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PARTWORKS LTD

U 96

U-BOAT

Pack 1

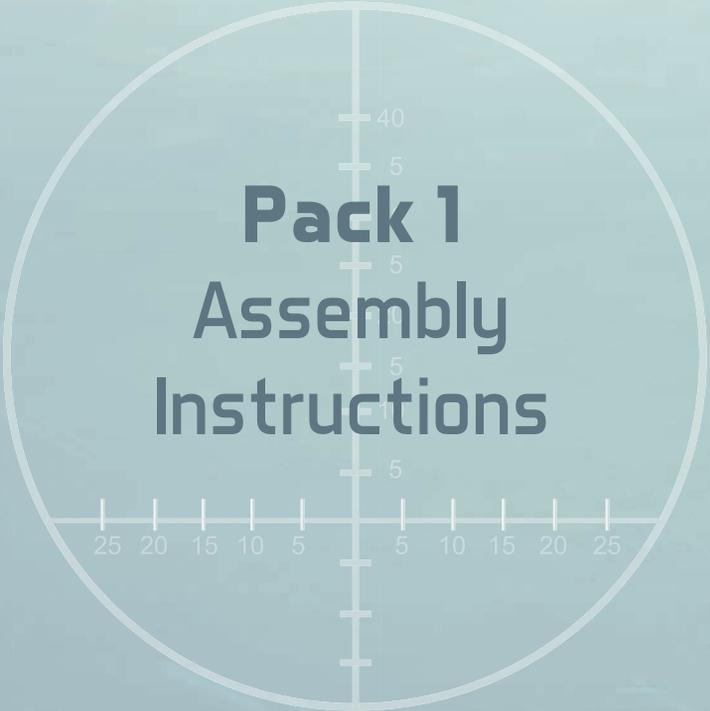
Kits 1-4



BUILD THE ICONIC WORLD WAR II U-BOAT

U 96

U-BOAT



Pack 1

Assembly Instructions

Kit 1: Port side of the bow

Kit 2: Torpedo door motor

Kit 3: Bow assembly and motor test

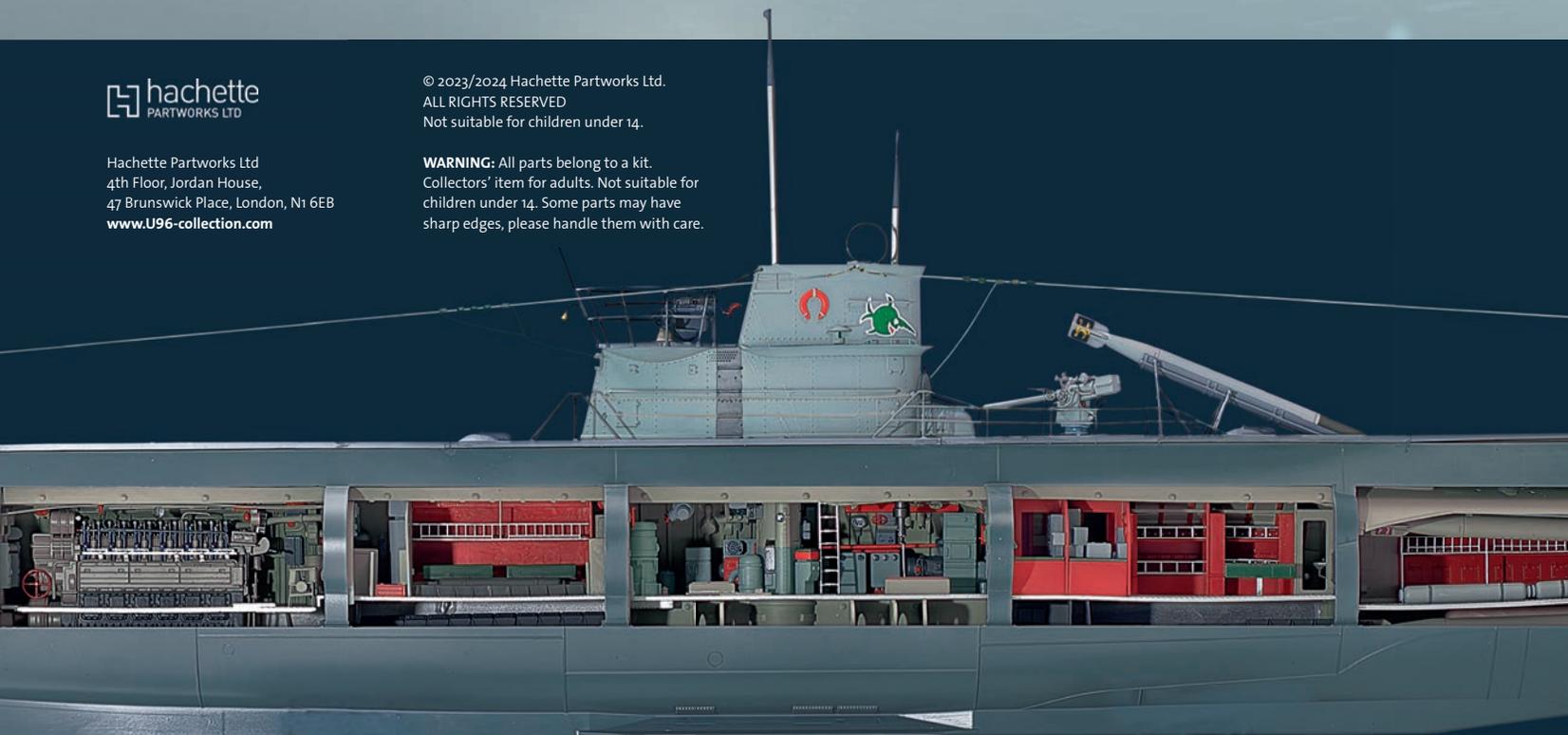
Kit 4: Port side of conning tower and anti-aircraft machine gun



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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.



Before you start

To help you get the best out of building the U96, we've prepared a modellers checklist with hints, tips and advice from our expert. The information below is aimed at making your build as enjoyable and professional as possible right from the start.

Make sure you have good ventilation when using adhesives and to replace caps firmly.

Always use the correct adhesives and always follow manufacturers guidance.

Apply glue sparingly and use a cocktail stick, or similar, to apply so that you don't use too much nor apply the glue too heavily.

Work in a well lit area. Use an anglepoise lamp or similar on your work bench to ensure you have good light whenever you're at work.

Organise storage – stackable, labelled containers like old clean takeaway or ice-cream plastic tubs with lids are perfect. Small parts, which may not be needed until a later kit, should be kept safely in clear plastic and labelled bags.

Use masking tape to hold parts temporarily in place. Only use the correct size screwdriver that fits the screw head firmly.

Cut parts from a frame with side cutters or a craft knife. Take care when using a craft knife. Side cutters tend to be easiest.

Before the construction of a step, read though it completely so as to fully understand all that needs to be done.

Where possible, test-fit parts in place before gluing.

Keep your own build diary – note mistakes and what went well along with tips for future builds.

Use a magnet to help find screws that have fallen on the floor.

Leave parts in the bags supplied until they are needed – you won't think you'll get confused, but it's easy to get overwhelmed by too many small, similar pieces. You can write a note of the kit and part on the bag too.

If a screw is tight, try turning a half turn forwards followed by a quarter turn backwards. Also, it can sometimes help to temporarily fit a screw into its hole before assembling the parts.

Always use the correct tools for each part of the build.

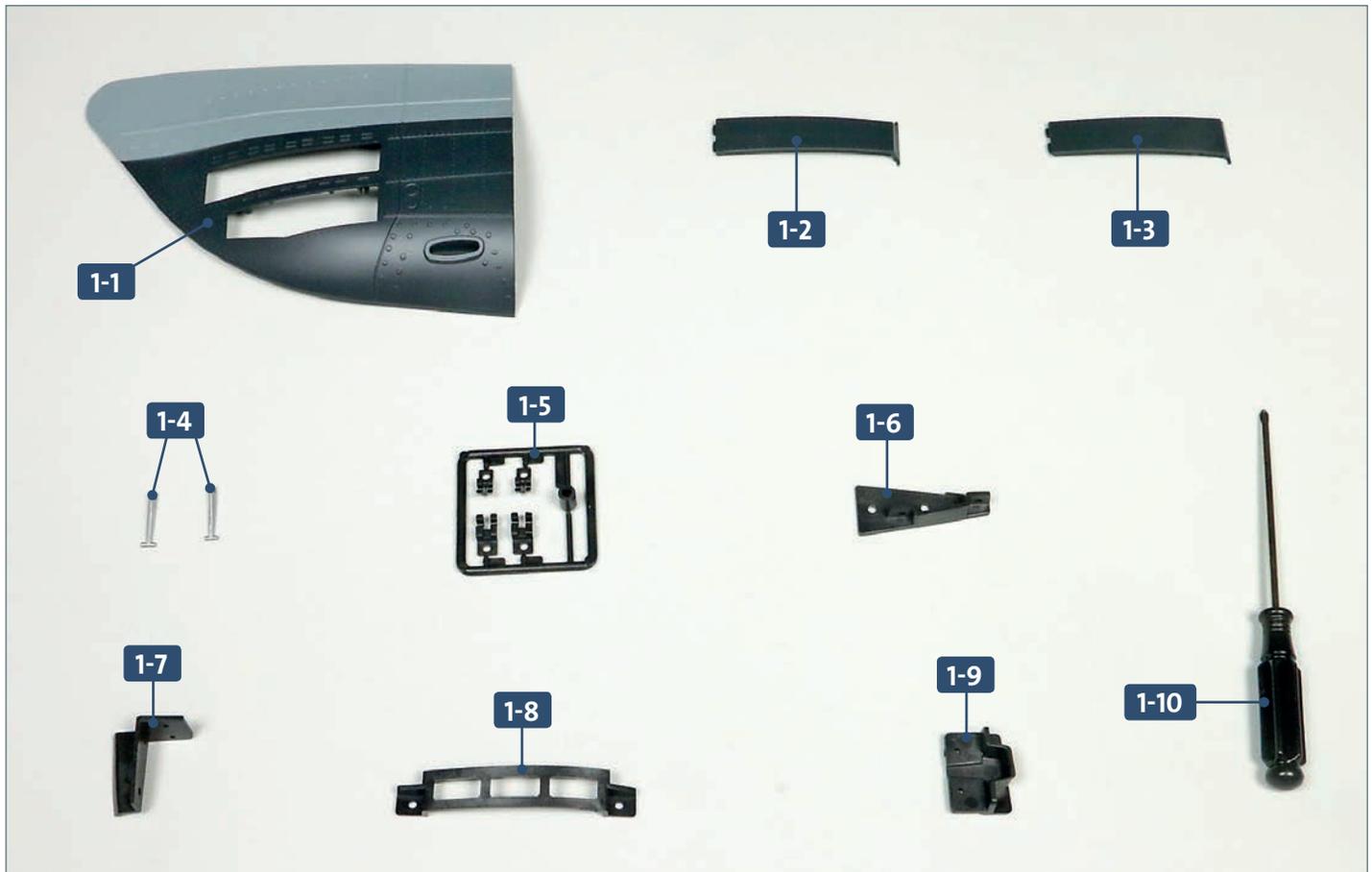
But most of all, enjoy your build!

TOOLS

- Screwdriver
- Glue
- Cocktail sticks
- Tweezers
- Side cutters
- Long-nosed pliers
- Cutting mat
- Needle files
- Masking tape
- Small vice
- Small spring clamps
- Forceps
- Small clear plastic bags
- Permanent marker pen (for labelling storage boxes and bags)
- Partitioned storage container (for spare screws)
- Magnifying glass

Kit 1: Port side of the bow

The model build will start at the bow of the submarine. Four connectors are attached to the port (L) side of the bow, and the two upper doors for the torpedo tubes will each have a lever attached for the opening mechanism.



Parts reference list

Part no.	Name
1-1	Port (L) bow hull
1-2	Upper port torpedo door (U-L)
1-3	Upper starboard torpedo door (U-R)
1-4	Lever (x2)
1-5	Door hinges and bush
1-6	Hull connector A
1-7	Hull connector B
1-8	Hull connector C
1-9	Hull connector D
1-10	Screwdriver

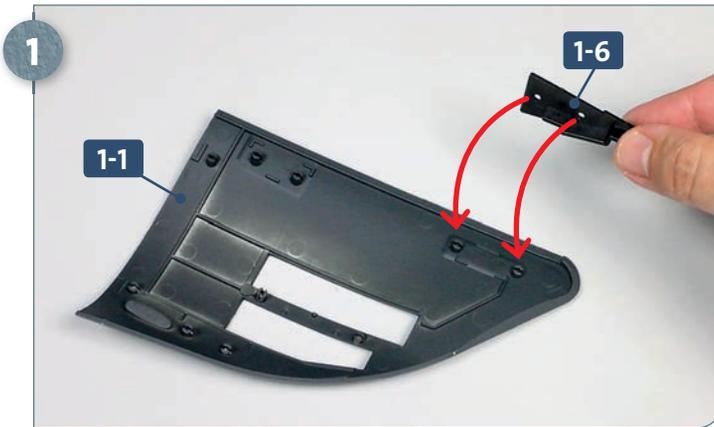


Screws

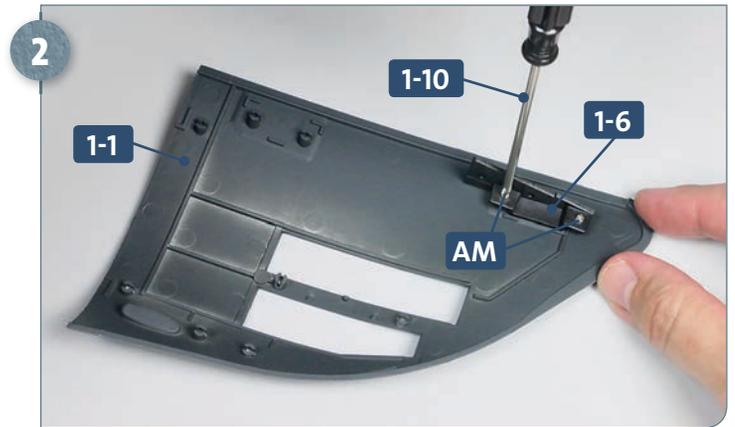
Ref	No.	Dimensions
AM	10+1	2 x 4 mm

Note: The AM screws are self-tapping, i.e. they cut their own thread as they are being screwed into the material.

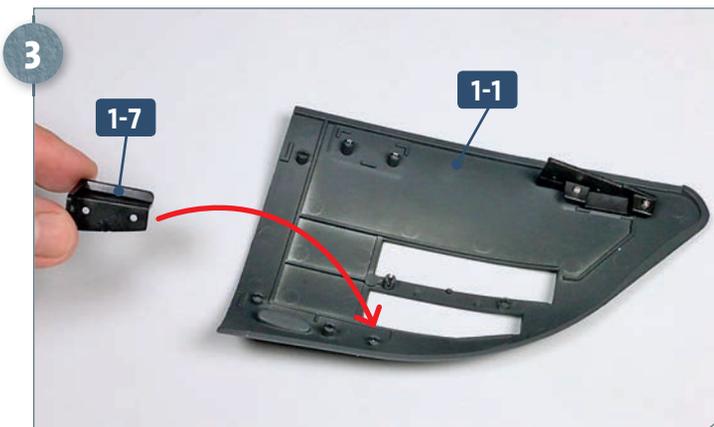
STAGE 1 → Adding the four connectors



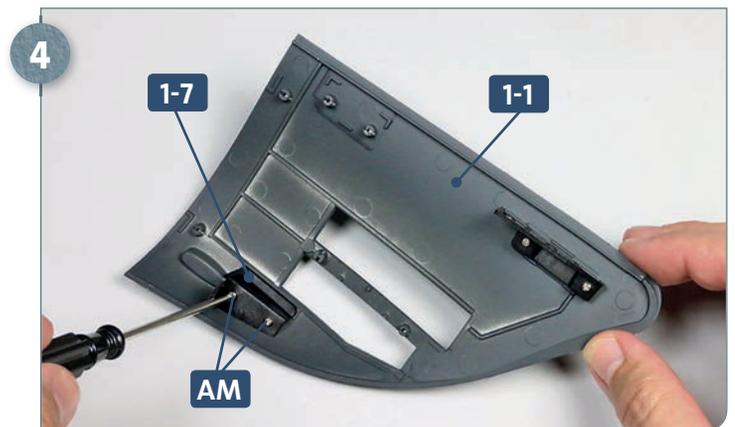
Place the port (L) bow section **1-1** outer-side down on your work surface. Take Hull connector A **1-6** and place its two holes over the front raised screw sockets on the bow section, as shown by the above arrows.



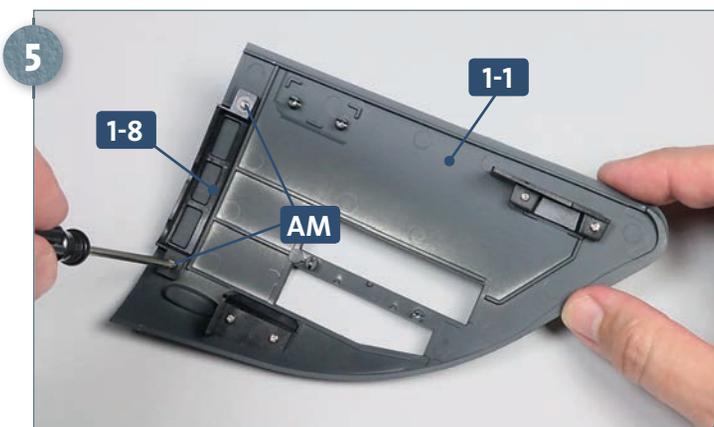
Using your screwdriver **1-10** fix the hull connector **1-6** in place using two **AM** screws, as shown.



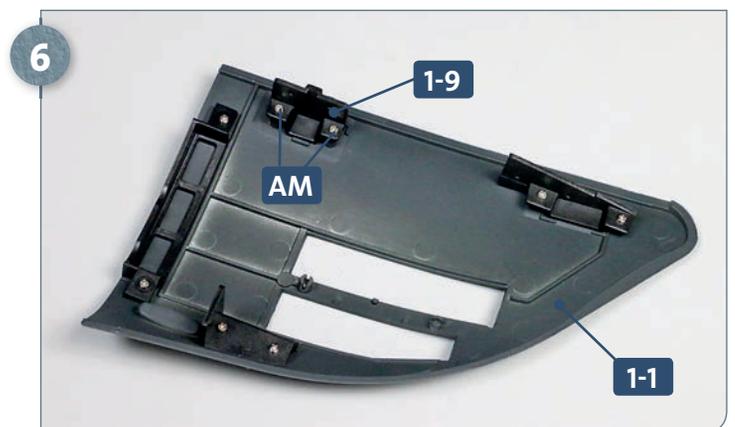
Take Hull connector B **1-7** and place it so its holes fit over the raised screw sockets at the bottom of the bow section **1-1**.



Fix in place using two **AM** screws, as shown above.



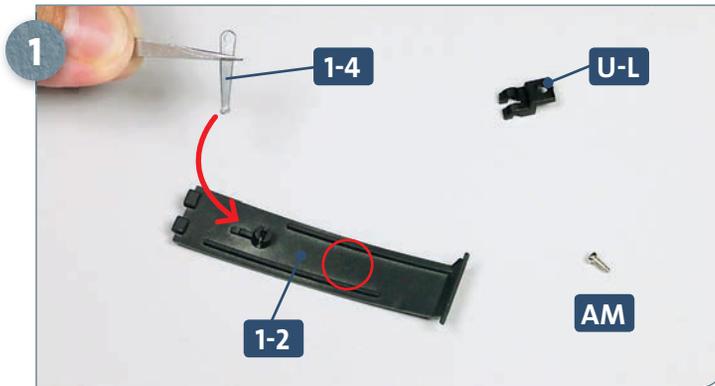
Take Hull connector C **1-8** and use two **AM** screws to attach it to the back edge of the port (L) bow section **1-1**.



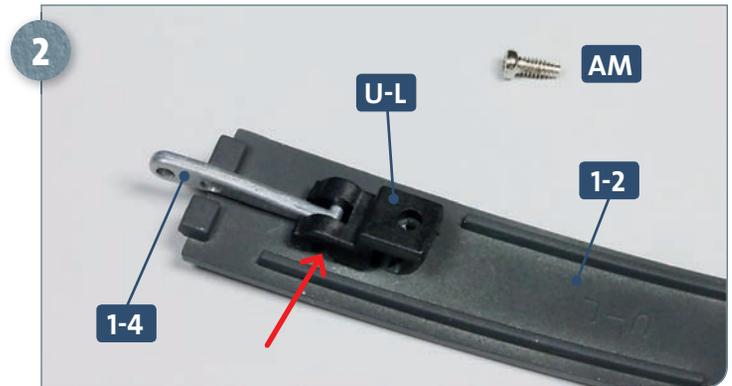
Finally, attach Hull connector D **1-9** to the upper back corner of the bow section **1-1** (as shown above) using two **AM** screws.

Kit 1: Port side of the bow

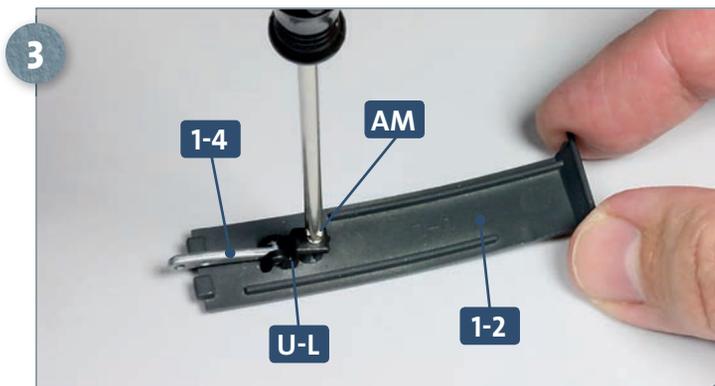
STAGE 2 → Work on the torpedo doors



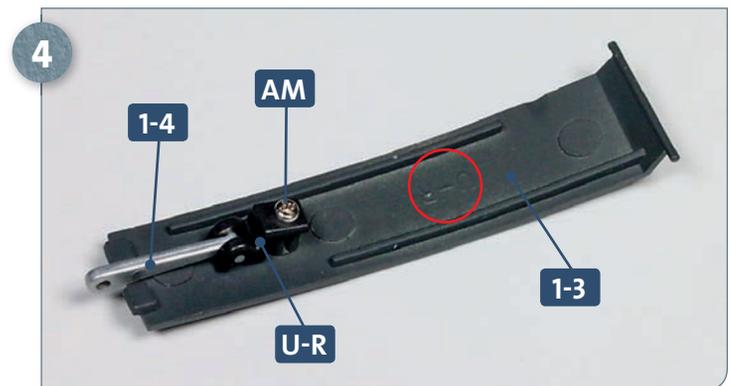
Take the upper port (L) torpedo door **1-2**, a lever **1-4**, the hinge labelled **U-L** from the frame **1-5**, and one **AM** screw. Place the lever **1-4** onto the ledge on the torpedo door as indicated by the red arrow. Note, the port (L) torpedo door **1-2** is marked with **U-L** and the starboard (R) torpedo door **1-3** is marked **U-R**.



Fit the hinge **U-L** onto the torpedo door **1-2** so that its semicircular arms fit over the two small pegs at the end of the lever **1-4**. The arrow is pointing to one of the arms. Have an **AM** screw ready.

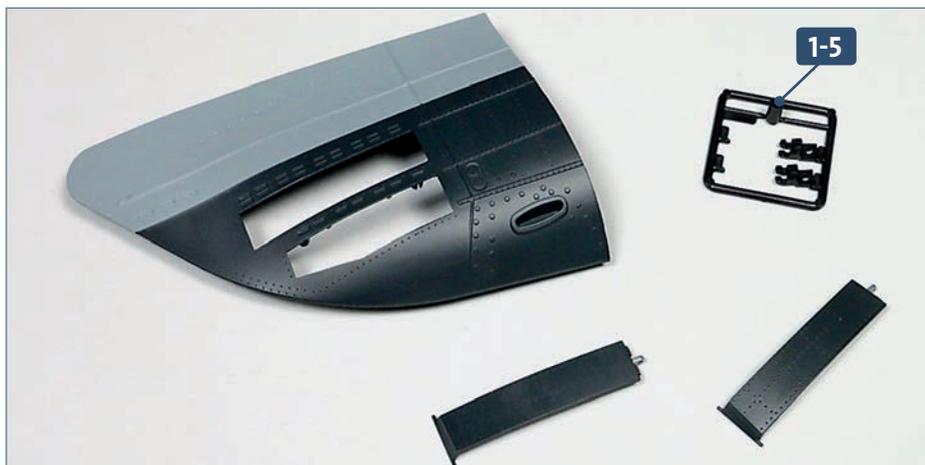


Fix the hinge **U-L** onto the torpedo door **1-2** using the **AM** screw. The lever **1-4** should retain movement.



Repeat the previous three steps with the upper starboard (R) torpedo door **1-3** (marked **U-R**, see red circle): place the second lever **1-4** in position, fit the hinge **U-R** (from frame **1-5**) onto it, and fix in place using an **AM** screw, as shown.

COMPLETED WORK



The four connectors have been attached to the port (L) bow, and the two torpedo doors have each had a lever attached.

Note: Make sure that you keep the remaining parts in frame **1-5** as they will be needed in the next part of the build.

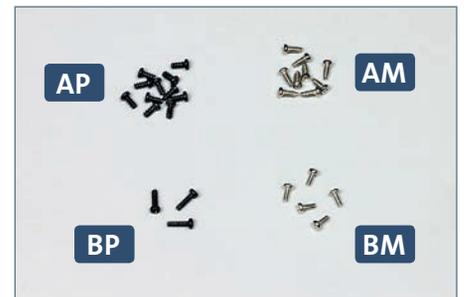
Kit 2: Torpedo door motor

After all four torpedo doors for the forward tubes are connected to the frame of the opening mechanism, along with its motor, the frame is then mounted on the port (L) side of the bow.



Parts reference list

Part no.	Name
2-1	Lower port torpedo door (D-L)
2-2	Lower starboard torpedo door (D-R)
2-3	Lever (x2)
2-4	Screw rod connector
2-5	Screw rod support
2-6	Lever support
2-7	Motor support
2-8	Torpedo door frame 1
2-9	Torpedo door frame 2
2-10	Torpedo door frame 3
2-11	Torpedo door frame 4
2-12	Screw rod
2-13	Shaft (x2)
2-14	Motor
2-15	Cable
2-16	Cable label



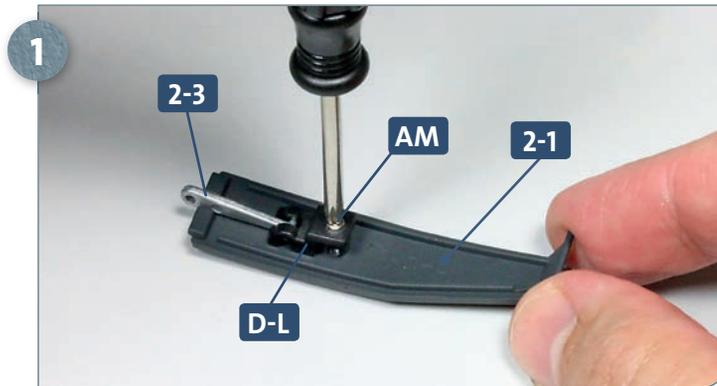
Screws

Ref	No.	Dimensions
AP	10+1	2 x 4 mm
AM	8+1	2 x 4 mm
BP	2+1	1.7 x 6 mm
BM	4+1	1.6 x 4 mm

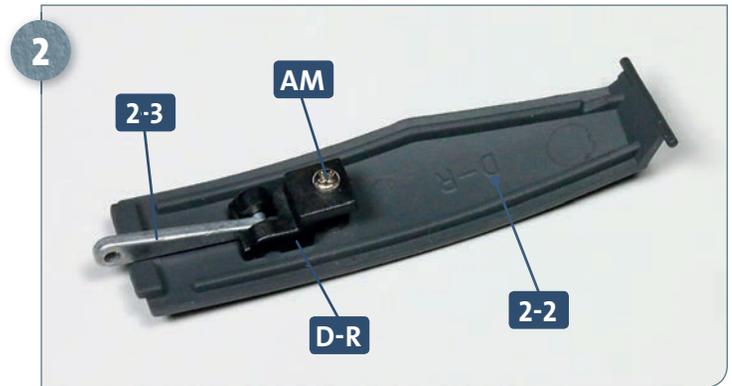
Note: You will normally receive at least one extra screw of each type.

Kit 2: Torpedo door motor

STAGE 1 → The torpedo doors

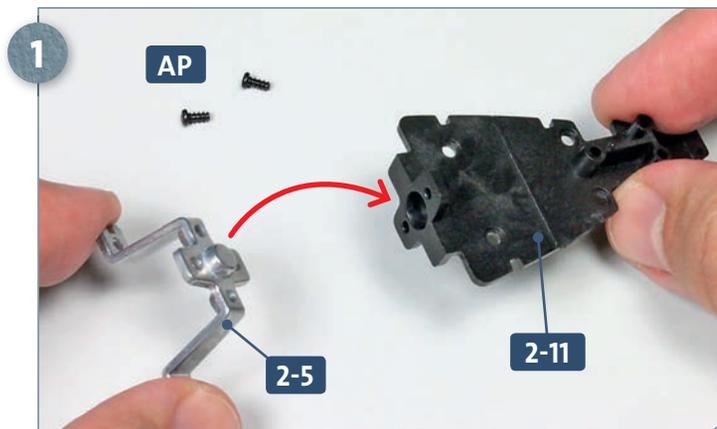


Take the lower port (L) torpedo door **2-1** (marked **D-L**). Place one of the levers **2-3** onto the door, then fit the hinge **D-L** (from frame **1-5**, received with kit 1) over the end of the lever. Fix in place using an **AM** screw.

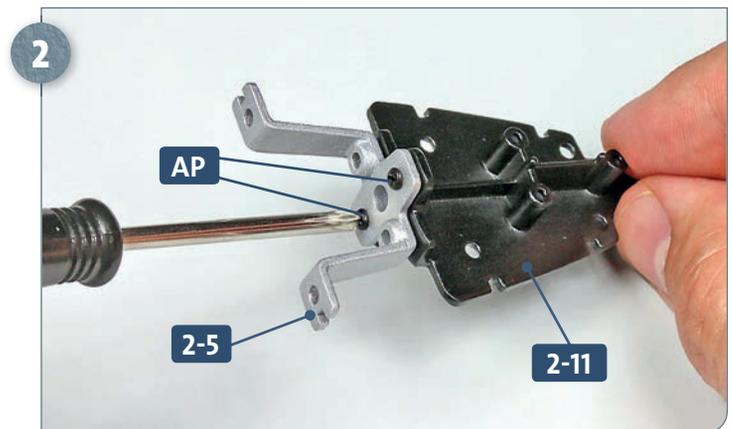


Repeat the previous step with the lower starboard (R) torpedo door **2-2** (marked **D-R**): place the second lever **2-3** in position, fit the hinge **D-R** (from frame **1-5**) over the end and fix in place using an **AM** screw, as shown.

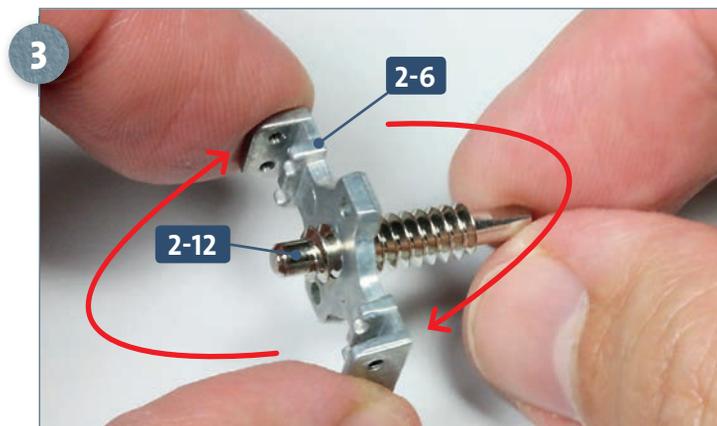
STAGE 2 → Attaching the shafts and screw rod



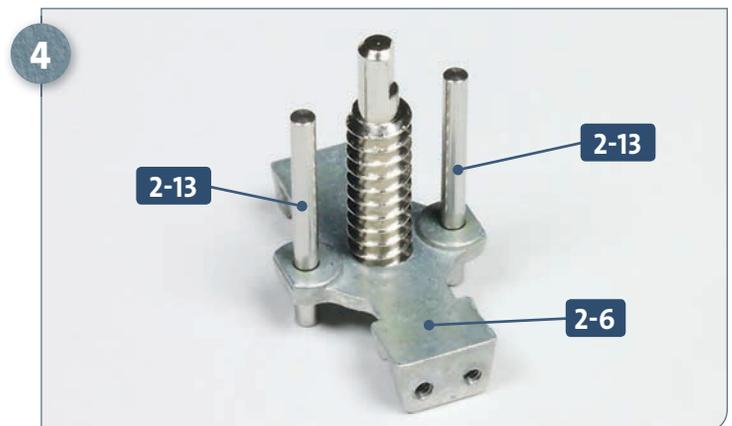
You will need two **AP** screws. Take the screw rod support **2-5** and fit it onto torpedo door frame **2-11**, in the position indicated by the arrow shown above.



Fix in place with two **AP** screws.

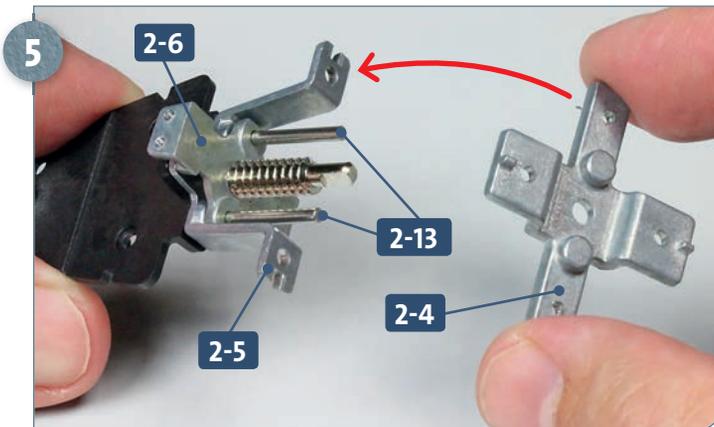


Take the lever support **2-6** and thread it onto the 'short' end of the screw rod **2-12**, as shown.

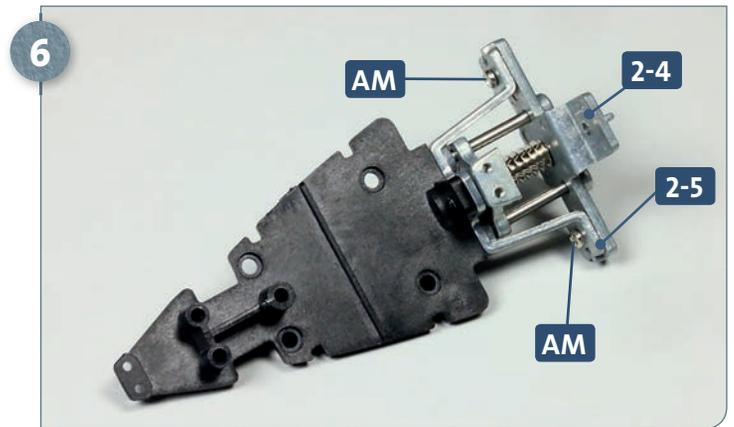


Fit the two shafts **2-13** into the holes on either side of the lever support **2-6**.

Kit 2: Torpedo door motor

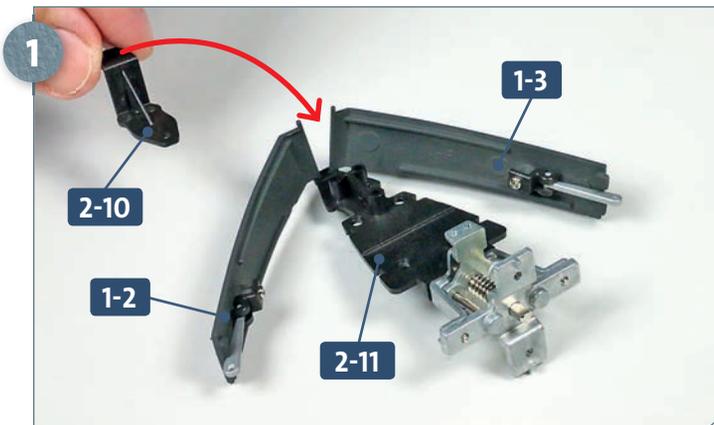


Fit the lever support **2-6** onto the screw rod support **2-5**, so that the two shafts **2-13** fit into the recesses in **2-5**. Have ready the screw rod connector **2-4**, as shown.

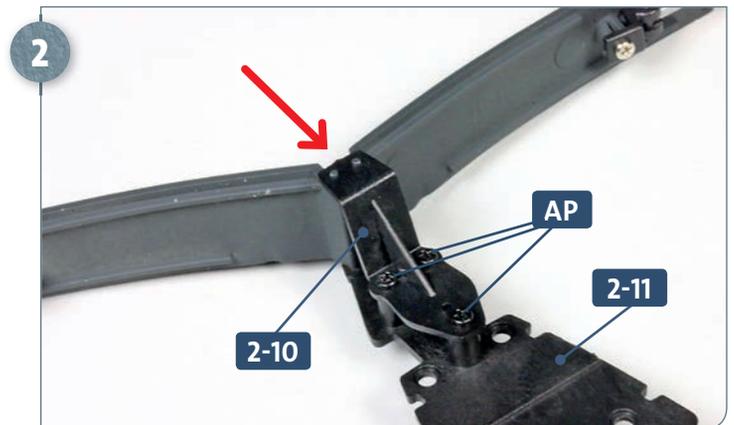


Attach the screw rod connector **2-4** to the support bracket **2-5** using two **AM** screws from below, as shown.

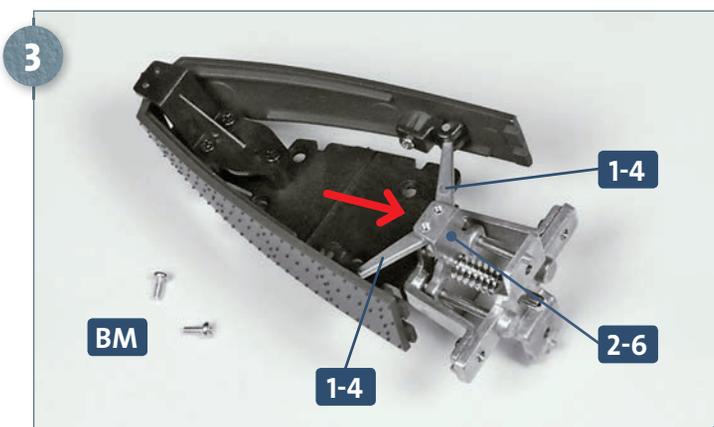
STAGE 3 → Attach the torpedo doors



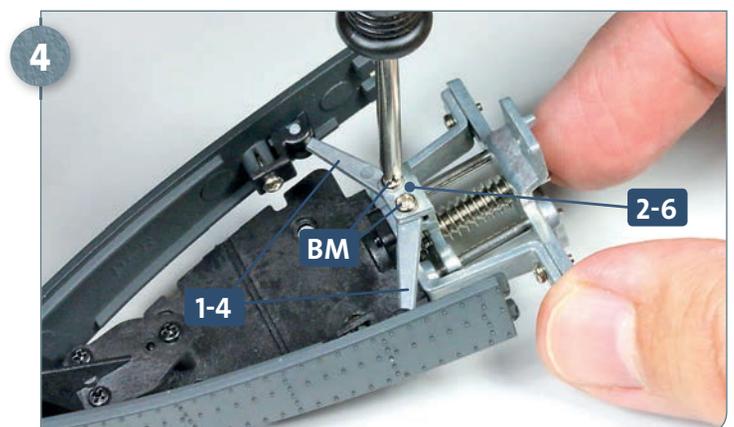
Fit the pegs at the bottom of the upper port (L) torpedo door **1-2** and the upper starboard (R) torpedo door **1-3** into the holes at the end of torpedo door frame **2-11**. Have the torpedo door frame **2-10** ready to fit, as shown in the next step and by the red arrow.



Place torpedo door frame **2-10** so that its two holes fit over the upper pegs of the two upper torpedo doors. Fix frame **2-10** to frame **2-11** using three **AP** screws.

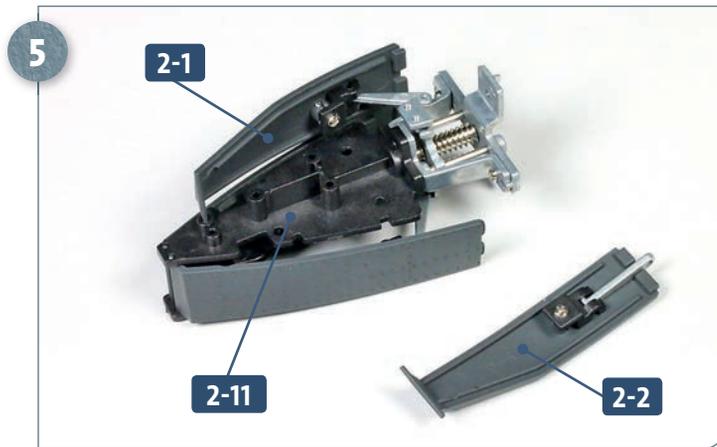


Turn the torpedo doors in towards one another, guiding the two levers **1-4** so that they sit beneath the holes in the lever support bracket **2-6**: as indicated by the red arrow. Have ready two **BM** screws for the next step.

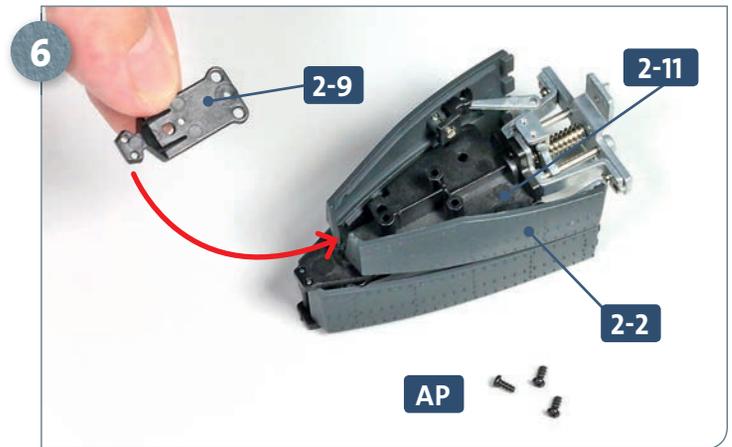


Fix the two levers **1-4** to the support bracket **2-6** using the two **BM** screws.

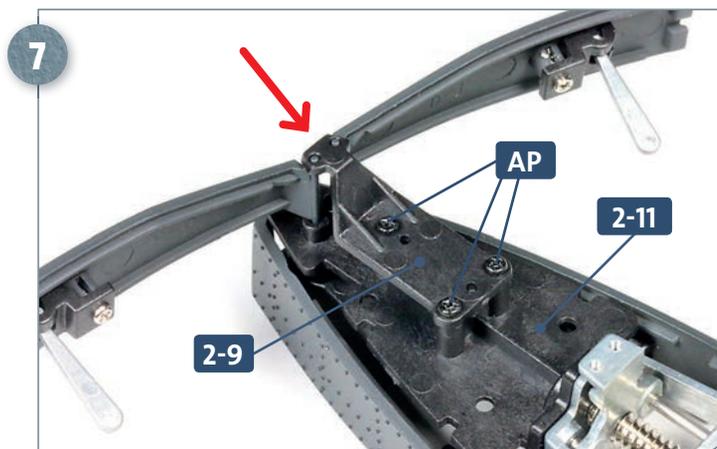
Kit 2: Torpedo door motor



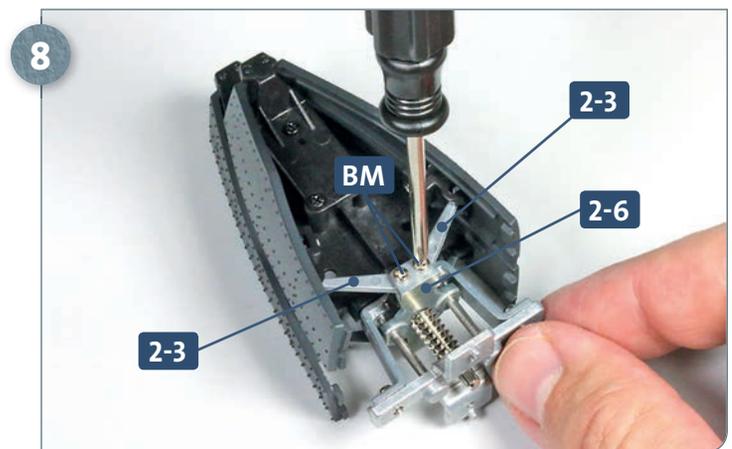
Turn the assembly upside down. Take the lower port (L) torpedo door **2-1** and fit the peg into the raised socket at the end of the door frame **2-11**, as shown. Place the lower starboard (R) torpedo door **2-2** in front of the assembly.



Insert the peg on the lower starboard (R) torpedo door **2-2** into the other raised socket at the end of the torpedo door frame **2-11**. Have three **AP** screws ready and offer up torpedo door frame **2-9** to the assembly, as shown.

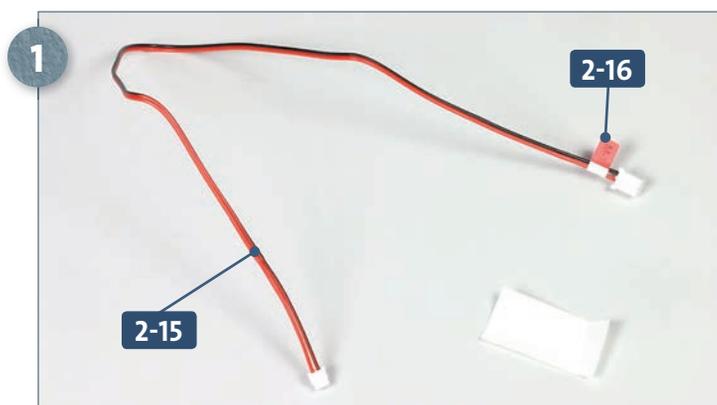


Place torpedo door frame **2-9** so that its two holes fit over the lower pegs of the two torpedo doors (see arrow). Fix onto frame **2-11** using the three **AP** screws.

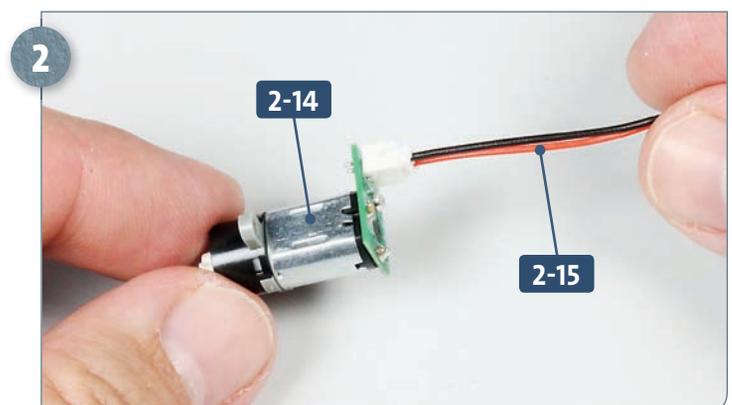


Pivot the lower torpedo doors in towards one another, guiding their two levers **2-3** so they sit directly beneath the holes in the lever support bracket **2-6**. Fix in place using two **BM** screws, one in each lever.

STAGE 4 → Assembling the motor

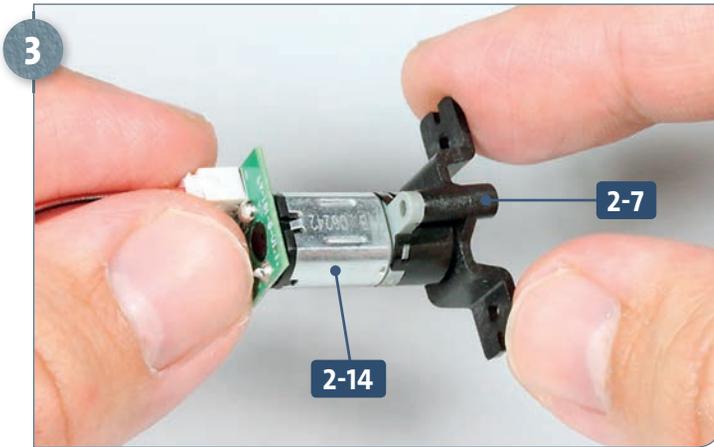


Peel the cable label **2-16** from its backing paper and wrap it around the end of the cable **2-15** with the widest connector.

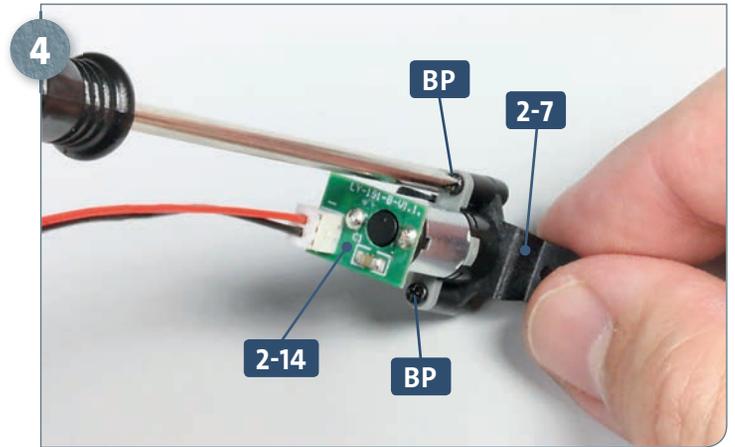


Plug the other end of the cable **2-15** into the terminal on the circuit board of the motor **2-14**, as shown.

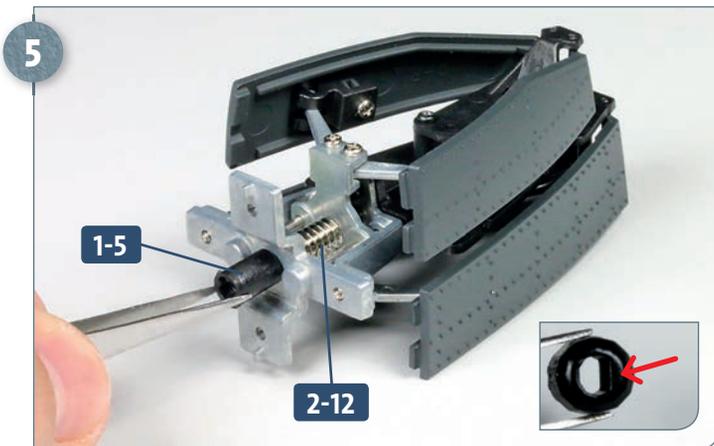
Kit 2: Torpedo door motor



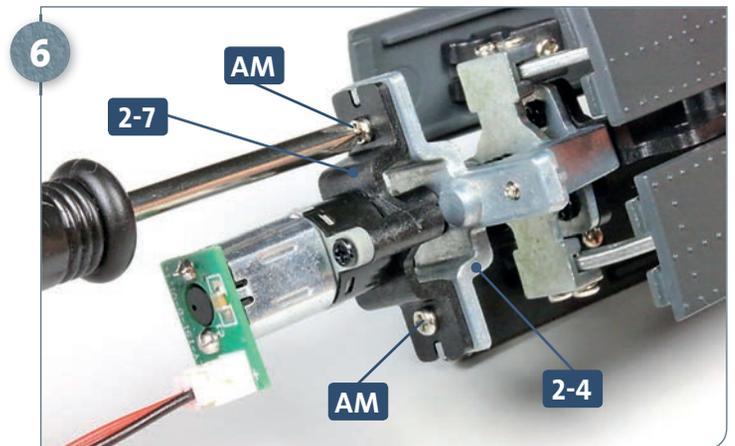
Take the motor support bracket **2-7** and fit its central hole over the hub of the motor **2-14**, as shown.



Secure the support bracket **2-7** to the motor **2-14**, using two **BP** screws into the outer holes, as shown.



Detach the bush from frame **1-5** (received with kit 1) and fit it onto the end of the screw rod **2-12**. Observe the flattened side of the bush (inset).

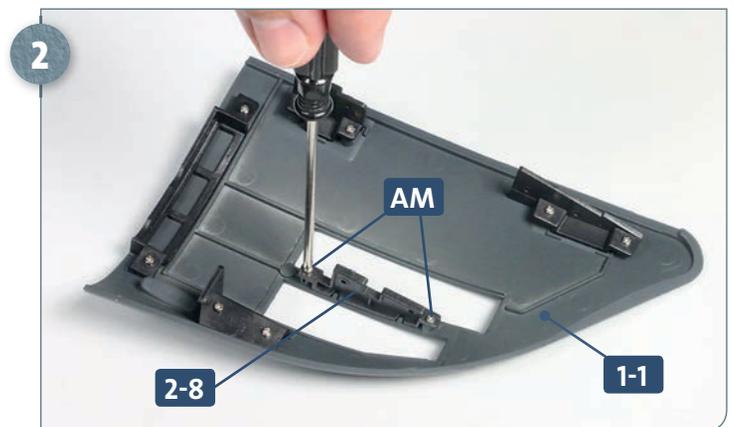


Fit the motor support bracket **2-7** onto the screw rod connector **2-4** and secure the two parts together using two **AM** screws. Note the position of the cable (see above).

STAGE 5 → Install the motor assembly in the fuselage

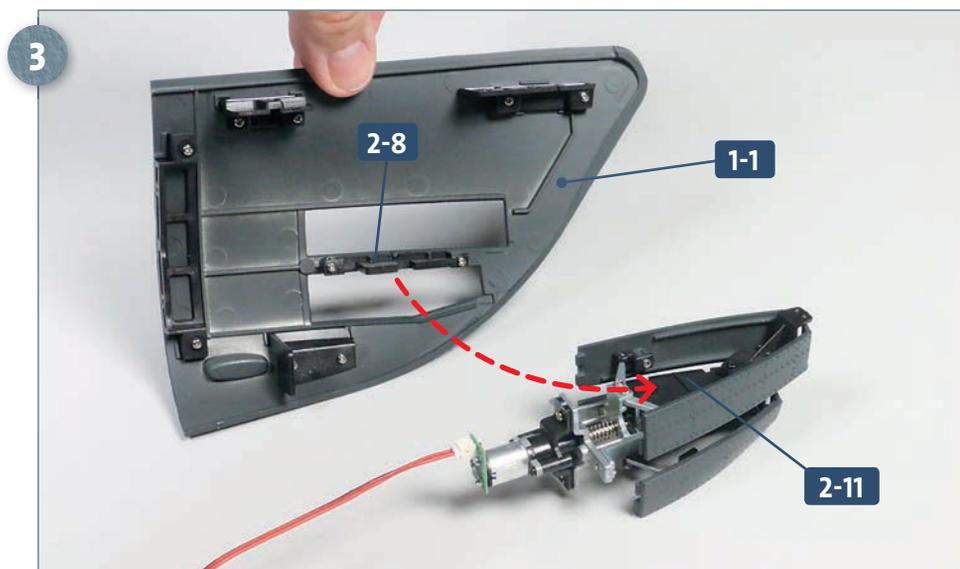


Place the Port (L) bow section **1-1** from kit 1 on your work surface. Take torpedo door frame **2-8** and fit it onto the strip between the openings for the two torpedo doors, as shown.

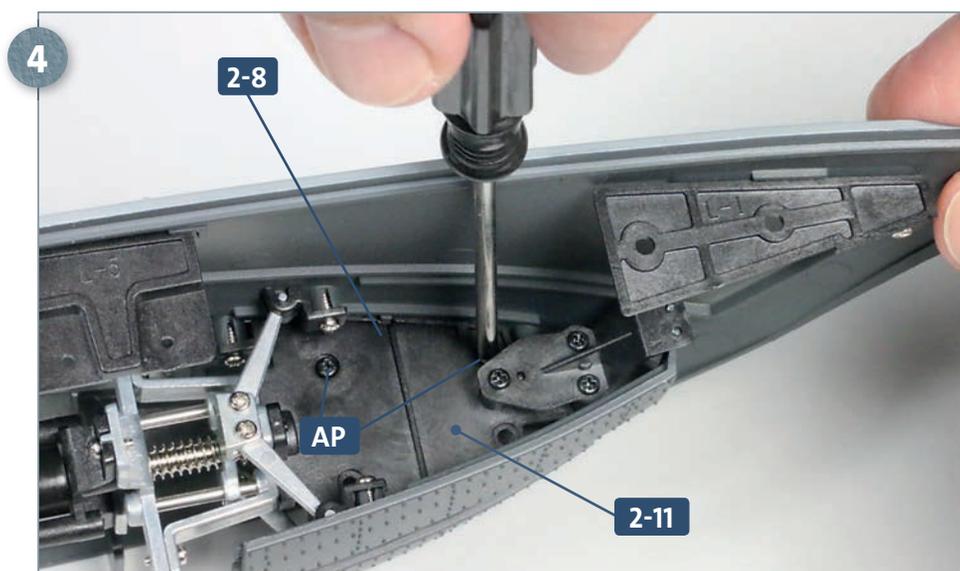


Fix in place using two **AM** screws, as shown.

Kit 2: Torpedo door motor

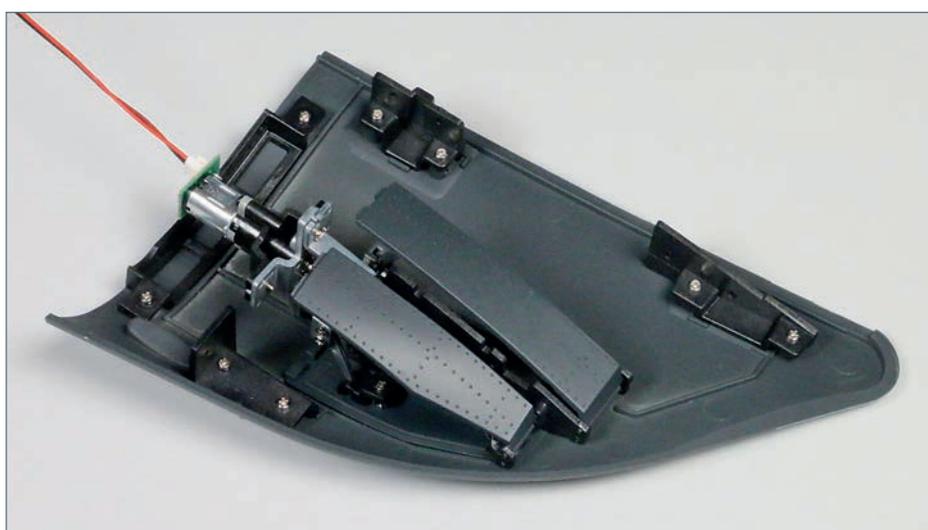


Have both the motor assembly and the torpedo door assembly ready. Take the bow assembly 1-1 and guide the attached torpedo frame 2-8 so that it fits between the two port (L) torpedo doors, and sits below the central part of the frame 2-11.



Attach torpedo door frame 2-11 to frame 2-8 (not visible in the image), by screwing two AP screws into the holes as shown.

COMPLETED WORK

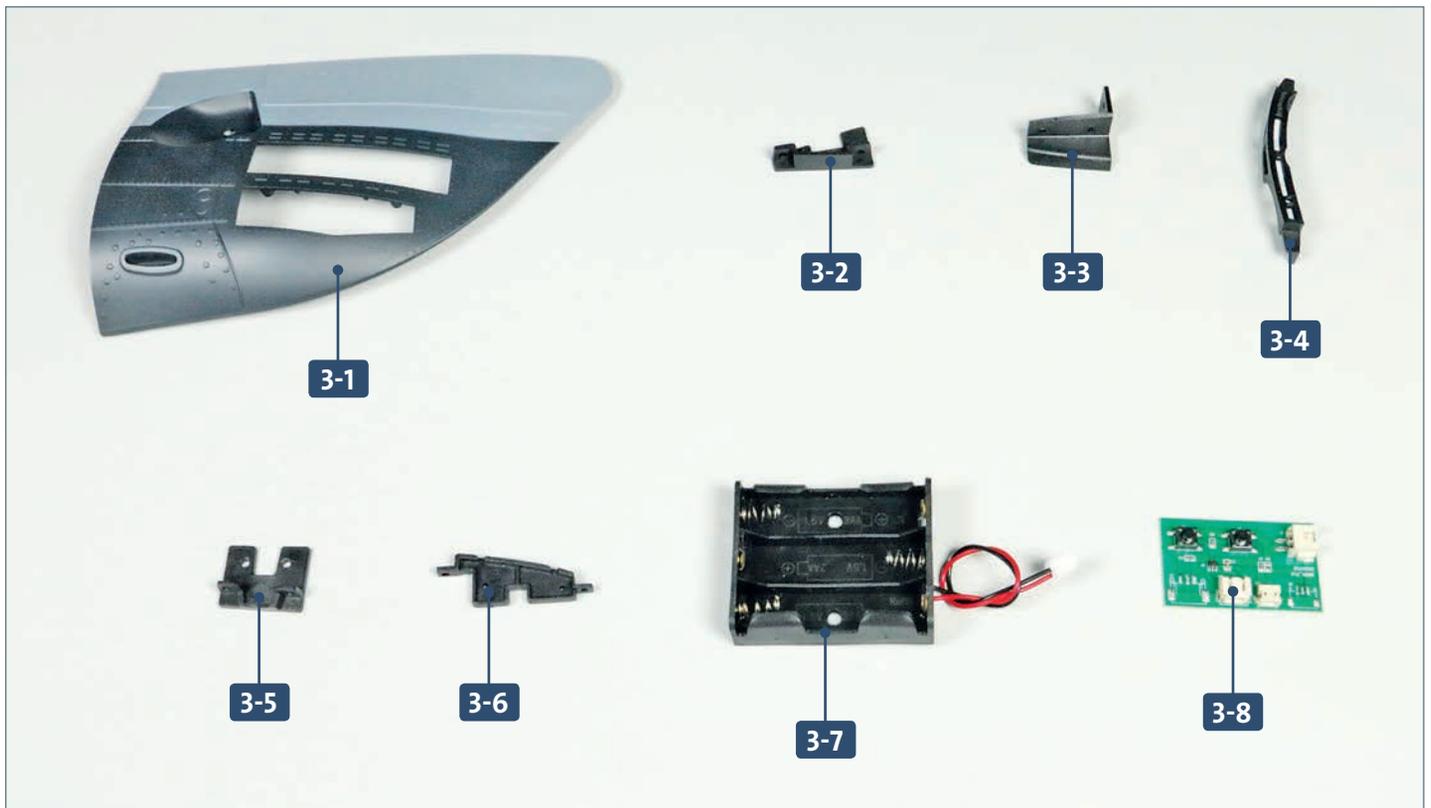


The opening mechanism for the four torpedo doors has been assembled and attached to the hull of the port (L) bow.



Kit 3: Bow assembly and motor test

You will attach five connectors to the starboard (R) side of the bow, before joining both halves of the bow together. The motor is then connected to a battery box via a circuit board (PCB) in order to test the opening mechanism for the forward torpedo doors.



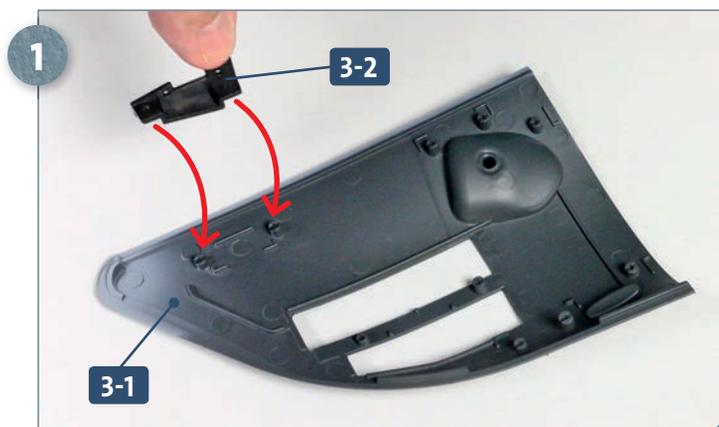
Parts reference list	
Part no.	Name
3-1	Starboard (R) bow
3-2	Hull connector A
3-3	Hull connector B
3-4	Hull connector C
3-5	Hull connector D
3-6	Torpedo door frame
3-7	Battery box
3-8	Test PCB



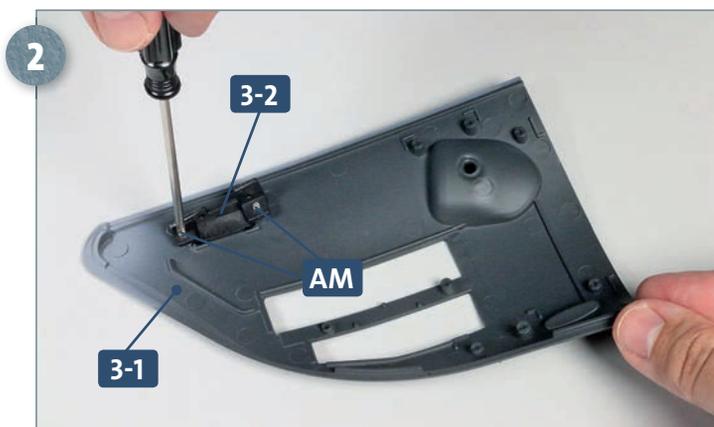
Screws		
Ref	No.	Dimensions
AM	10+1	2 x 4 mm
AP	8+1	2 x 4 mm

Kit 3: Bow assembly and motor test

STAGE 1 → Attaching the five connectors



Place the starboard (R) bow **3-1** outer-side down on your work surface. Take Hull connector **A 3-2** and fit its two holes over the front raised sockets on the bow section, as shown.



Attach the connector **3-2** to the starboard (R) bow **3-1** using two **AM** screws, as shown.



Take Hull connector **B 3-3** and fit its holes over the raised screw sockets at the bottom right of the bow section **3-1** (indicated by the arrow).



Attach the connector **3-3** to the hull of the right bow **3-1** using two **AM** screws, as shown.

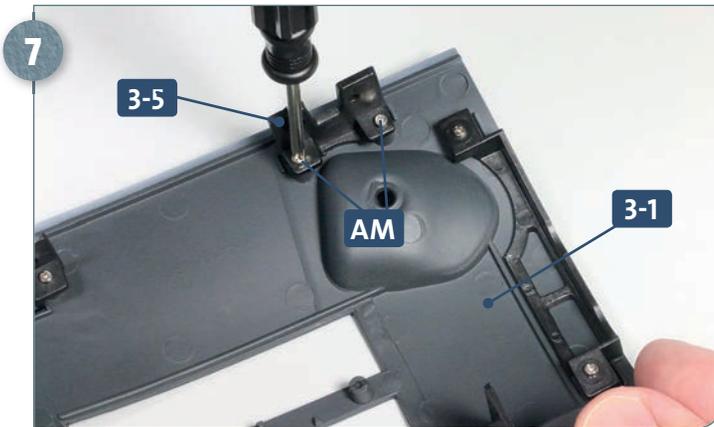


Take Hull connector **C 3-4** and attach it to the back of the bow section **3-1** using two **AM** screws.

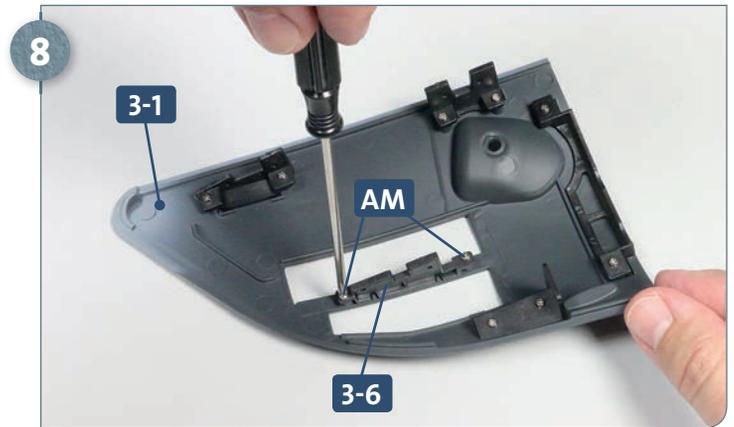


Take Hull connector **D 3-5** and place it on the corner of the bow section **3-1**, as shown. Have ready two **AM** screws.

Kit 3: Bow assembly and motor test

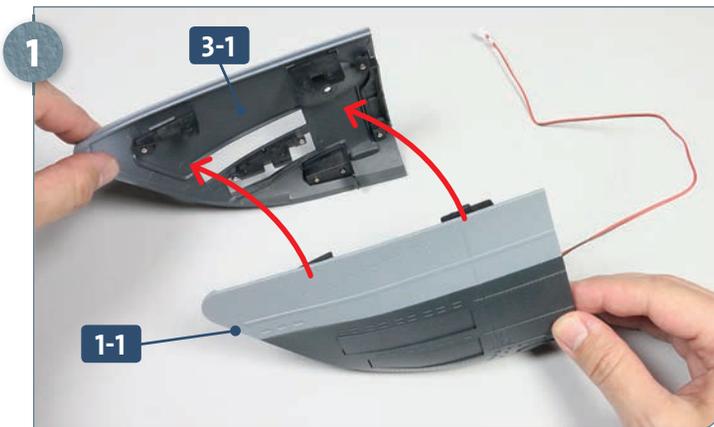


Attach Hull connector D **3-5** to the starboard (R) bow using two **AM** screws, as shown.

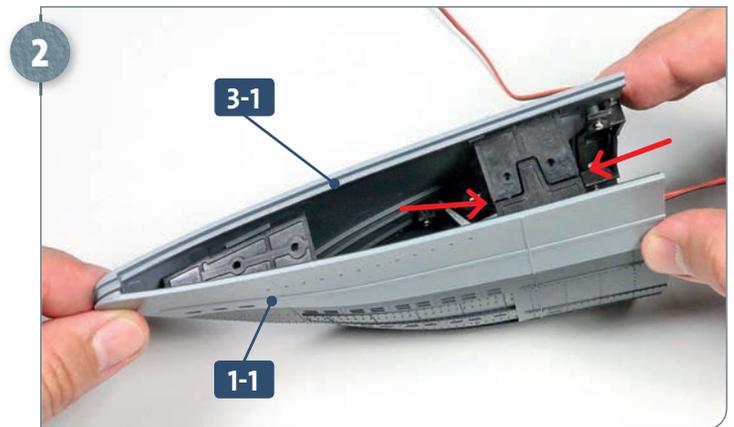


Finally, place the torpedo door frame **3-6** between the openings in the starboard (R) bow **3-1** for the two torpedo doors, and fix in place using two **AM** screws.

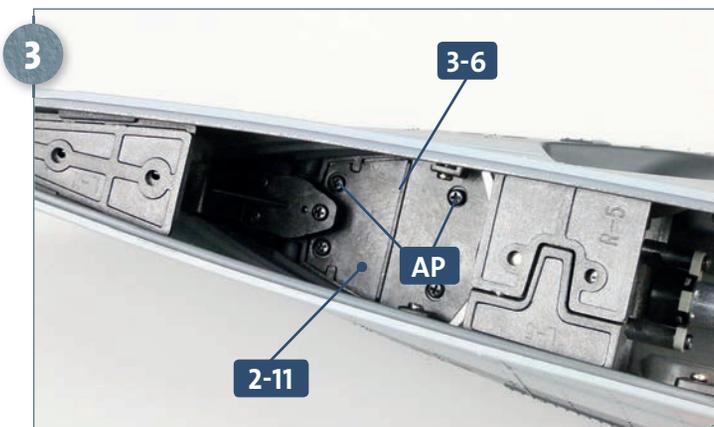
STAGE 2 → Joining the two halves of the bow



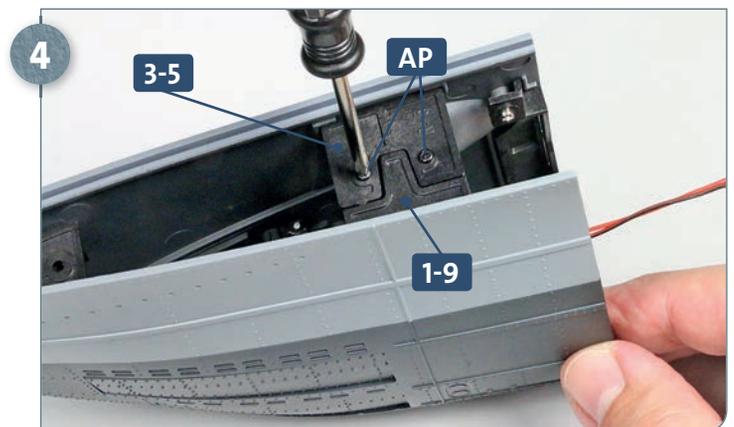
Take the port (L) side of the bow **1-1** (which was last worked on in the previous kit) and carefully join it to the starboard (R) side of the bow **3-1**. The two upper connectors on both sides should slot together.



The photo above shows the two sides of the bow **1-1** and **3-1** joined together. Looking at the rear connectors (see red arrows) you can see that the two sides can be pressed together for a flush fit.

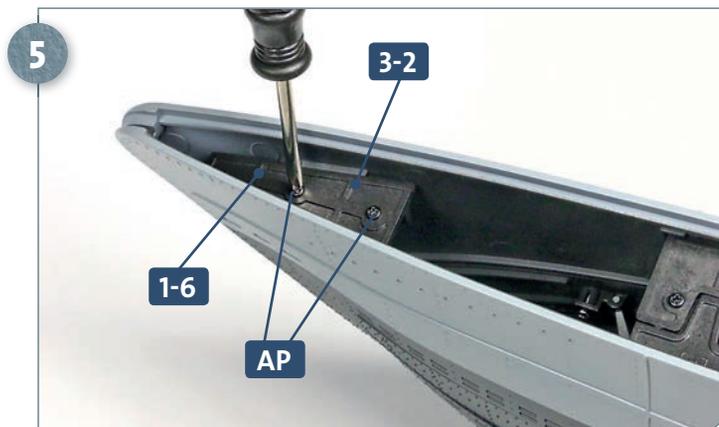


Study the photo above carefully and attach torpedo door frame **2-11** to the torpedo door connector **3-6**, which is directly beneath the frame. These parts are located inside and towards the bottom of the bow section. Use two **AP** screws, as shown.

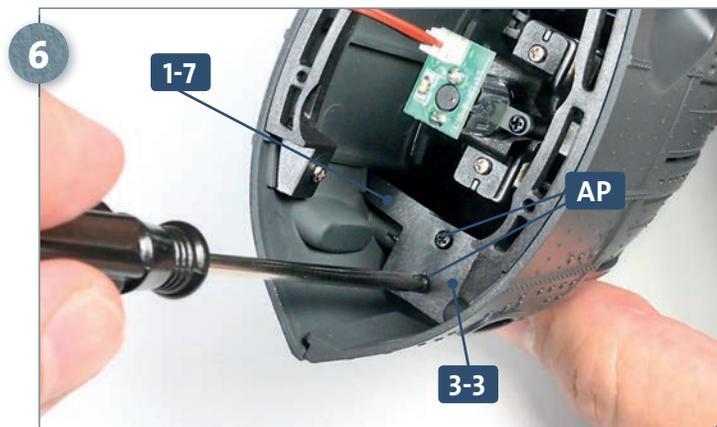


Fix Hull connector D **3-5** of the right hull section to its counterpart on the left side, **1-9**, using two **AP** screws, as shown in the photo.

Kit 3: Bow assembly and motor test

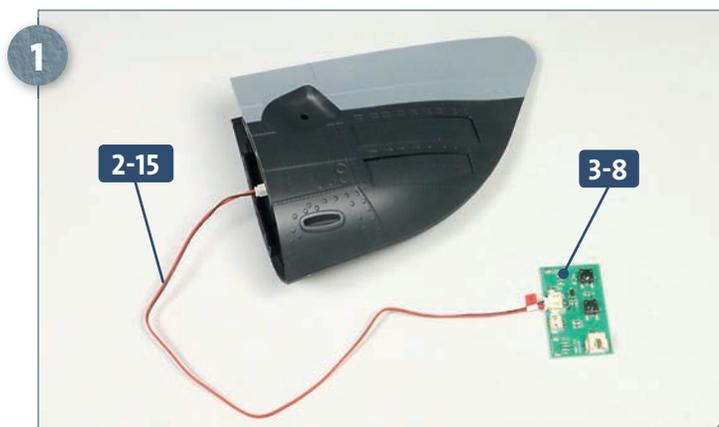


At the tip of the bow, attach the right hull connector A 3-2 to left hull connector A 1-6 using two AP screws.

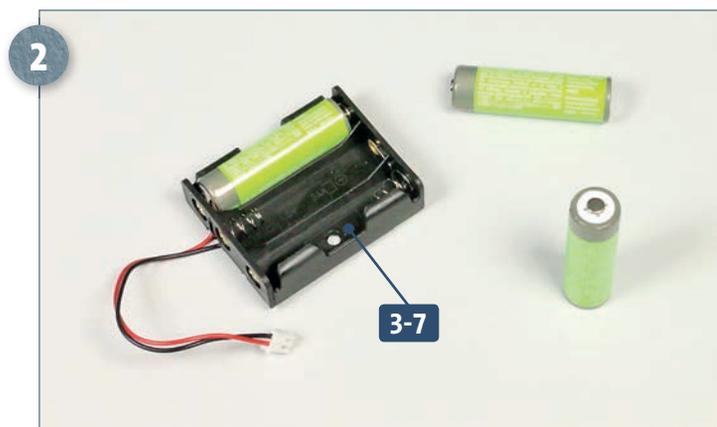


The two halves of the bow must also be connected from the back. Fit two AP screws into the holes in connectors 3-3 and 1-7.

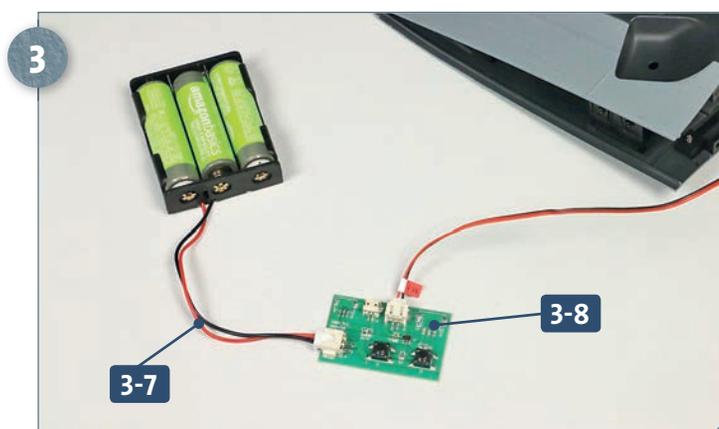
STAGE 3 → Testing the opening mechanism



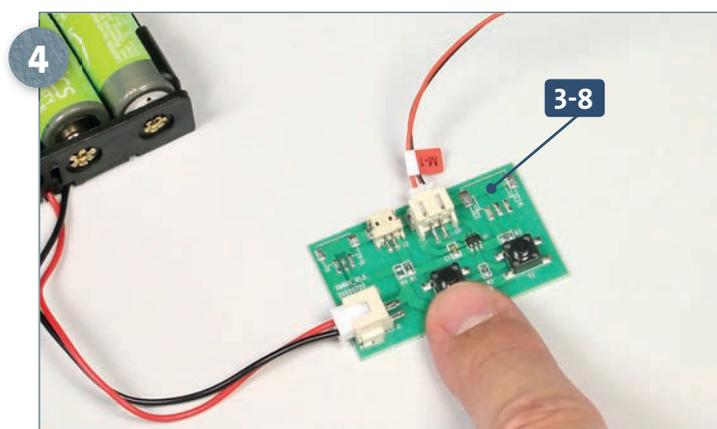
Take the free end of cable 2-15 and insert the plug into the socket in PCB 3-8, as shown above.



Prepare the battery box 3-7 inserting three AA batteries as shown.

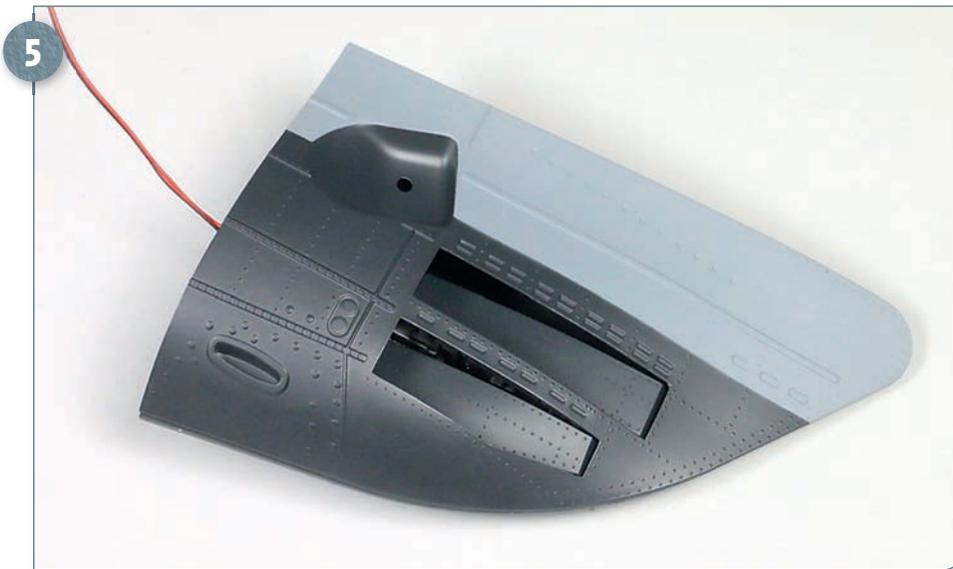


Connect the end of the battery box cable 3-7 to the socket on the PCB 3-8, as shown.

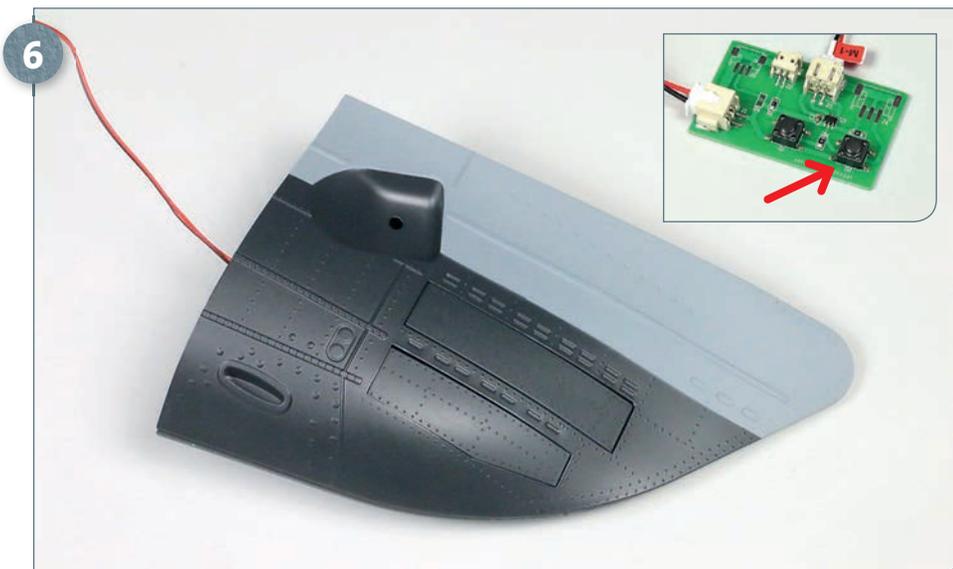


Depress the left button on the circuit board 3-8. Hold it down to open the four torpedo doors.

Kit 3: Bow assembly and motor test

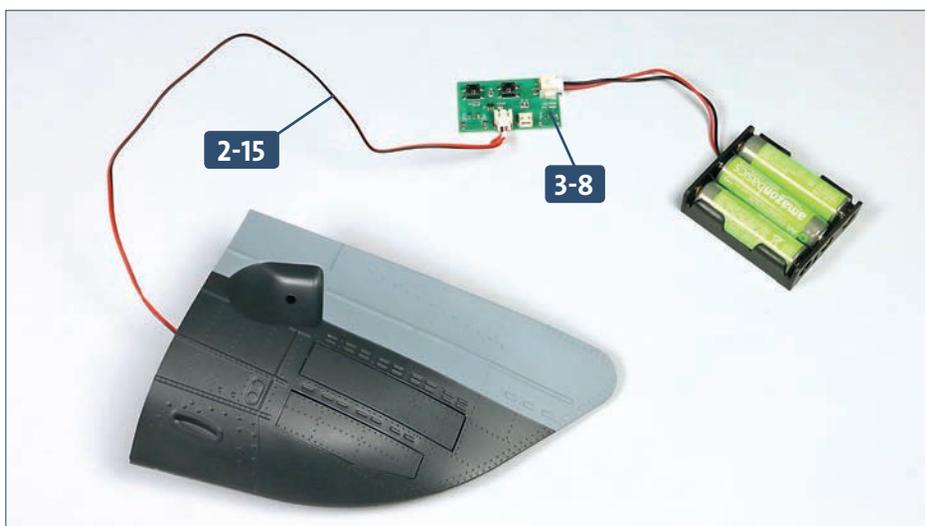


This photo shows the torpedo doors fully open. If you release the button on the PCB, the opening mechanism stops.



To close the torpedo doors, depress the right button on the PCB (indicated by the red arrow). Releasing the button will stop the closing process.

COMPLETED WORK

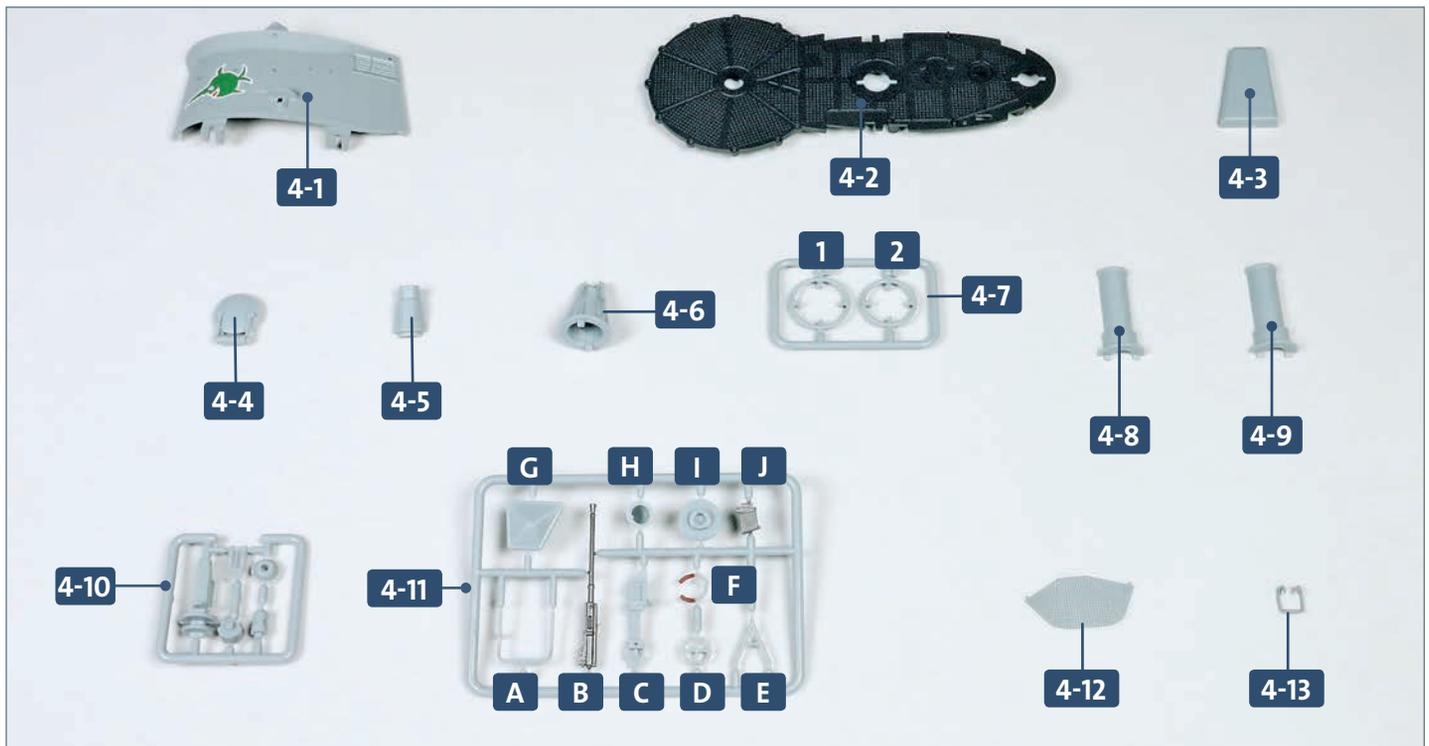


The two halves of the bow have been joined together, and the opening mechanism for the torpedo doors tested.

Note: After testing the mechanism, we recommend that you disconnect the cable 2-15 from the circuit board 3-8, as the latter will be needed for subsequent tests. Take care not to pull the wires when removing the cable. If necessary, use tweezers or long nosed pliers to hold the plug.

Kit 4: Port side of conning tower and anti-aircraft machine gun

Work on the conning tower starts with the bridge deck and port (L) half of the bulwark. The lower sections of the two periscopes and the UZO (surface targeting optics) are assembled and mounted in the conning tower. The 2cm anti-aircraft gun is then assembled, attached to its carriage and fitted with a cartridge case basket.



Parts reference list

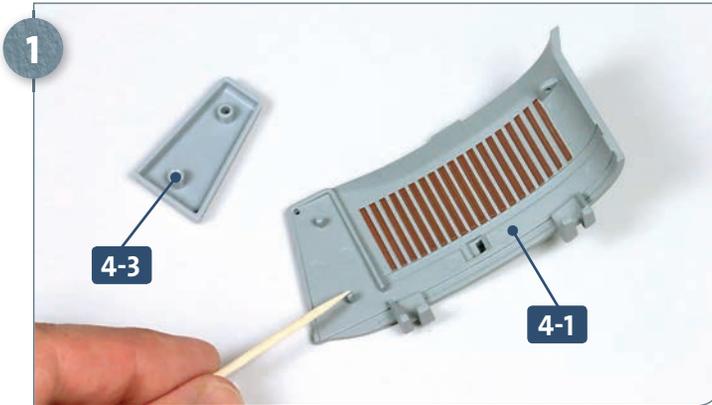
Part no.	Name
4-1	Bridge port (L) bulwark
4-2	Bridge deck
4-3	Air duct cover
4-4	Hatch door
4-5	Periscope (part 1)
4-6	Periscope (part 2)
4-7	Periscope rings
4-8	Periscope shaft (part 1)
4-9	Periscope shaft (part 2)
4-10	Target optics parts (UZO)
4-11	2cm machine gun
4-12	Spent cartridge collector
4-13	Periscope detail

Note: In this stage of the assembly some small parts are glued together. You will need to use superglue, applied precisely and sparingly to the contact surfaces using a pointed object (such as a toothpick). This should prevent excess glue from marring the components.

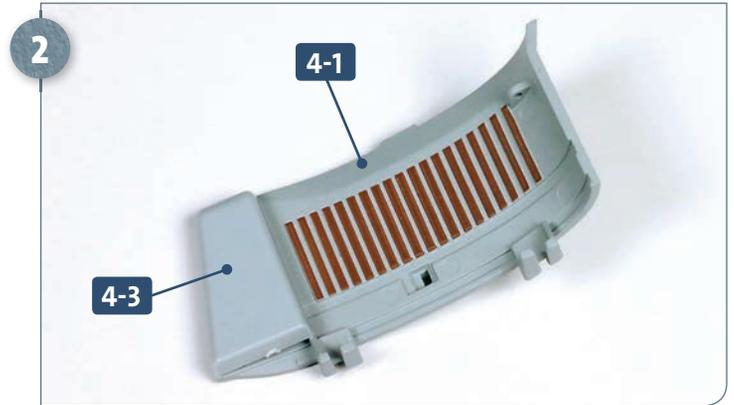
It is always useful to test-fit parts before gluing together to ensure you have the correct parts and that they fit together correctly.

Kit 4: Port side of conning tower and anti-aircraft machine gun

STAGE 1 → First part of U-Boat conning tower

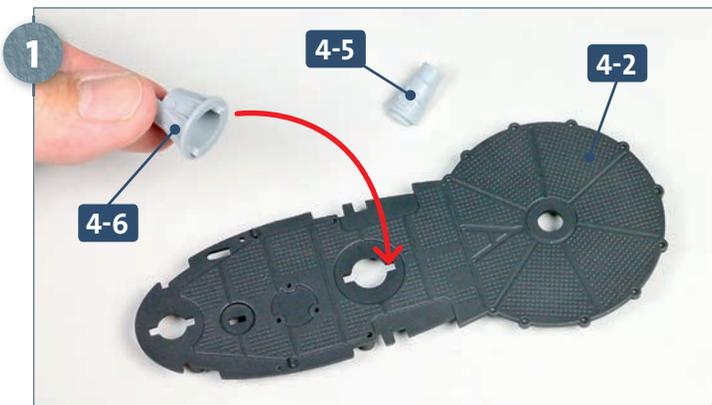


After test-fitting the air duct cover 4-3 in place on bulwark 4-1, apply a little glue to the pegs on the bulwark, as shown.

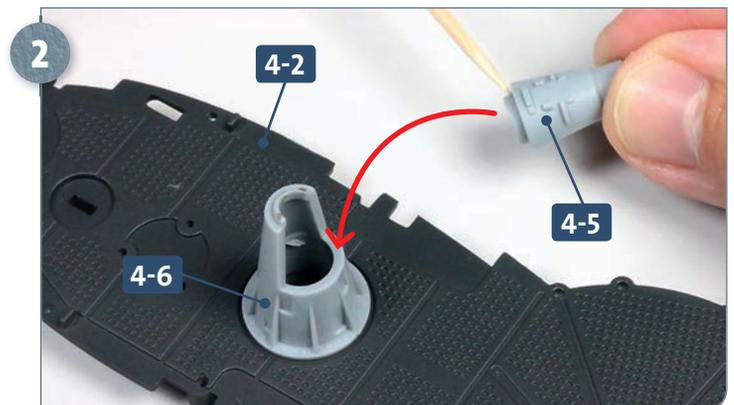


Glue 4-3 to the inside of the bulwark 4-1, at the back, as shown. Note that there is a small gap at the base of the parts.

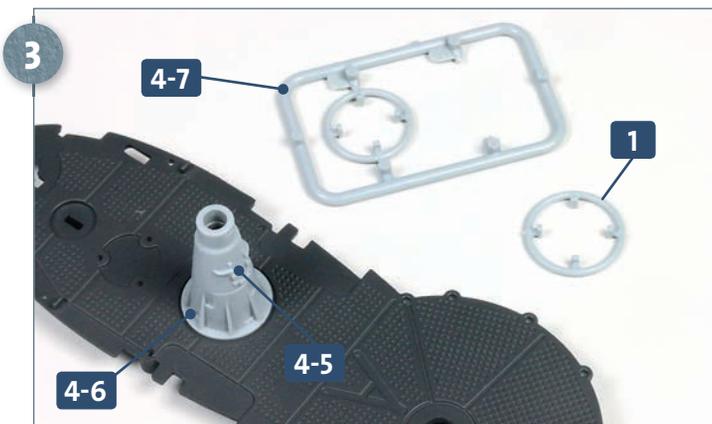
STAGE 2 → Periscope stand and conning tower hatch



Place the bridge deck 4-2 and both halves of the periscope, 4-5 and 4-6, on your work surface. Apply a little glue to the pegs on part 4-6 and attach it to the bridge deck, as shown. See also next step.



Once 4-6 is attached to the deck 4-2, apply a little glue to the edge of part 4-5 and fit it into the recess in 4-6, as shown.

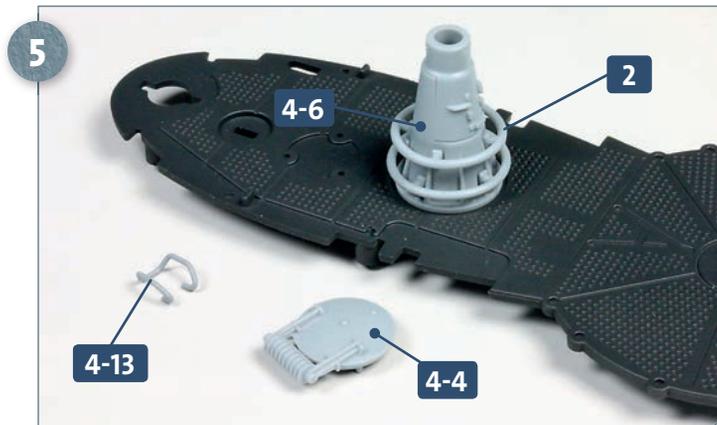


The two halves of the base of the periscope, 4-5 and 4-6, are now attached. Separate the slightly larger ring 1 from the frame 4-7, as shown.

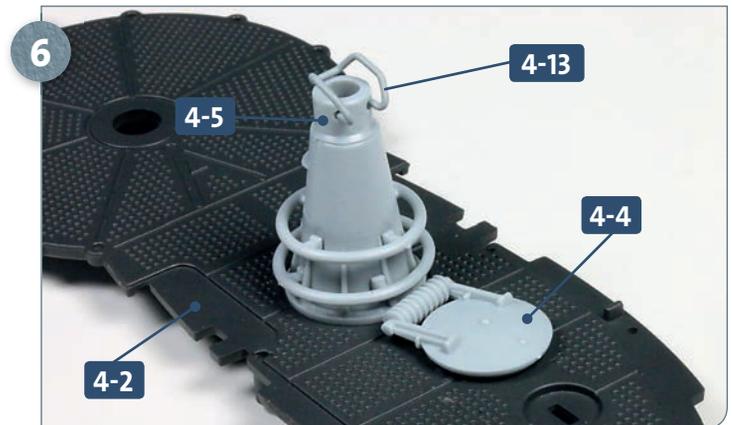


Glue ring 1 in place, fitting it onto the lower indentations of the base of the periscope 4-6.

Kit 4: Port side of conning tower and anti-aircraft machine gun

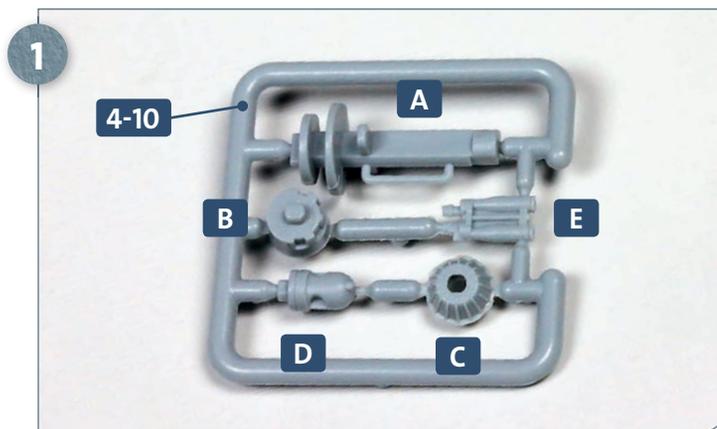


Detach ring 2 from frame 4-7, glue it into the upper indentations of the periscope base 4-6. Have ready the hatch door 4-4 and periscope detail 4-13.



Rotate the assembly. Glue detail 4-13 into the small holes at the top of the periscope base 4-5. The hatch door 4-4 is attached to the bridge deck 4-2 with glue.

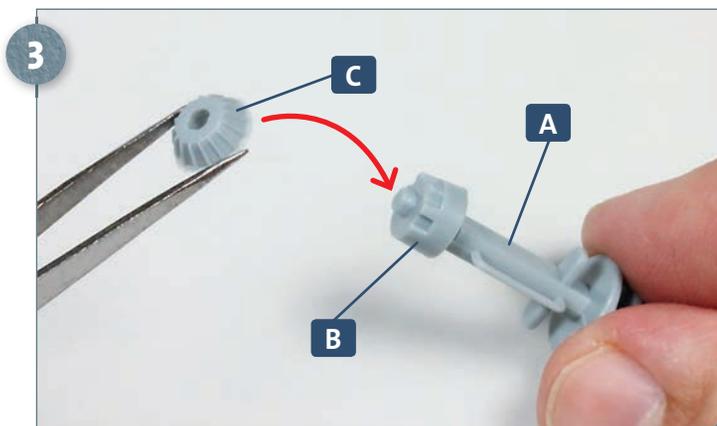
STAGE 3 → Periscope and UZO targeting optics



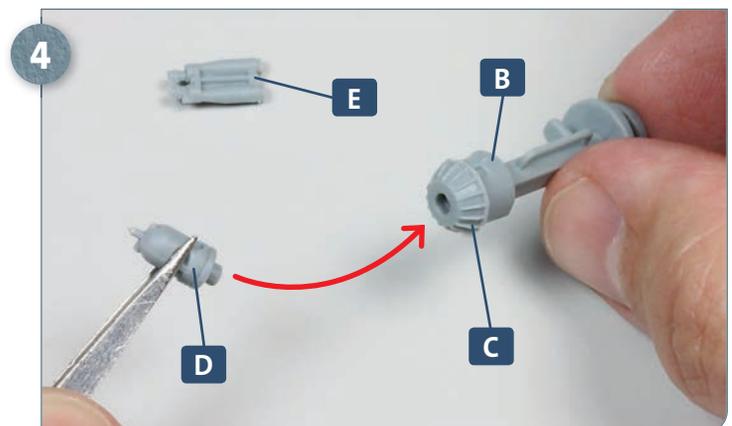
Carefully study the detail view of the frame 4-10, which holds the five parts of the U-Boat targeting optics (UZO): column A, lower rim B, upper rim C, binocular holder D and binoculars E.



Carefully detach the five pieces from 4-10 and use a small flat file to remove the remains of the frame.

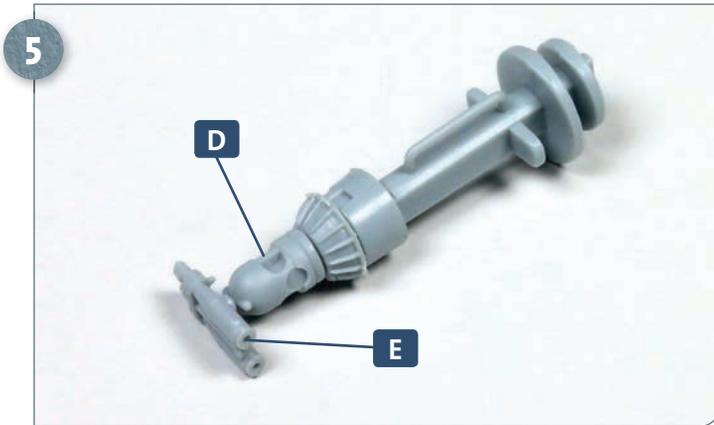


Glue the lower rim B to the top of column A. Next, take the upper rim C and glue it to the peg of lower rim B, as shown.

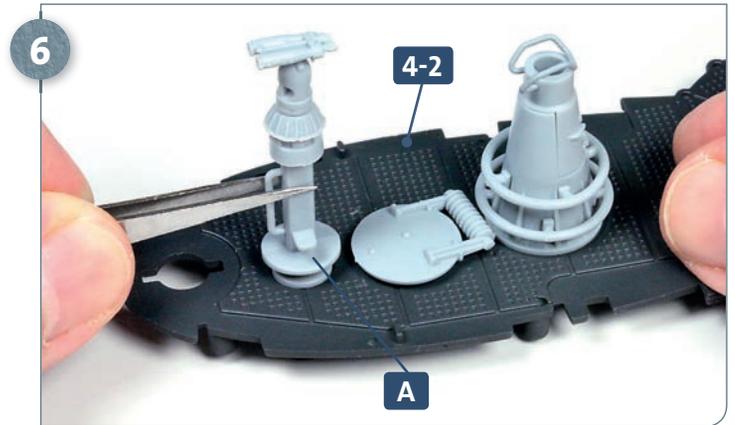


Once upper rim C is attached to lower rim B, glue the binocular holder D to the recess in part C, as shown. Have the binoculars E ready.

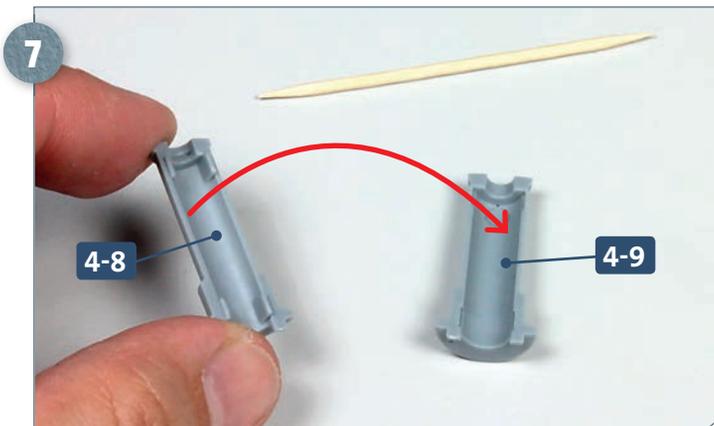
Kit 4: Port side of conning tower and anti-aircraft machine gun



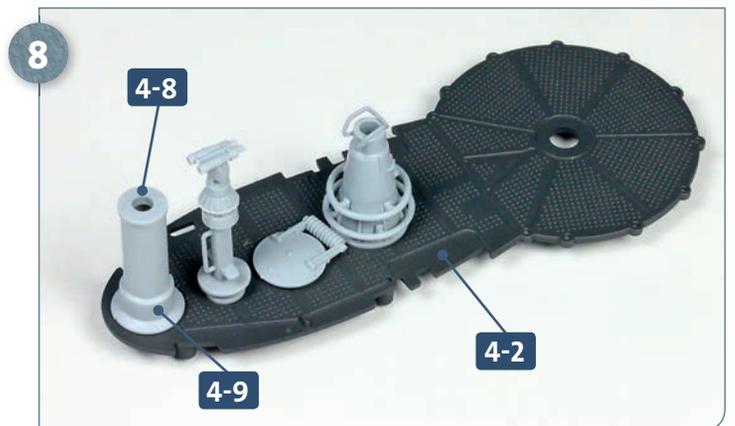
Glue the binoculars **E** onto the peg of the binocular holder **D**. The photo shows the completed UZO.



Apply some glue to the long peg at the bottom of column **A** of the UZO and glue the assembly into the opening second from the front of the bridge deck **4-2**.

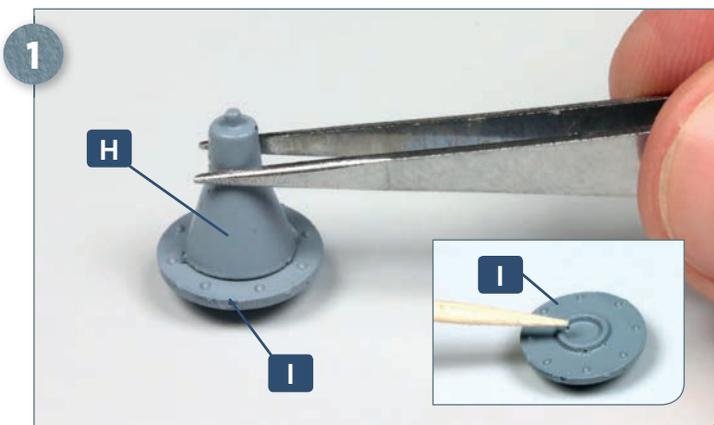


Take the two halves of the periscope shaft, **4-8** and **4-9**. After test-fitting, apply a little glue to the contact surfaces of the two parts, as indicated, and glue together.

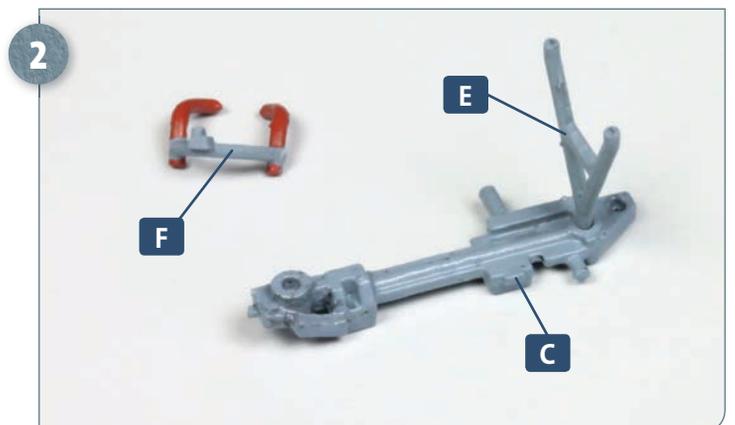


Glue the shaft assembly **4-8/4-9** into the foremost opening in the bridge deck **4-2**.

STAGE 4 → Assembling the anti-aircraft machine gun

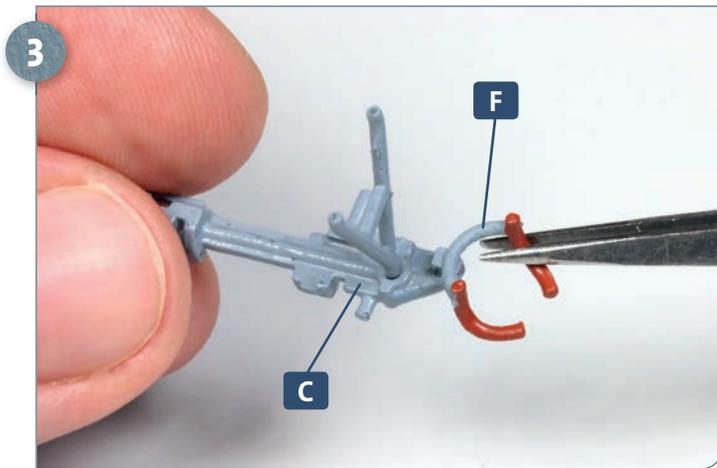


Carefully detach the lower carriage **H** and the first foot **I** from frame **4-11**. Apply some glue to the protruding ring of **I** (inset) and fix the lower carriage **H** to this ring, as shown.

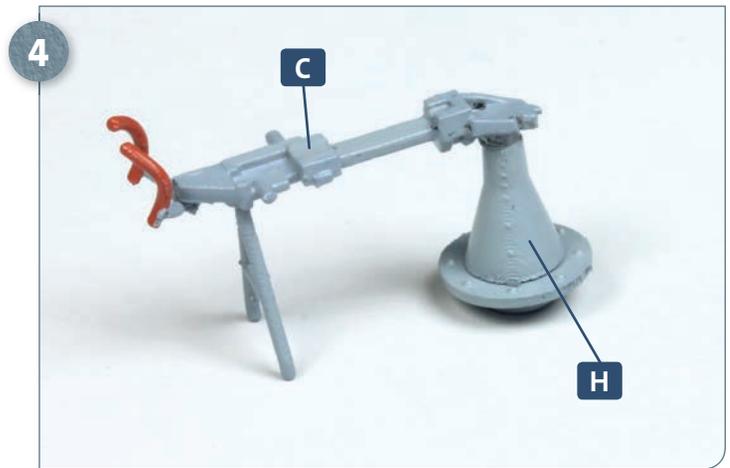


Carefully detach the upper carriage **C**, the bipod **E** and the buttstock **F** from frame **4-11**. Glue the top pin of the bipod into the middle of the three indentations in the upper carriage, as shown.

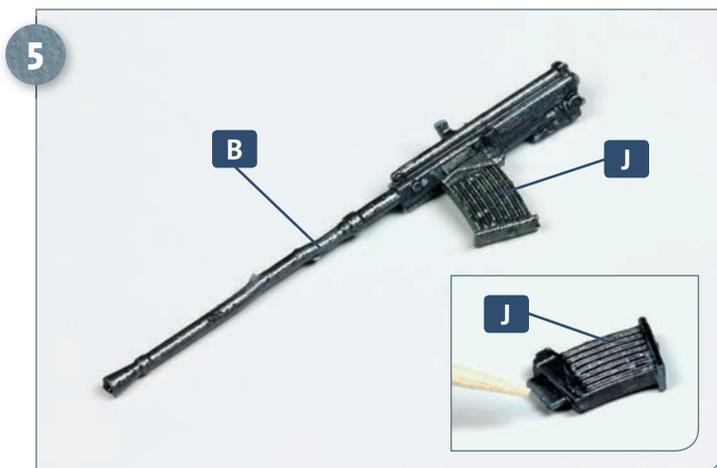
Kit 4: Port side of conning tower and anti-aircraft machine gun



Apply some glue to the middle peg of the buttstock **F** and glue this into the rearmost indentation in the upper carriage **C**, as shown.



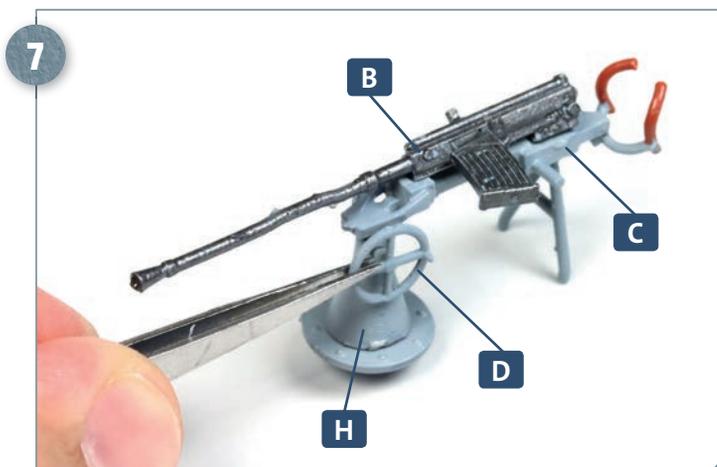
Apply some glue to the upper peg of the lower carriage **H** and fit the front indentation of the upper carriage **C** onto this peg. Note that there is a hole in the side of part **H** (not shown) into which the hand wheel **D** is fitted in step 7. Study the photo in step 7 to ensure part **H** is correctly orientated.



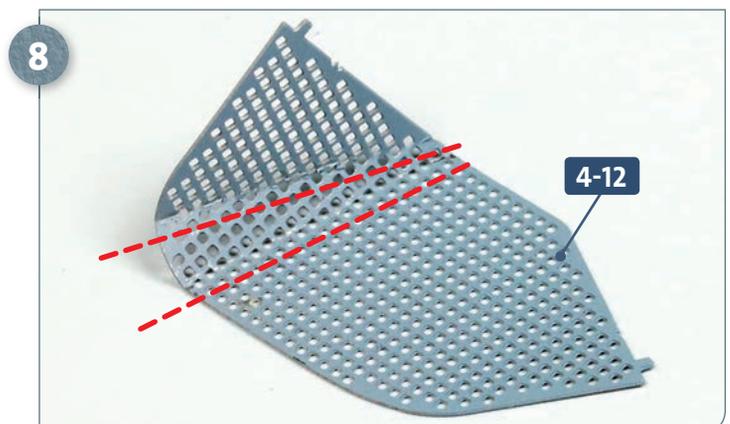
Separate the barrel **B** and the magazine **J** from frame 4-11. Apply a little glue to the tab on the magazine **J** (inset) and attach it to the barrel **B**.



Apply a small amount of glue to the places marked by the two arrows on upper carriage **C**.

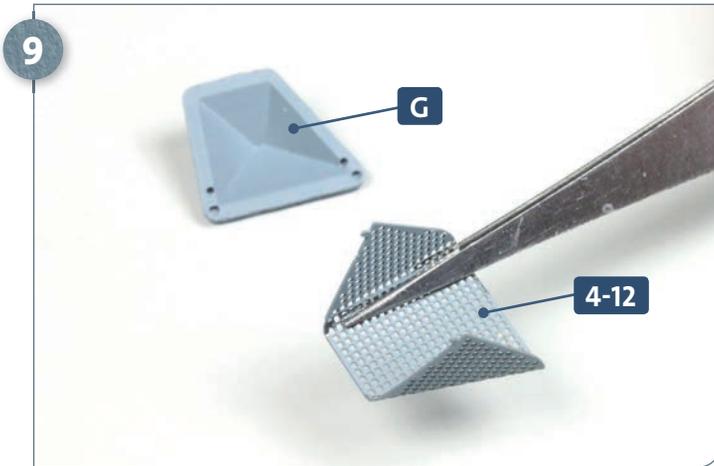


Glue **B** to the upper carriage **C** as shown. Separate the hand wheel from the frame 4-11 and glue it in the recess of the lower carriage **H**.

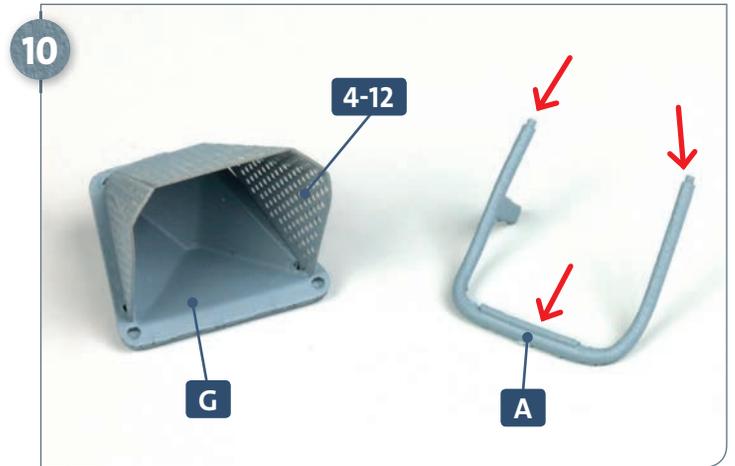


Take time and read through the next few steps before starting to construct the basket. Take the cartridge case basket 4-12 and use flat nosed pliers to bend one end upwards along the folds (red lines) at an angle of approximately 45° for each. Note that the creases are on the outside of the bend, which is not visible in the picture.

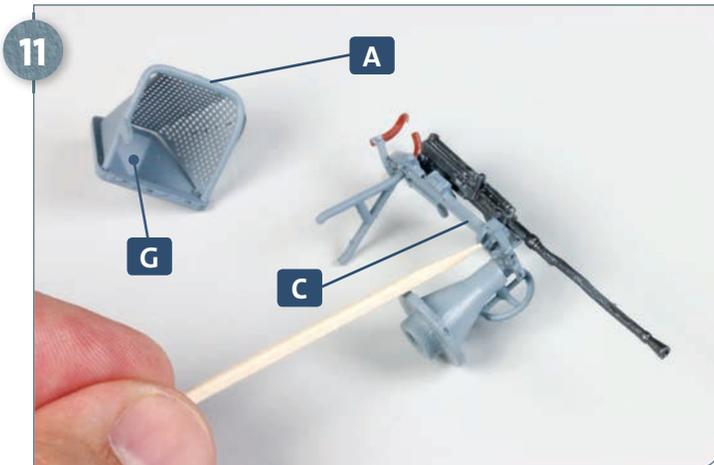
Kit 4: Port side of conning tower and anti-aircraft machine gun



The other end of the basket 4-12 is also bent along the two creases at a 45° angle, as shown. Separate the base of the basket G from the frame 4-11.



After test-fitting to ensure the parts are correctly aligned, glue the two small pins of the basket 4-12 into the indentations of the base G. Separate bracket A from frame 4-11 and apply some glue to each end and along the central bar (red arrows).

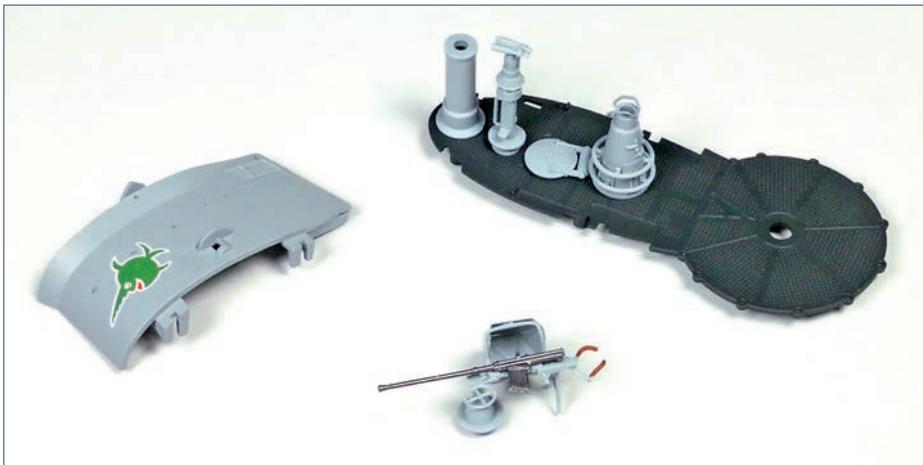


Fix the bracket A to the lower part of the basket G. Then, apply some glue to the small indentation on the lower carriage, C, as shown.



Glue the bracket A to the lower gun carriage C as shown in the photo above.

COMPLETED WORK



The lower parts of the two periscopes and the UZO have been installed, and the anti-aircraft machine gun has been assembled.