

BISMARCK

THE LEGENDARY BATTLESHIP



Pack 02 | Build Instructions

Your 1:200 scale model of the legendary battleship Bismarck is packed with intricate details which precisely replicate every aspect of this state-of-the-art warship. Each piece has been created using premium quality materials to bring maximum enjoyment during your complete build.

In your second model pack, you will assemble:

**STAGE 09: GEARBOX FOR THE
BOW ANCHORS: 2**

**STAGE 10: THE SECOND SECTION
OF THE UPPER DECK**

STAGE 11: THE PORT HULL AND SUPPORT STAND

**STAGE 12: GEARBOX FOR THE
FORWARD GUN TURRET**

**STAGE 13: HINGED SUPPORTS FOR
THE BREAKWATER**

**STAGE 14: MOTOR FOR THE FORWARD
GUN TURRET**

**STAGE 15: HULL ASSEMBLY AND SUPPORTS
FOR THE FORE BREAKWATER**

STAGE 16: FORWARD GUN ELEVATION MOTOR

**STAGE 17: WIRING FOR
THE FORWARD TURRET**

**STAGE 18: TESTING THE
WIRING OF THE TURRET**

**STAGE 19: THE JACKSTAFF
AND BOW LIGHT**

STAGE 20: ANOTHER SECTION OF THE HULL

Advice from the experts

Spare screws are included with each part. Occasionally, you may be instructed to keep spare or unused screws for a later stage.

Keep these spares in a safe place and label them correctly.

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 magnetised 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.

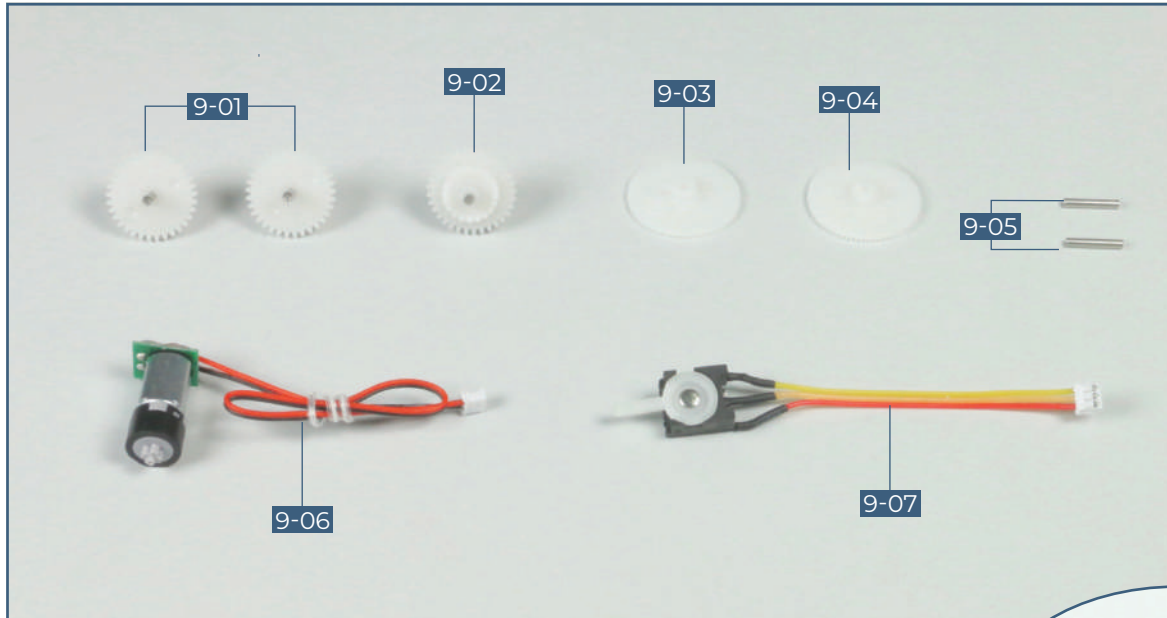
During the course of this build, you will receive many pieces that you will assemble immediately – following the instructions in the corresponding stage – and other pieces that you should store safely to one side, for use in future assembly stages.



Not suitable for children under the age of 14. This product is not a toy and is not designed for use in play. Keep the parts out of the reach of small children. Some parts may have sharp edges. Please handle them with care.

STAGE 09

GEARBOX FOR THE BOW ANCHORS: 2



COMPONENTS CHECKLIST

9-01: Two cogs with shafts

9-02: Double cog with shaft

9-03: Cog with peg

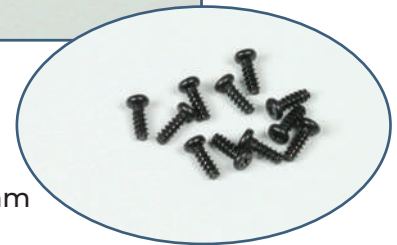
9-04: Cog

9-05: Two shafts

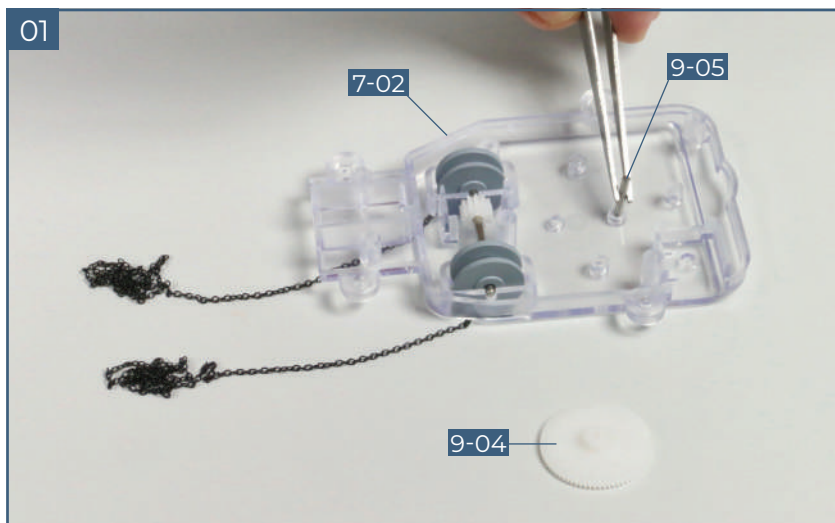
9-06: Anchor motor

9-07: Switch

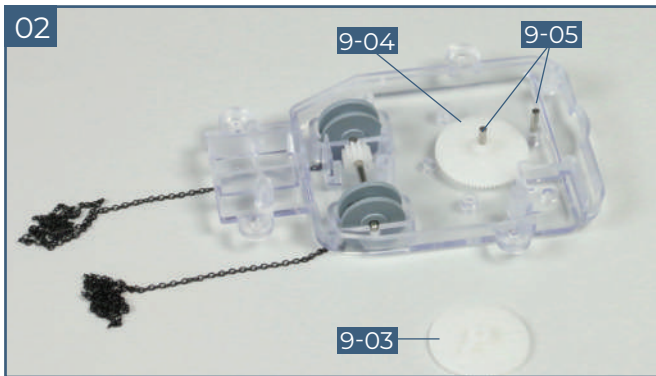
PB Eleven 2 x 6 mm screws



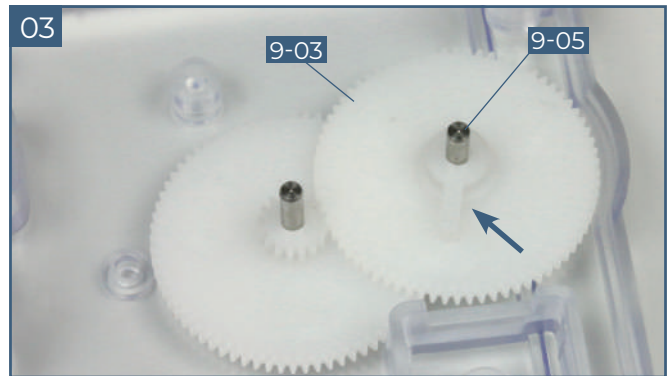
01. MOUNTING THE GEARS AND SHAFTS



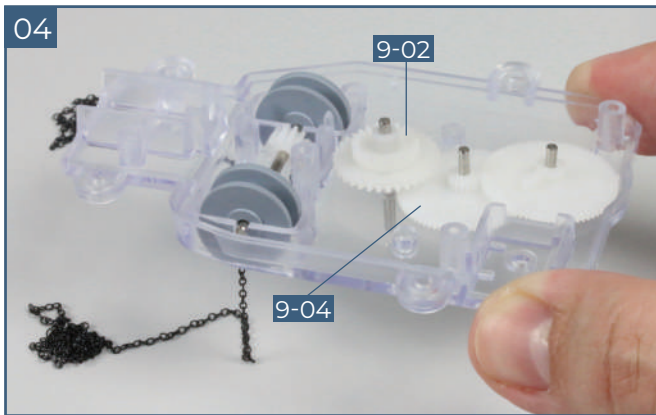
Take the upper part of the gearbox housing **7-02**, which was assembled in stage 7. Insert a shaft **9-05** into the hole in the middle of the gearbox housing as shown. Identify the cog **9-04**. Note that this has a smaller cog at the centre whereas the similar cog **9-03** has a peg at the centre.



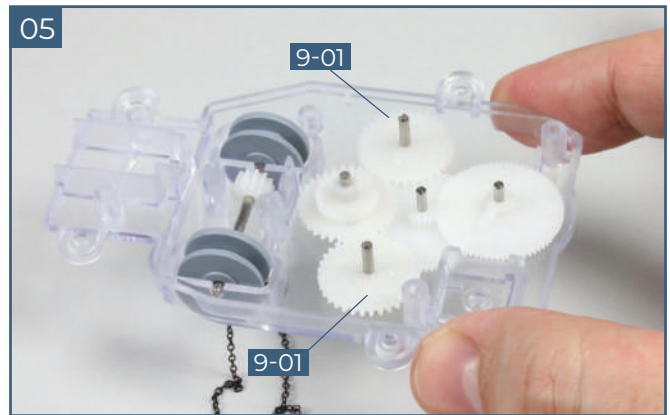
Fit the cog **9-04** onto the shaft **9-05**. Fit the second shaft **9-05** into the hole near the end of the gearbox as shown. Identify the cog with a peg **9-03**.



Fit the cog **9-03** onto shaft **9-05**. Make sure that the peg (indicated by the arrow) is at the angle shown. See also section 02, photo 4.

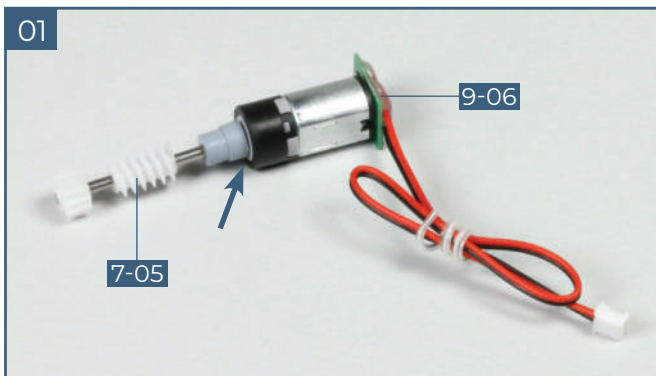


Holding the gearbox above the worksurface, fit the shaft of the gear **9-02** into the hole in the gearbox on the other side of cog **9-04** as shown.

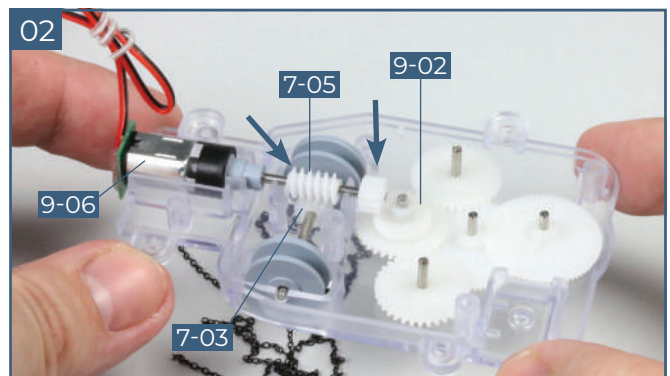


Holding the gearbox above the worksurface, take the two cogs with shafts **9-01**. One end of the shaft has splines which pass through the gearbox housing to protrude on the other side. Fit the shafts into the holes either side of the central cog.

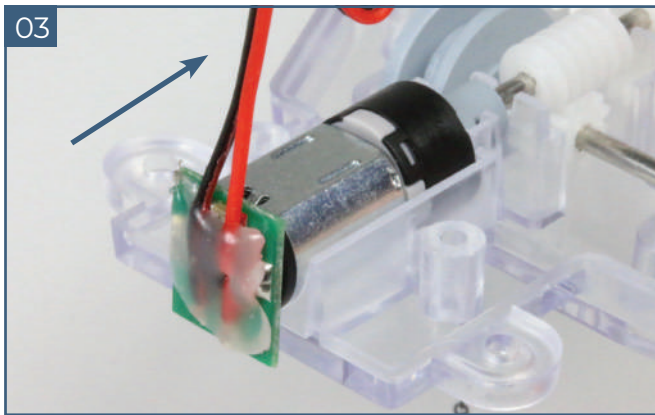
02. INSTALLING OF THE ANCHOR MOTOR AND SWITCH



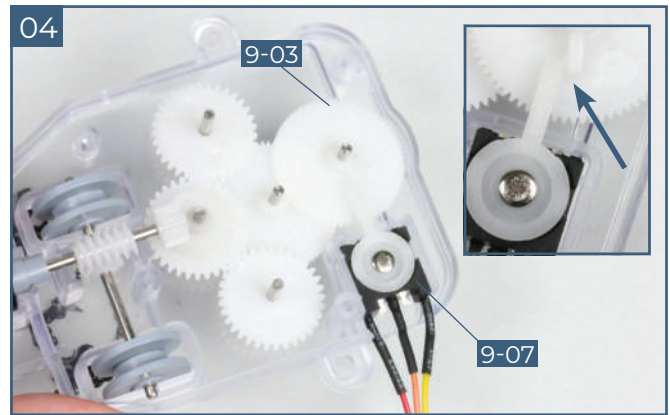
Take the lengthwise shaft **7-05** supplied with stage 7 and fit the grey end onto the shaft of the anchor motor **9-06**, as indicated by the arrow.



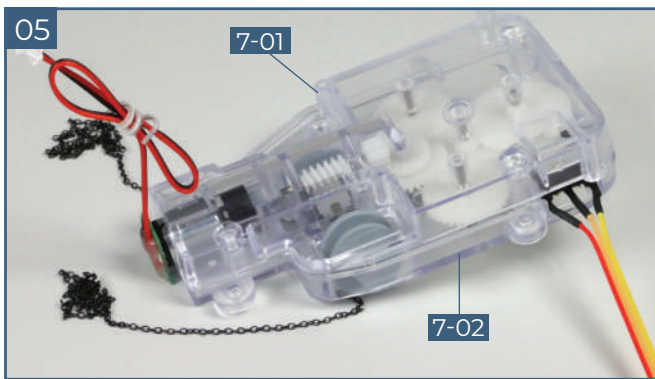
Fit the motor and lengthwise shaft assembly **9-06/ 7-05** into the gearbox housing. Make sure that the sprockets of the cogs on the shaft (indicated by the arrows) engage with the cogs



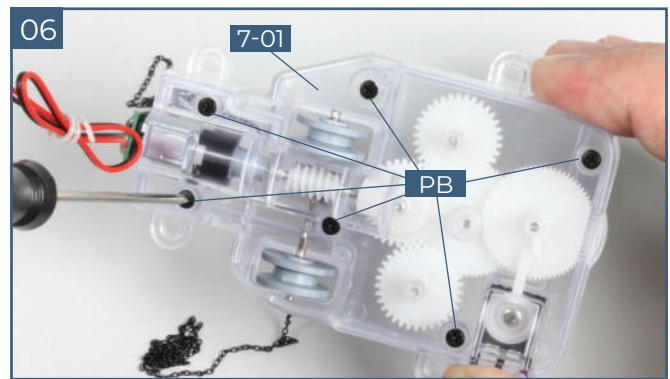
When fitting the anchor motor **9-06** into the gearbox, make sure that the cables run upwards (as indicated by the arrow).



Insert the switch **9-07** in the gearbox housing so that its pin is to the left of the peg on cog **9-03** (see inset).

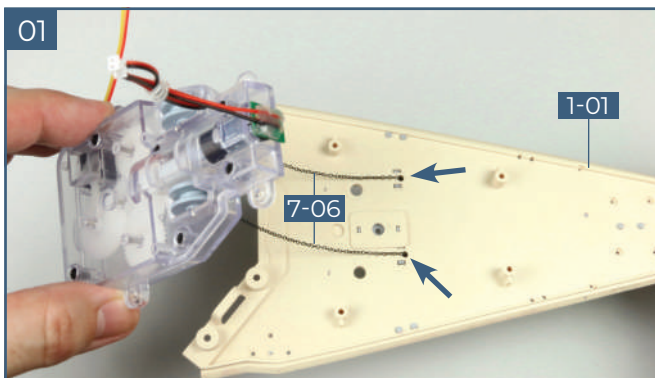


Take the lower part of the gearbox housing **7-01** and, after checking the shafts are correctly aligned, fit it on top of the upper section **7-02**.

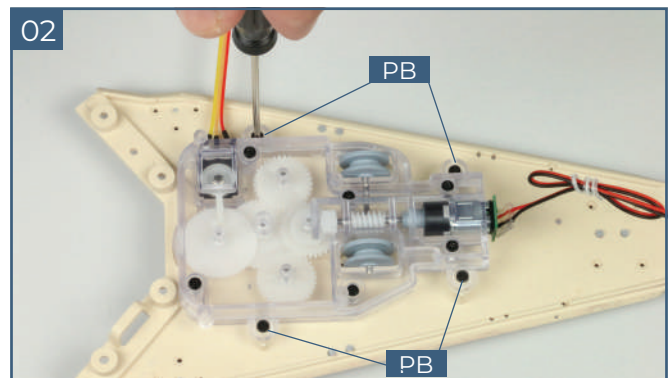


Secure the two parts of the gearbox together using six **PB** screws as shown.

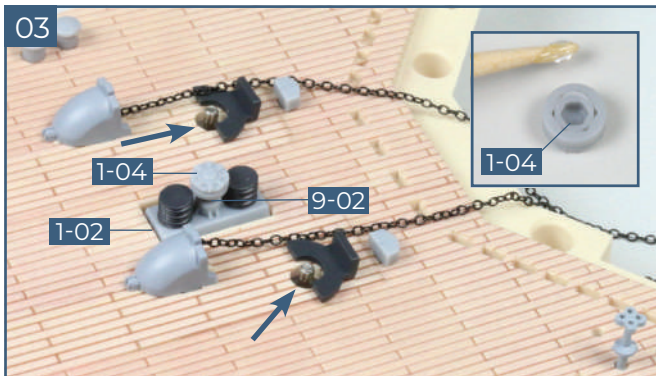
03. FITTING THE GEARBOX AND ANCHOR CHAINS



Turn the fore section of the upper deck **1-01** upside down, taking great care not to damage any of the details fitted previously. Take the gearbox housing and thread the two anchor chains **7-06** through the small holes in the upper deck (indicated by the arrows).



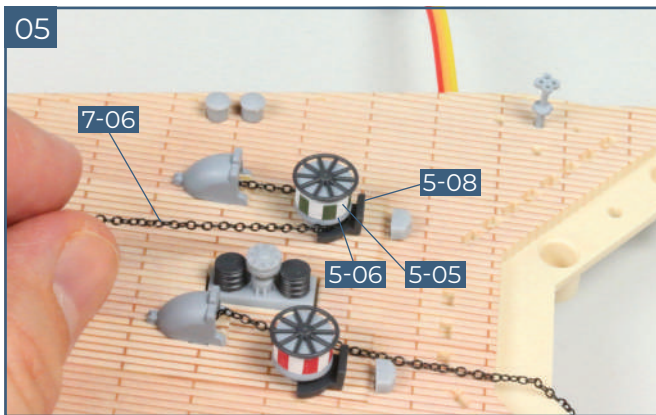
Position the gearbox **7-02** on the four raised sockets on the underside of the upper deck **1-01**. Taking care not to damage the deck details, fix the gearbox housing in place with four **PB** screws. Carefully turn the fore section of the upper deck right side up.



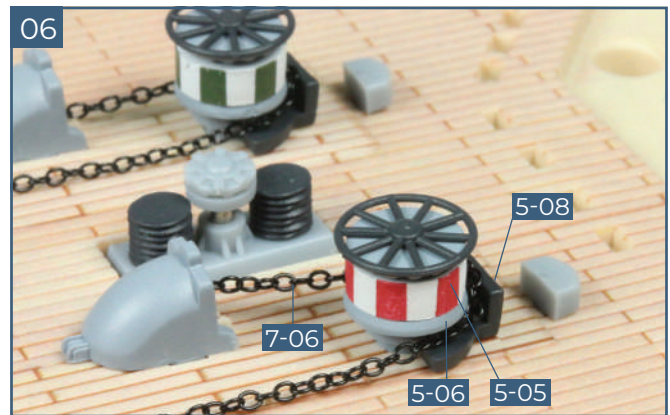
Apply a little superglue to the bottom of the capstan head **1-04** supplied with stage 01. Glue part **1-04** to the end of shaft **9-02**, which protrudes through the hole in the warping winch baseplate **1-02**. Two other shafts show through holes in the deck (indicated by arrows).



Fit the two capstans **5-05** assembled in stage 05, on the splines on the ends of shafts **9-01** (see also two arrows in photo 3). Note that the green capstan should be on the starboard (right) side and the red capstan on the port (left).



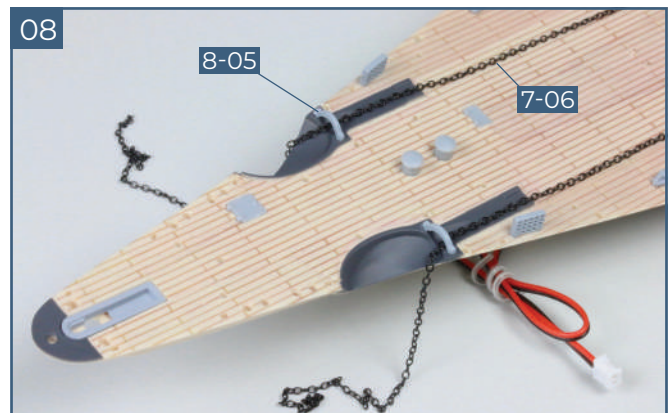
Take the starboard anchor chain **7-06** and wrap it around the base of the green capstan **5-05**. The chain should run between the shaft **5-06** and the anchor chain guide **5-08**.



Wrap the port anchor chain **7-06** around the red capstan **5-05**. Again, it passes between the shaft **5-06** and the anchor chain guide **5-08**.

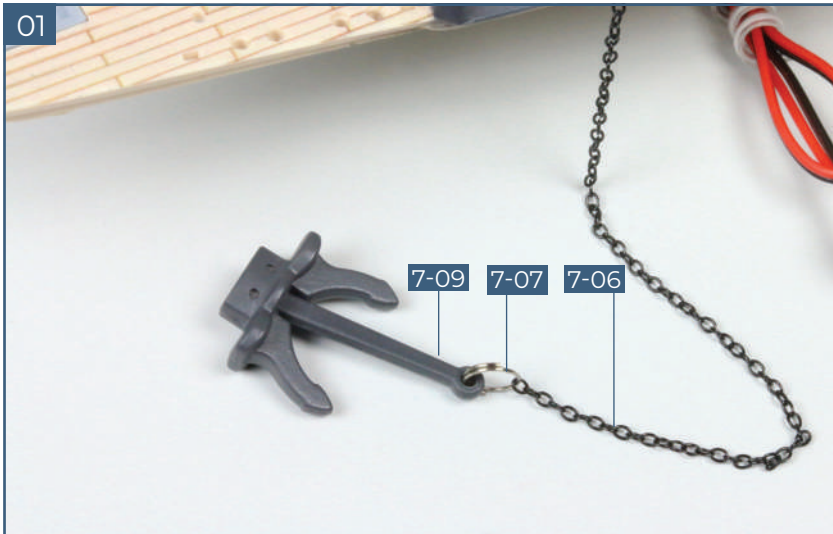


Thread the port anchor chain **7-06** along the upper deck towards the bow and through the anchor bracket **8-05**.

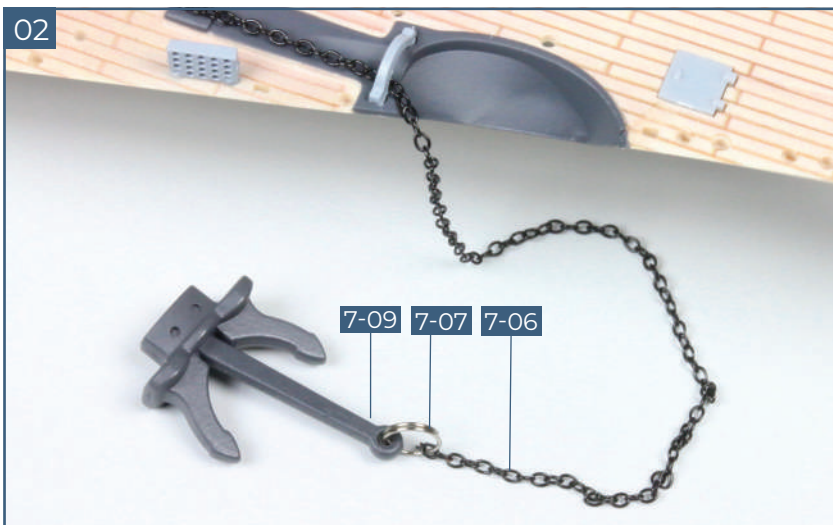


The starboard anchor chain **7-06** runs from the capstan drum towards the bow and beneath the anchor bracket **8-05**.

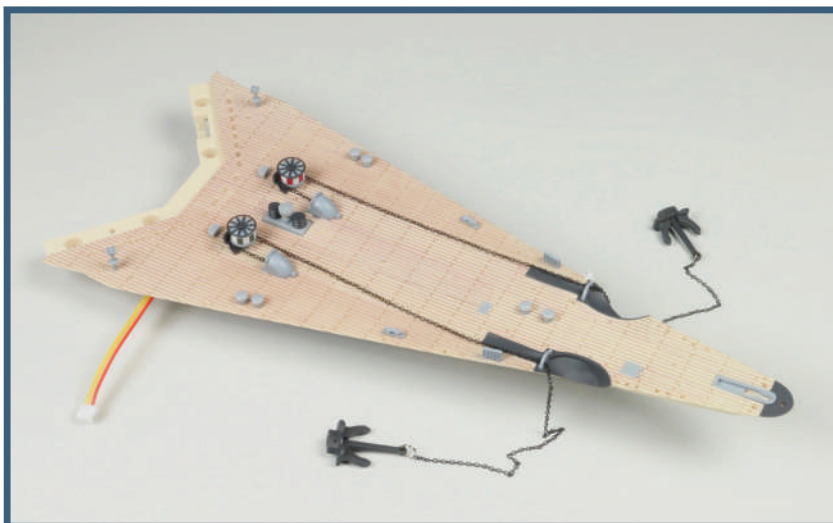
04. ATTACHING THE TWO SIDE BOW ANCHORS



Take out the two anchors assembled in stage 07. Take one of the anchor chains **7-06** and a ring **7-07**. Carefully lever the ring open so that you can thread it through the last link in the chain. You may find it helpful to use tweezers and a magnifying glass.



Repeat the last step on the other side of the upper deck so the second ring **7-07** is threaded through the last link on the second anchor chain **7-06** as shown.

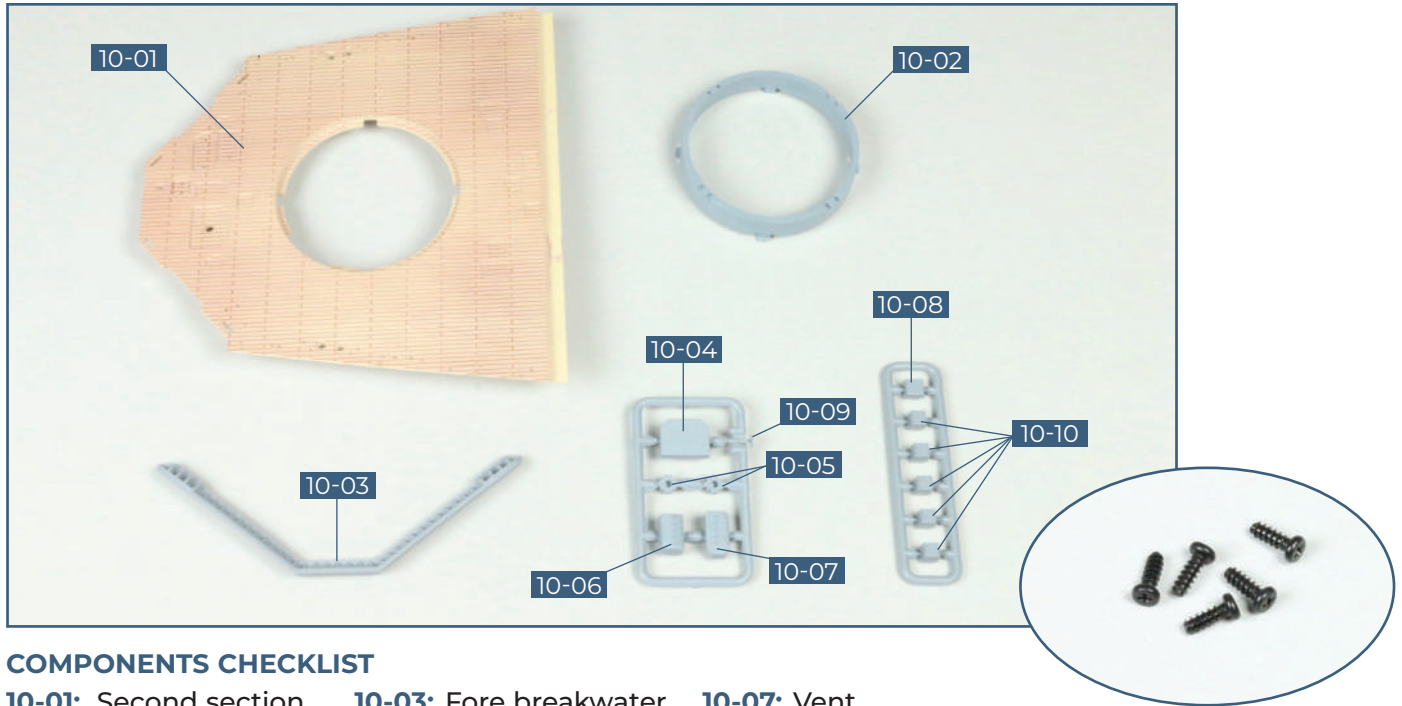


Completed work

The gearbox for the bow anchor is completed and mounted under the forward section of the deck. The anchor chains have been positioned so that they wrap around the capstans, and the anchors have been attached to the chains.

STAGE 10

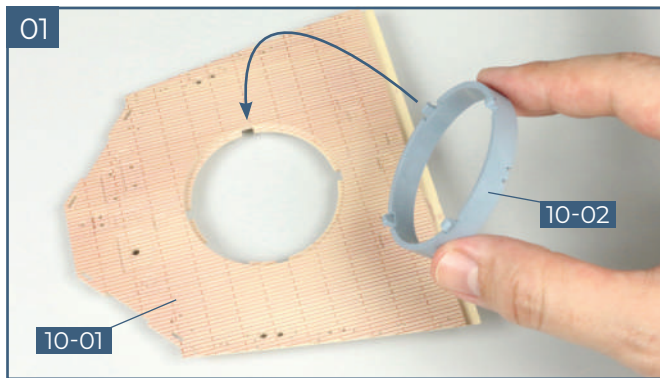
THE SECOND SECTION OF THE UPPER DECK



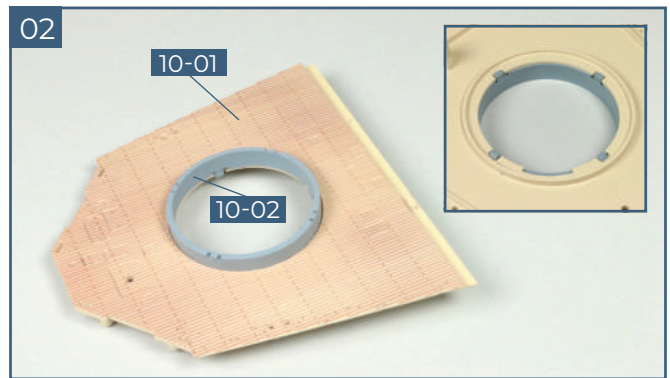
COMPONENTS CHECKLIST

- | | | | |
|--|-------------------------------|------------------------------|---------------------------------|
| 10-01: Second section of the upper deck | 10-03: Fore breakwater | 10-07: Vent | |
| 10-02: Barbette (turret A) | 10-04: Vent | 10-08: Hatch | PB: Five 2 x 6 mm screws |
| | 10-05: Two skylights | 10-09: Handwheel | |
| | 10-06: Vent | 10-10: Five skylights | |

01. THE BARBETTE FOR THE FOREMOST TWIN TURRET

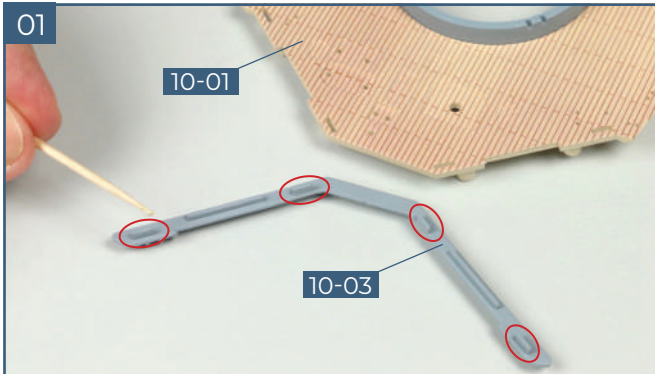


Place the second upper deck section **10-01** on your work surface. Take the barbette **10-02** and insert it in the opening on the upper deck. The four tabs should fit in the recesses (as indicated by the arrow).

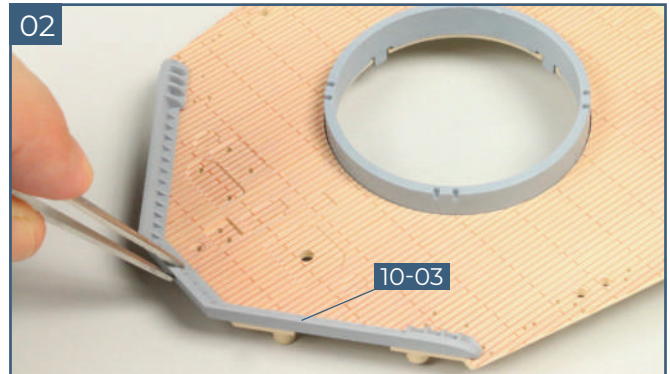


The main photo shows the barbette **10-02** in place on the upper deck section **10-01**. The inset shows the two parts from underneath with the four tabs fitted into the recesses.

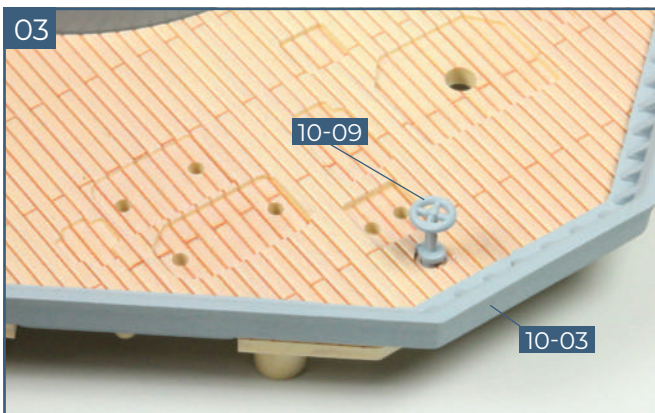
02. DETAILS FOR THE SECOND UPPER DECK SECTION



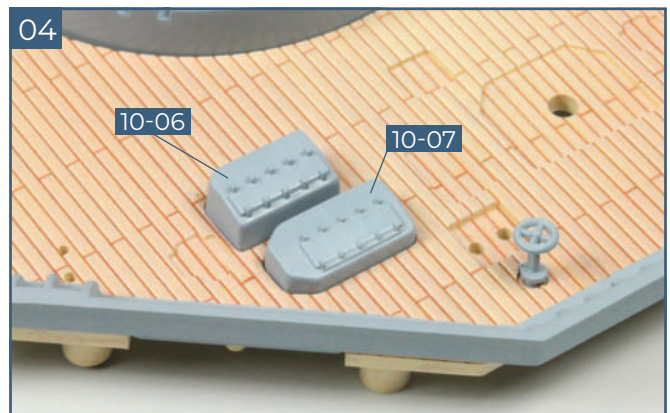
Place the front breakwater **10-03** upside down in front of the upper deck section **10-01**. Apply thick superglue to the four tabs on the breakwater (circled).



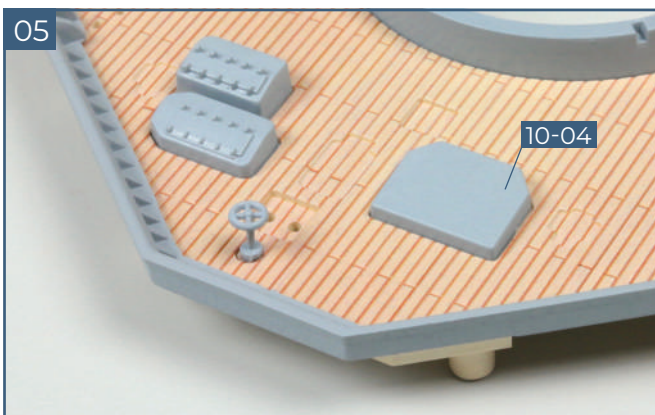
Fix the breakwater **10-03** in place so the tabs on **10-03** fit into the recesses at the front edge of the upper deck section **10-01**. It is helpful to use tweezers for this step.



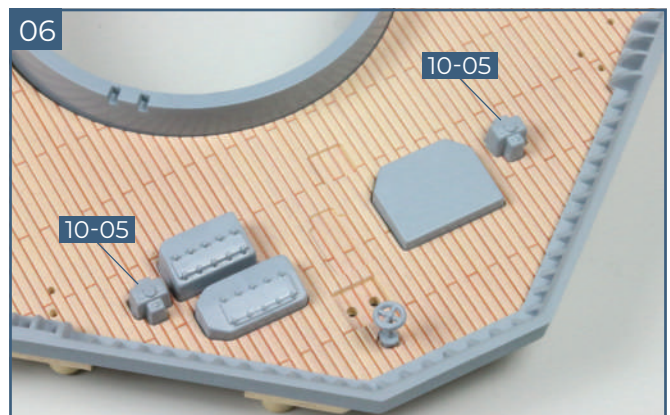
The handwheel **10-09** is fitted behind the breakwater **10-03**. Apply a little thick superglue to the peg on the base of **10-09** to fix it in place.



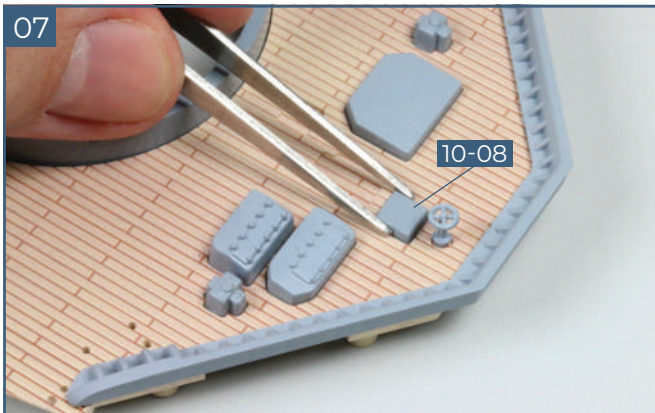
Glue the vents **10-06** and **10-07** into the recesses in the front area of the upper deck section **10-01**, as shown.



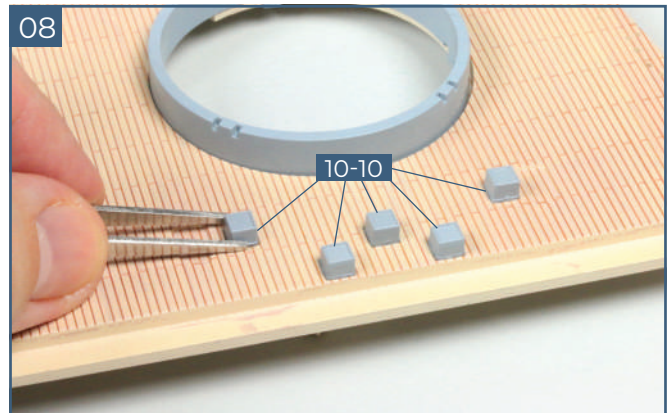
The vent **10-04** is also positioned in the front area of the upper deck section. Apply a little glue to the peg on the base of **10-04** to hold it in place.



Take the two skylights **10-05**. Check their orientation in the recesses on the deck into which they fit. Apply thick superglue to the undersides of the skylights **10-05** and fix in place on the deck section as shown.

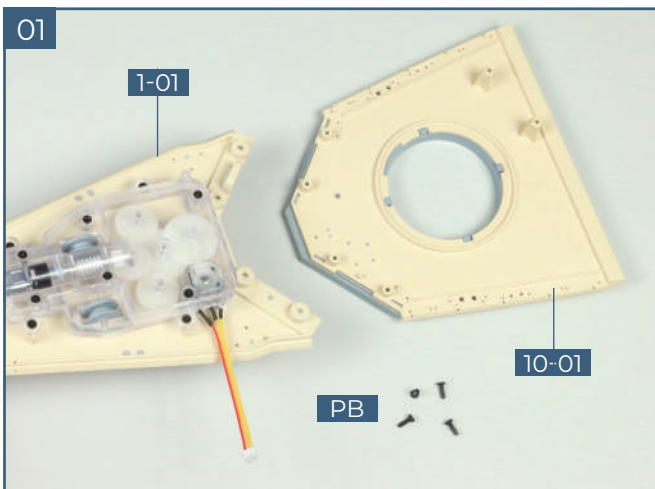


Take the hatch **10-08** and glue it in place behind the handwheel on the upper deck section as shown.

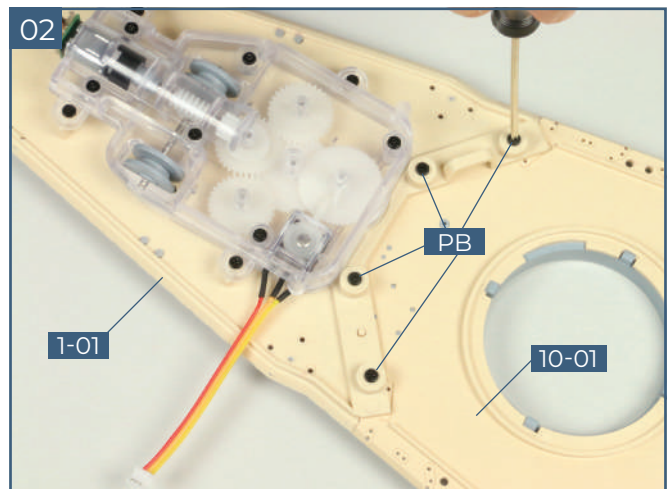


At the very back of the upper deck section identify the recesses for the five identical skylights **10-10** behind the barrette. Glue them in place.

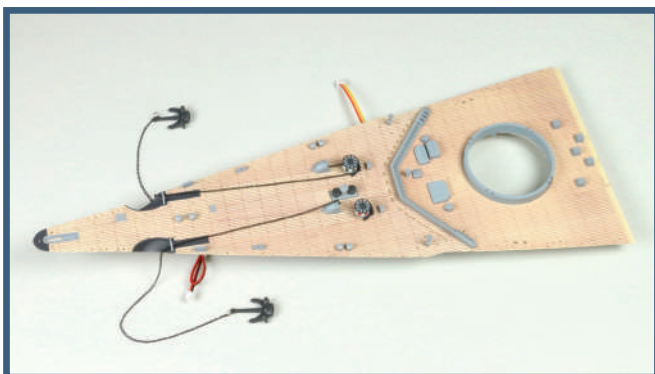
03. ASSEMBLING THE UPPER DECK PARTS



Taking care not to damage any of the parts that have already been fitted, turn the front of the upper deck **1-01** and the second upper deck section **10-01** upside down. You will need four **PB** screws to fix them together.



Fit the lip on the edge of the forward deck section **1-01** over the raised screw sockets on the second deck section **10-01**. Again, take care not to damage any of the parts on the other side. Fix them together with four **PB** screws.

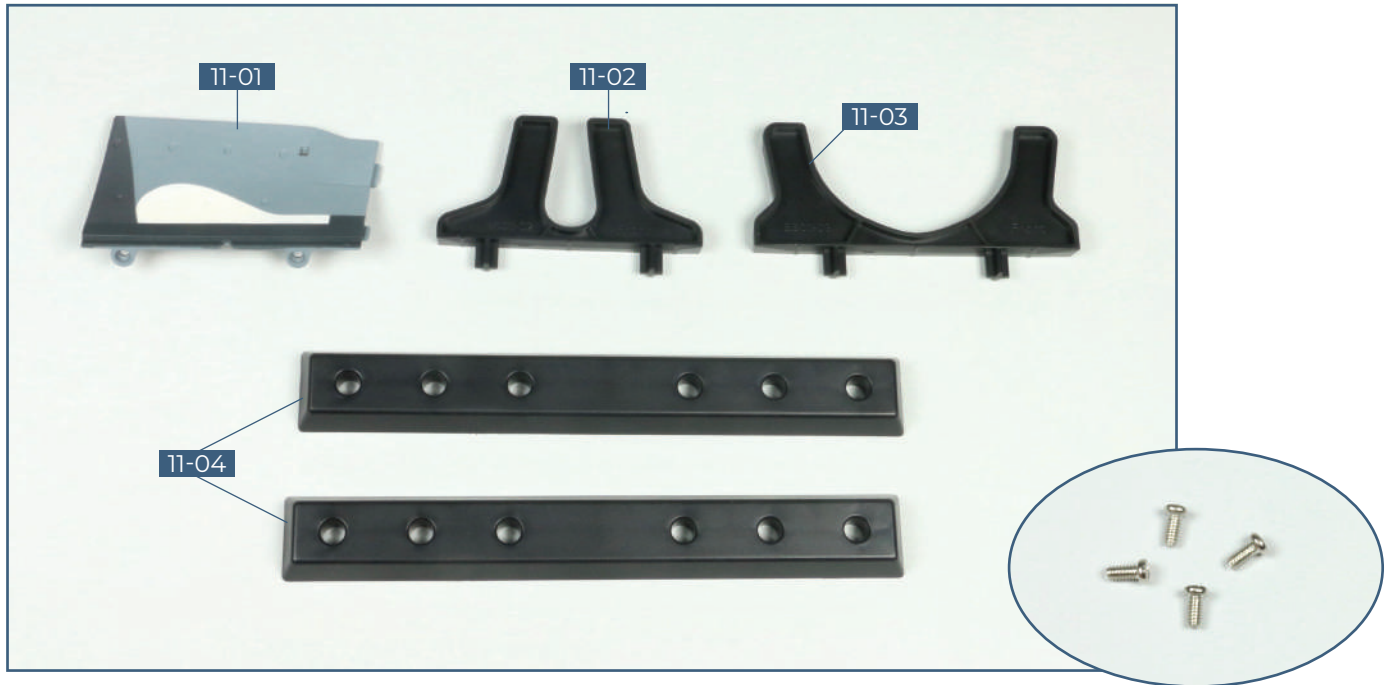


Completed work

The second upper deck section has been fitted with various details and then attached to the forward section of the upper deck.

STAGE 11

THE PORT HULL AND SUPPORT STAND



COMPONENTS CHECKLIST

11-01: Second port hull section

11-03: Hull support (2)

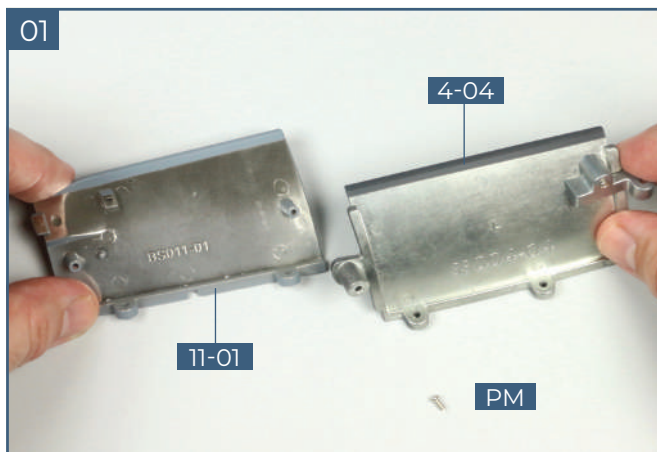
PM: Four 2 x 4 mm screws

NOTE: You will also need additional **PM** screws supplied with Stage 04.

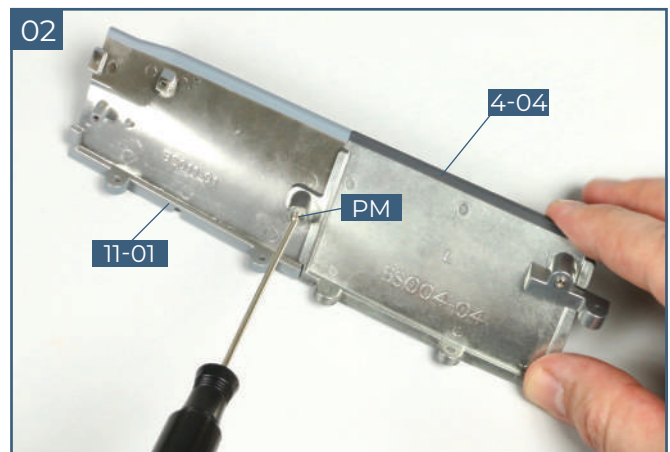
11-02: Hull support (1)

11-04: Two support bases

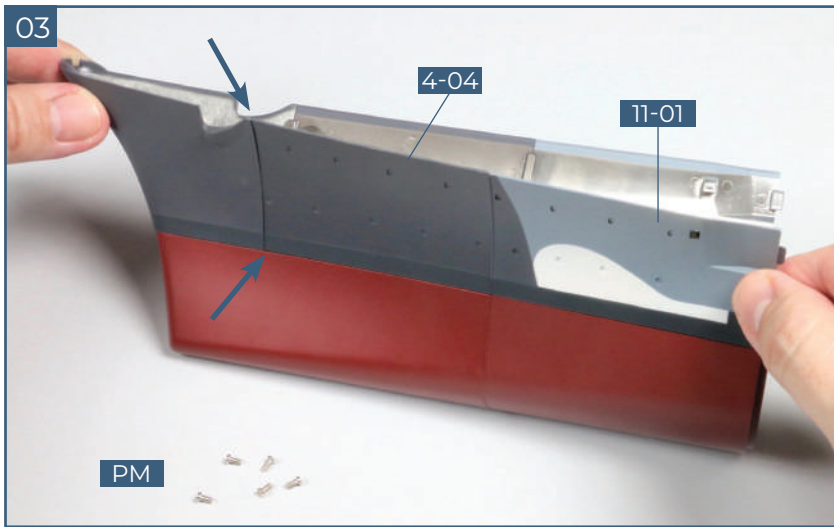
01. TWO SECTIONS OF THE PORT HULL ARE ASSEMBLED



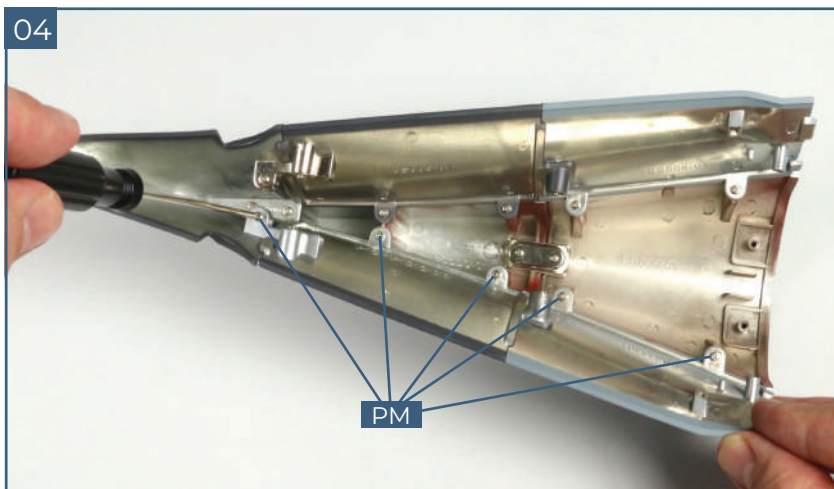
Take the first port hull section **4-04** (from stage 04) and align it with the second port hull section **11-01** so that the raised socket on **11-01** fits into the hollow socket on **4-04**.



Check that the parts are flush and then fix the hull sections together with a **PM** screw.

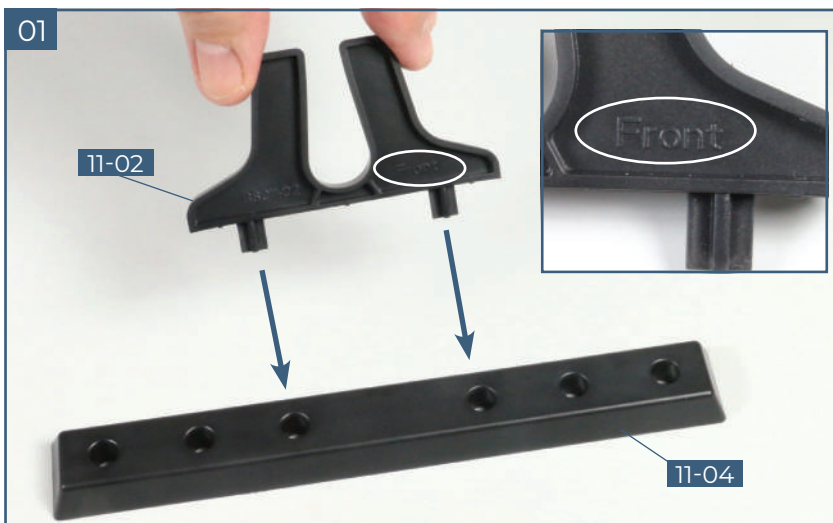


Check how the assembly **4-04/11-01** fits on the parts of the hull that have already been assembled. The upper edge of part **4-04** should be flush with the bow section of the hull (see blue arrows) and there should not be a gap where the upper sections of the hull butt up against the section of the hull below the waterline.

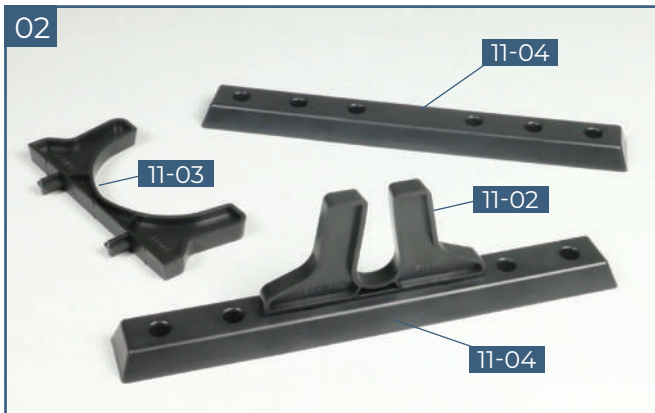


Using the **PM** screws supplied in stage 04 and in this stage, join the assembly **4-04/11-01** to the hull. The positions of the five **PM** screws are indicated by the blue lines.

02. ASSEMBLING THE SUPPORT STAND



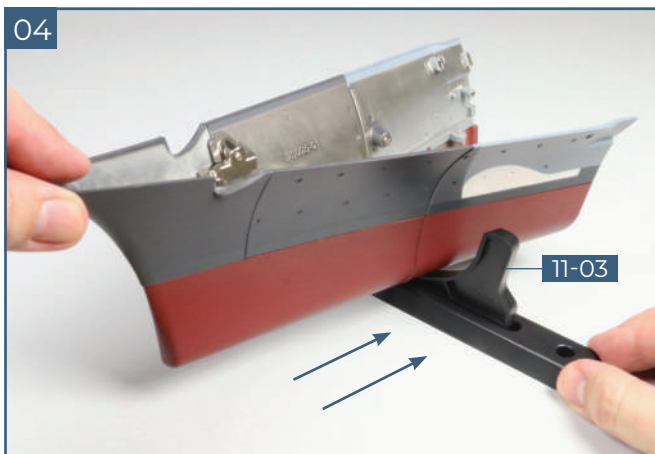
Place one of the two support bases **11-02** on your work surface. Take the bracket **11-02** and fit the pegs on the lower edge into the two inner holes of the base, as indicated. Note that all supports have a front and a back, as shown in the inset.



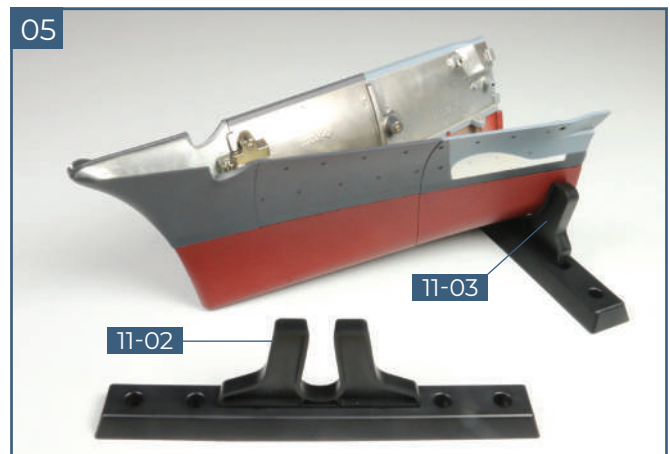
The photo shows the assembled support bracket for the bow of the model. Place the second support **11-03** and the support base **11-04** on your work surface.



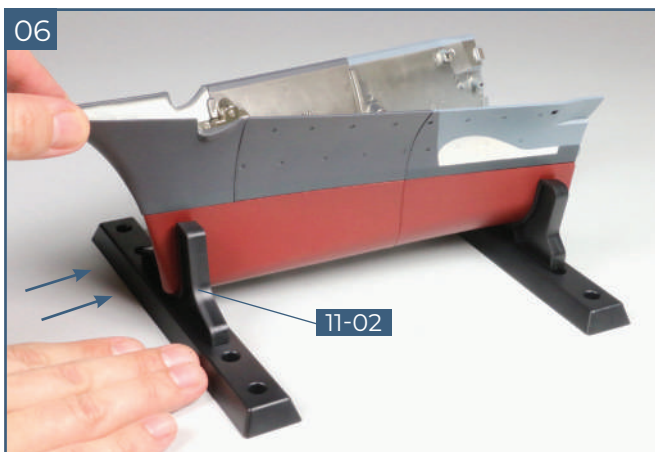
Fit the pegs on the lower edge of **11-03** into the holes of the second support base **11-04**.



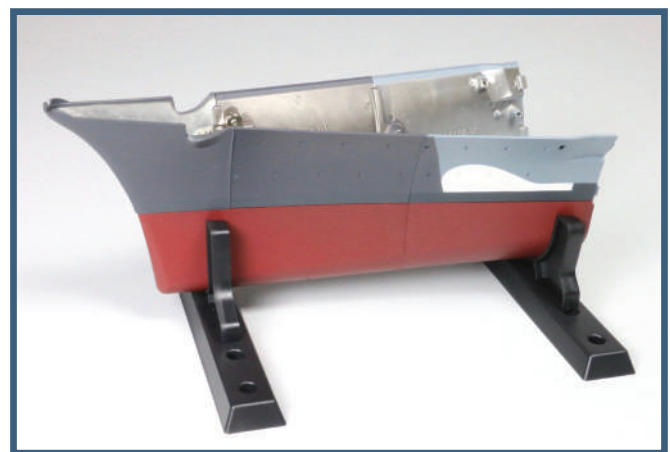
Fit the hull into the support **11-03**. Gradually slide the support to the rear of the hull, as indicated. The side of the support labelled "front" should be facing the bow.



The photo shows the support stand pushed as far back along the hull as possible



Slide the bow support stand **11-02/11-04** back from the bow. Again, the side of the support labelled "front" should be towards the bow.

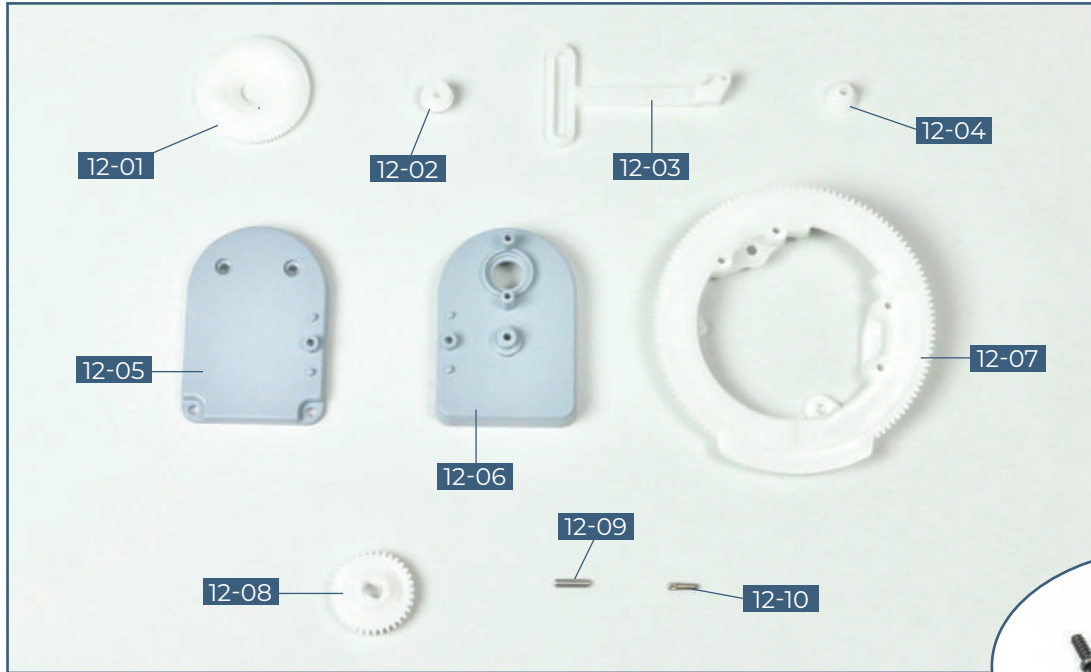


Completed work

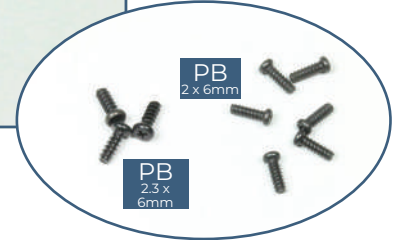
The length of the port side of the hull has increased. The hull is safely supported on the first two stands.

STAGE 12

GEARBOX FOR THE FORWARD GUN TURRET



Note: The screws are the same type but have different diameters and threads.



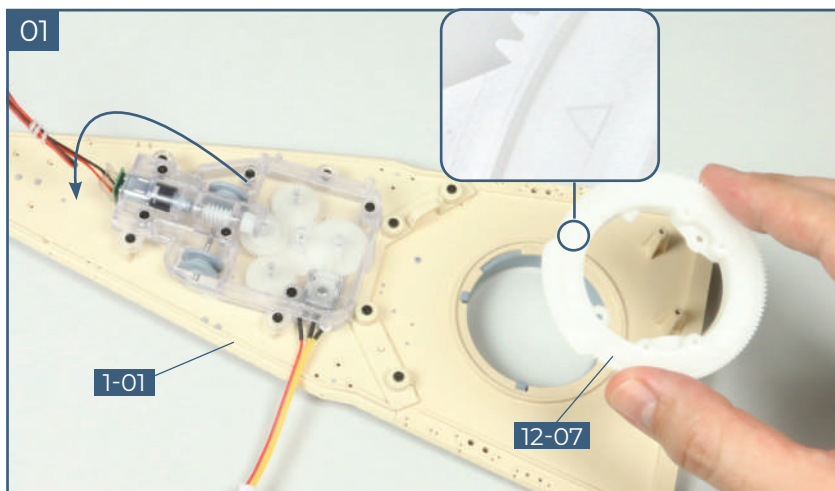
COMPONENTS CHECKLIST

- | | |
|------------------------------------|-------------------------------|
| 12-01: Cog 1 | 12-06: Gearbox housing |
| 12-02: Cog 2 | 12-07: Cog 3 |
| 12-03: Gear lever mechanism | 12-08: Cog 4 |
| 12-04: Hub | 12-09: Smooth shaft |
| 12-05: Gearbox housing | 12-10: Splined shaft |

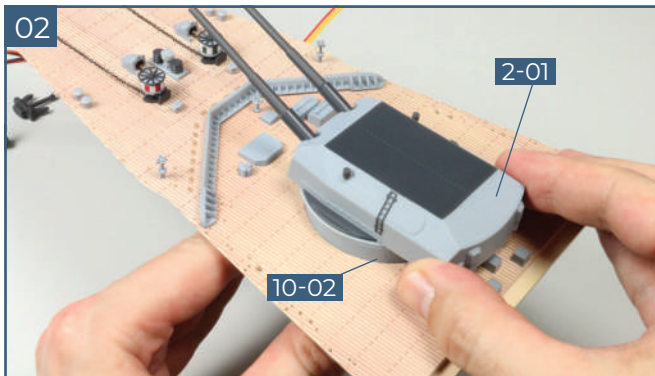
PB: Six 2 x 6 mm screws

PB: Three 2.3 x 6 mm screws

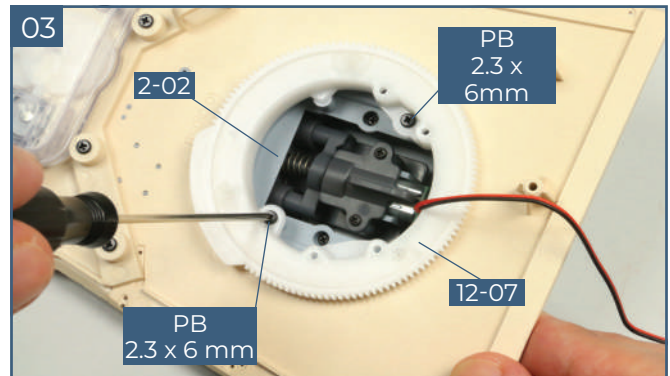
01. ASSEMBLING THE FRONT 38cm GUN TURRET



Place the upper deck section **1-01** upside down on your worktop, taking care not to damage any of the parts that are fixed to the deck. Take cog 3 **12-07** and fit it into the circular hole for the front turret. The orientation of the gear is indicated by the small triangle (see detail image), which should point towards the bow. This triangle is circled in the main picture. Carefully turn the upper deck right side up, holding cog **12-07** in place.

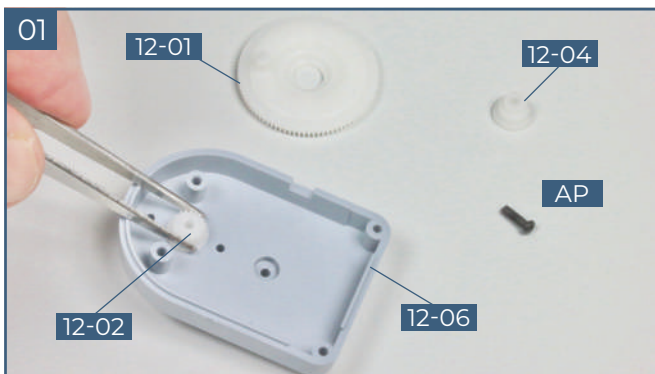


Place the gun turret **2-01** on the barrette **10-02**, guiding the cable through the hole. At the same time, hold cog **12-07** in place on the underside of the upper deck.

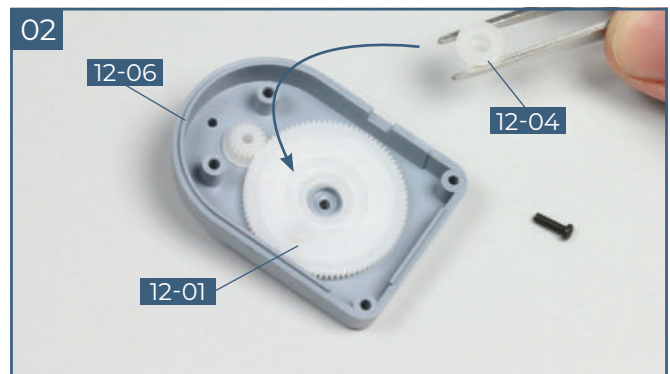


Holding the gun turret in position, turn the deck over again. Fix the turret base **2-02** to cog **12-07** using two **PB** (2.3 x 6 mm) screws, as shown.

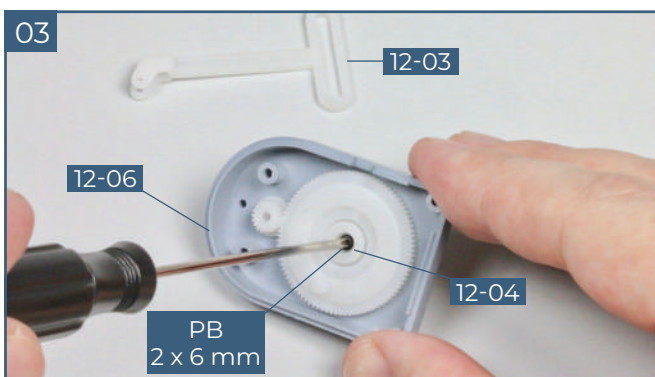
02. THE GEARS FOR THE ELEVATION OF THE GUNS



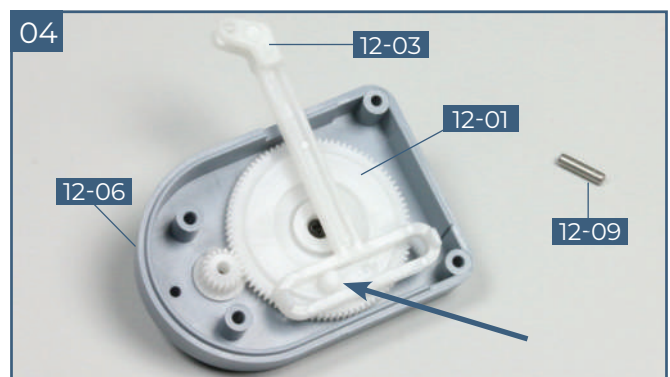
Insert cog **12-02** into the gearbox housing **12-06** with the cog teeth inside. The next parts you need are the cog **12-01**, hub **12-04** and a **PB** (2 x 6 mm) screw.



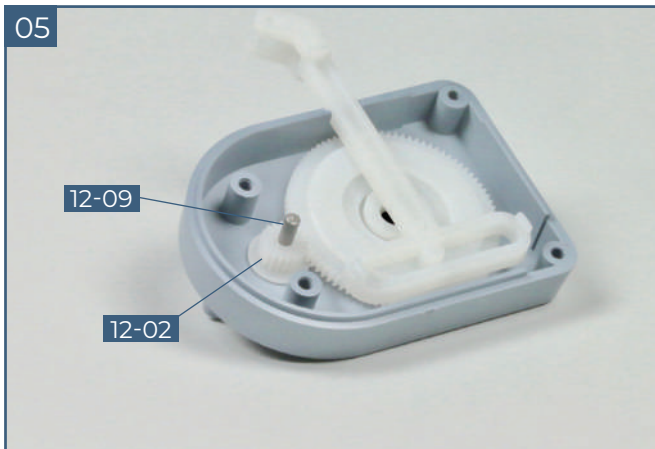
Fit cog **12-01** into the gearbox housing **12-06** with the cog teeth inside. Fit the hub **12-04** into the central opening of **12-01**, as shown.



Attach the hub **12-04** to the gearbox housing **12-06** with an **PB** (2 x 6 mm) screw. Identify the gear lever mechanism **12-03**.



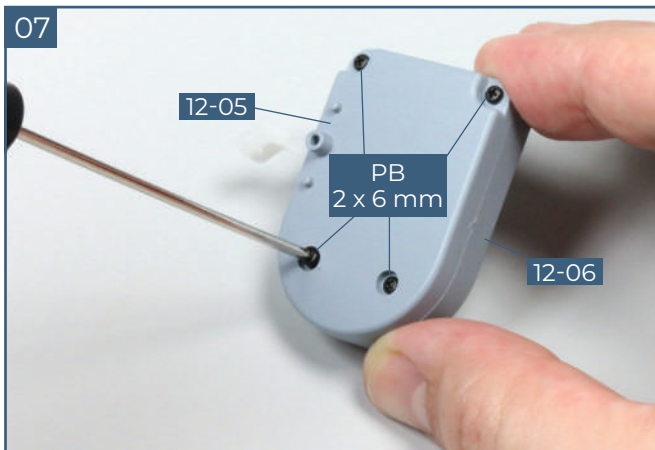
Fit the gear lever mechanism **12-03** in the gearbox housing **12-06** so that the peg on cog **12-01** fits into the slot in part **12-03** (see arrow). The next part to be fitted is the smooth shaft **12-09**.



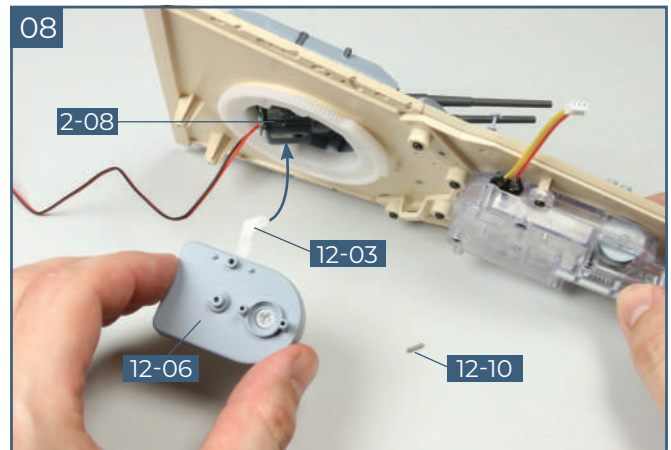
Fit the shaft **12-09** into the central hole in cog **12-02** as shown.



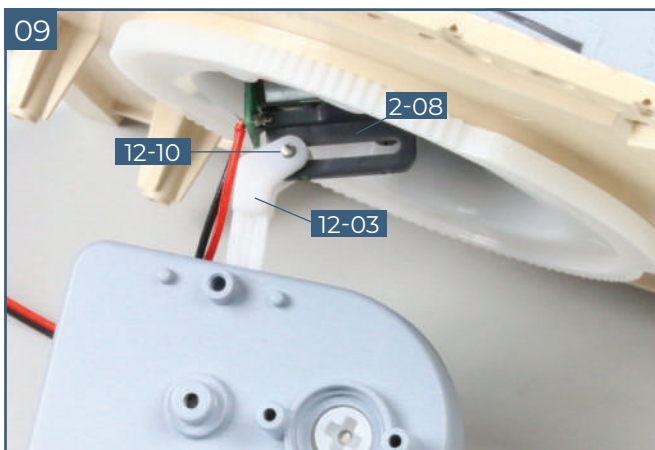
Fit the other half of the gearbox housing **12-05** over part **12-06** as indicated.



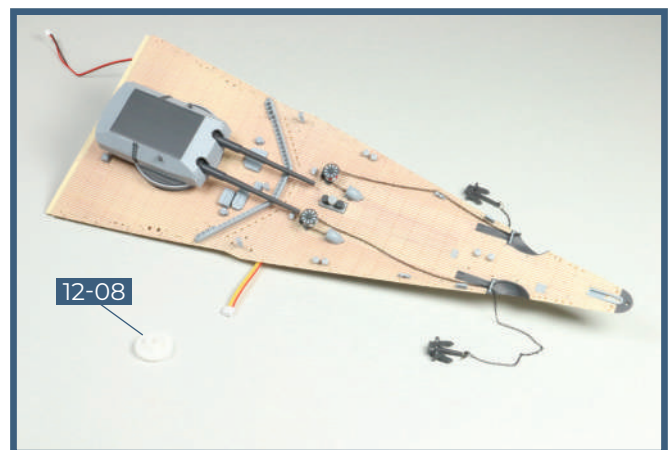
Fix the two halves of the gearbox housing (**12-05** and **12-06**) together, using four **PB** (2 x 6 mm) screws, as shown.



Guide the gear lever mechanism **12-03** through the elongated opening on the motor mount **2-08**, as indicated. Have the splined shaft **12-10** ready.



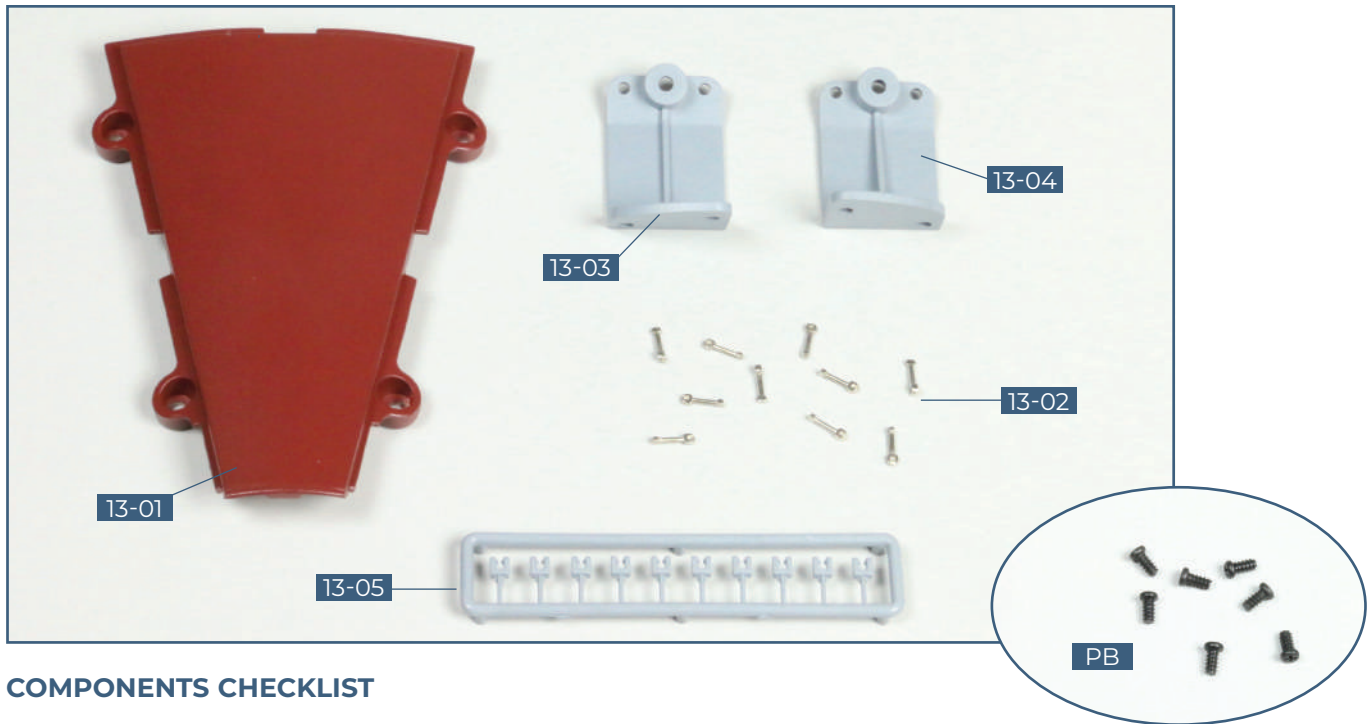
Fix the gear lever **12-03** to the slot in the motor mounting **2-08** by pushing the shaft **12-10** through one hole in the arm of **12-03**, then through the slot in **2-08** and then into the other hole in **12-03**. You may find it helpful to use long-nosed pliers.



Completed work

The first turret is mounted on the deck, with its gearbox in place. Mounting brackets to hold the gearbox in place will be supplied with the next stage. The cog **12-08** will be fitted in stage 14.

STAGE 13 HINGED SUPPORTS FOR THE BREAKWATER



COMPONENTS CHECKLIST

13-01: Third keel section

13-02: Supports x 10

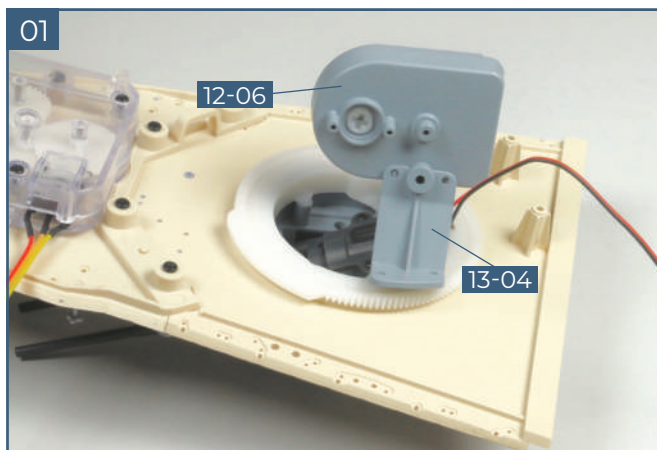
13-03: Left gearbox mounting bracket

13-04: Right gearbox mounting bracket

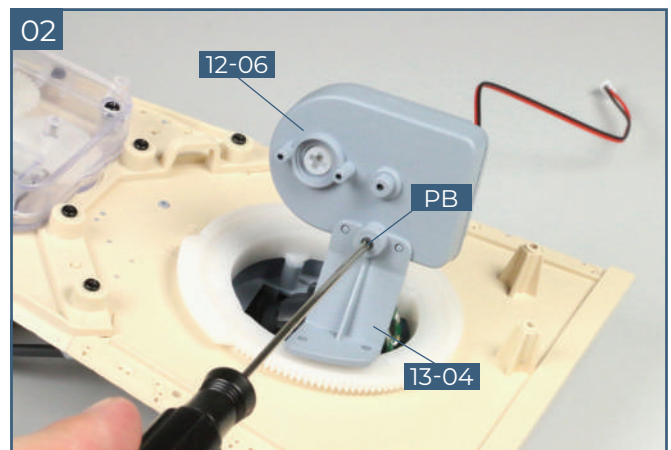
13-05: Hinge joints x 10

PB: Seven 2 x 4 mm screws

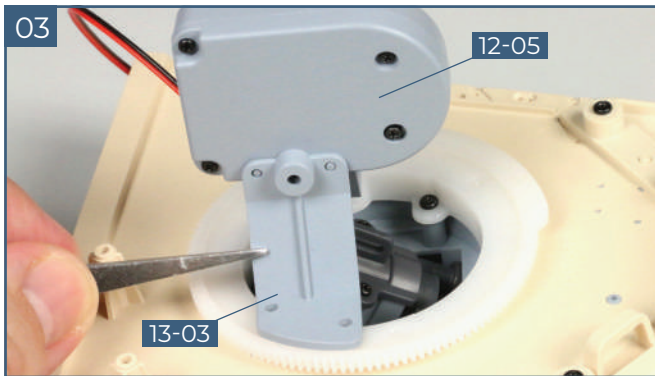
01. MOUNTING THE GUN ELEVATION GEARBOX



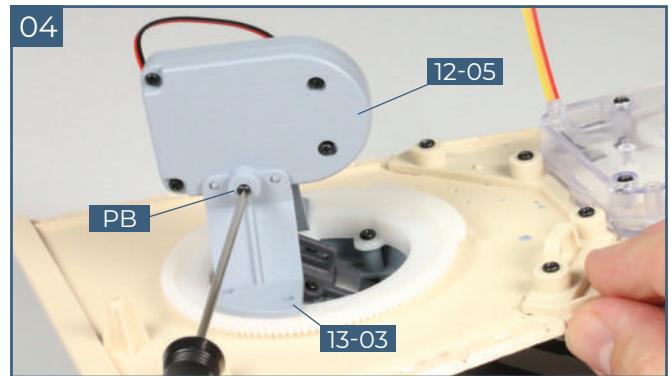
Gently turn the upper deck upside down, taking care not to damage any previously fitted parts. Fit the right gearbox mounting bracket **13-04** onto the three pegs on the gearbox housing **12-06**.



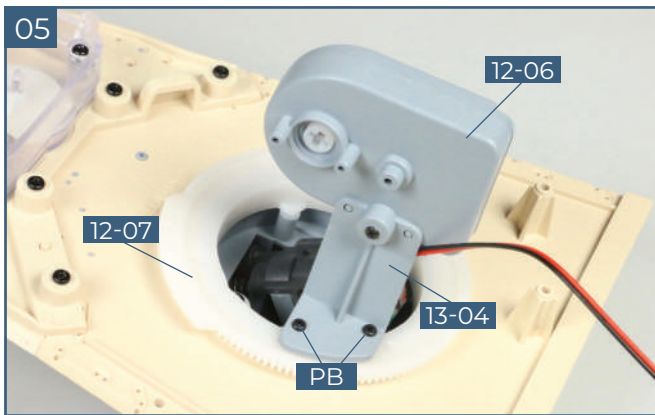
Attach the right gearbox mounting bracket **13-04** to the gearbox housing **12-06** with a **PB** screw as shown.



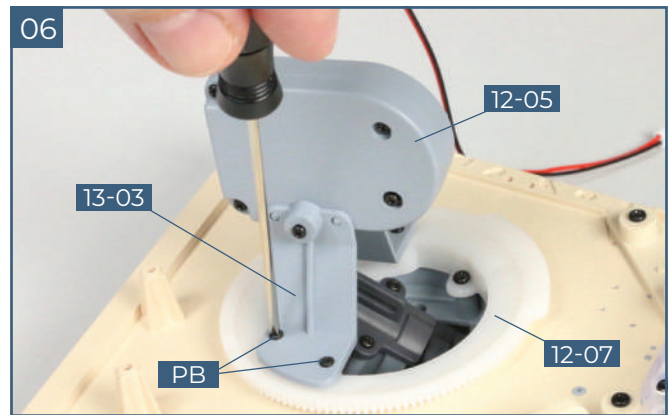
On the other side of the gearbox, fit the left gearbox mounting bracket **13-03** on the pegs on the gearbox housing **12-05**.



Fix the gearbox mounting bracket **13-03** to the gearbox housing **12-05** with a **PB** screw as shown.



On the right side of the gearbox, fix the right gearbox mounting bracket **13-04** to cog **12-07** using two **PB** screws.

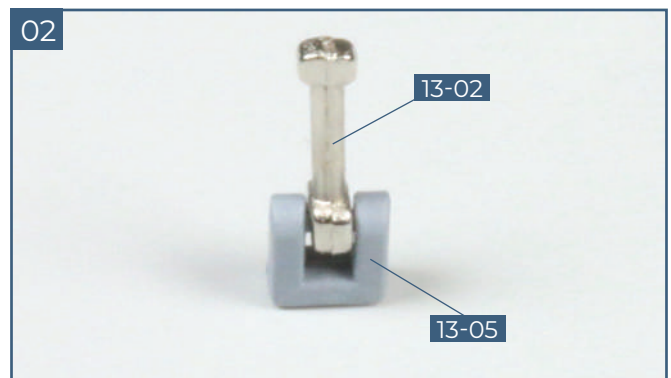


On the left side of the gearbox housing, fix the left gearbox mounting bracket **13-03** to cog **12-07** using two **PB** screws.

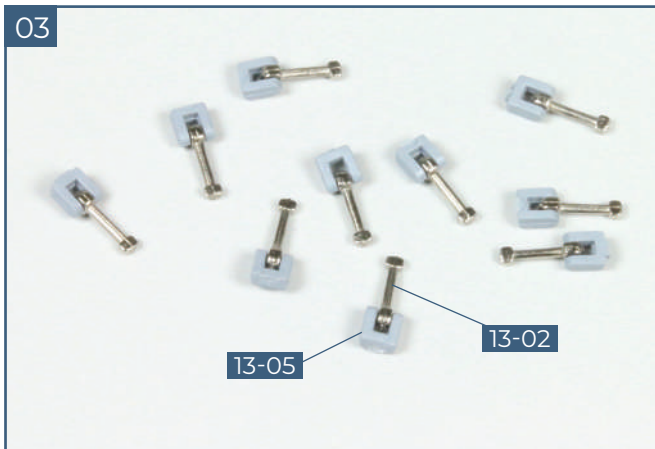
02. THE FIRST HINGED SUPPORTS FOR THE FRONT BREAKWATER



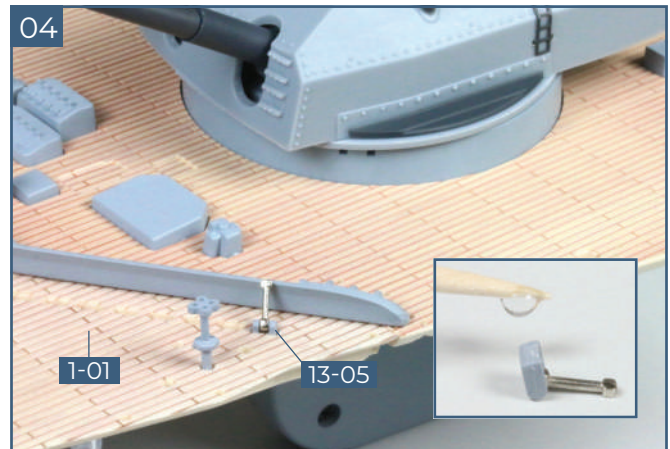
Take one of the supports **13-02**. Separate a hinge joint **13-05** from the plastic framework, taking care that they do not fly off. Use sandpaper to smooth away any unevenness where the part was removed from the framework.



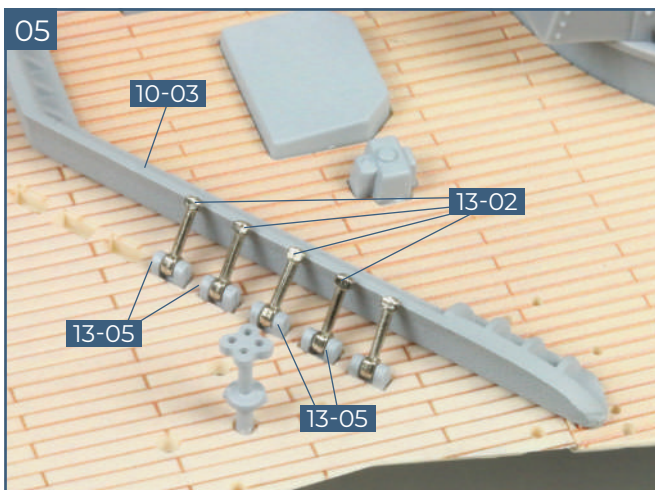
Push the end of the support **13-02** that has a socket into the hinge joint **13-05**. The pins on part **13-05** fit into the socket and lock it in place, but the part **13-02** remains movable. Do not use glue.



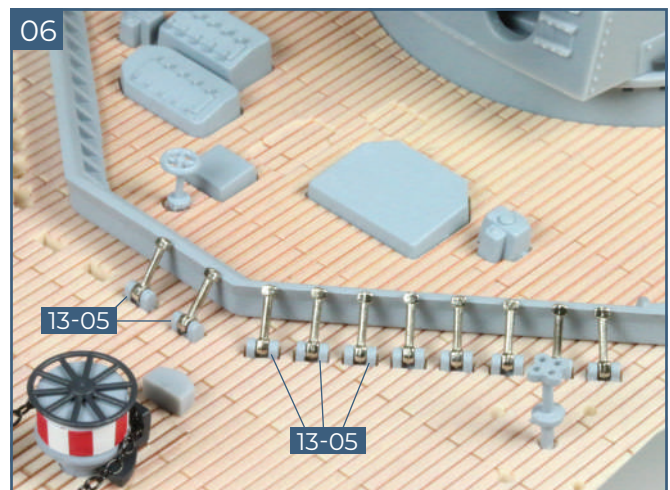
Repeat steps 1 and 2 with the remaining nine supports **13-02** and joints **13-05**, to make a total of 10 hinged supports.



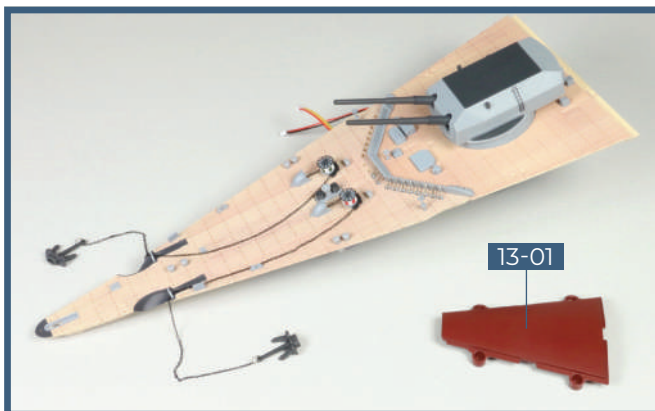
Apply a drop of superglue to the bottom of a hinge joint **13-05** (see inset). Glue it in the outermost recess in front of the breakwater on the port side of the upper deck **1-01** as shown



Continue working along the breakwater, fitting four hinged supports **13-02/13-05** into the next four recess in the deck. The supports **13-02** lean against the front of the breakwater **10-03**.



Glue the five remaining joints **13-05** into the recesses in front of the breakwater on the upper deck **1-01**.

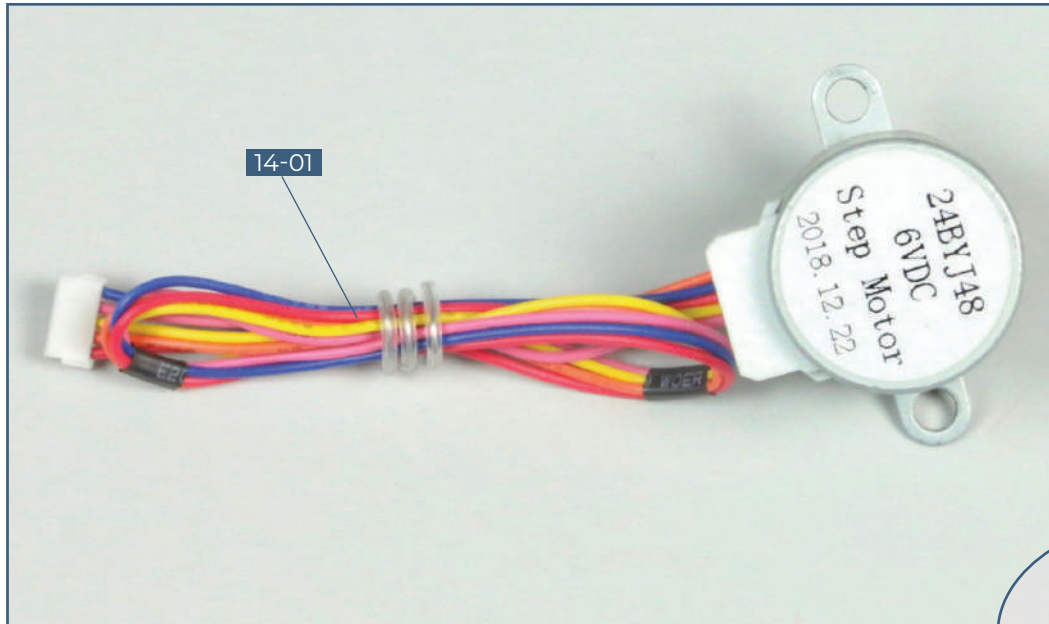


Completed work

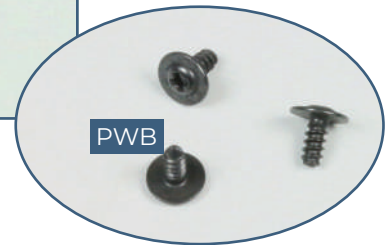
The gun elevation gearbox is fixed under the forward gun and the first 10 hinged supports are mounted in front of the breakwater on the upper deck. The keel section **13-01** will be fitted in a future stage.

STAGE 14

MOTOR FOR THE FORWARD GUN TURRET



Note: The gun turret motor is a step motor, more commonly called a stepper motor, that controls the rotation of the turret in small steps.

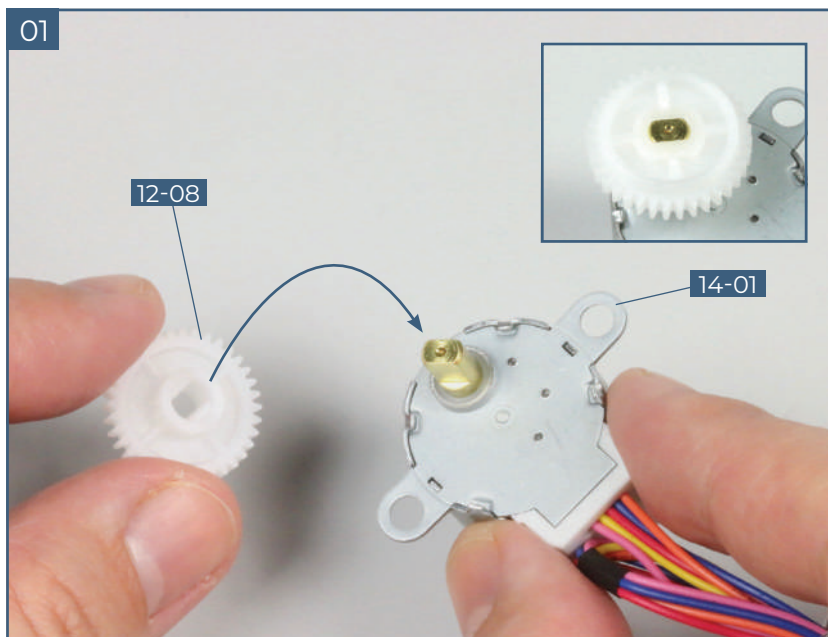


COMPONENTS CHECKLIST

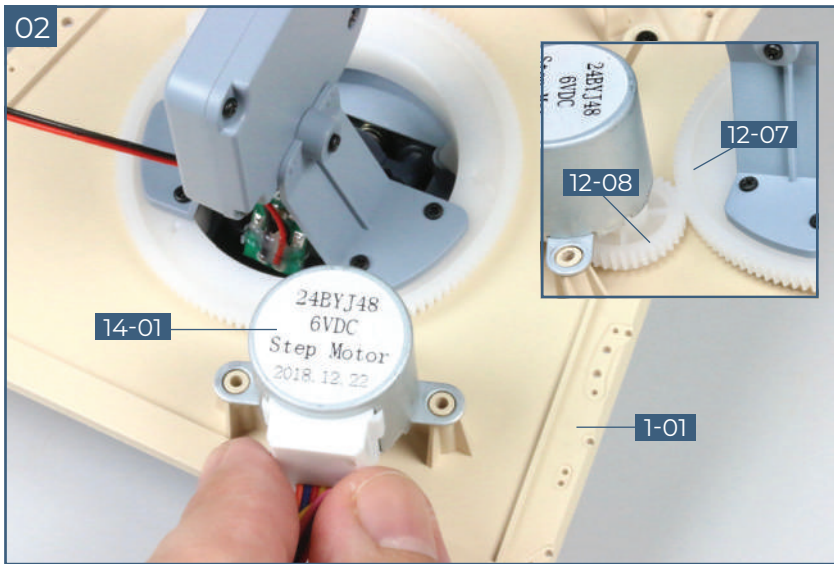
14-01: Gun turret motor

PWB: Three 2.3 x 5mm screws

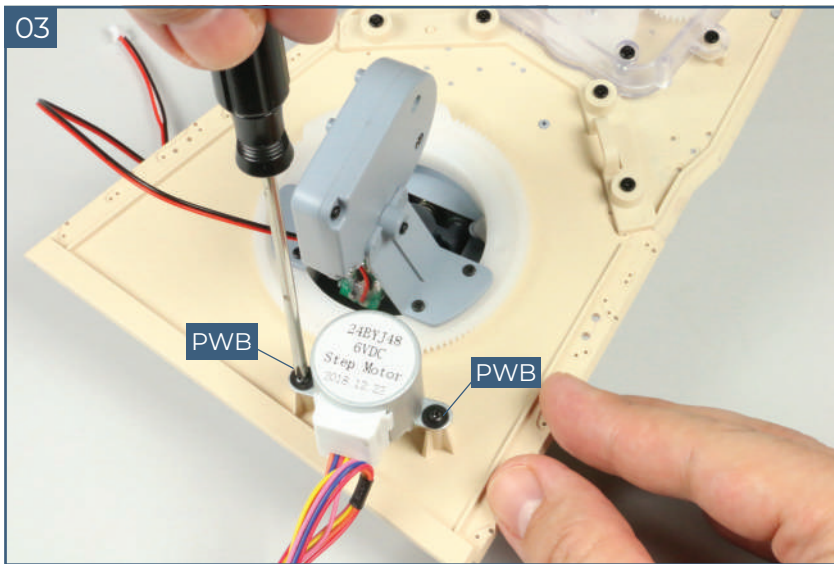
01. FITTING THE GUN TURRET MOTOR



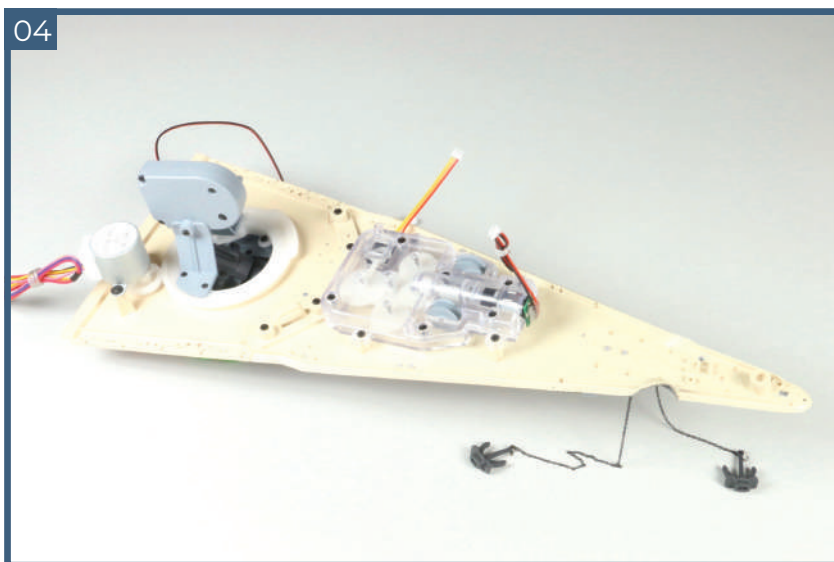
Take the gun turret motor **14-01**. It controls the lateral rotation of the first 38cm gun turret. Fit the cog **12-08** onto the brass rotor of the motor. The cog was supplied with stage 12. Check that you fit it the right way round on the motor. The inset shows the cog correctly fitted.



Place the deck **1-01** upside down on your work surface, taking care not to cause any damage. Position the motor **14-01** on the underside of the deck, as shown, so that the screw holes in the tabs on the sides of the motor are aligned with the raised screw sockets on the deck. When it is in the right position, the teeth of the cogs **12-07** and **12-08** will interlock, as shown in the inset.



Fix the motor in place with two **PWB** screws, as shown.



Completed work

The motor that rotates the forward 38cm gun turret is mounted on the underside of the upper deck.

STAGE 15

HULL ASSEMBLY AND SUPPORTS FOR THE FORE BREAKWATER

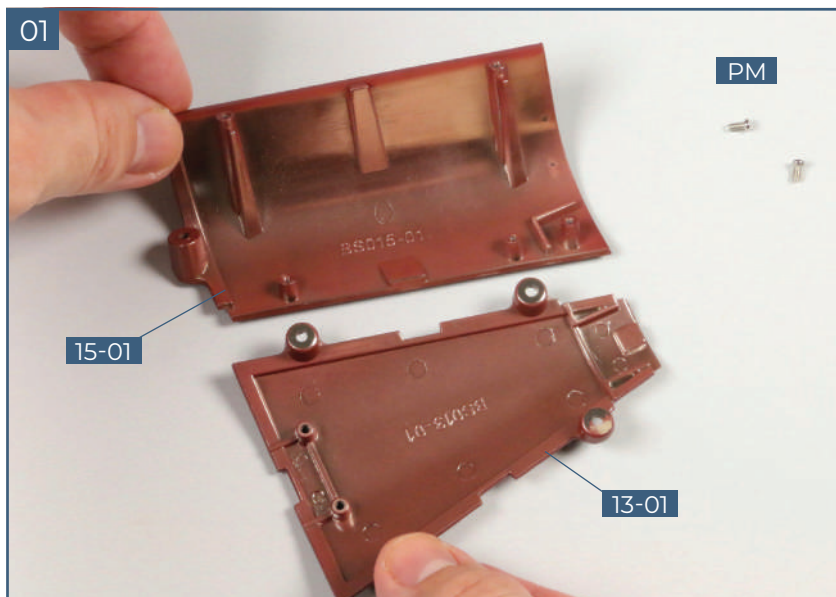


COMPONENTS CHECKLIST

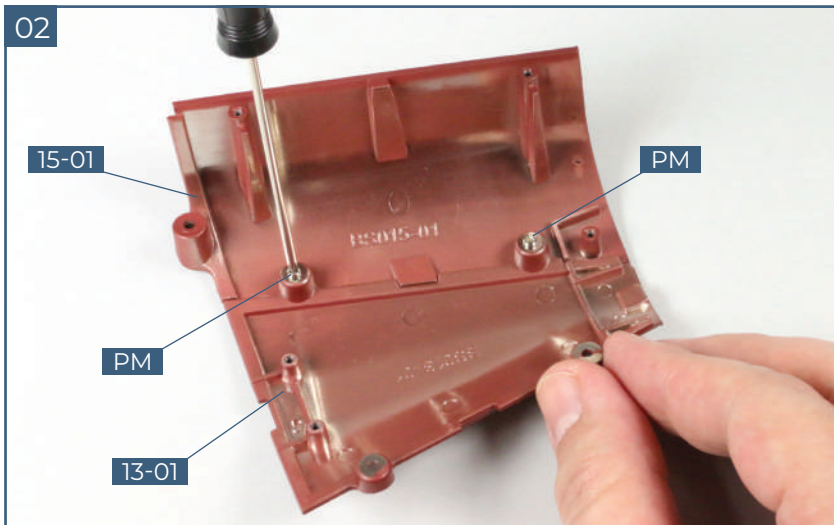
15-01: Port lower hull section
15-02: Hinge joints
 (x10 on a single fret)

15-03: Supports (x10)
PM: Three 2 x 4mm screws

01. JOINING THE KEEL AND LOWER HULL SECTIONS



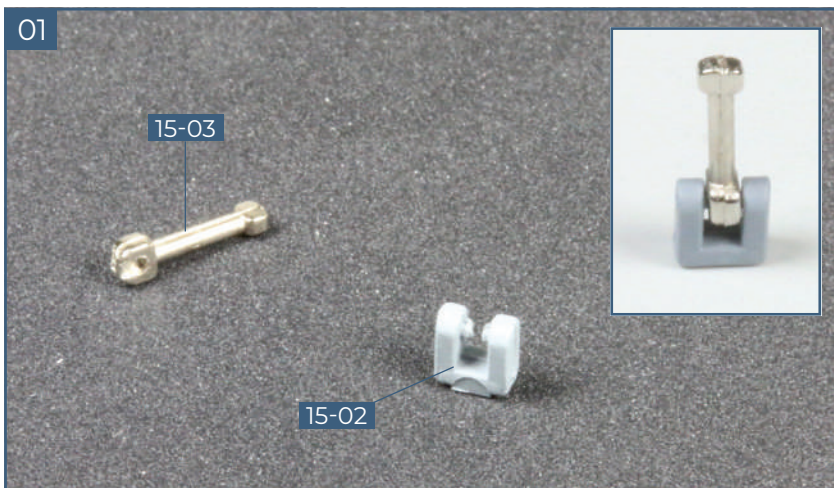
Take the third keel section **13-01** (supplied with stage 13). Fit the two tabs with screw holes on the left side of part **13-01** over the corresponding screw sockets on the lower hull section **15-01**. Have two **PM** screws ready.



Fix the two parts of the hull, **13-01** and **15-01**, together with the two **PM** screws as shown.

Store the assembly safely. It will be needed again in a later stage.

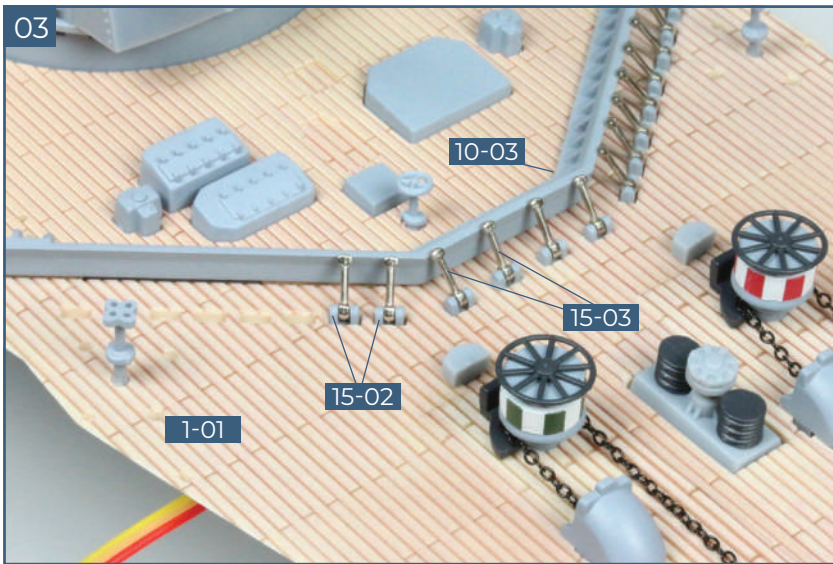
02. FITTING THE LAST 10 HINGED SUPPORTS FOR THE FORE BREAKWATER



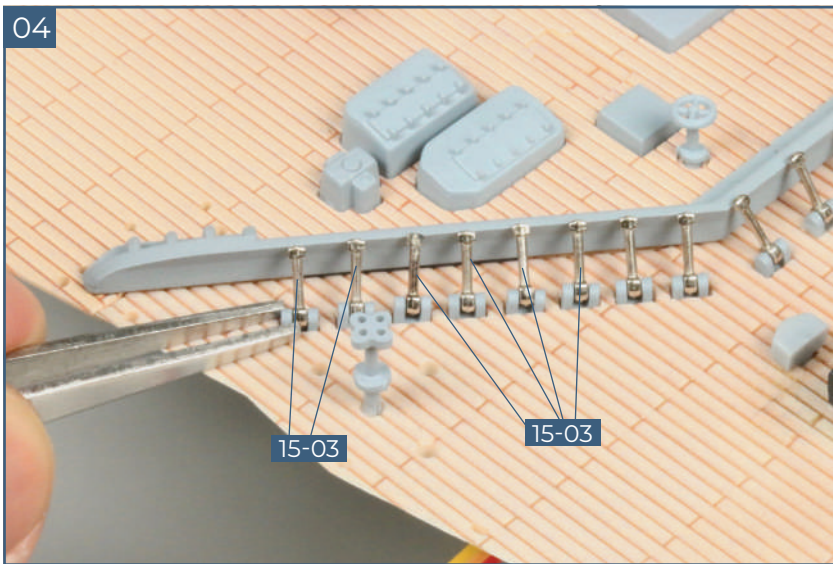
Remove a hinge joint **15-02** from the plastic fret and gently remove any remnants of the bar that connected it to the fret using sandpaper. Take a support **15-03** and push it into the joint **15-02**, as shown in the inset. Note that the metal support should be gripped so that it can swing freely, do not glue it. The use of tweezers might be helpful here.



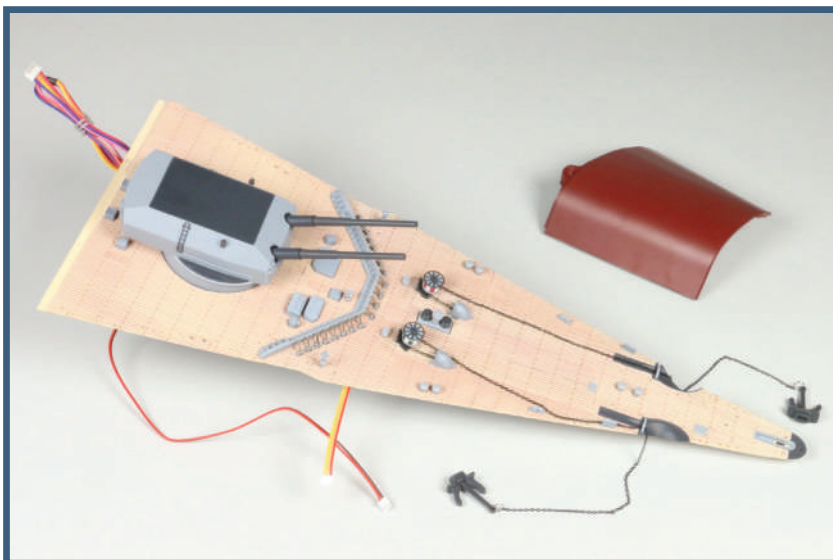
Repeat the process with the other nine hinge joints **15-02** and supports **15-03** to create a total of 10 hinged supports.



Working from the middle of the deck towards the starboard side, glue the hinge joints **15-02** in the recesses in the deck **1-01**. The metal supports **15-03** should lean up against the breakwater **10-03**.



Continue working across the deck to the outer edge so that all 10 hinged supports are glued in place.

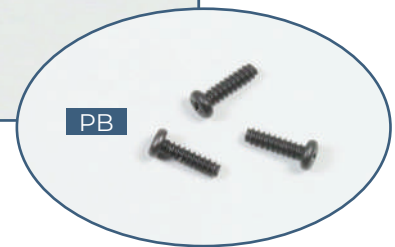
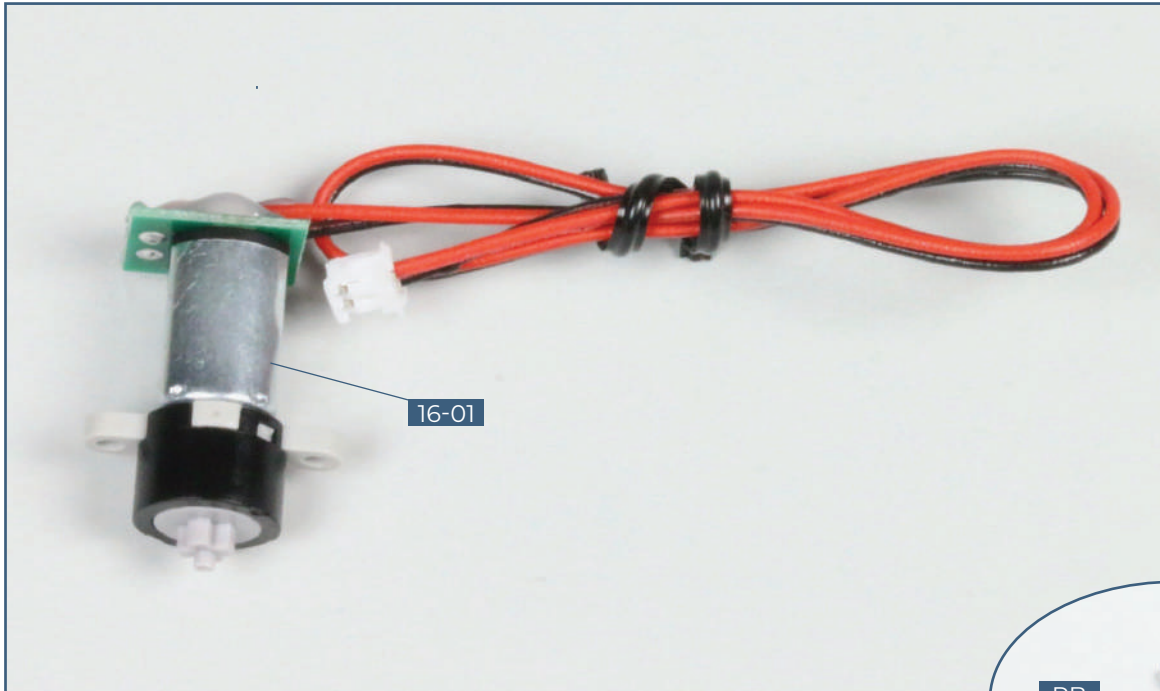


Completed work

Two more hull sections have been fixed together and the complete row of hinged supports is in place in front of the fore breakwater.

STAGE 16

FORWARD GUN ELEVATION MOTOR

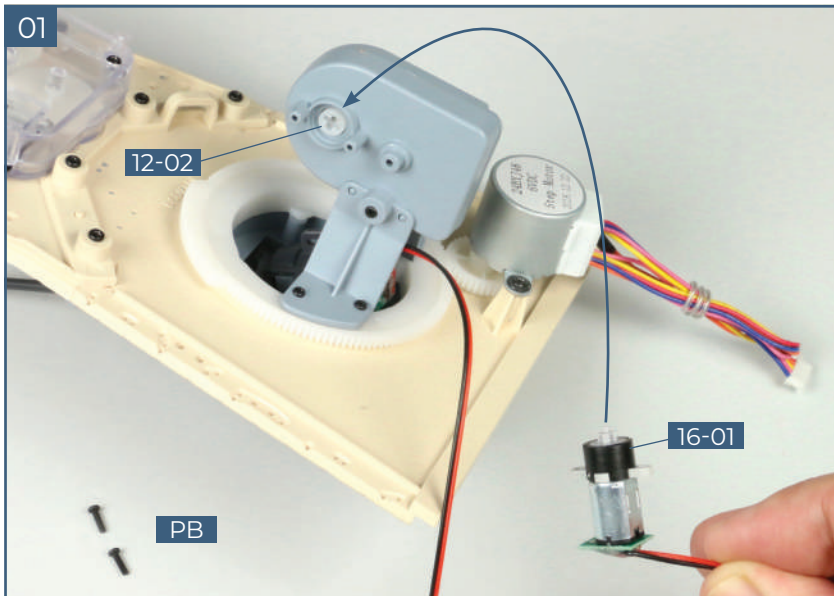


COMPONENTS CHECKLIST

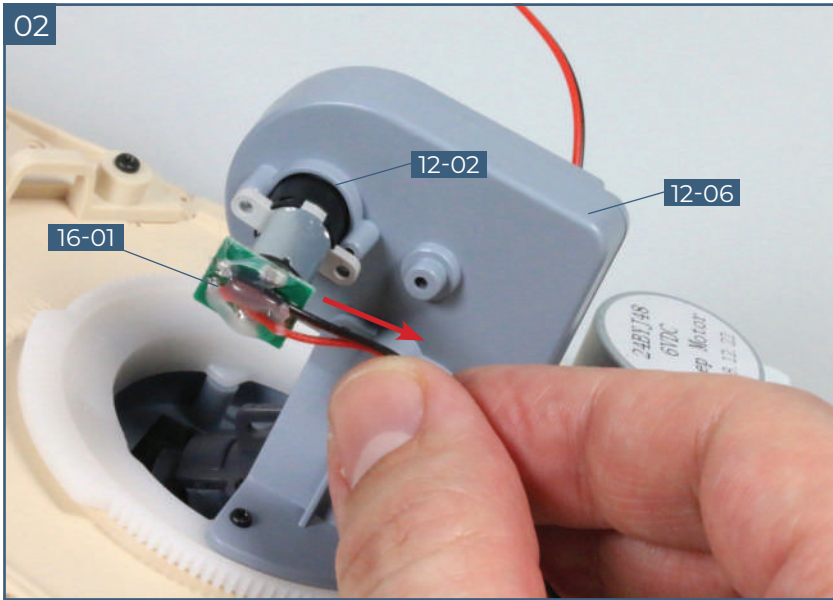
16-01: Elevation motor

PB: Three 1.7 x 6 mm screws

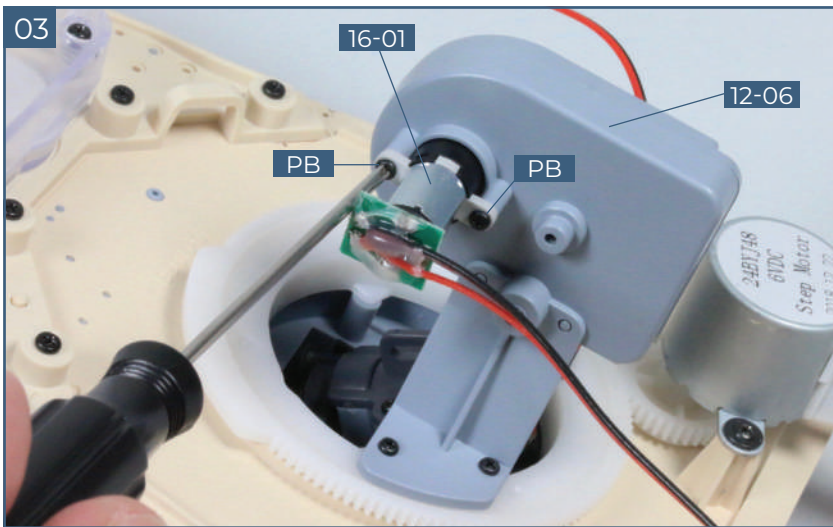
01. FITTING THE ELEVATION MOTOR



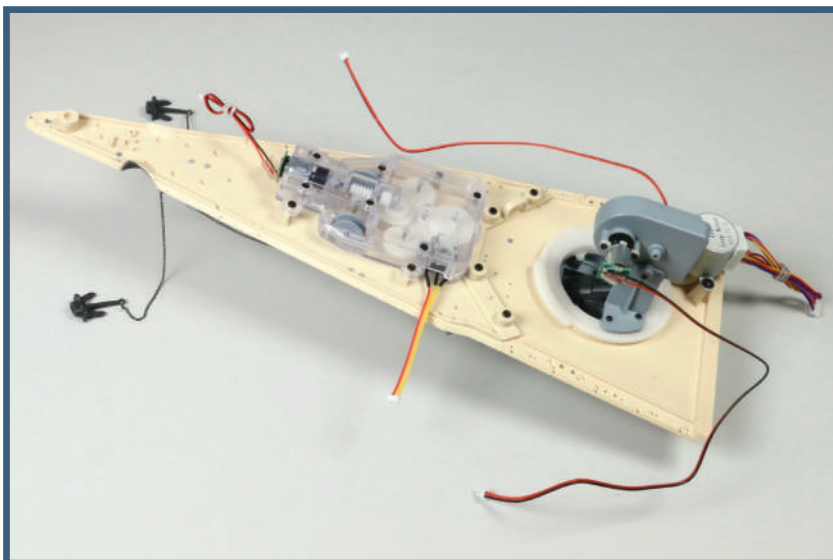
Take the elevation motor **16-01**. Check how the shaft of the motor fits into the cog **12-02**, as indicated by the arrow. Have two **PB** screws ready on your work surface.



Fit the elevation motor **16-01** on the gearbox housing **12-06** so that the shaft of the motor engages with the cog **12-02**. Check that the motor is the right way round, with the cables running towards the aft of the ship, as indicated by the arrow.



Fix the elevation motor **16-01** to the gearbox housing **12-06** using two **PB** screws, as shown.

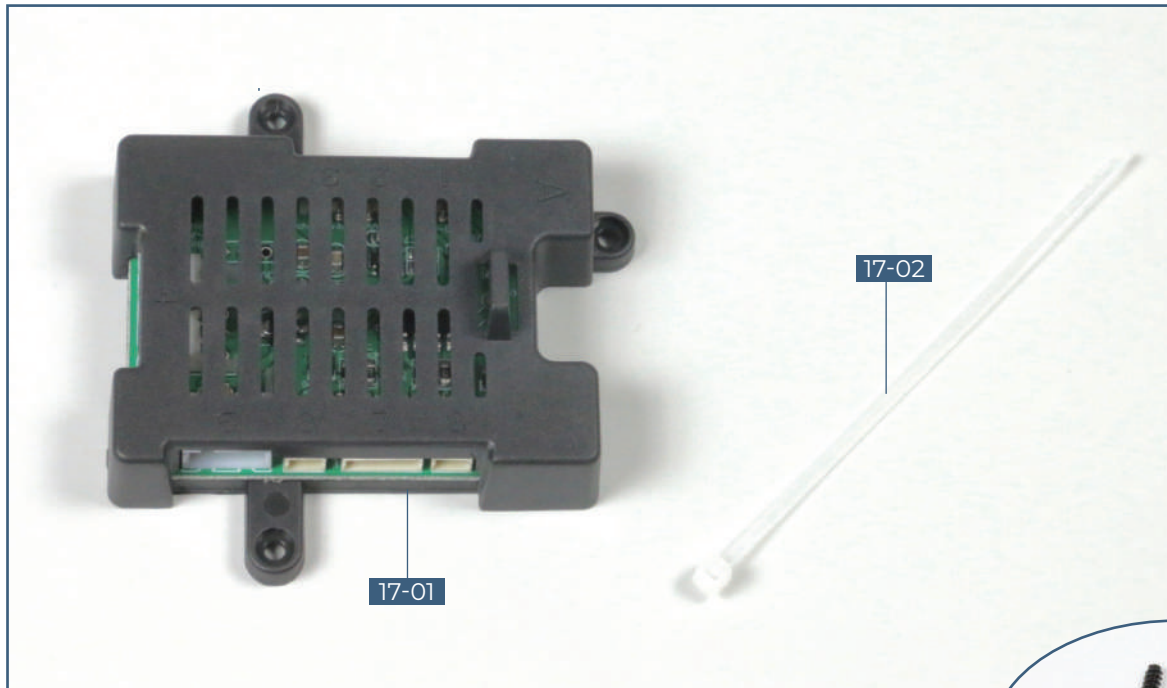


Completed work

This view of the underside of the deck shows the elevation motor fixed to the gearbox housing.

STAGE 17

WIRING FOR THE FORWARD TURRET

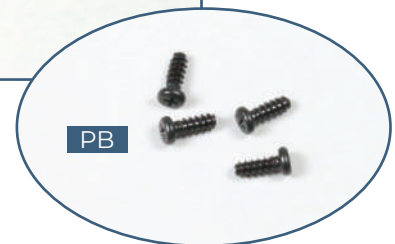


COMPONENTS CHECKLIST

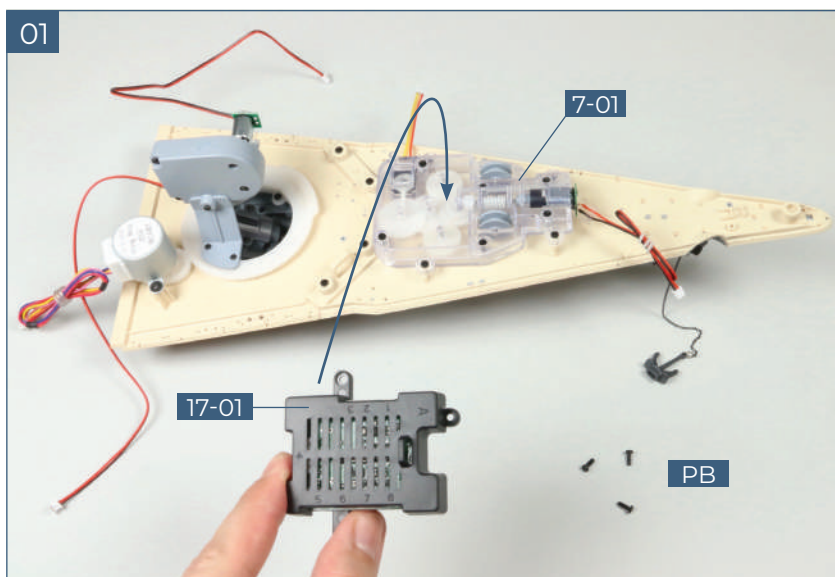
17-01: Circuit board box

PB: Four 2.3 x 6 mm screws

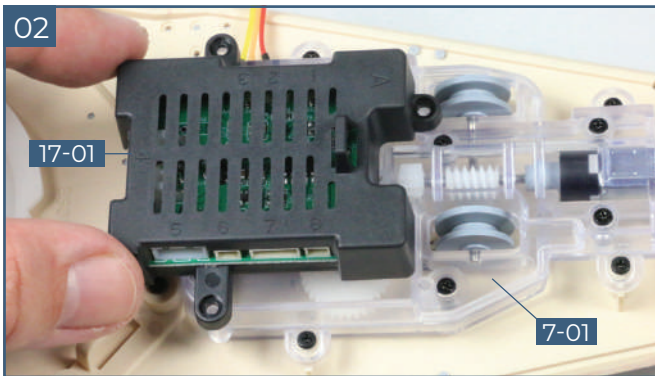
17-02: Cable tie



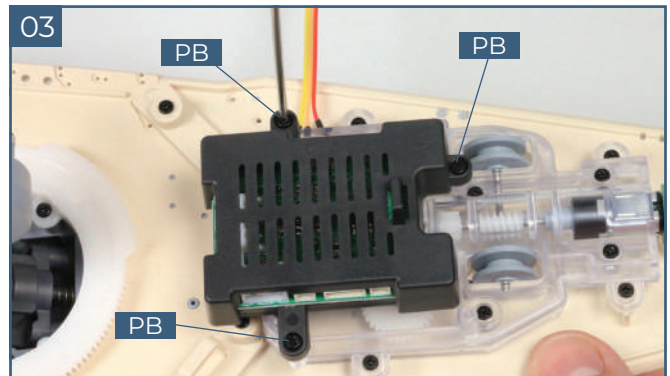
01. FITTING THE FIRST CIRCUIT BOARD BOX



Take the circuit board box **17-01** and check how it fits on the gearbox housing **7-01**. Lower part **17-01** in place on the housing as indicated. Have three **PB** screws ready.

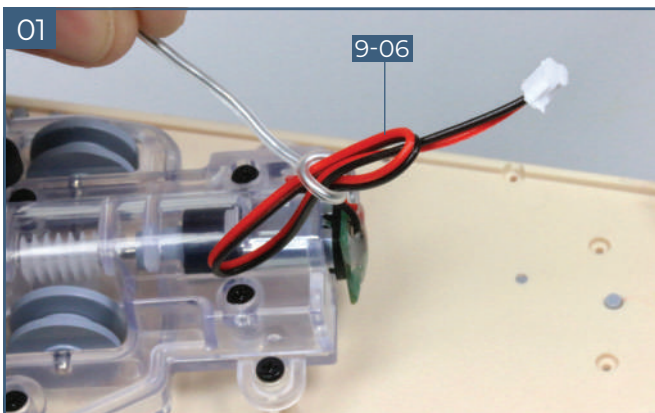


When the circuit board box **17-01** is in the correct position, the screw holes will align with screw sockets on part **7-01**.

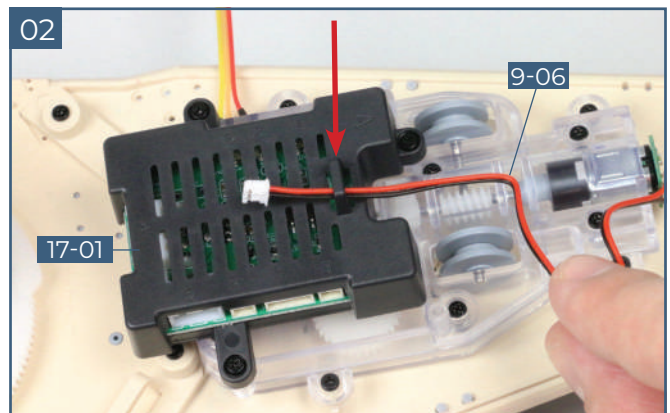


Fix the circuit board box **17-01** to the gearbox housing **7-01** using three **PB** screws. Support the deck carefully as you fix the screws in place.

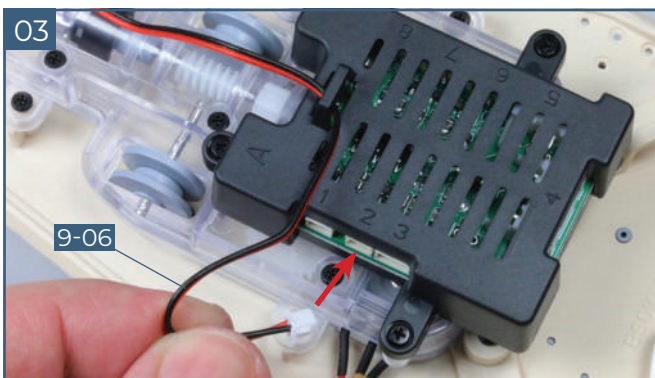
02. CONNECTING THE ANCHOR CABLES



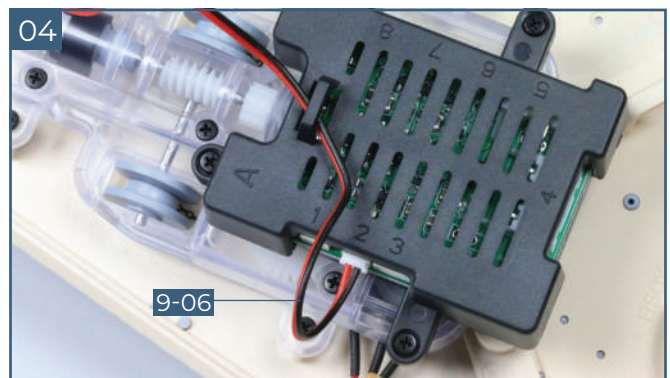
Take the cable from the anchor motor **9-06** and untie the wire if you have not already done so.



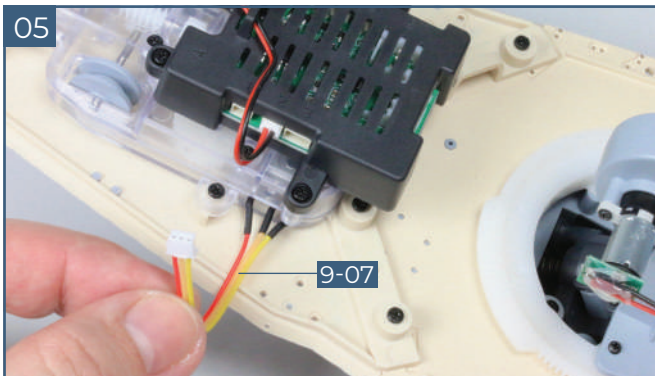
Feed the cable from the anchor motor **9-06** through the eyelet on the circuit board box **17-01** (indicated by the red arrow).



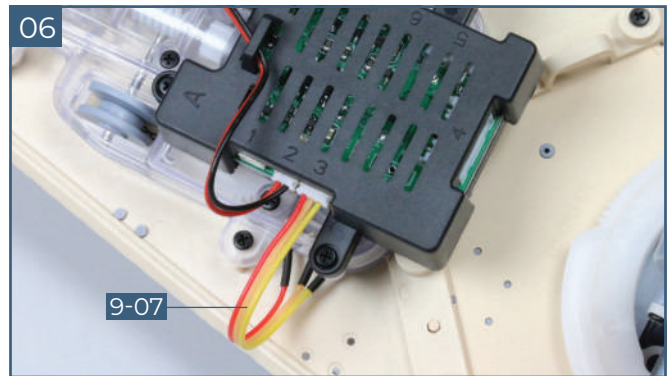
Turn the upper deck around so that you can see cable ports 1, 2 and 3 on the side of the circuit board box **17-01**. Plug the anchor motor cable **9-06** fully into port 2 (see arrow). Make sure that you fit the cable the right way round, with the notches facing downwards.



This photo shows the cable fitted in port 2 of the circuit board box.

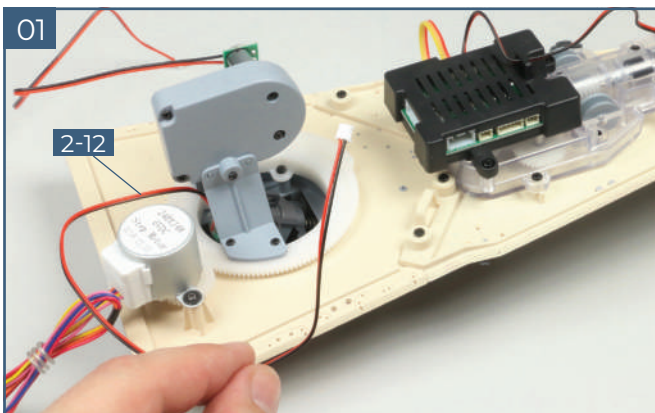


The next step is to fit the cable from the switch **9-07**. The notches on the connector plug should face downwards, with the yellow wire on the right.

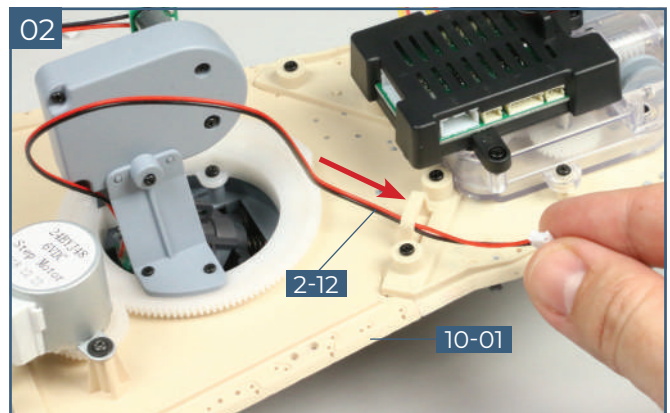


Plug the cable **9-07** fully into port 3 of the circuit board box as shown.

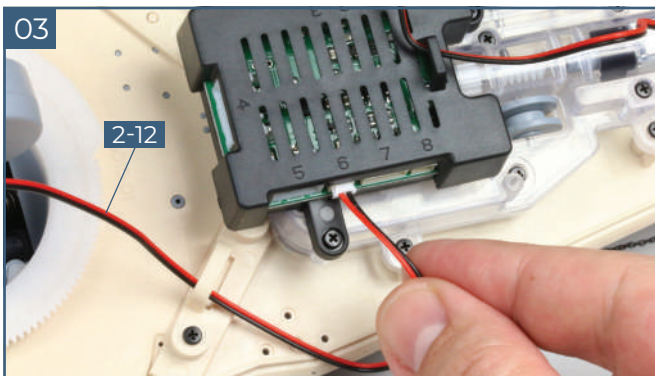
03. CONNECTING THE TURRET CABLES



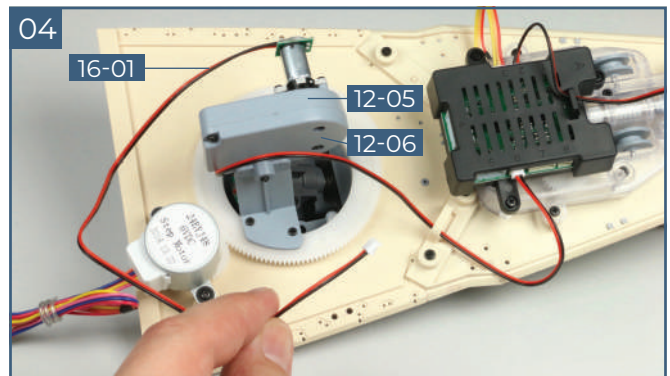
Turn the upper deck around so that you can see ports 5, 6, 7 and 8 on the other side of the circuit board box. Identify the cable from the motor **2-12**.



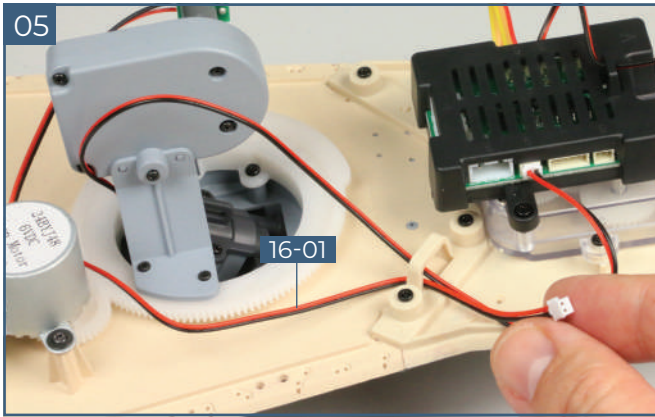
Feed the cable from the motor **2-12** through the large eyelet on the underside of the upper deck section **10-01** as indicated by the arrow.



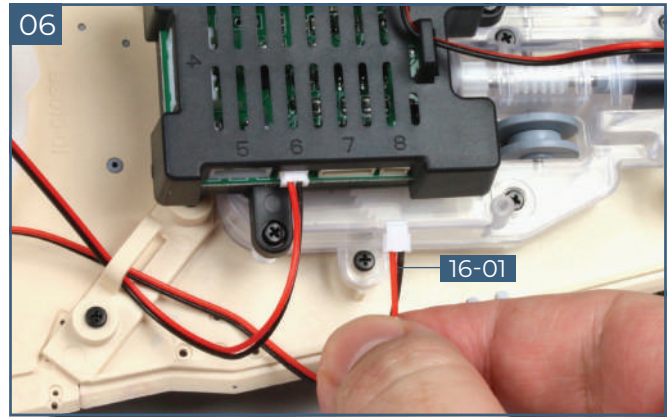
Plug the cable **2-12** fully into port 6 of the circuit board box. The notches on the plug face downwards and the black wire is on the right.



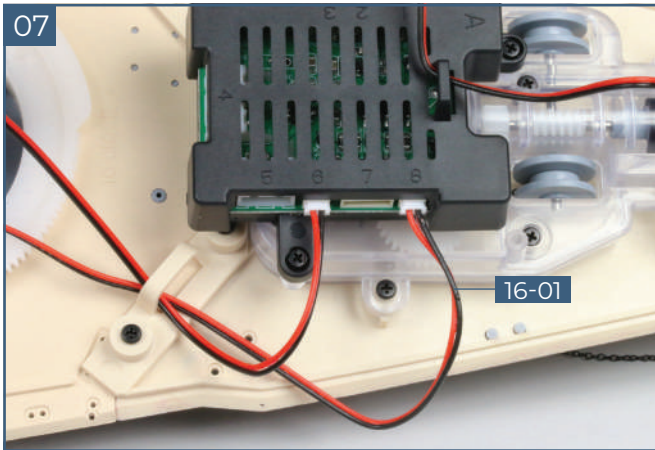
Now take the cable from the elevation motor **16-01** and untie the wire, if you have not already done so. Bring it around the gearbox **12-05 / 12-06** as shown in the photo.



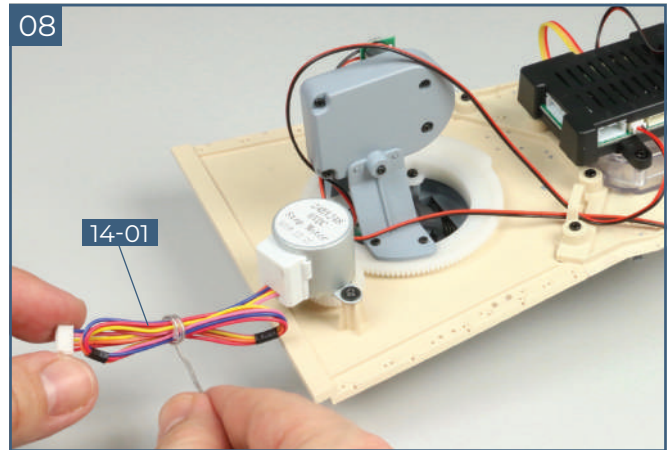
Thread the cable from the elevation motor **16-01** through the large eyelet on the underside of the upper deck.



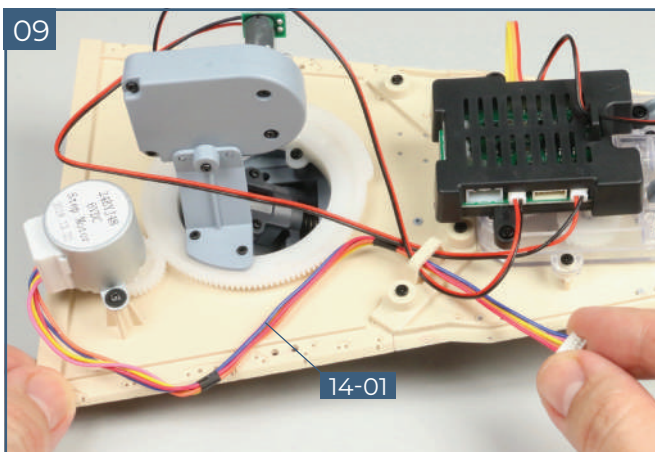
Bring cable **16-01** round to the side of the circuit board box so that you can plug it in to port 8.



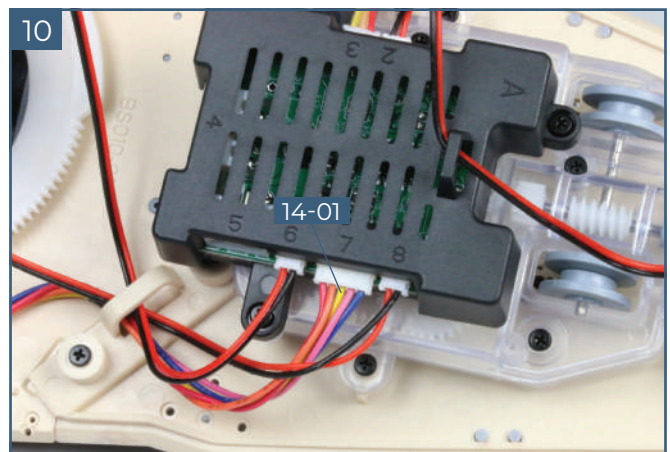
Plug cable **16-01** fully into port 8 of the board box as shown. The notches on the plug face downwards and the black wire is on the right.



Finally, take the cable of the gun turret motor **14-01**. Remove the wire if you have not already done so.

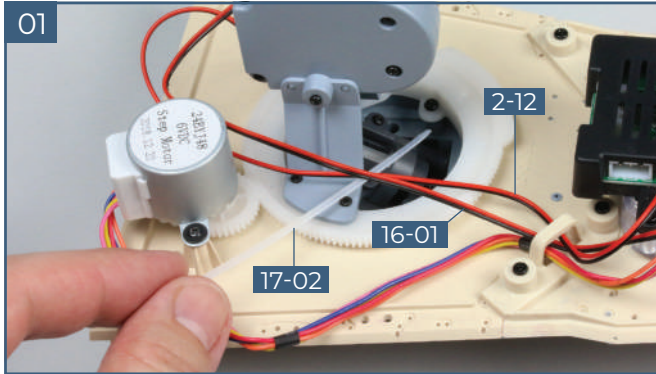


Thread the cable from gun turret motor **14-01** through the large eyelet on the underside of the upper deck as shown.

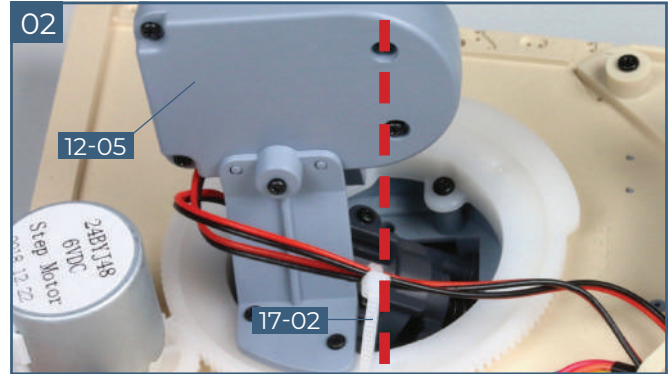


Plug the cable **14-01** fully into port 7 of the circuit board box. Again, the notches on the plug face downwards. The blue wire is on the right.

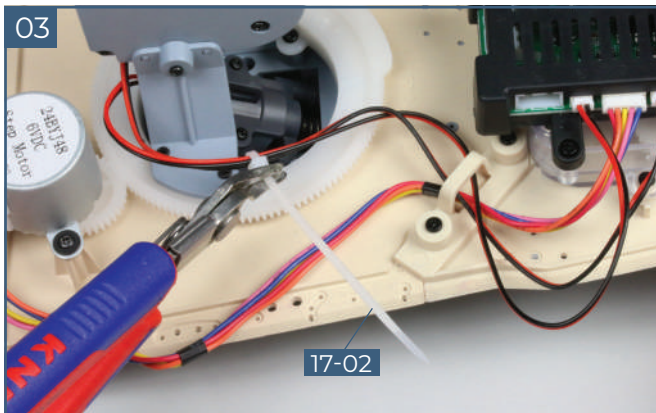
04. FITTING THE CABLE TIE



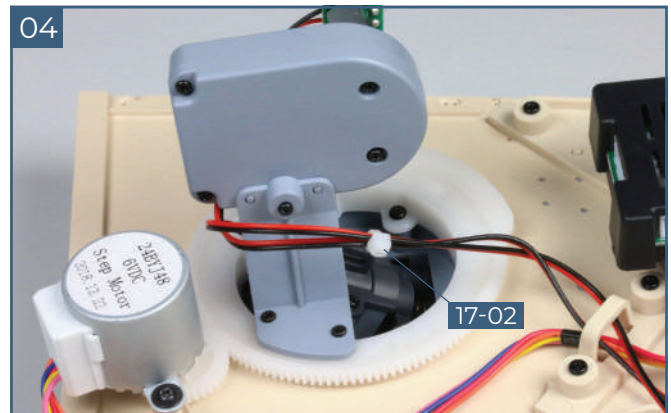
Take the cable tie **17-02** and wrap it around the two cables **16-01** and **2-12** as indicated.



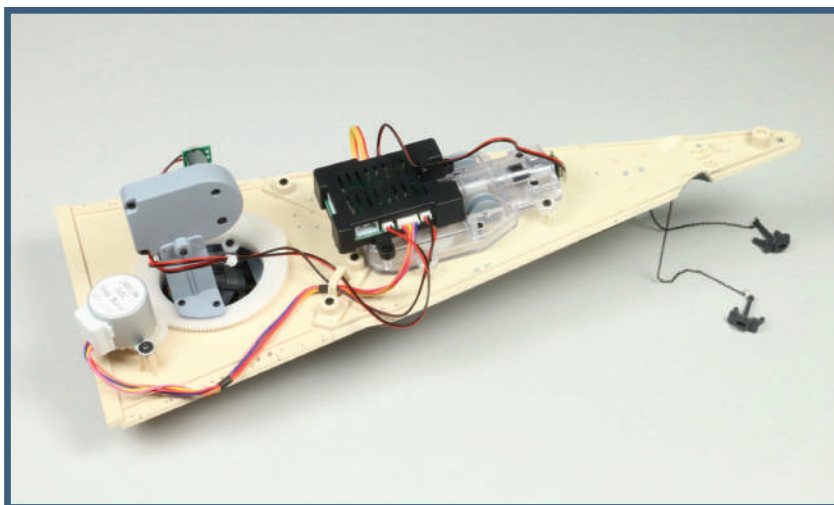
Tighten the cable tie **17-02** around the two cables. The cable tie should be roughly level with the two front screws of the gearbox housing **12-05** (indicated by the dotted line).



Cut off the excess length of the cable tie **17-02** with a side cutter or suitable scissors.



The photo shows the cable tie **17-02** trimmed and in the correct position.

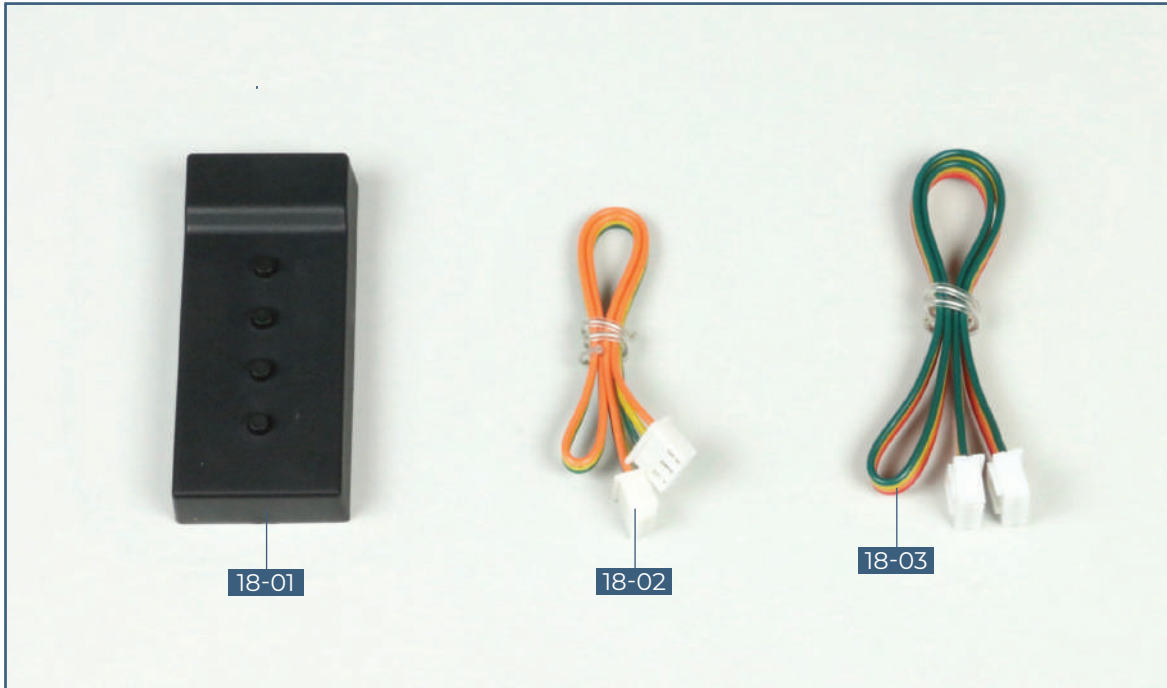


Completed work

Five cables have been fitted to the circuit board box: they connect the bow anchors and the front turret motors. The first connections will be tested in the next stage.

STAGE 18

TESTING THE WIRING OF THE TURRET



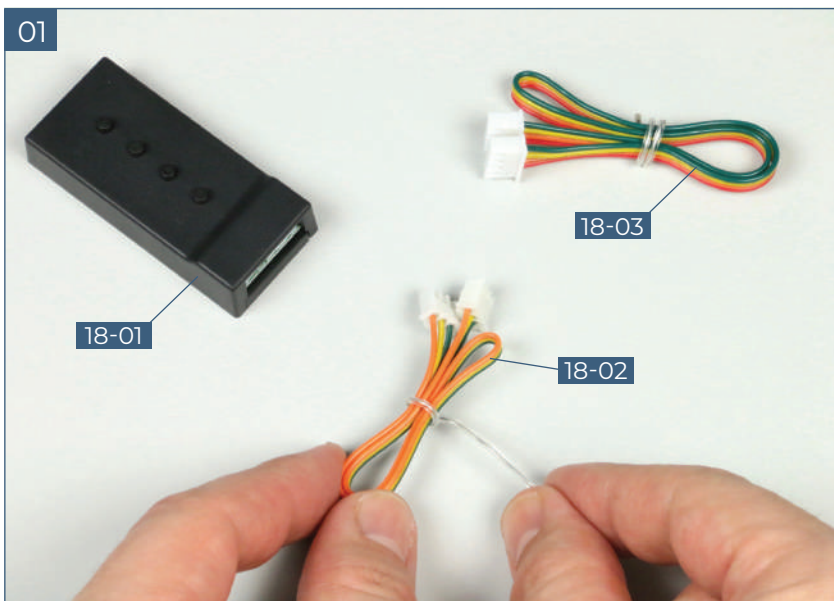
COMPONENTS CHECKLIST

18-01: Tester box

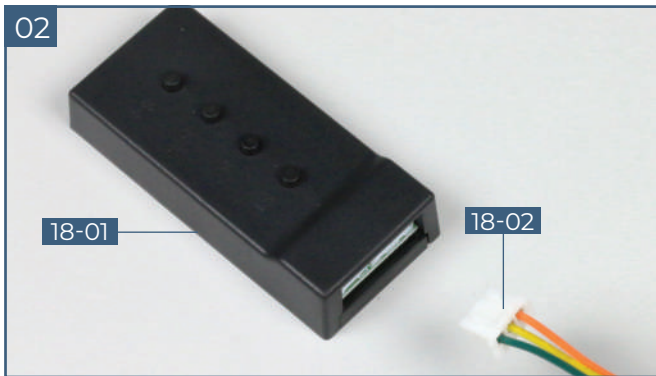
18-02: Tester cable (three wires)

18-03: Circuit board cable (four wires)

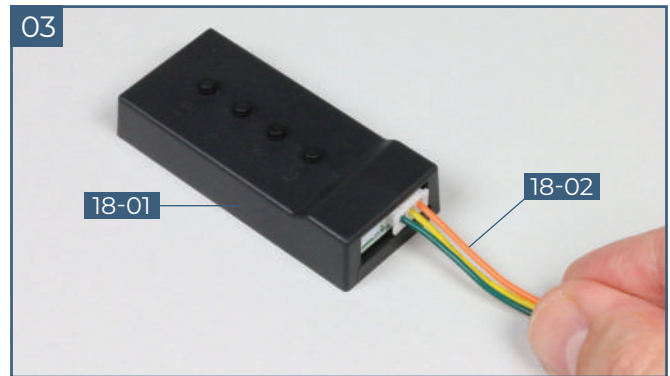
01. CONNECTING THE TESTER TO THE BATTERY BOX



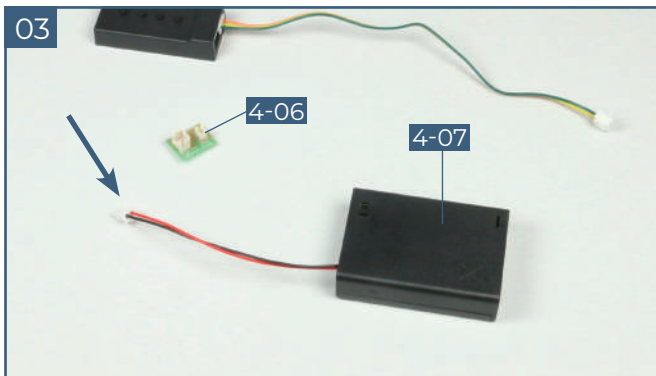
Place the three parts on your worktop. The circuit board cable **18-03** will not be needed until a later stage. Keep it in a safe place. Take the tester cable **18-02** and remove the protective wire.



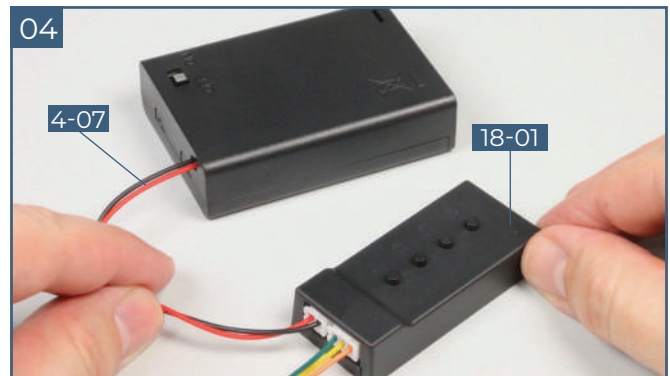
Plug the tester cable **18-02** into the right port of the tester box **18-01**. The notches face upwards with the orange wire on the right.



The photo shows the tester cable **18-02** connected to the right port of the tester box **18-01**.

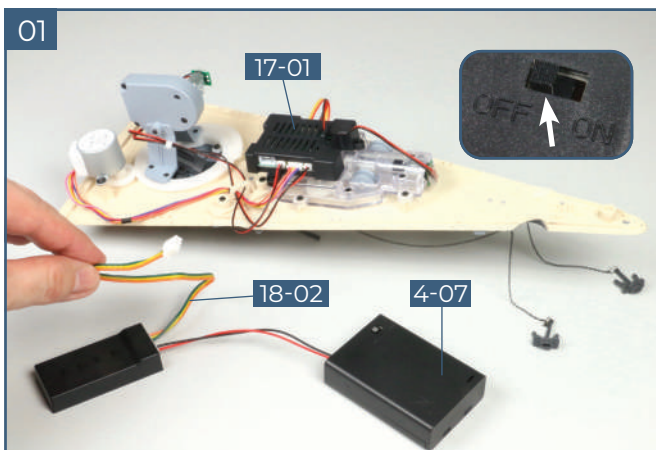


Take out the battery box **4-07**. Disconnect the plug of the battery box cable (arrow) from the port of circuit board **4-06**, which is not needed at this stage.

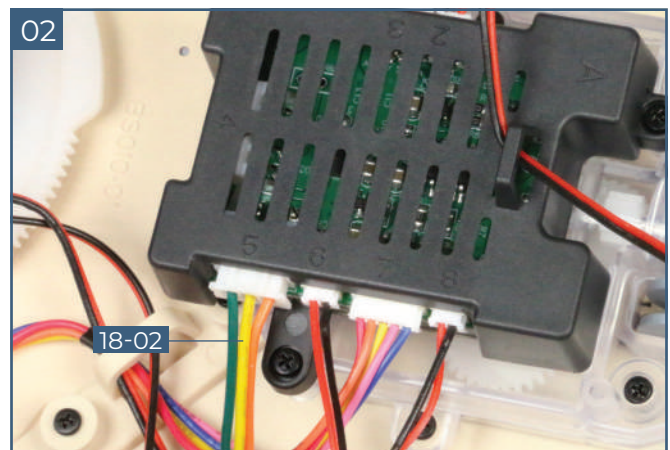


Plug the connector from the battery box cable **4-07** into the left port of the tester box **18-01**, with the notches facing upwards and the black wire on the right.

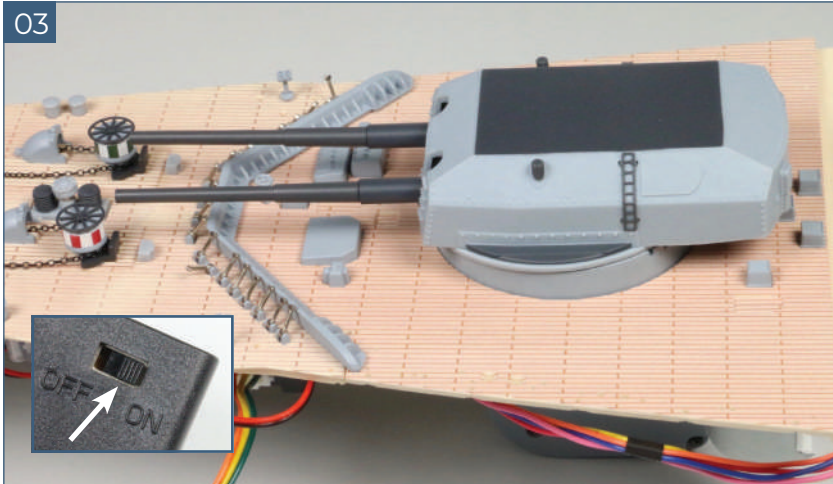
02. INITIALIZATION



Set the switch of the battery box **4-07** to "Off" (see inset). Take the tester cable **18-02** and lead it to port 5 of the board box **17-01**.



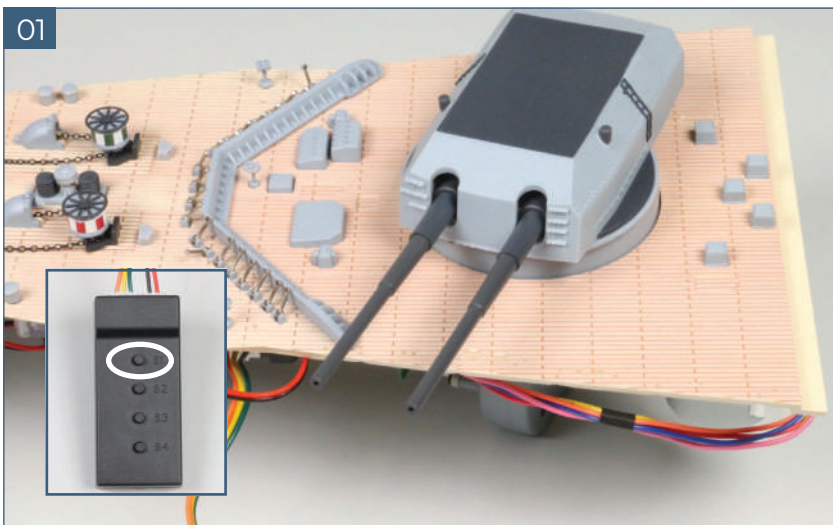
Plug the connector of the tester cable **18-02** into port 5 of the circuit board box. The notches face upwards with the orange wire on the right.



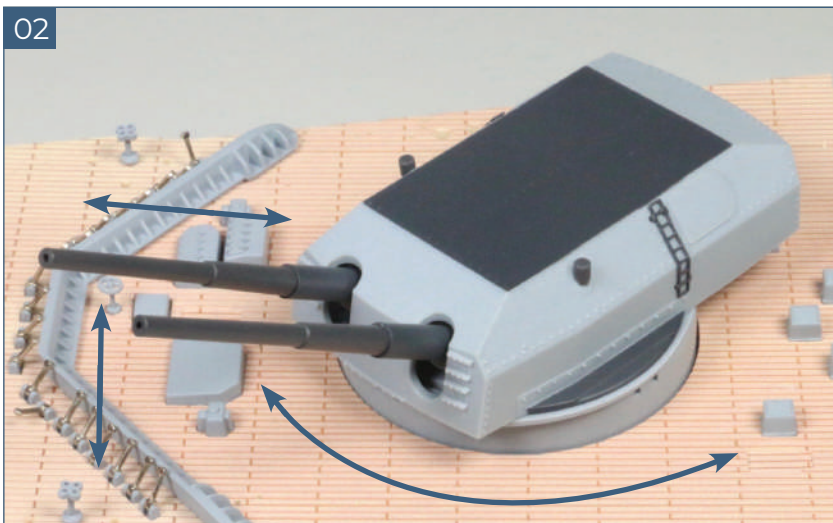
Switch the battery box **4-07** to “On” (inset). The initialization will start automatically. During this sequence, the gun turret rotates to starboard and stops before returning to the original position.

Note: During the initialization, the functions of the tester box **18-01** are not available.

03. THE TURRET TEST



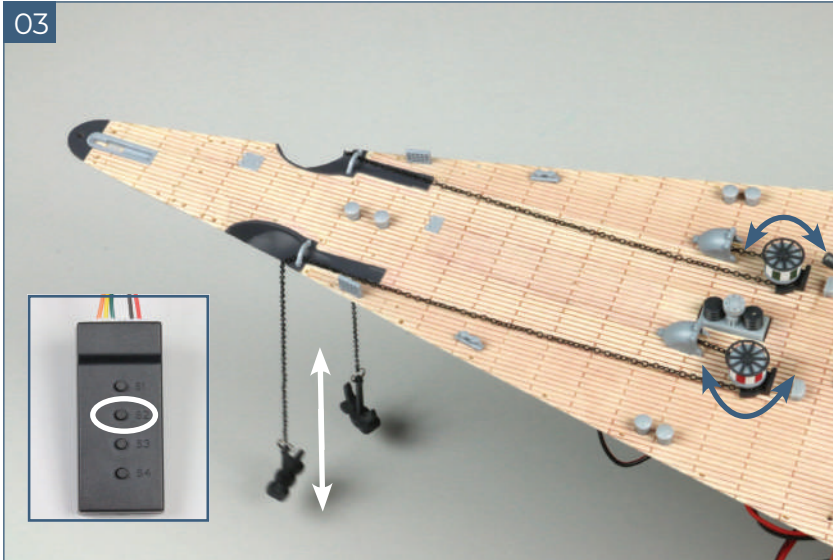
When you have completed the initialization on the tester box **18-01**, press the “S1” button (inset). The full turret test will commence. All three turret functions are carried out simultaneously: rotation, elevation and firing. End the test by pressing the “S1” button again.



The arrows in the photo illustrate the actions of the gun during the turret test: the turret rotates, the gun barrels raise and lower and they fire.

Note 1: On the finished model, all three turret functions can be controlled separately. During the test they are simultaneous.

Note 2: Always stop a test before starting the next test.



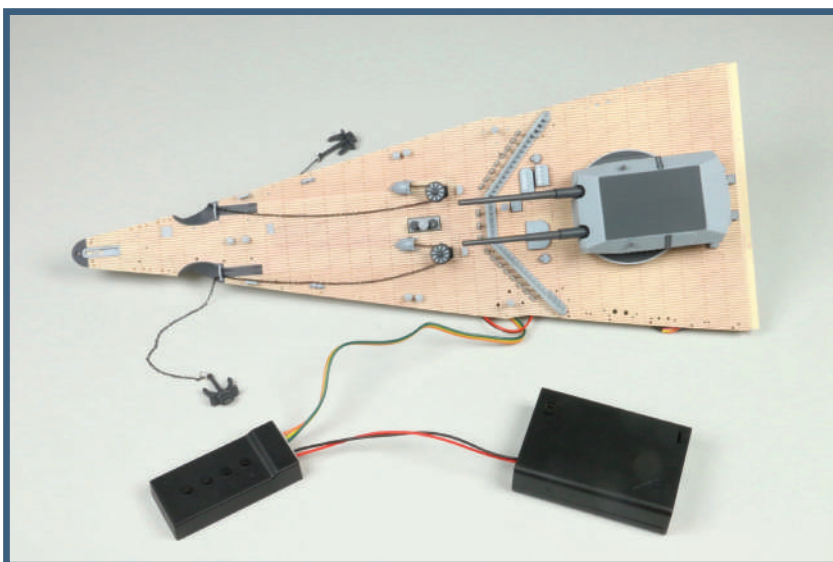
If you press the “S2” button on the tester box **18-01** (inset), the anchor test will begin. The two anchor spools turn first in one direction, then in the other direction. As a result, both anchors are lowered a little and then raised up again. Depending on the position of the anchor chain, there may be a slight delay in starting.

Note: The test is repeated at short intervals until you press the “S2” button again.



The buttons “S3” and “S4” on the tester box **18-01** do not have any function at this stage. The button “S3” will be used to test the bow light, which will be supplied with the next stage.

Note: When not in use, carefully unplug the tester box **18-01** and store it safely. It will be used again and again during the construction of your model.

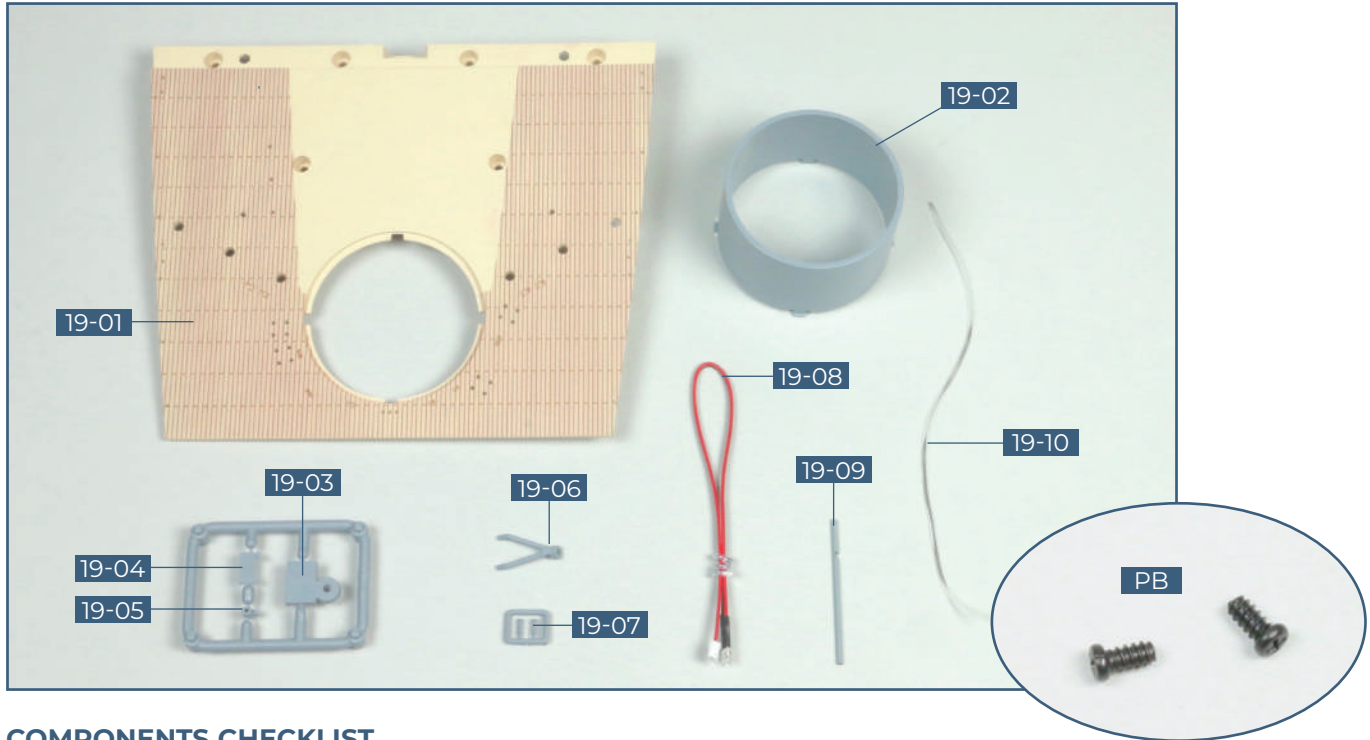


Completed work

The tester box has been used to test the action of the bow anchor and the forward 38 cm double gun turret.

STAGE 19

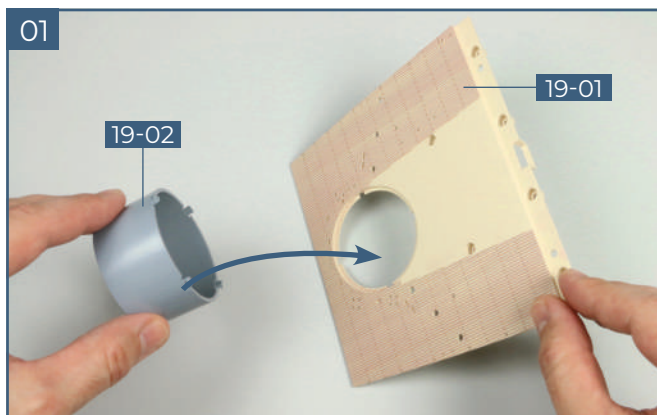
THE JACKSTAFF AND BOW LIGHT



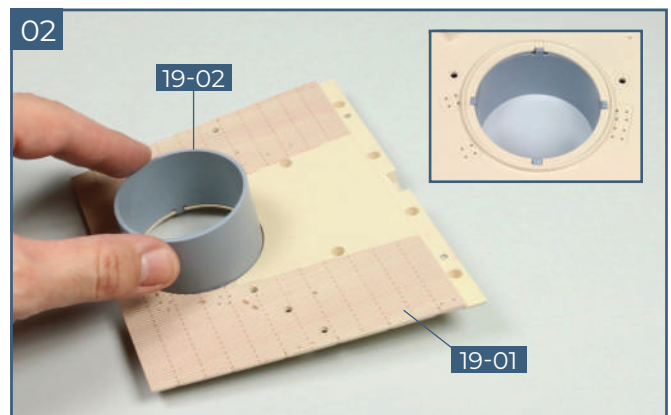
COMPONENTS CHECKLIST

- | | | |
|--|---|---------------------------------|
| 19-01: Third section of the upper deck | 19-04: Fibre optic cable guide | 19-08: LED cable |
| 19-02: Barbette for the second gun turret | 19-05: Fibre optic cable mount | 19-09: Jackstaff |
| 19-03: LED cover | 19-06: Support for the jackstaff | 19-10: Fibre optic cable |
| | 19-07: Two plugs | PB: Two 2 x 4 mm screws |

01. FITTING THE BARBETTE FOR THE SECOND 38 CM GUN TURRET

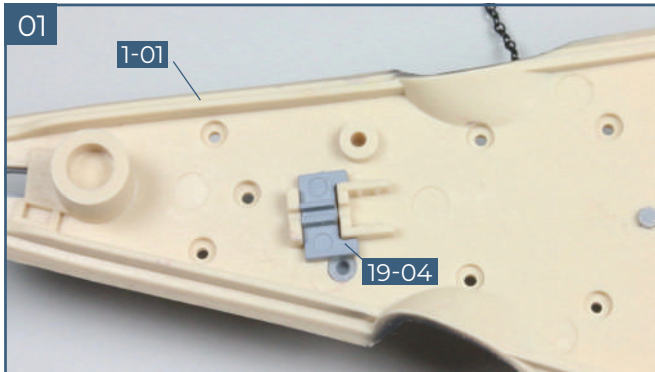


Take the barbette **19-02** and insert it into the opening of the upper deck section **19-01**, as shown.

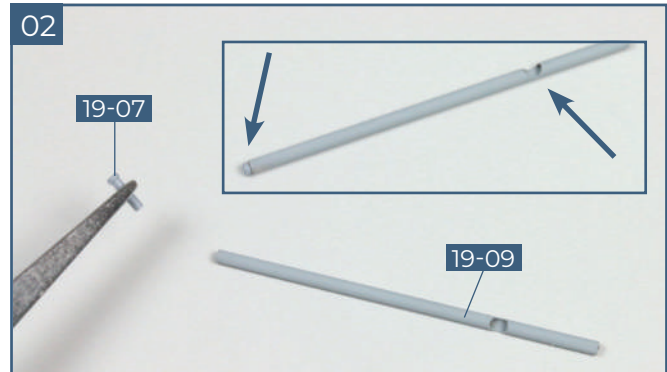


When the barbette **19-02** is correctly mounted, the four tabs on the lower rim of the barbette snap-fit into the recesses in the deck **19-01** (see inset).

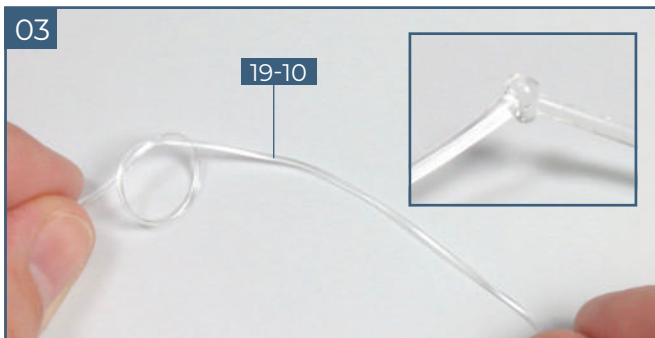
02. PREPARE THE BOW LIGHT



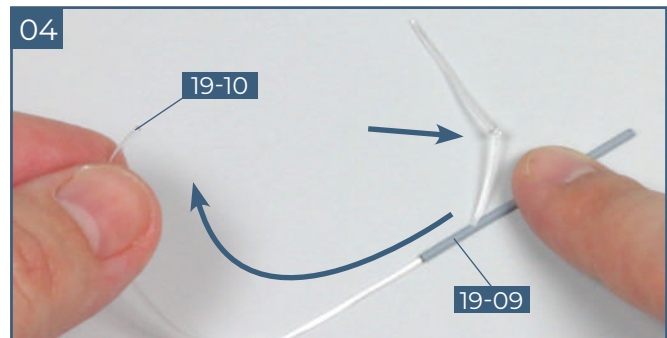
Place the forward deck assembly upside down on your desktop, taking care not to cause any damage. Fit the fibre optic guide **19-04** between the raised shapes near the bow, as shown.



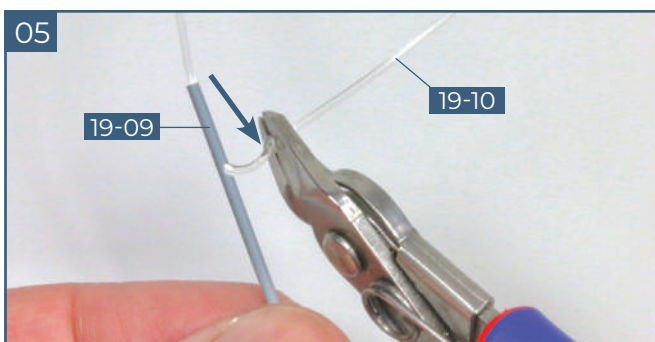
Insert one of the plugs **19-07** into the top end of the **19-09** jackstaff (the end that is further away from the notch, see inset). The second plug **19-07** is a spare.



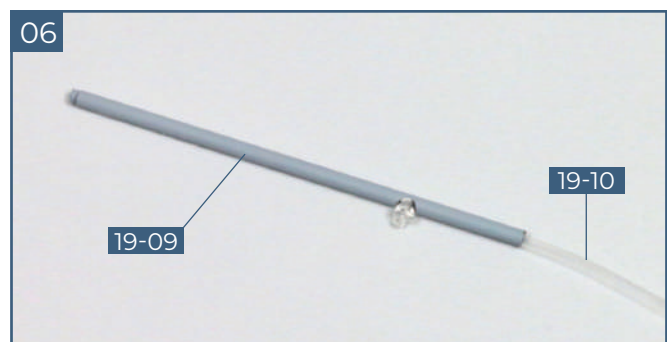
Take the fibre optic cable **19-10** and make a knot near one end. This will form the lamp at the bow, so pull it quite tight (see inset).



Thread the other end of the fibre optic cable **19-10** through the opening in the jackstaff **19-09**. Push the cable down the jackstaff so that it comes out of the open end (see curved arrow). The straight arrow indicates where the knot is.

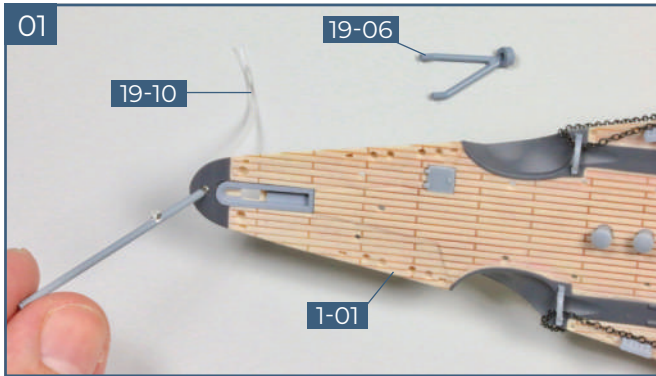


Cut off the short end of fibre optic cable **19-10** directly above the knot (the arrow indicates where the knot is).

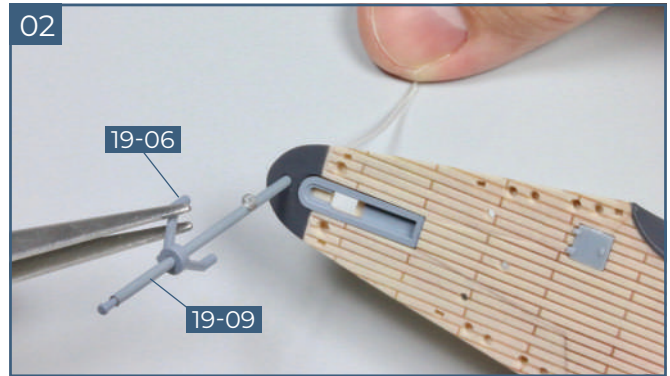


Pull the fibre optic cable **19-10** through the jackstaff **19-09** so that the knot sits in the opening. (Make sure that the knot is not so small that it can slip through the opening.)

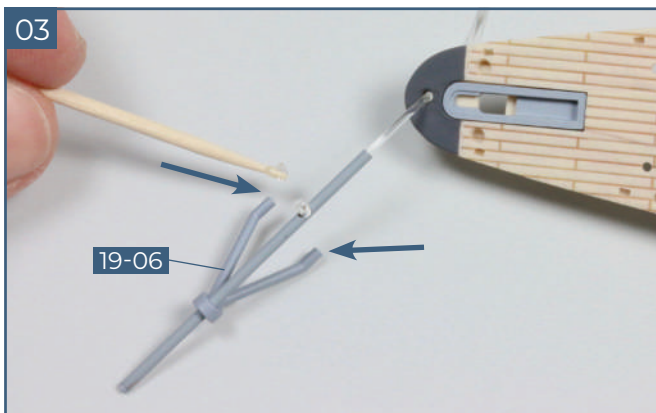
03. ASSEMBLING AND CONNECTING THE BOW LIGHT



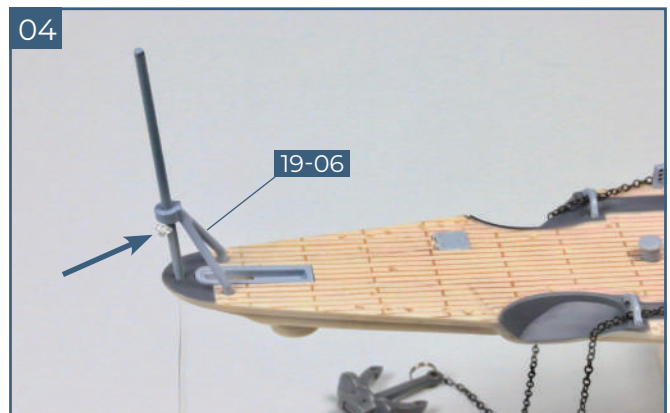
Turn the deck assembly **1-01** over and guide the fibre optic cable **19-10** through the hole in the bow. Have the jackstaff support **19-06** ready.



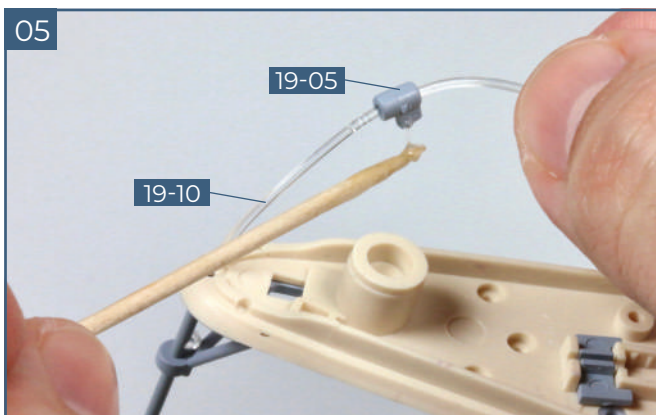
Fit the support **19-06** on to the top of the jackstaff **19-09** and slide it down the pole.



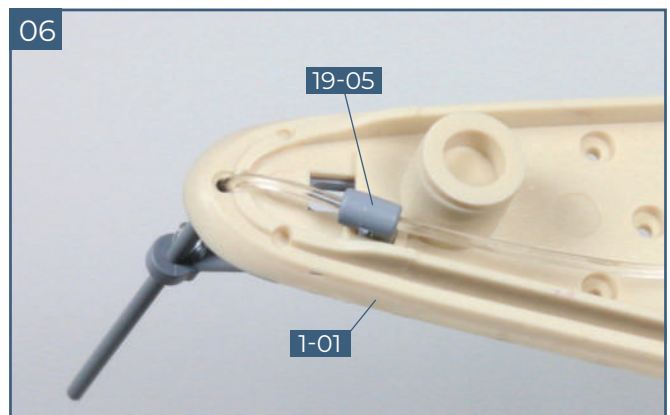
Put a drop of superglue on each of the two feet of the support **19-06** as indicated by the arrows.



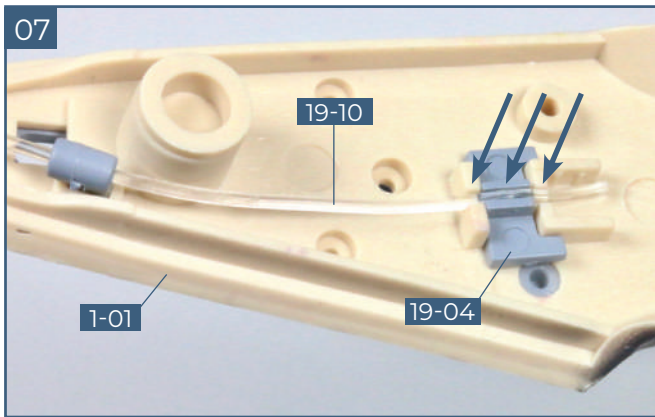
Fix the two legs of support **19-06** into the recesses of the upper deck. Adjust the jackstaff so that the knot of the fibre optic cable is at the front (see arrow).



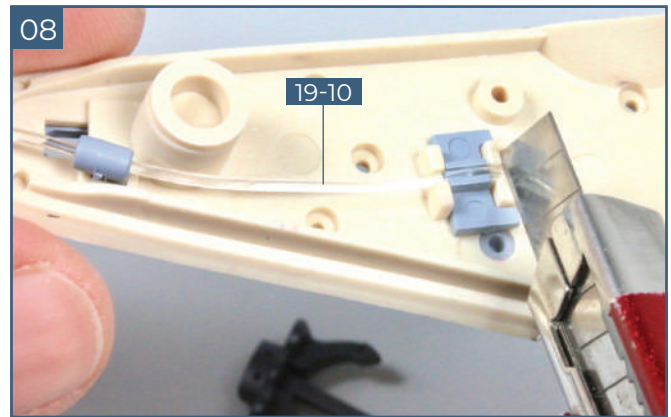
Noting the orientation, thread the fibre optic cable **19-10** through the fibre optic cable mount **19-05**. Put a tiny drop of glue on the pin of the mount.



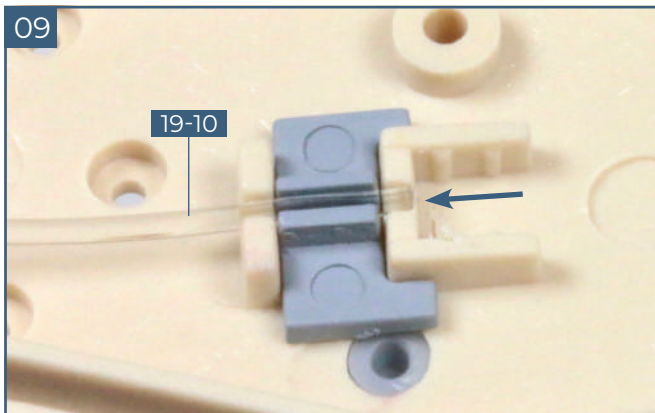
Glue the mount **19-05** in the recess on the underside of the upper deck **1-01** near the bow, as shown.



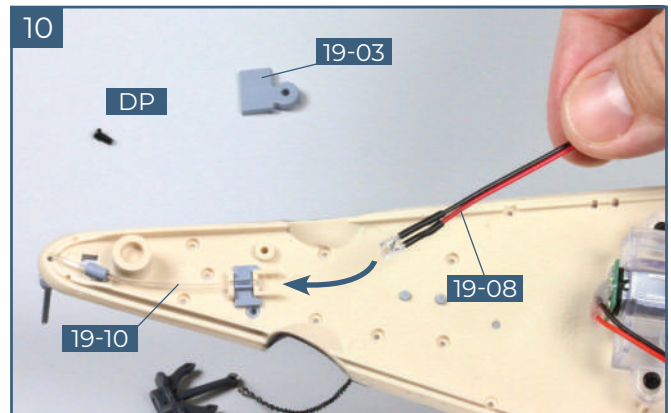
Fit the fibre optic cable **19-10** into the recesses on the guide **19-04** and the bottom of the deck **1-01**, as indicated by the three arrows.



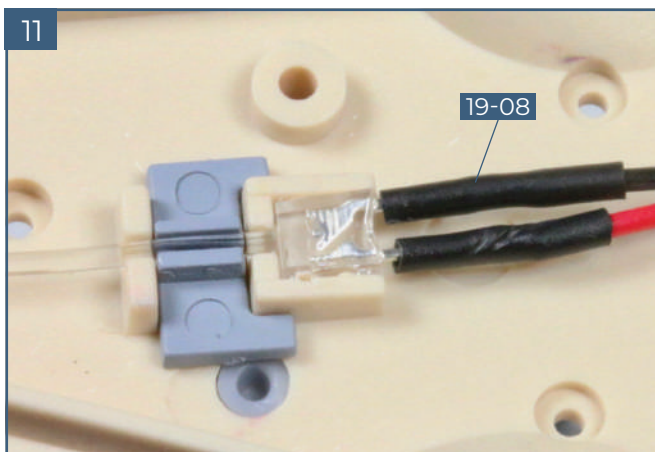
Cut the fibre optic cable **19-10** at the point where it comes out of the second recess in the raised section on the underside of the deck (see also next step). Always take care when using a craft knife.



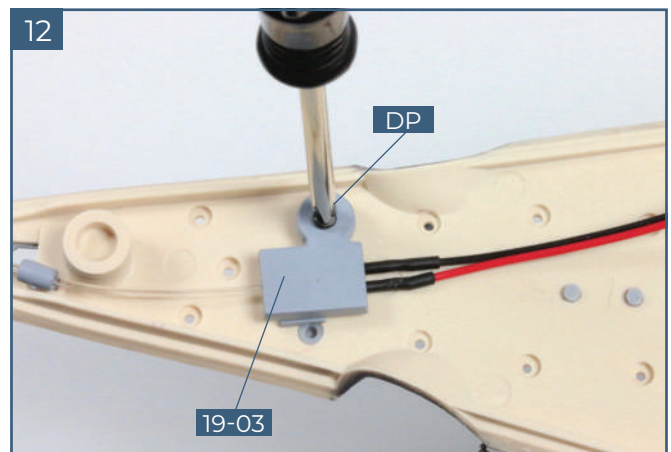
When trimmed correctly, the end of the fibre optic cable **19-10** is flush with the rear edge of the raised shape that holds the fibre optic cable guide in place, indicated by the arrow.



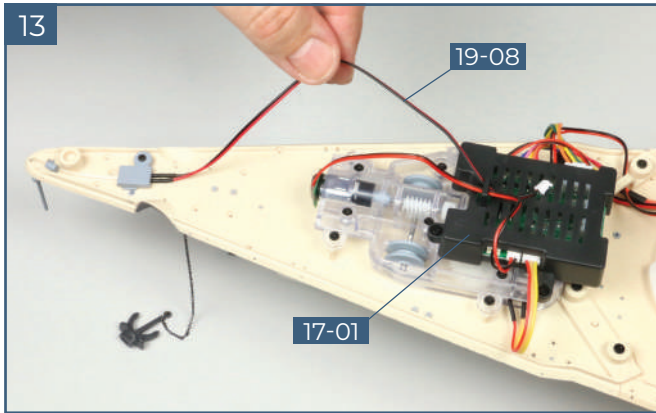
Have the LED cover **19-03** and a **DP** screw ready. Take the LED cable **19-08** and bring the LED towards the end of the fibre optic cable **19-10**, as indicated by the arrow.



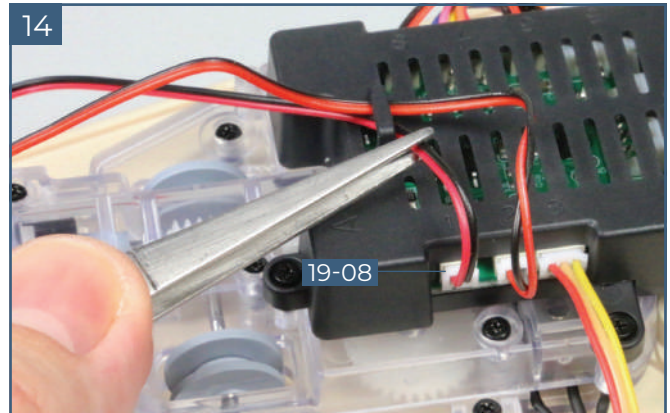
The LED at the end of the LED cable **19-08** fits into the recess and butts up to the end of the fibre optic cable **19-10**.



Fix the LED cover **19-03** over the LED using a **DP** screw. Take care to support the deck whilst doing this, so as not to damage previously fitted parts.

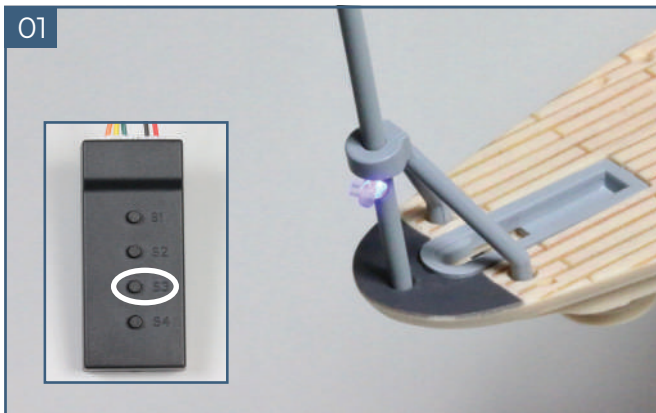


Thread the free end of LED cable **19-08** through the eyelet on circuit board box **17-01**.

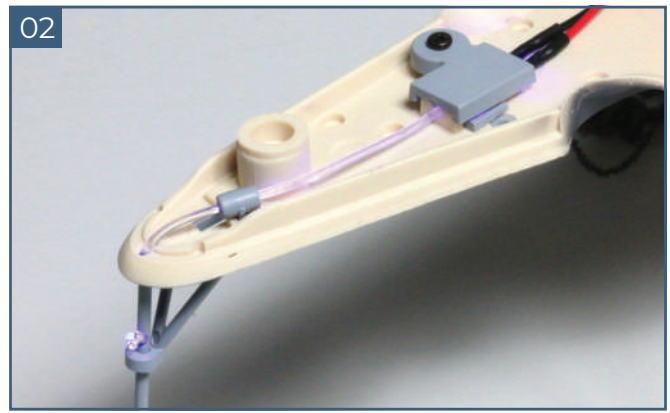


Plug the connector of the LED cable **19-08** into port 1 of the circuit board box. The black wire is on the right.

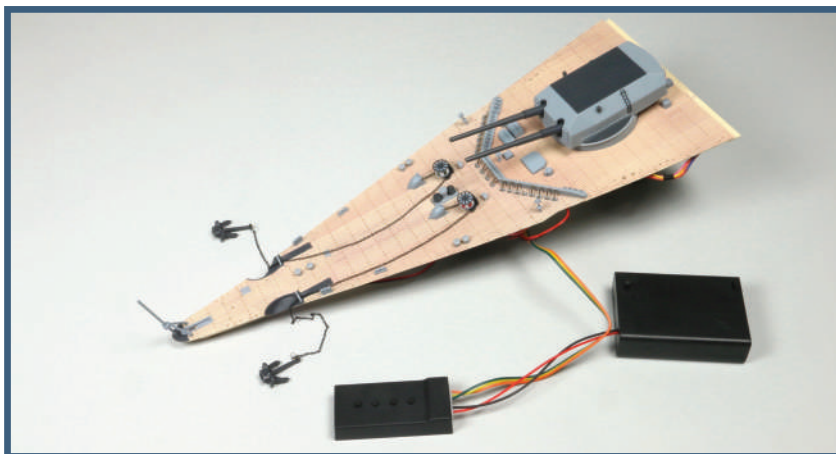
04. TESTING THE BOW LIGHT



Set the switch of the battery box **4-07** and after the turret has finished its start-up sequence, press the button "S3" on the tester box **18-01**. The bow light comes on.



Viewed from the underside of the deck, you can see how the light travels from the LED to the knot on the jackstaff.

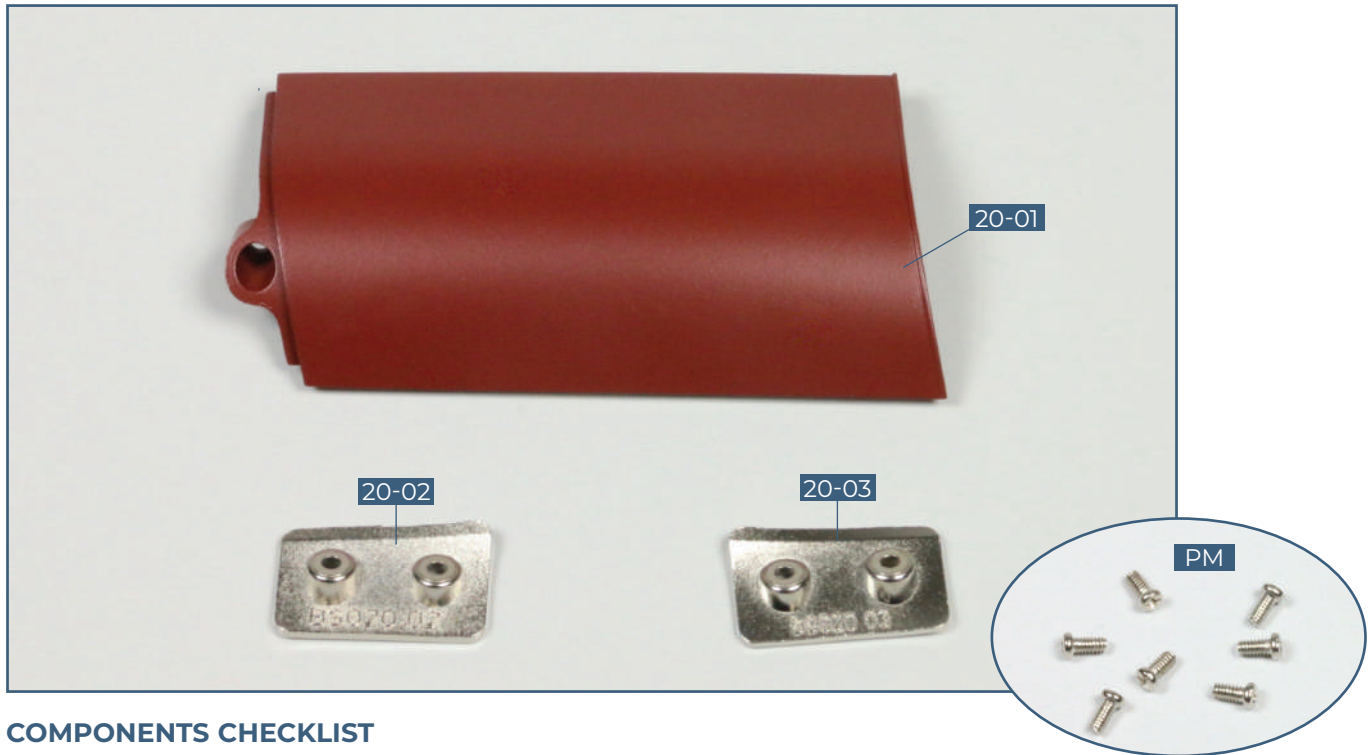


Completed work

The jackstaff has been mounted on the bow of the deck and the LED and fibre optic bow light have been fitted and tested. The second gun turret barbette has been fitted to the third section of the upper deck (not shown).

STAGE 20

ANOTHER SECTION OF THE HULL



COMPONENTS CHECKLIST

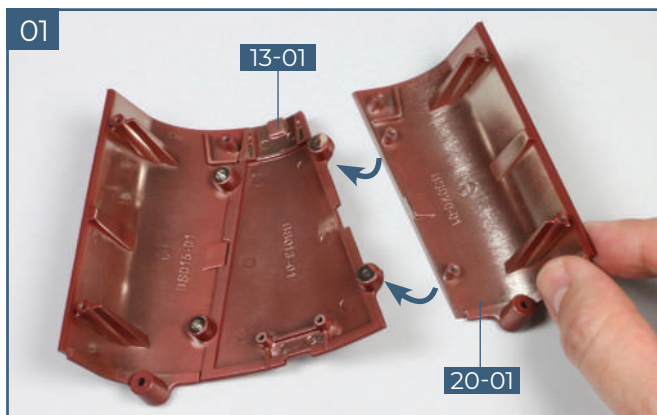
20-01: Lower starboard hull section

20-03: Starboard connector

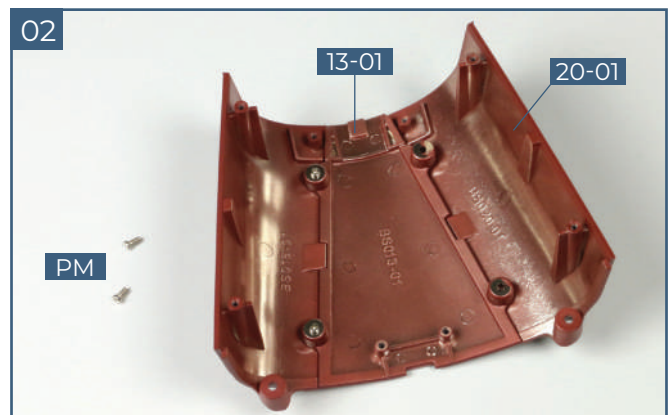
PM: Seven 2 x 4 mm PM screws

20-02: Port connector

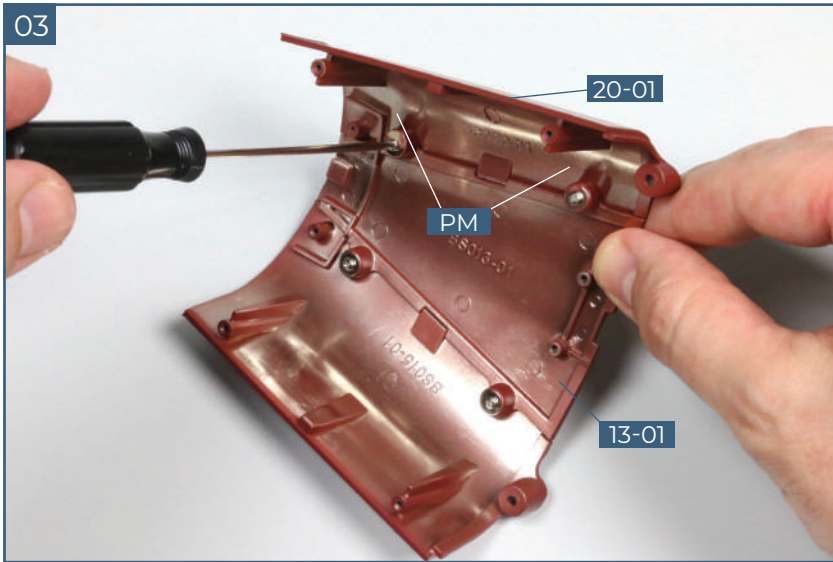
01. CONTINUING THE HULL ASSEMBLY



Take the hull assembly **13-01/15-01** from stage 15. Check the fit of hull section **20-01**: two screw sockets on the edge of the hull fit into the two tabs with screw hole on the right of part **13-01**, as shown.

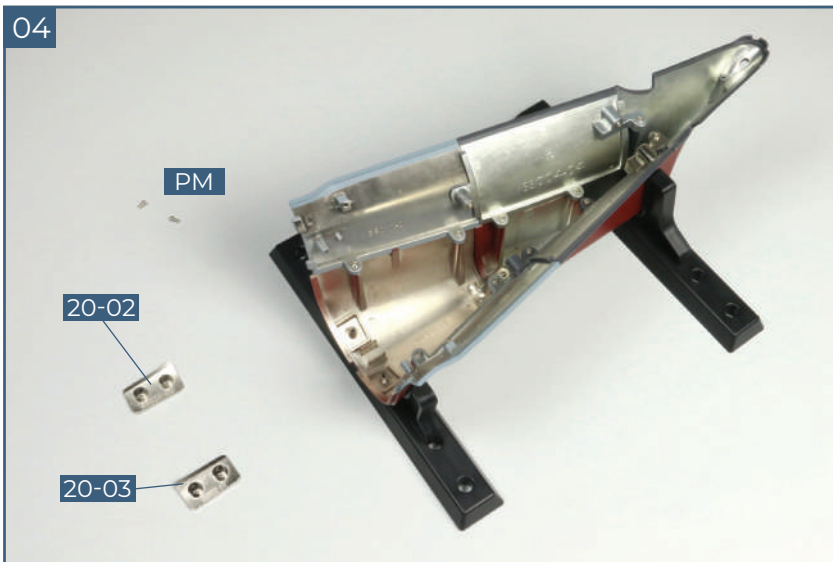


This shows the hull section **20-01** in the correct position. You will need two **PM** 2 x 4 mm screws for the next step.

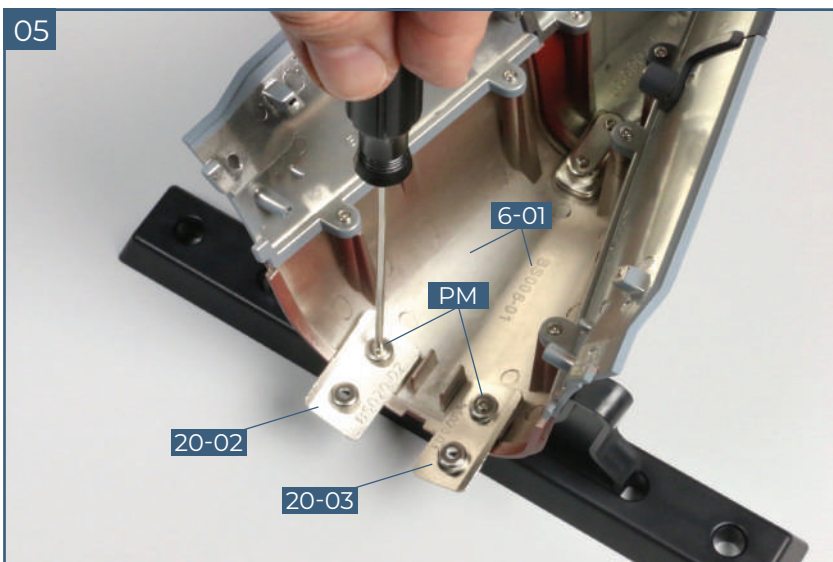


Fix the hull section **20-01** to part **13-01** using two **PM** screws, as shown.

NOTE: The unevenness between the sections of the hull will disappear once the screws are fully tightened.

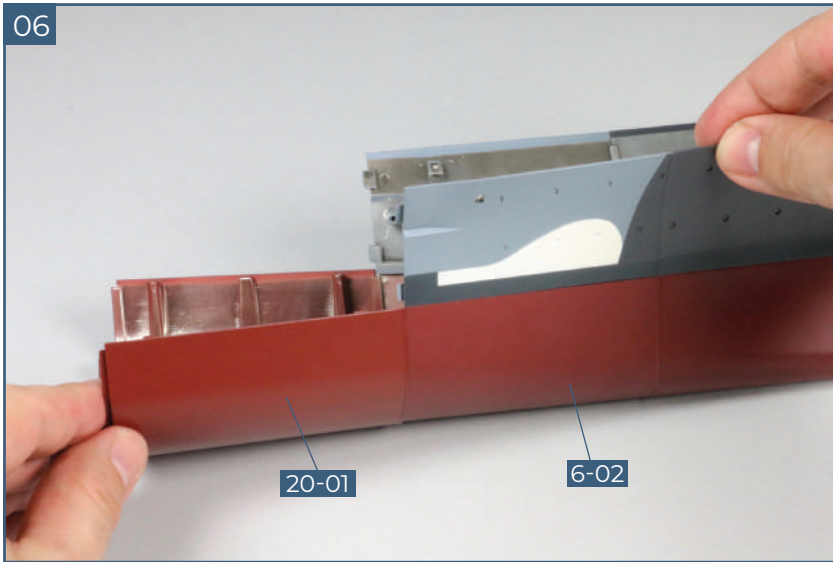


Take the bow hull assembly and stands from stage 11. Stand the bow section on the support stands. Place the two connectors **20-02** and **20-03** on the work surface and have four **PM** 2 x 4 mm screws ready.



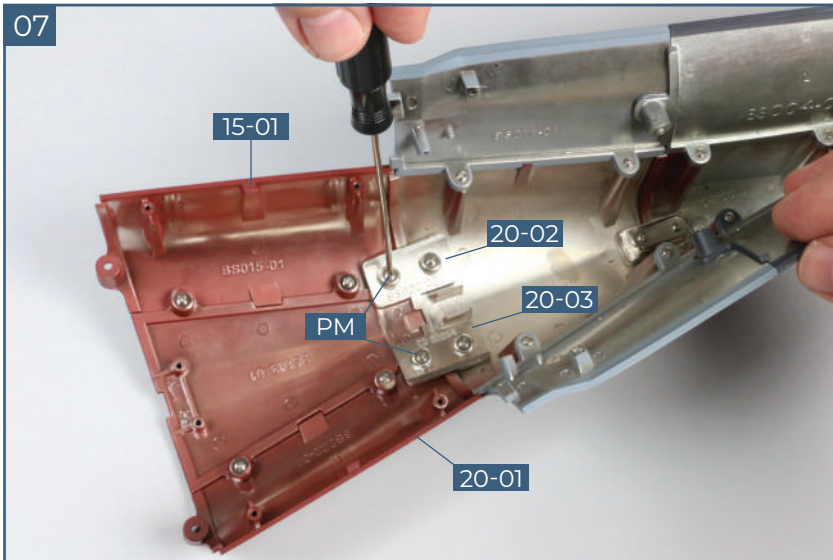
Fit the forward hole of the port connector **20-02** in place on hull section **6-01**. Fix in place with a **PM** 2 x 4 mm screw. Repeat to fit the starboard connector **20-03** in place.

06

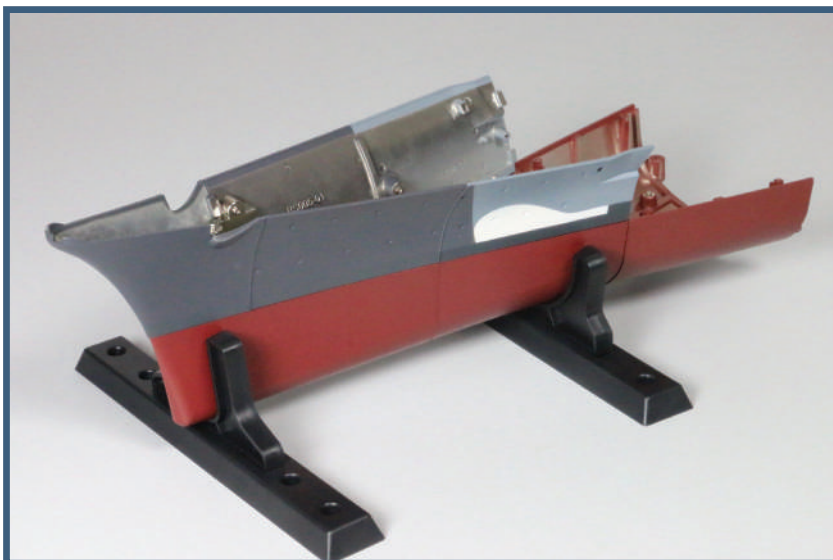


Position the hull section completed in step 3 against the bow hull assembly and check that the parts are correctly aligned, with no gaps or unevenness between the sections.

07



Fix the connectors **20-02** and **20-03** to the hull sections **15-01** and **20-01** using two **PM** 2 x 4 mm screws, as shown.



Completed work

The next hull section has been fitted to the bow hull section completed earlier. The completed hull section sits on the stand.