starting.



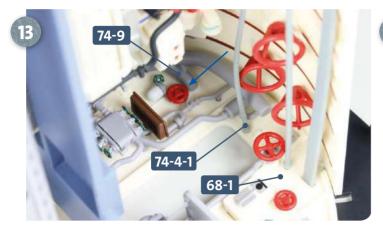
This photo shows the deckhead panel **73-1** correctly positioned over the engine compartment.



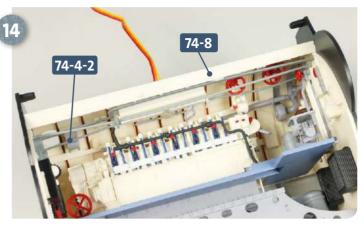
Attach the deckhead panel **73-1** to the aft bulkhead **71-1** using two **EP** screws.



Likewise, fix the deckhead panel **73-1** to the forward bulkhead **68-1** using two **EP** screws.

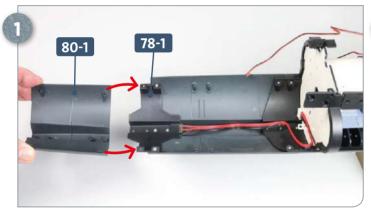


Insert the front end of the rod **74-4-1** (already attached to the deckhead) into the recess in the forward bulkhead **68-1**, as shown. Similarly, insert the peg on pipe **74-9** into its corresponding hole in bulkhead **68-1** (see blue arrow).

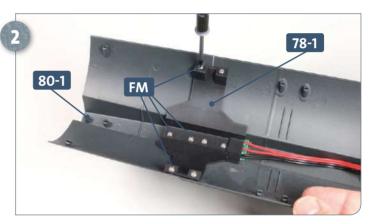


The aft end of the rod **74-4-2** likewise is inserted into the recess in the aft bulkhead. Glue the ends of the cover **74-8** into the corresponding slots in the two bulkheads. You may find a very little glue is also needed along the length of the cover **74-8**.

STAGE 2 \rightarrow Adding the hull section

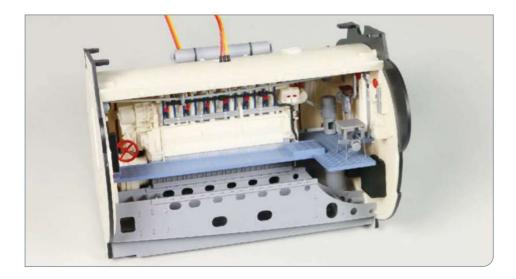


Taking the lower hull plate **80-1**, fit the holes at the forward end underneath the mounting points of the connector **78-1**, as indicated by the arrows.



Fix the hull section **80-1** to the connector **78-1** using four **FM** screws, as shown above.

COMPLETED WORK



The fifth compartment - the engine room - has now been assembled. Another section has also been added to the hull (not pictured).