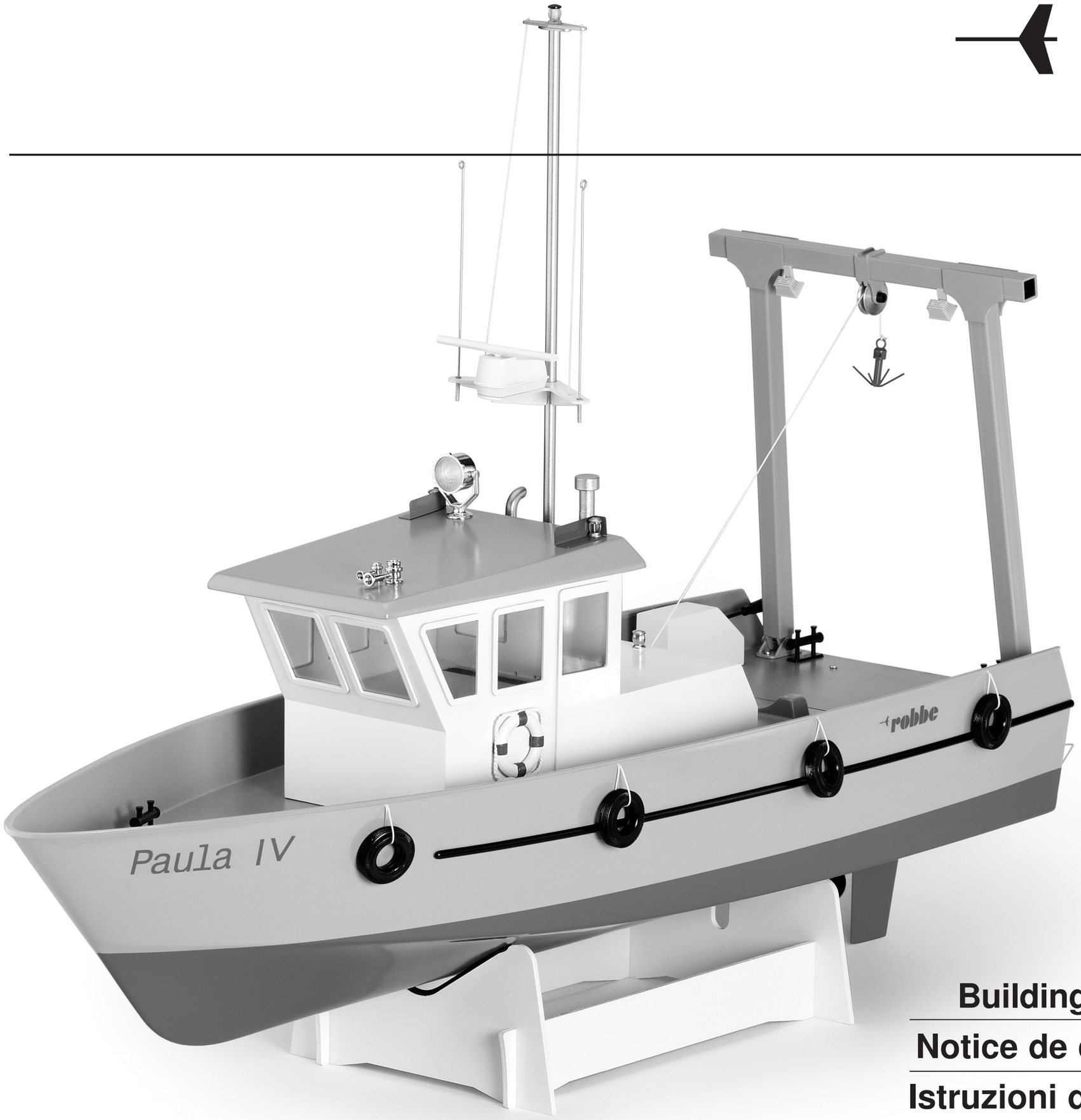
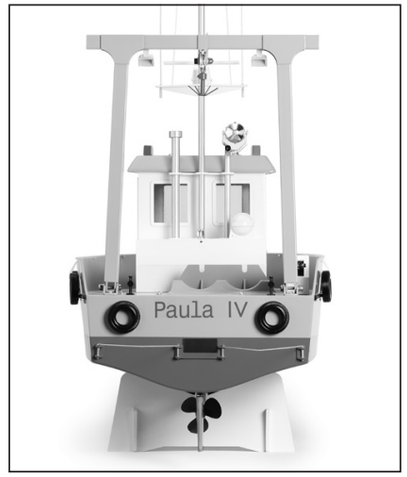
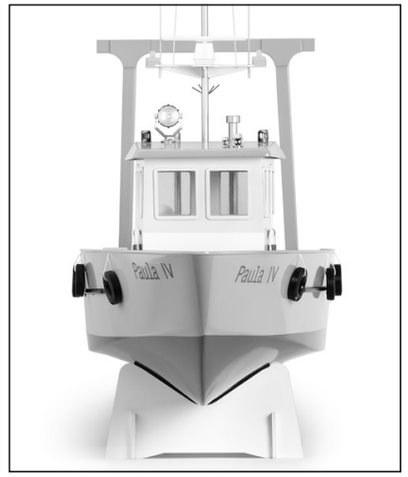
robbe







Building Instructions PAULA IV No. 1198

Notice de construction PAULA IV réf. 1198

Istruzioni di montaggio PAULA IV No. 1198

Building instructions - PAULA IV No. 1198
Notice de construction PAULA IV réf. 1198
Istruzioni di montaggio PAULA IV No. 1198

Specification:

Length:	790 mm
Beam:	250 mm
Height:	approx. 520 mm
Total displacement:	approx. 2500 g
Scale:	1 : 25

RC functions:
Rudder, throttle, auxiliary working systems

Essential accessories

1 x Attack ER 2/2/2 40 MHz	No. F2211
8 x NiMH AA cell, 1.2 V / 2500 mAh	No. 8005
1 x Transmitter charge lead	No. F1415
1 x POWER PEAK® Uni 7 EQ, 230 V	No. 8564
1 x Charge lead, JST/ TAM	No. 8192
1 x Rokraft 100 uP TAM	No. 8366
1 x Racing Pack 5NiMH 3000 6 V TAM	No. 456007
1 x Power 600/21 Vent	No. 4497
1 x Suppressor set	No. 4008

Auxiliary function accessories

1 x FC16 Boat and Truck	No. F4044
1 x Transmitter battery, 8NiMH 1500	No. 4566
1 x SW-3 E-COLINE sailwinch	No. 6203
1 x Crane servo	No. F1259
alternatively:	No. F1646
(would require programming at the robbe factory)	
1 x Isolation switch	No. 8139

Suitable adhesives

robbe speed Type 1	Nr. 5062
robbe activator spray	No. 5017
Stabilit-Express	No. 5016
robbe rostuff filler paste	No. 5587
robbe precision grease	No. 5532

Recommended ro-color acrylic spray paints

ro-color primer	No. 55440010
ro-color pure white	No. 55400014
ro-color transport red	No. 55400005
ro-color solid black	No. 55400015
ro-color rapeseed yellow	No. 55440001
ro-color transport grey	No. 55440006

Please see the robbe main catalogue for details of tools and accessories.

Dear customer,
Congratulations on your choice of a factory-assembled model boat from the robbe Modellsport range. Many thanks for placing your trust in us.

Introduction to the building instructions
Our model of the PAULA IV is a classic kit - not a ready-made model.
We therefore assume that the builder has a certain amount of experience in the handling of modelling tools and materials.
For this reason these instructions do not explain in detail the procedure for separating machine-cut parts, drilling holes, cutting strip material and wire to length, painting individual components, etc.
The building instructions are divided into sub-assemblies, each of which is sub-divided into individual stages arranged in a logical sequence.
Each stage also includes supplementary hints and tips which apply to the procedures currently in hand.
Before you start construction, please read right through the instructions, referring constantly to the illustrations, so that you have a clear idea how the model goes together.
In basic terms the part numbers in the drawings and instructions reflect the recommended sequence of assembly.
Unless indicated otherwise, all measurements are stated in millimetres.
All stated directions are as seen from the rear of the model looking forward.

General notes on construction

The vacuum-moulded parts
Use abrasive paper to sand the cut edges smooth after trimming the vacuum-moulded parts.
Drill holes in the vacuum-moulded parts at the marked points, and in the positions indicated in the illustrations.

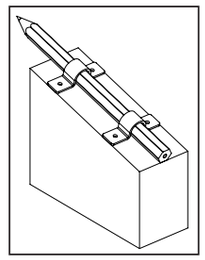
The parts in the machine-cut sheets
This kit contains machine-cut sheets containing model components.
The parts are joined to the sheets by small lugs, to prevent them falling out in transit. They can easily be removed using a chisel or a sharp balsa-knife.
It is best to leave the parts in the sheets until you need them for the stage in hand; this makes it easier to identify the remaining parts.
These instructions include an A4 sheet showing reduced-scale drawings of the machine-cut sheets and the stage numbers for which they are needed.
The machining process produces "radii" (rounded areas) on internal corners. In some cases it is necessary to remove these rounded corners using a needle file or a sharp knife. These areas are indicated by an exclamation mark (!) in the drawings.
The individual sub-assemblies from each stage should be trial-fitted “dry” (no glue) beforehand, both to check that the parts are correctly positioned, and that they fit together neatly.
As most of the curved shapes require fine adjustment, the projecting tongues are designed to have a little play in the matching slots. This is useful when completing complex sub-assemblies, but does mean that you have to be very accurate when aligning external contours.
This method of construction inevitably leaves small gaps; these can be used to tack the parts together with small quantities of cyano.
When joining parts at an angle to each other, it is important to ensure that their contact surfaces mate accurately, as errors are cumulative, and the result may be that it is difficult to install subsequent sub-assemblies in the correct position.
The sequential numbering of the stages of assembly is intended to help you when installing the parts. This is not always 100% true, but still forms a useful guideline.
Wait until glued joints have set hard before filling exposed joints and sanding smooth.

Glued joints
Use the recommended adhesives only.
Always observe the instructions provided by the adhesive manufacturers.
All parts must be trial-fitted “dry” (without glue) before you reach for the adhesive.
When using Stabilit-Express, spread the adhesive out thinly rather than applying thick beads of glue.
All glued joints involving the hull at which there is a danger of water penetration (rudder bush, stern tube etc.) must be sealed carefully with a fillet of Stabilit-Express.
Hold parts together with clamps or strips of adhesive tape after applying the glue.
Small quantities of cyano-acrylate can be applied using a pin or a length of thin wire.

Soldering
When soldering joints involving the railing stanchions and similar parts, always use a hot iron and apply it for the minimum of time, otherwise there is a danger of heat-damage to the adjacent plastic parts (superstructure, platforms etc.). An alternative method is to prepare a simple jig for bending and soldering the individual railing sections.
Clean up all soldered joints carefully. All metal parts must be rubbed down with fine abrasive paper and de-greased before they are painted. Use heat-shrink sleeves to insulate soldered joints involving connectors and cables.

Painting the model
It is left up to the builder to decide when to paint the individual components.
Any gaps between individual plastic parts can be made good using a plastic filler paste, e.g. robbe rostuff-micro. Sand filled areas smooth when dry.
When plastic parts are to be painted, clean the surfaces with white spirit (not cellulose thinners), and then avoid touching them again. Before painting the hull we recommend giving it a coat of primer and rubbing down with fine abrasive paper.
If you wish to obtain a neatly delineated paint job, it is essential to paint areas of different colour separately. This means: every individual component which is to be a different colour should first be trimmed to fit on the boat, then painted, and only then glued or screwed to the model.
If any part is to be painted in multiple colours, then the different areas should be masked out using Tesafilm (clear adhesive tape) or PVC tape - don't use paper masking tape. The tape must be removed again when the new paint is just dry to the touch.
Where painted parts are to be glued to the model, sand the painted surface before applying glue.
For painting this model we recommend acrylic-based or synthetic enamel paints exclusively.
If you wish, you can finish the model in the colour scheme shown in the kit box illustrations.

Marking the waterline, painting the model



Since the Construction Water Line (CWL) also represents the dividing line between the upper hull and the lower hull colours, it must be marked on the hull before painting.
It is best to prepare the jig shown in the drawing for marking the waterline.
The position of the waterline is stated in the drawing.
Place the hull in the boatstand and weight it down to prevent it shifting.
Now pack up the boatstand so that the CWL points marked at the bow and stern are the same height above the bench; it is best to check this with a steel ruler. Set the jig to the correct height, and move it round the hull to mark the waterline all round.

Radio control system
A two-channel radio control system is all you need to operate the model.
We recommend that you install the specified RC components. Study the instructions supplied with the equipment before using it for the first time.
Electrical connections must be secured inside the hull in such a way that they cannot come into contact with any water which penetrates the model.

Be sure to read these Safety Notes before you assemble your model. Always keep to the procedures and settings recommended in the instructions.
If you are operating a model boat for the first time, we recommend that you enlist the help of an experienced modeller.

Safety Notes
Radio-controlled models are not toys in the usual sense of the term. Young persons under fourteen years should only be allowed to operate them under the supervision of an adult.
Building and operating these models requires technical expertise, manual skills, a careful attitude and safety-conscious behaviour.
Errors, negligence and omissions in building or operating this model can result in serious personal injury and damage to property.
Since the manufacturer and vendor are not in a position to check that your models are built and operated correctly, all we can do is bring these hazards expressly to your attention. We deny all further liability.

Boat propellers, and all moving parts generally, constitute a constant injury hazard.
It is essential to avoid touching such parts.

Please bear in mind that motors and speed controllers may become hot when operating. It is essential to avoid touching such parts.

Do not stand close to the hazard area around rotating parts when an electric motor is connected to the flight battery.
You must also take care to keep all other objects away from moving or rotating parts.

Observe the instructions provided by the battery manufacturer.
Overcharged or incorrectly charged batteries may explode. Take care to maintain correct polarity.

Ensure the equipment is protected from dust, dirt and moisture contamination.
Do not subject the system to excessive heat, cold or vibration.
The radio control system may only be operated when the ambient temperature is within the stated range.

Use the recommended charger only, and charge the batteries only for the prescribed period.
Check your equipment for damage at regular intervals, and replace defective components with genuine spare parts.
Do not re-use any devices which have been damaged in a crash or by water, even when they have dried out again.
Send the equipment to the robbe Service Department for checking, or replace the parts in question.
Crash or water damage can result in concealed defects which may lead to failure in subsequent use.
Use only those components and accessories which we specifically recommend.
Always use original robbe-Futaba connectors and spare parts.
Do not carry out modifications of any kind to the radio control equipment.

Particular care is called for when operating radio control systems on the 27, 35 and 40 (41) MHz frequency bands:
- Always use genuine robbe-Futaba plug-in crystals.
- If several modellers are using the same stretch of water, ensure that your frequency is not already in use before switching your radio on.
- Extend the transmitter aerial to full length and make sure it is securely seated.
- When several transmitters are being used on adjacent channels, the operators should stand together in a loose group.
- Any modeller standing away from the group endangers his own model as well as those of the others.

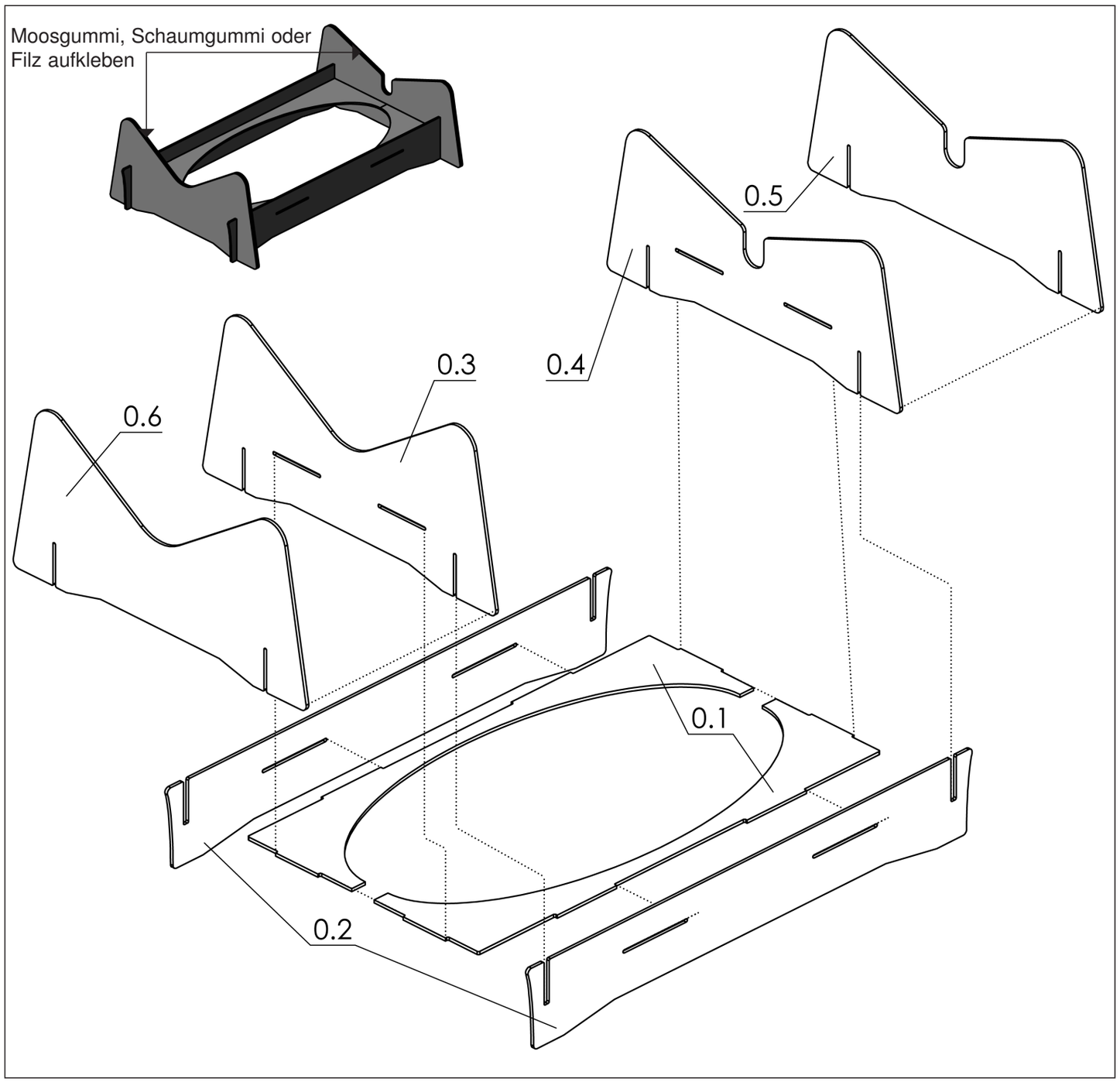
Routine pre-run checks
- Before switching on the receiver, ensure that the throttle control on the transmitter is in the Stop or Idle position.
- **Always switch on the transmitter first, and then the receiver.**
- **Always switch off the receiver first, and only then the transmitter.**
- Carry out a range check before each session.
- Have you selected the correct model memory?
- Check all the working systems.
- Are the batteries sufficiently charged?
- **If you are not sure of any point - don't run the model!**

Operating the model
- Never endanger people or animals.
- Don't operate your model in the vicinity of canals locks or open waterways.
- Operate your model at authorised sites only.
- **Never operate your radio equipment in stormy weather.**
- Never "point" the transmitter aerial straight at the model when operating it. In this direction the transmitter's radiated output is at a minimum. It is always best to keep the long side of the aerial facing the model.

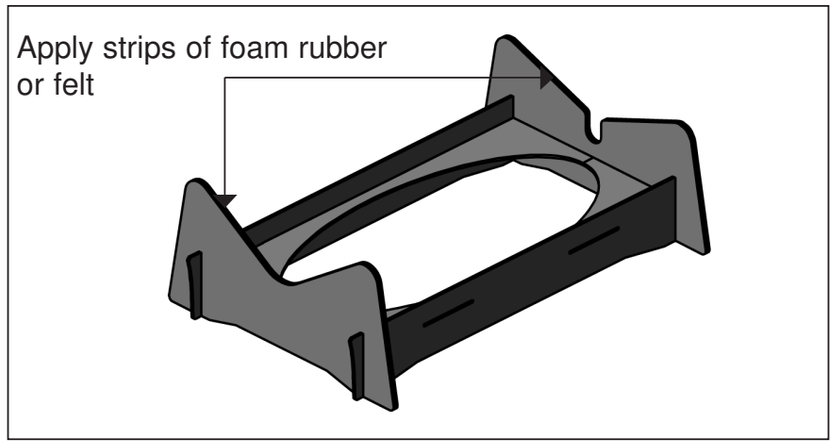
Insurance
Ground-based models are usually covered by standard personal third-party insurance policies.
Check your insurance policy and take out new cover where necessary.

Liability exclusion:
robbe Modellsport is unable to ensure that you observe the assembly and operating instructions, or the conditions and methods used for installing, operating and maintaining the model components.
For this reason we accept no liability for loss, damage or costs which are due to the erroneous use and operation of our products, or are connected with such operation in any way.
Regardless of the legal argument employed, our obligation to pay compensation is limited to the invoice value of those robbe products directly involved in the event in which the damage occurred, unless otherwise prescribed by law.
This does not apply if the company is deemed to have unlimited liability according to statutory regulation due to deliberate or gross negligence.

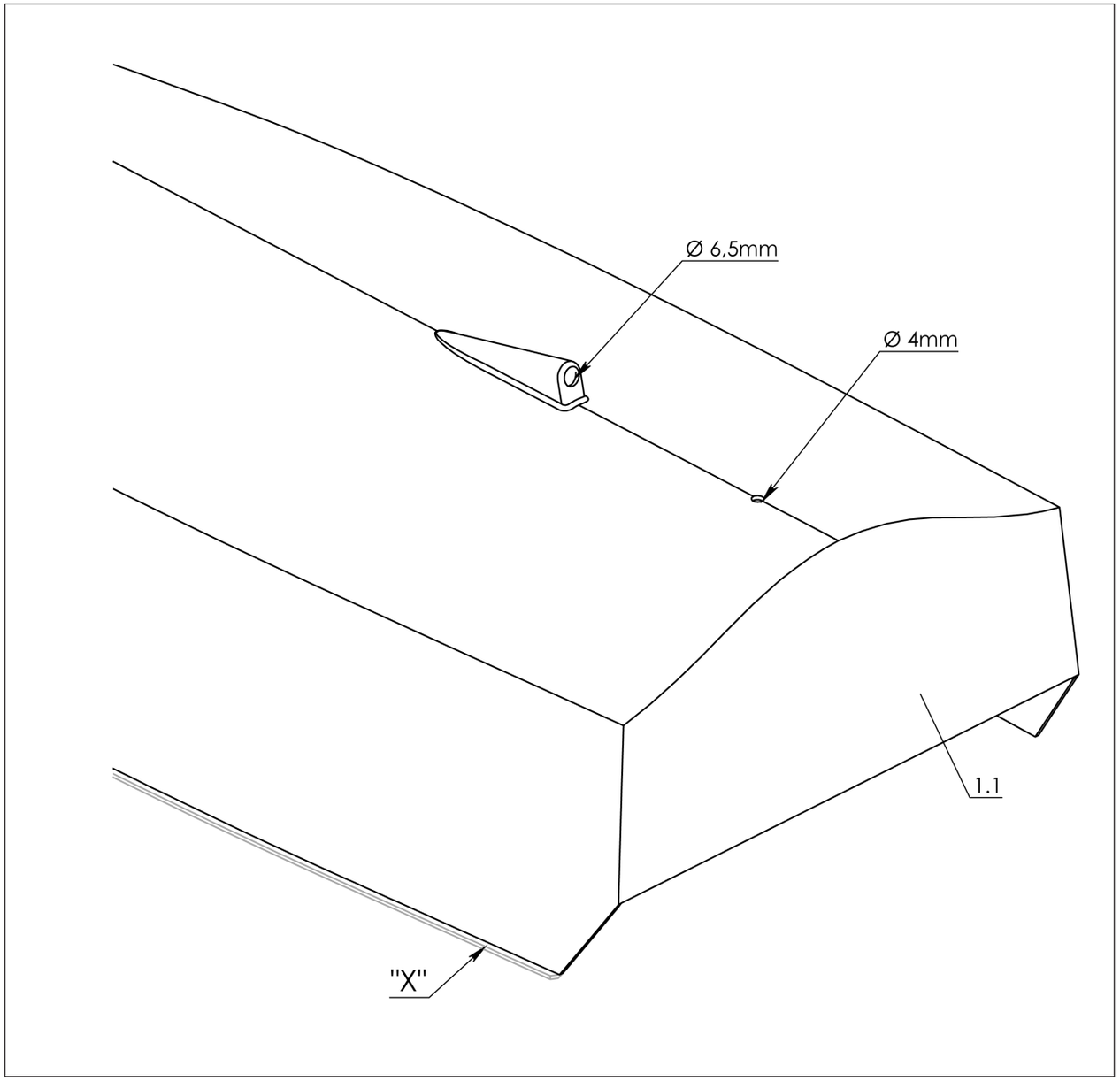
Baustufe 0 – Bootsständer



Stage 0 – Boatstand **Page 5**

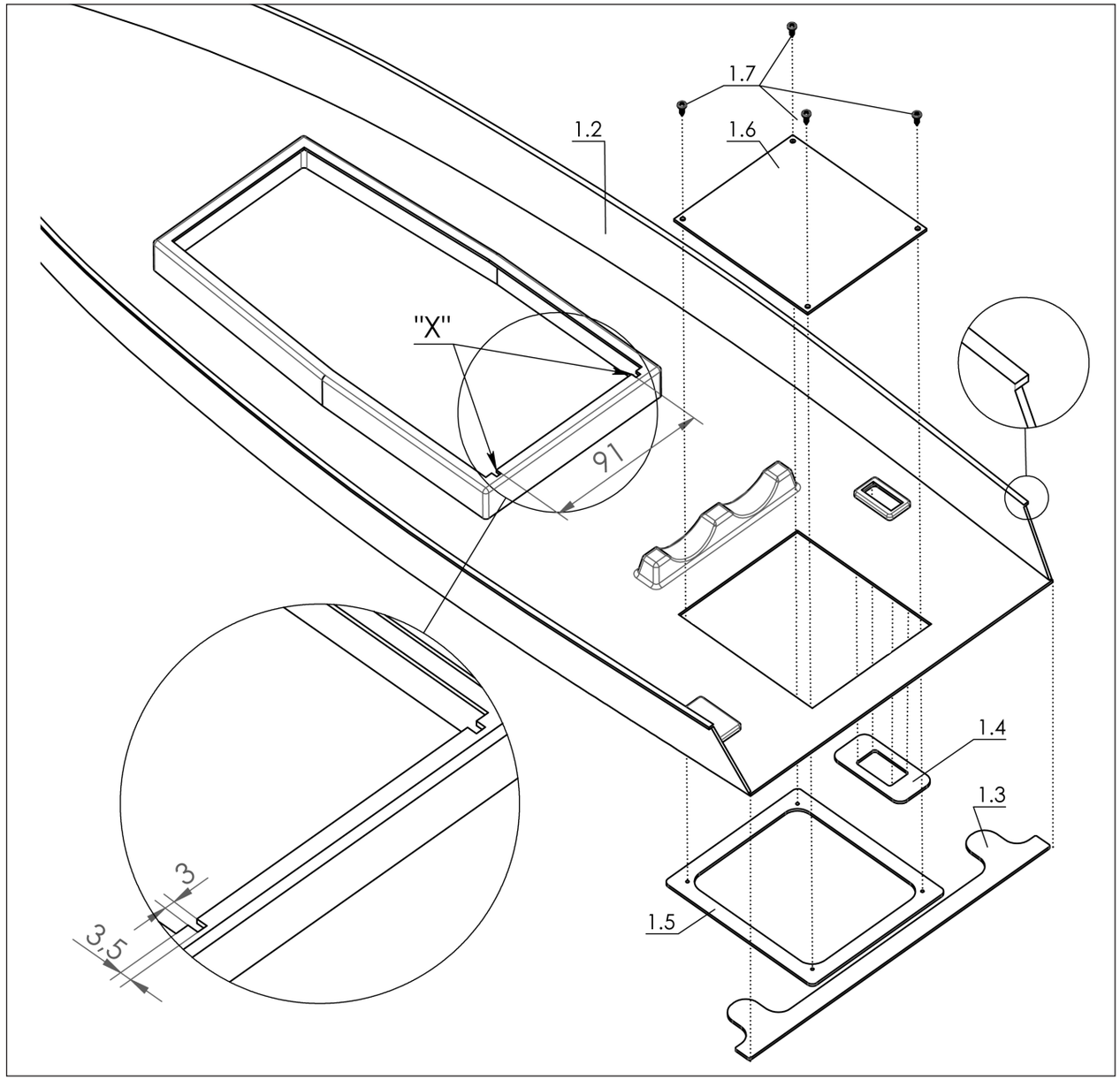


- Separate the parts from the machine-cut sheet "A".
- Glue the parts together on a flat surface, as shown in the drawing.
- Allow the glued joints to set hard, then sand and paint the boatstand.
- When the paint is dry, stick protective material (foam rubber, foam plastic or felt) to the contact surfaces. These soft linings protect the hull from scratches during construction.

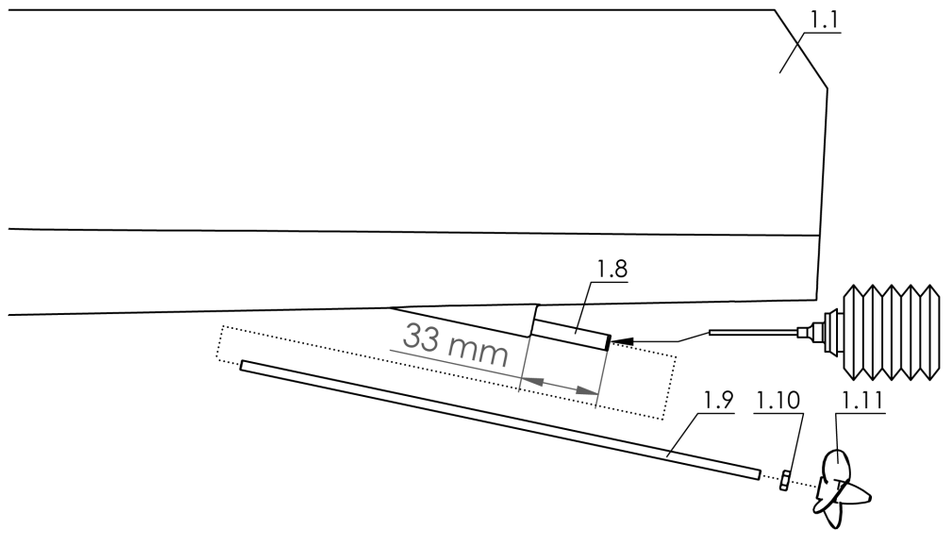


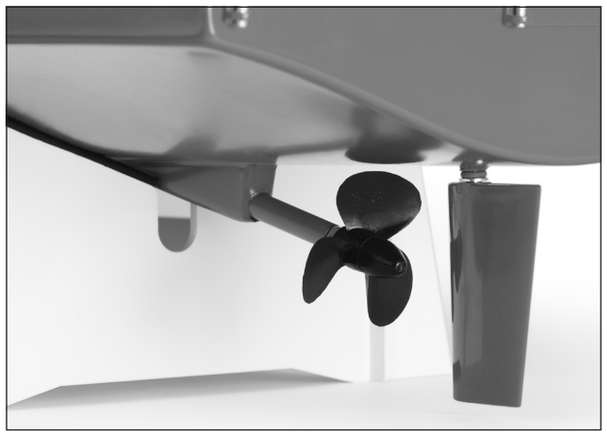
- Separate the parts required from the machine-cut sheets "B, C".
- Cut out the hatched-in areas of the vacuum-moulded parts 1.1 and 1.2.
- Drill holes in the hull 1.1 at the positions indicated.
- **Caution "X":** a small flange (about 2 - 3 mm) should be left all round, as this serves later as support for the deck 1.2.

Baustufe 1 – Rumpf/Motoreinbau

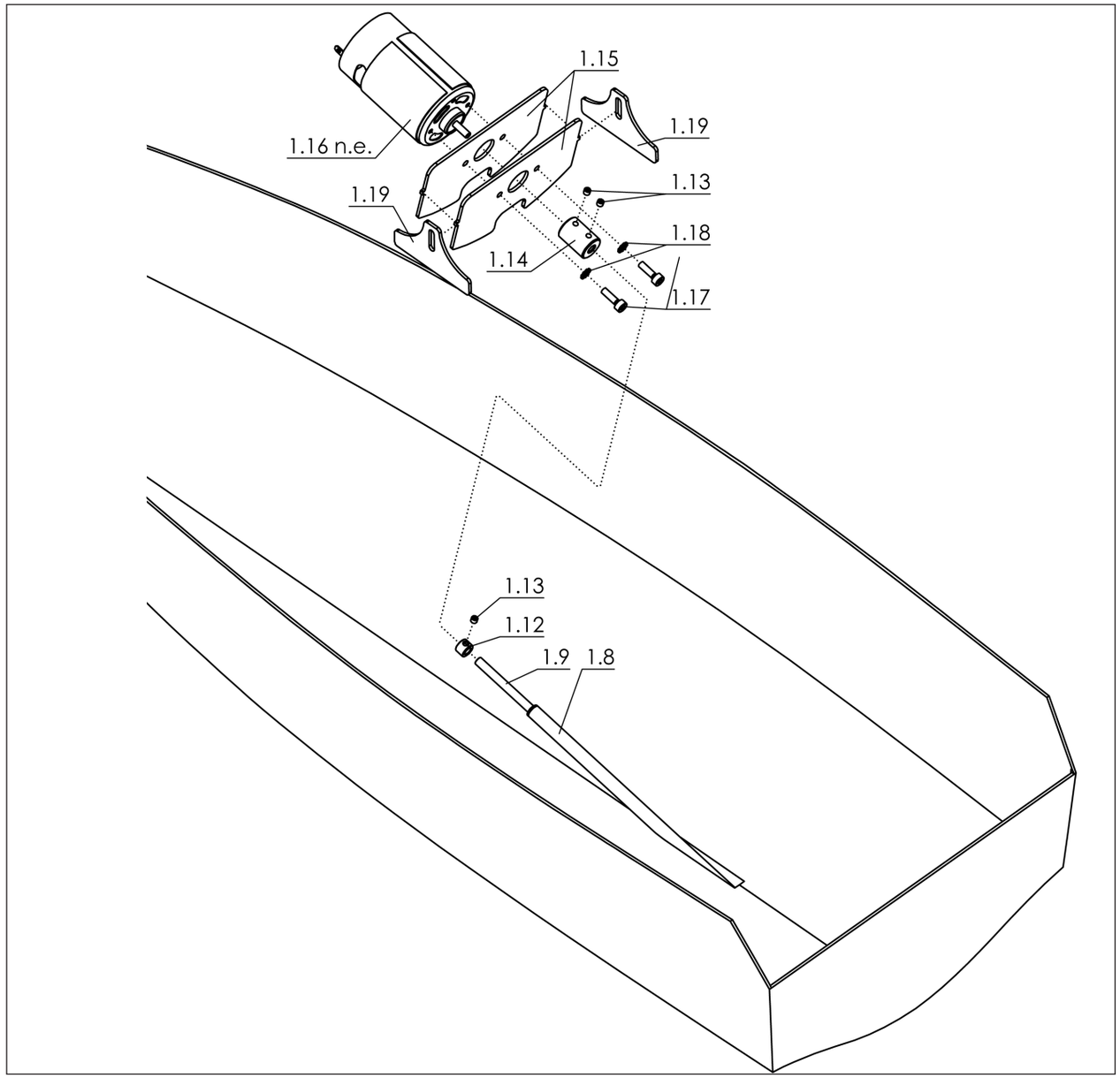


- Glue the reinforcement 1.3 under the stern edge of the deck 1.2, keeping it flush and central.
- Glue the bellcrank reinforcement 1.4 under the small opening.
- Fix the rudder hatch cover 1.6 to the frame 1.5 using the screws 1.7, then fit it in the deck from the underside.
  Caution: glue the frame only.
  The cover only acts as a temporary locating piece.
- Cut out the openings "X" as indicated.



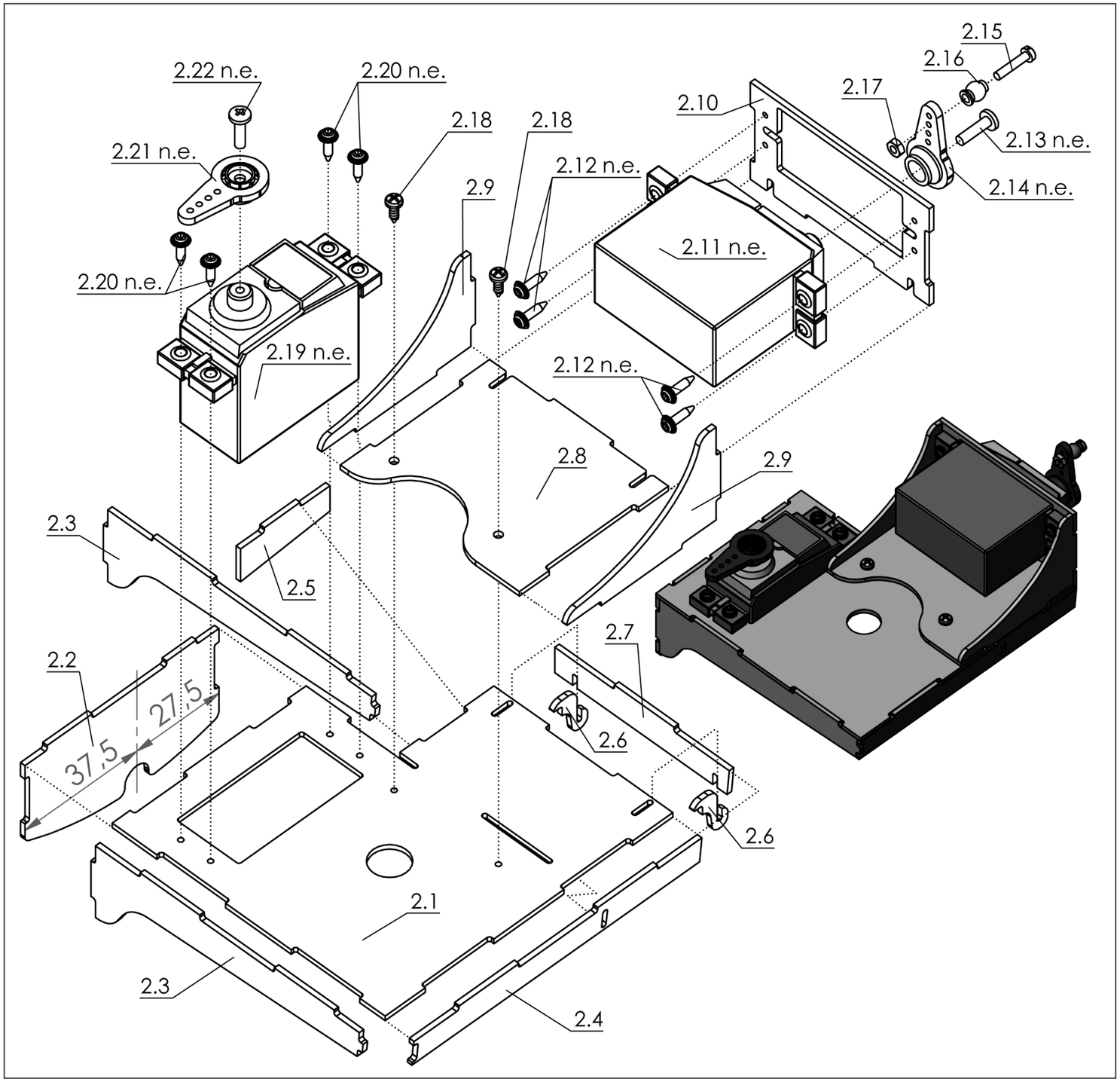


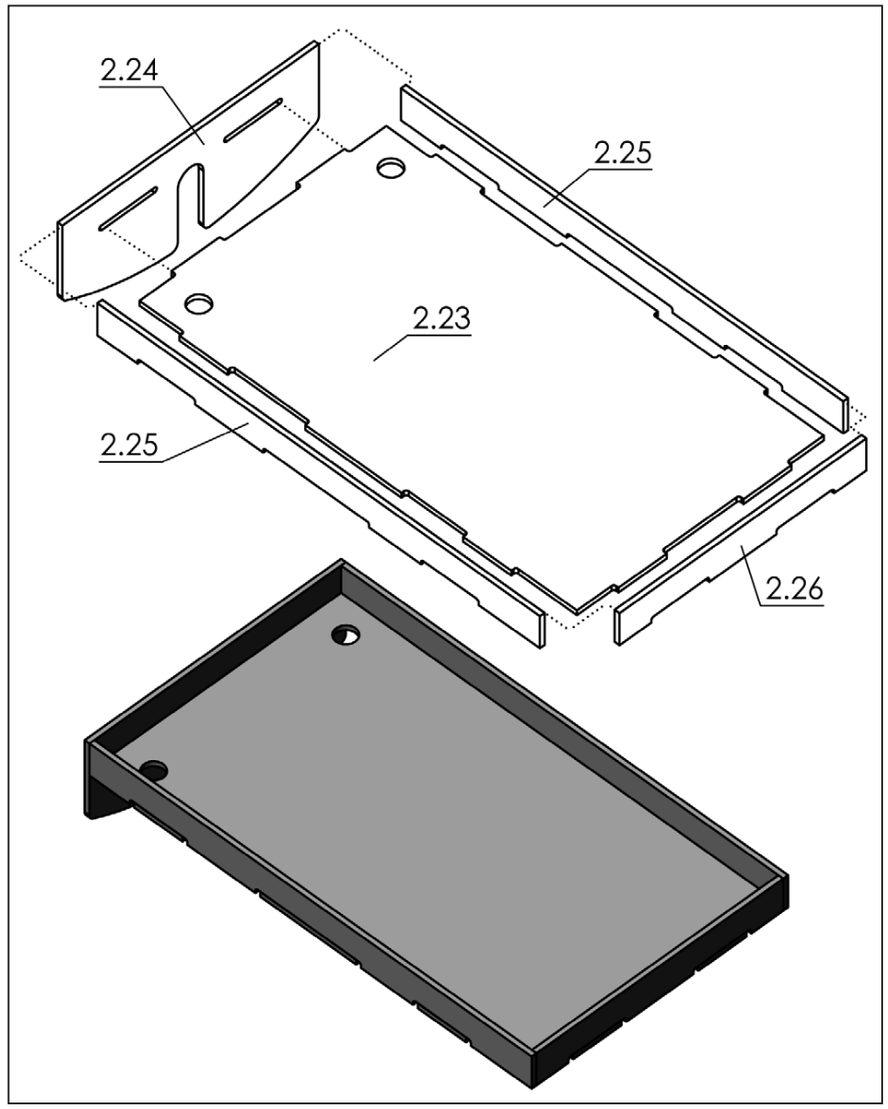
- Lightly grease the shaft 1.9 before fitting the stern tube 1.8 in the hull as shown.
- Tack the stern tube to the outside edge of the hull, referring to the stated dimension.
- Lock the propeller 1.11 on the shaft 1.9 using the hexagon nut 1.10.



- Fit the collet 1.12 (with socket-head grubscrew 1.13) on the shaft 1.9, and slide it along the shaft until it rests against the stern tube.
- Temporarily fit the shaft coupling 1.14 on the shaft, leaving it loose.
- Attach the electric motor 1.16 (not included) to the doubled bearer 1.15 using the screws 1.17 and shakeproof washers 1.18.
- Slide the electric motor assembly into the shaft coupling, leaving about 1 mm clearance between motor shaft and propeller shaft.
- Tighten the socket-head grubscrews 1.13.
- Glue the motor bulkhead 1.19 to the side of the motor mount, and glue the whole motor assembly in the hull. The stern tube can now be glued to the hull, taking care to produce a waterproof joint.

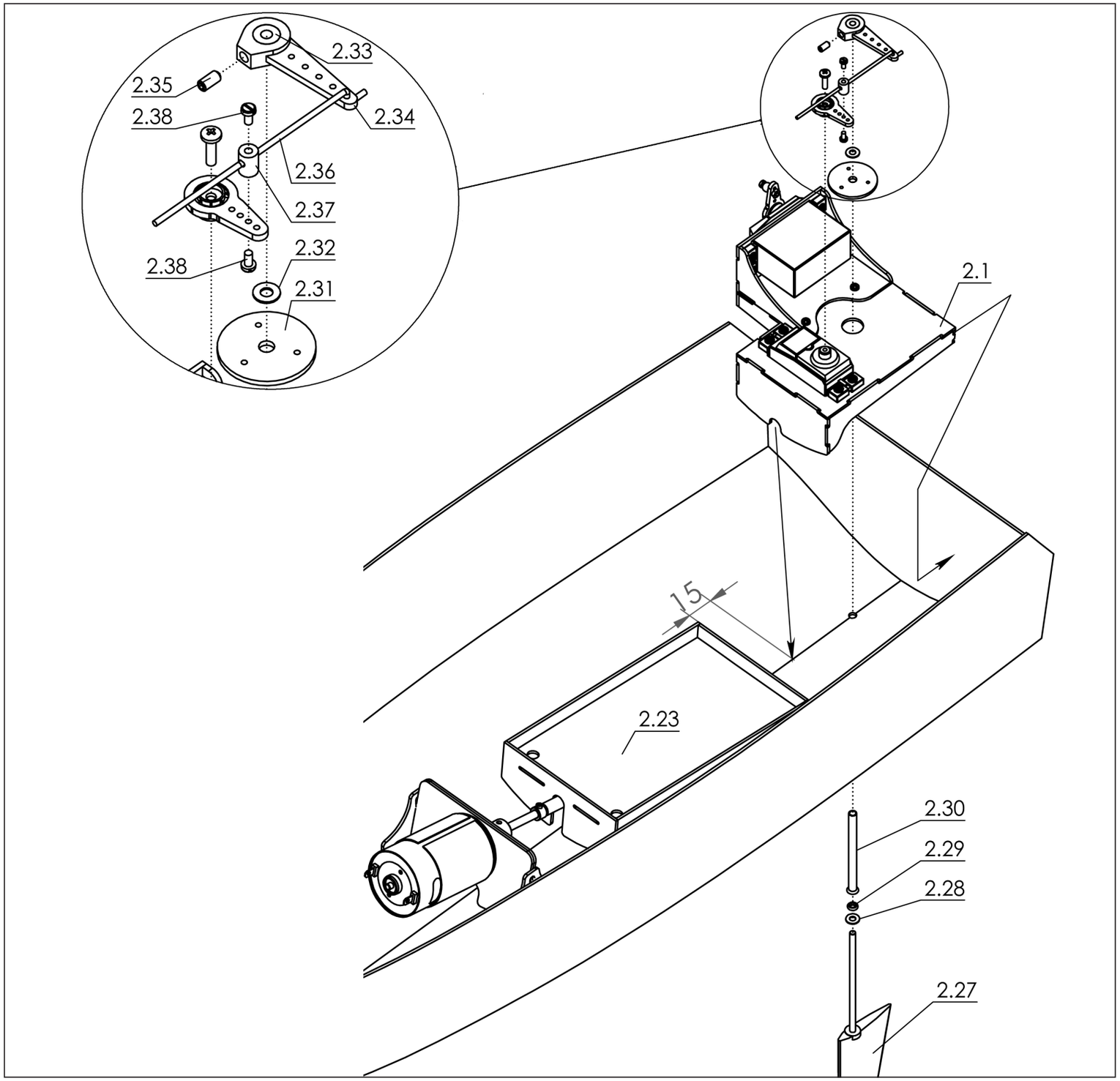
Baustufe 2 – Ruder mit Anlenkung





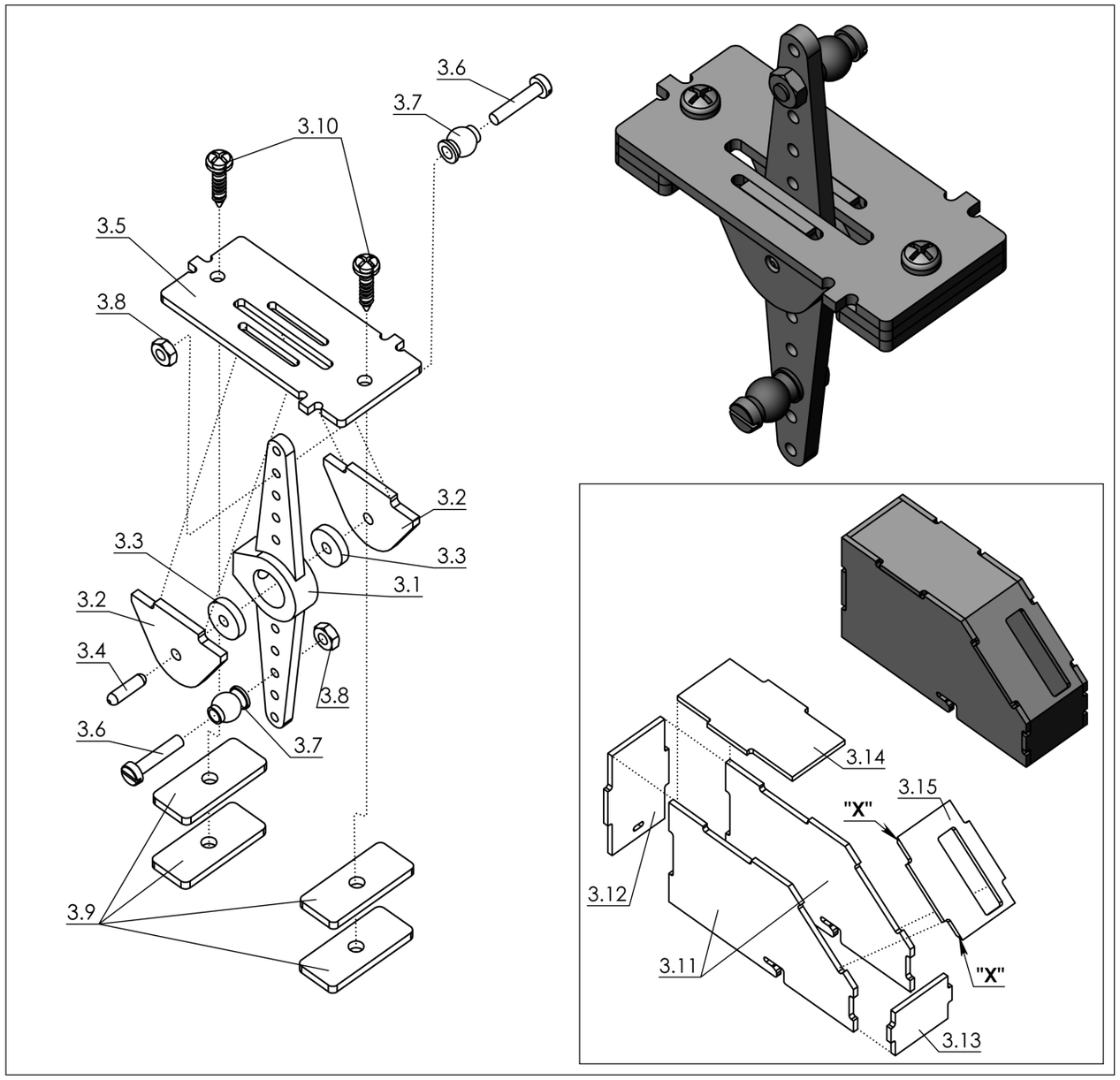
- Separate the parts required from the machine-cut sheet "C".
- Glue together the machine-cut parts 2.1 to 2.10 as shown; it is important to note the correct position of the bulkhead 2.2. Note: the purpose of the locking hooks 2.6 is to support the removable crane servo 2.11. Fix the plate 2.8 to the plate 2.1 using the self-tapping screws 2.18.
- Assemble the RC platform from parts 2.23 - 2.26.

Baustufe 2 – Ruder mit Anlenkung

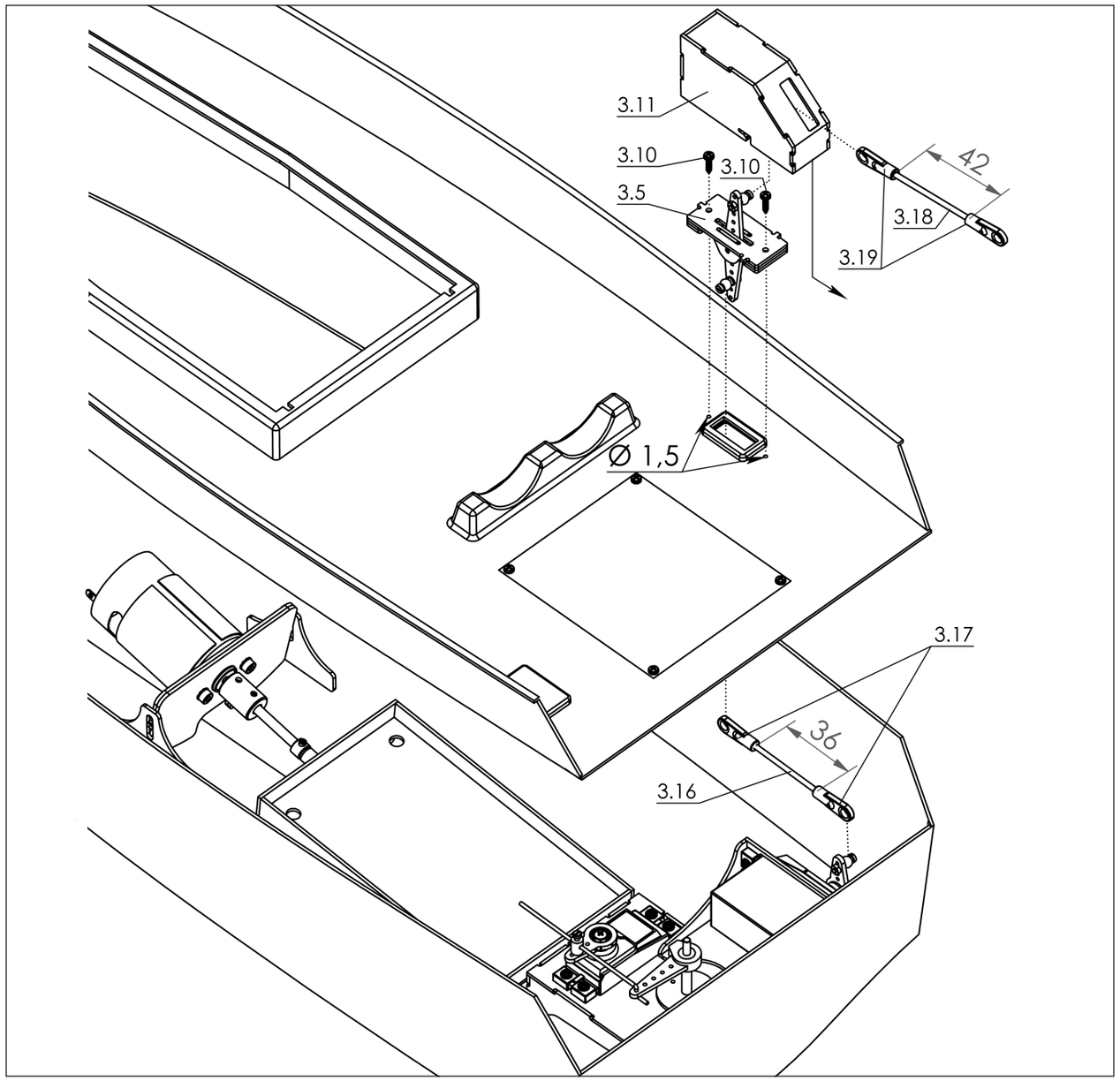


Stage 2 Rudder and linkage

- Glue the servo mount assembly and the RC platform in the centre of the hull.
- Fit together parts 2.27 - 2.35 to form the rudder assembly, install it in the hull and the servo mount, and align it carefully. The locating disc 2.31 determines the position of the rudder.
- Glue the rudder bush 2.30 to the hull, taking care to produce a waterproof joint.
- Connect the pushrod 2.36 to the tiller arm 2.33.
- Attach the swivel pushrod connector 2.37 to the servo output arm using the screw 2.38. Note: once you have tightened the screw just to the point where slop is at a minimum, apply a drop of cyano to prevent it working loose in the connector.
- Fit the pushrod assembly on the servo and rudder shaft using the screws shown; check that the parts line up flush.



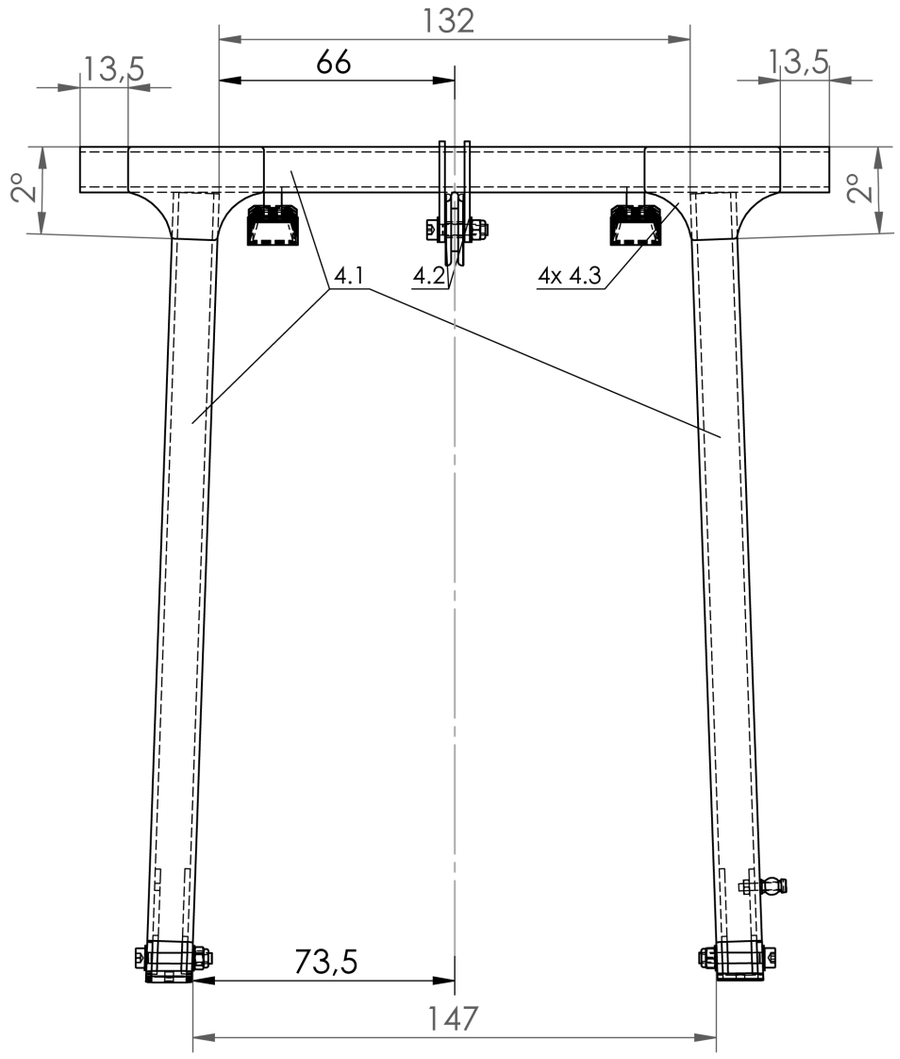
Baustufe 3 – Deck



Stage 3 – Deck

- Separate the parts required from the machine-cut sheet "C".
- Assemble the bellcrank support 3.1 - 3.10 and box 3.11 - 3.15 as shown. The screws 3.10 act as a temporary centring piece for positioning the packing pieces 3.9.
- **Note "X":** chamfer the edges of part 3.15 until it fits correctly.

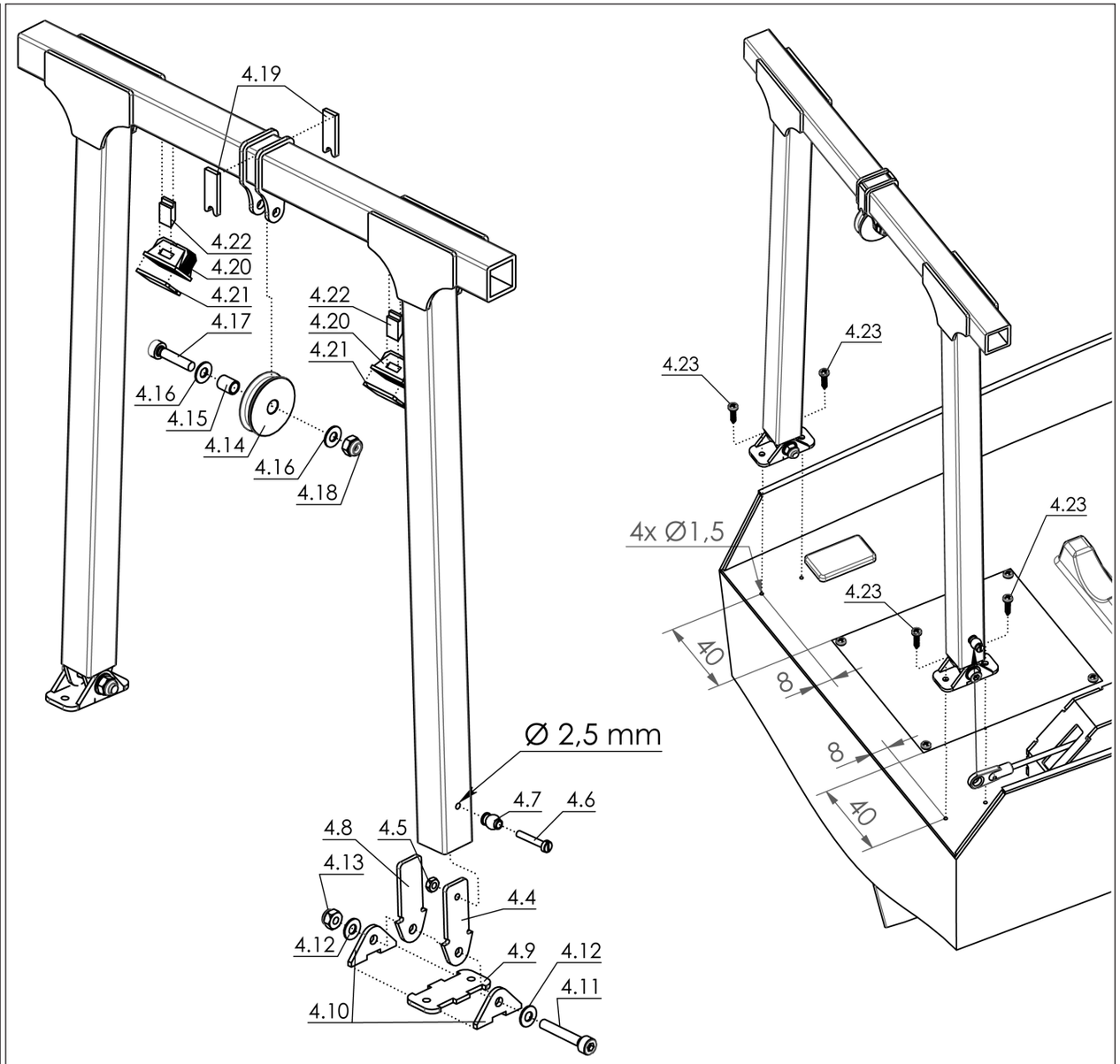
- Fit the ball-links on the pushrods 3.16 and 3.18 and set them to the stated length.
- Drill the prepared deck to accept the bellcrank sub-assembly.
- Temporarily screw the bellcrank sub-assembly to the deck, and check that the box can be removed. The box is retained by placing it in position and sliding it fore and aft. If this does not work properly, it may be necessary to carry out some careful trimming to the machine-cut tongues of part 3.5.
- If you wish to fix the crane permanently, fill the slots of part 3.5 with scrap material in order to prevent the lever moving.
- The deck and hull can now be glued together. Sand back the edges all round to the profile shown.



Stage 4 – Crane

- Separate the parts required from the machine-cut sheet "C".
- Prepare a dimensioned outline prior to assembling the crane components 4.1, 4.2 and 4.3.
  Caution: note the angle of the crane connecting pieces 4.3; do not glue the pulley mounts 4.2 at this stage.

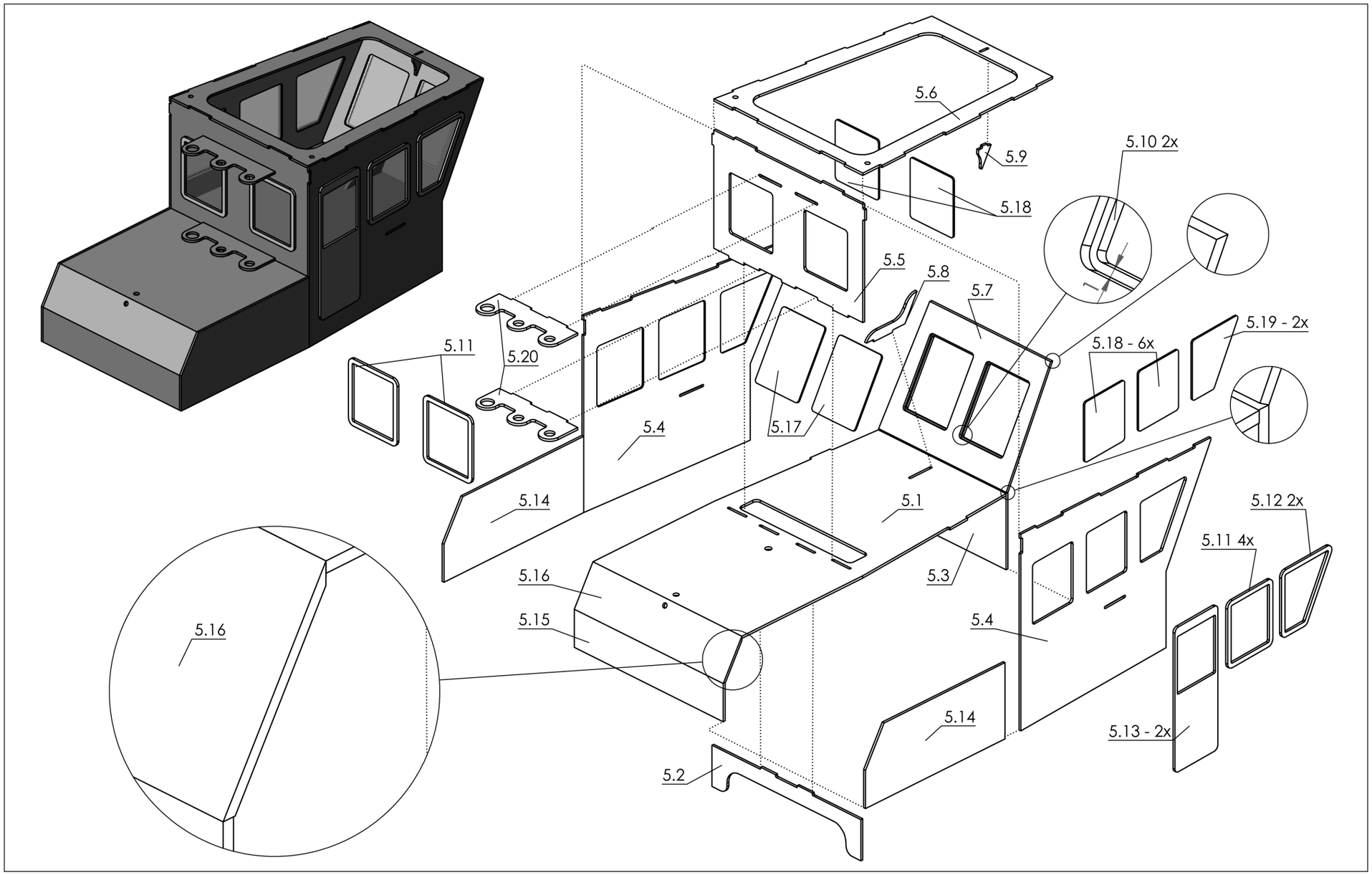
Baustufe 4 – Kran



Stage 4 – Crane

- Drill a 2.5 mm Ø hole on one outside face of the crane component 4.1, marking it from part 4.4.
- Glue the hexagon nut 4.5 to the inside of the appropriate base component 4.4, in line with the upper hole, which is already defined. Note: the base components 4.4 and 4.8 are fitted in the square tubes of part 4.1, resting against them at the bottom. Glue part 4.4 to the outer wall, and part 4.8 to the inner wall. Explanation: the slight difference in hole spacings allows for the angle of parts 4.1.
- Install the linkage ball 4.7 and screw 4.6.
- Assemble parts 4.9 and 4.10, and screw them to parts 4.11 - 4.13. Caution: do not over-tighten the screws, as the crane must be free to move smoothly.
- Attach the cable pulley sub-assembly 4.14 - 4.18 to the pulley mount 4.2, which is not yet fixed. Use the cable guides 4.19 to centre the whole assembly, then fix it to the horizontal component 4.1.
- Assemble the deck floodlight 4.20 - 4.22 and glue it in place, resting against part 4.3 as shown.
- Drill the holes for fixing the crane as shown in the drawing, and attach the crane to the deck using the screws 4.23.

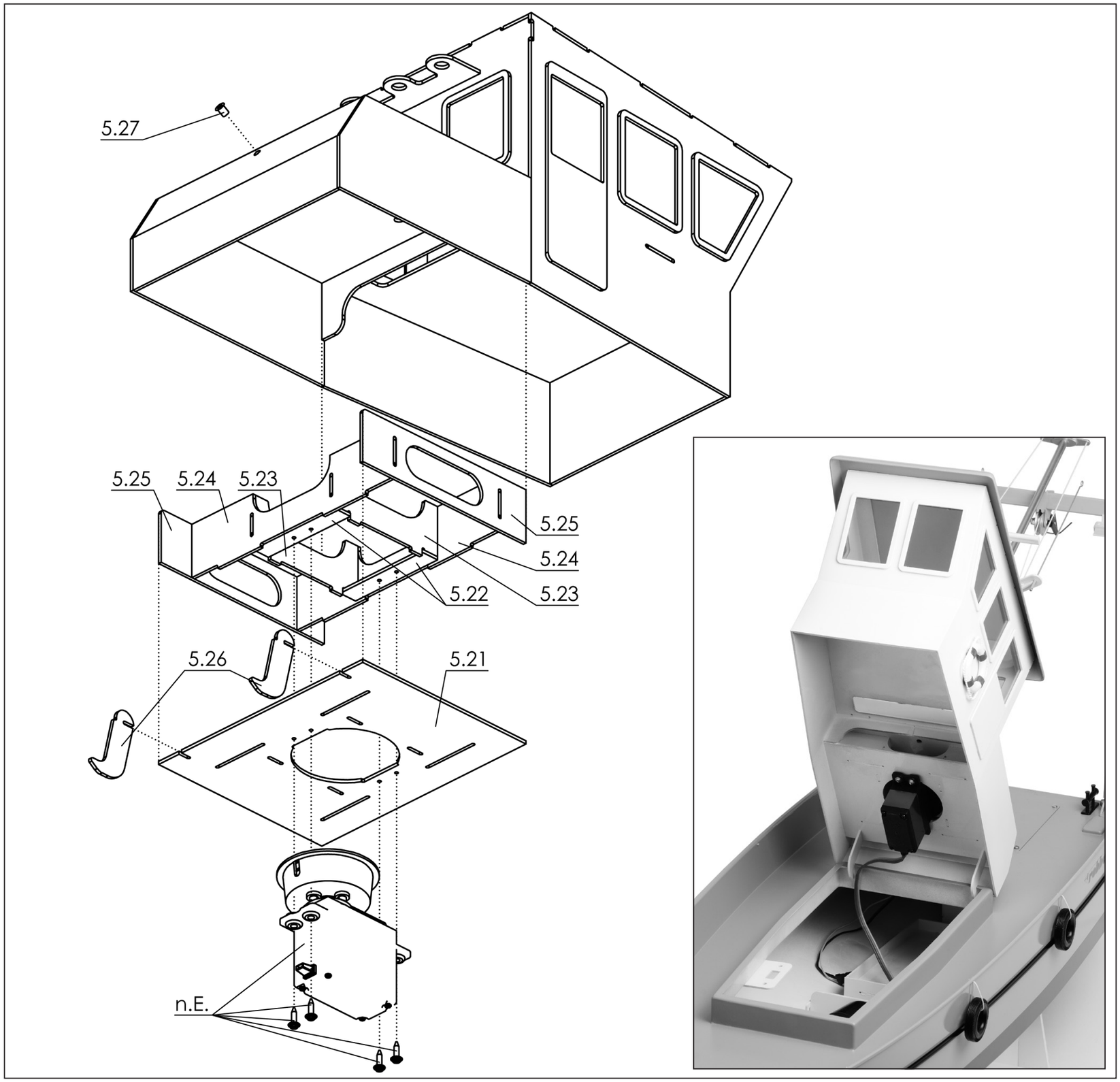
Baustufe 5 – Aufbau



Stage 5 – Superstructure **Page 16**

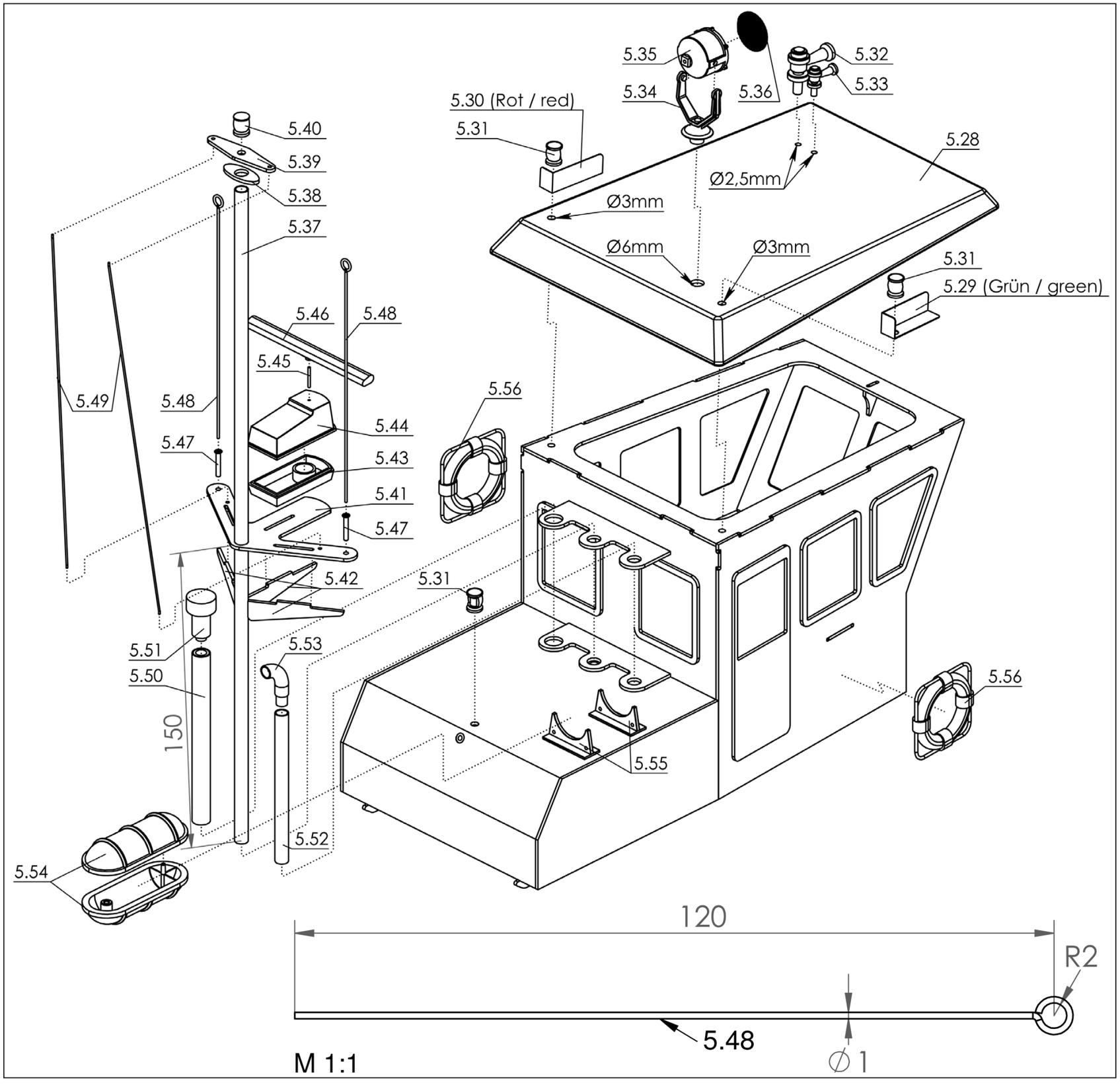
- Separate the parts required from the machine-cut sheet "B".
- **Preliminary note:** the superstructure is designed to be assembled with window frames and inset glazing panels. Please work very carefully when gluing the frame components 5.10 - 5.13 in place. They can be aligned correctly by placing them against the appropriate walls; this will produce a spacing all round of 1 mm relative to the window openings. This spacing also acts as "stop" for the glazing panels which are to be fitted (machine-cut sheet "D"). Alternatively it is possible to glue the frames in place before the superstructure is assembled; this allows more accurate working. If you take this option, be sure to produce a handed pair of side walls: one left and one right.
- Assemble the base plate 5.1 - 5.6.
- Bevel the edges of the wall 5.7 until it is a snug fit.
- Install the internal braces 5.8 and 5.9 to stiffen the structure.
- Glue the window frames / doors 5.10 - 5.13 to the outside of the appropriate walls as shown.
- Glue the side panels 5.14 and end-piece 5.15 to the superstructure.
- Trim the angled fairing 5.16 to fit.
- Install the windows 5.17 - 5.19 (machine-cut sheet D) from the inside.
- Fit two supports 5.20, align them with the mast 5.37, then glue them in place.

Baustufe 5.1 – Aufnahme für Windenservo

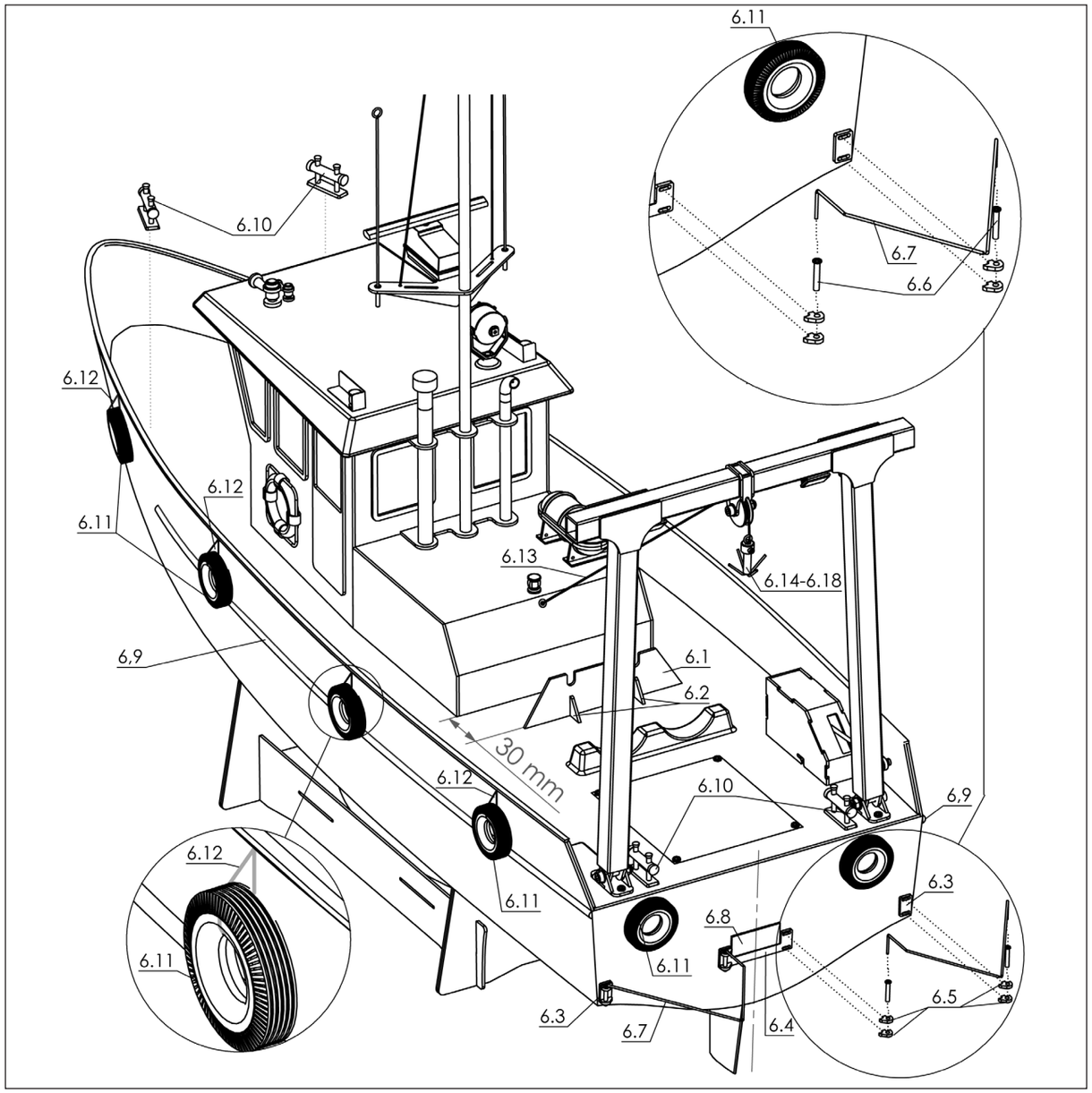


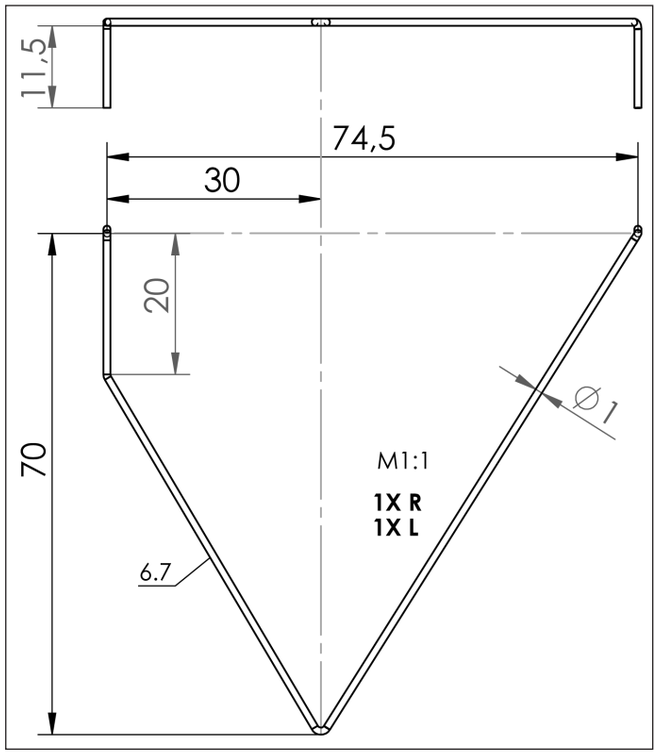
Stage 5.1 – Winch servo mount **Page 18**

- A mount for the sailwinch can be installed if the crane cable winding function is to be carried out using a winch.
- Separate the parts required from the machine-cut sheet "C".
- Assemble parts 5.21 – 5.25.
- The purpose of parts 5.26 is to hold the superstructure in place. They prevent the whole superstructure being pulled off the vessel in windy conditions.
  When removing the superstructure from the deck it is therefore important to ensure that the front edge of the superstructure is raised first (to disengage it), and only then to lift the whole superstructure from the deck.
- Glue the tubular rivet 5.27 in part 5.16 to act as cable guide.

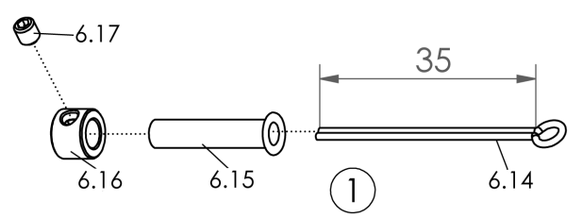


- Separate the parts required from the machine-cut sheet "B".
- Drill holes in the vacuum-moulded part 5.28 at the stated points. Mark the outer 3 mm Ø holes from the machine-cut part 5.6, holding the roof "as far forward" as possible.
- Glue the navigation lamps to the lamp brackets 5.29 - 5.31.
- Glue the single lamp 5.31 concentrically in the hole in the superstructure plate 5.1.
- Glue the foghorns and searchlights 5.32 – 5.36 in place.
- Place the completed roof on the superstructure.
  Note: please ensure that there is a small clearance between the tubes 5.37, 5.50 and 5.52 and the rear edge of the roof.
- Seal the top end of the tubular mast 5.37 with parts 5.38 – 5.40.
- Attach the triangular reinforcement 5.42 to the radar bearer 5.41, slide it onto the tubular mast from the bottom (spacing 150 mm), and glue it at right-angles to part 5.39.
- Assemble the radar unit from parts 5.43 – 5.46. Make the shaft 5.45 from a 10 mm length of 1 mm Ø brass rod.
- Prepare two aerials 5.48 from 1 mm Ø brass rod as shown in the drawing, and solder or glue the tubular rivet 5.47 to the bottom edge.
- Insert the aerials in the outer holes of the radar bearer.
- Tie part 5.49 (thread, supplied in the kit) between parts 5.39 and 5.41.
- Insert the complete mast and the dummy parts 5.50 – 5.53 in the supports 5.20.
- Glue the liferaft components 5.54 and 5.55 to the plate 5.1 as shown.
- Position the lifebelts 5.56 on the side panels in such a way that they cover the gap in the machine-cut sheets.





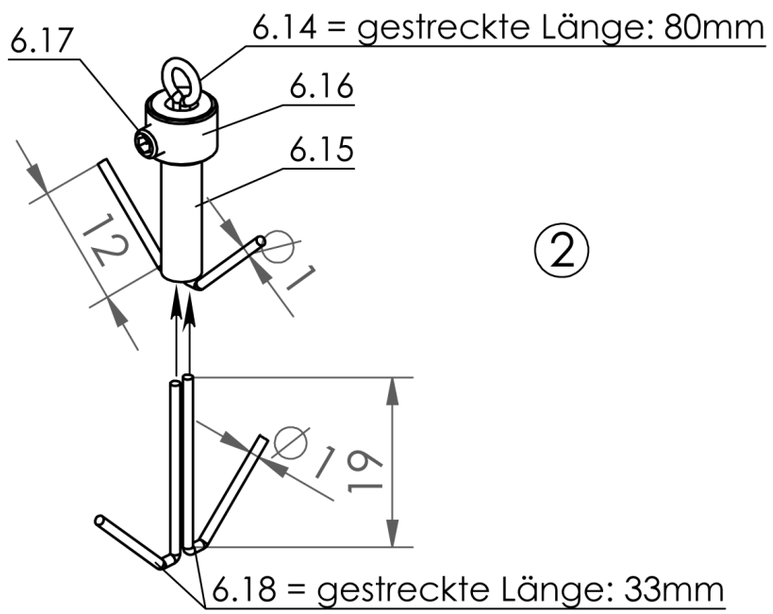
Haken 1



- Separate the parts required from the machine-cut sheet "C".
- Attach the struts 6.2 to the buoy holders 6.1, and glue them to the deck, in line with the depressions. Keep to the stated dimensions.
- Glue together parts 6.3 – 6-5 to form the capture rod holders. Draw a reference line on the transom to mark the positions, then glue them in place.
- Bend the capture rods 6.7 (R + L) to shape from 1 mm Ø brass rod, as shown in the drawing, and solder or glue the tubular rivets 6.6 to the ends to strengthen them.
- Glue the magnetic strip 6.8 in the opening of part 6.4.
- Glue the rubbing strake 6.9 to the external long sides of the hull, keeping them flush at the stern.
- Position the double cruciform bollards 6.10 as shown.
- Suspend eight tyre fenders 6.11 on the outside of the hull using lengths of thread 6.12.: drill small 1.5 mm Ø holes just below the top edge of the hull. The positions are shown in the drawing "CWL = Waterline".
- Glue two tyre fenders 6.11 directly to the transom.
- The thread supplied in the kit for making the hook cable 6.13 is used to fix the hook in its static position. If you intend to operate the hook with a winch, we recommend the use of a longer cable.
- Prepare the hook 6.14 – 6.18 as shown, and tie it to part 6.13.
- The support plate 6.19 can be used if you wish to fit the optional isolation switch.

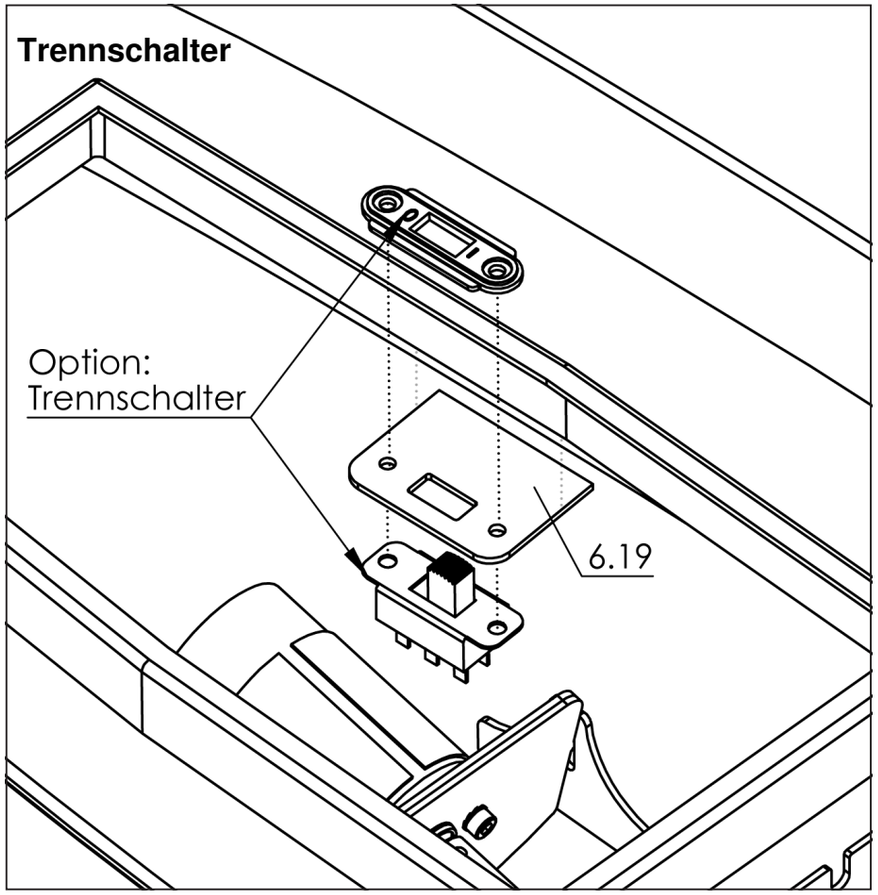
Baustufe 6 – Endausstattung

Haken 2

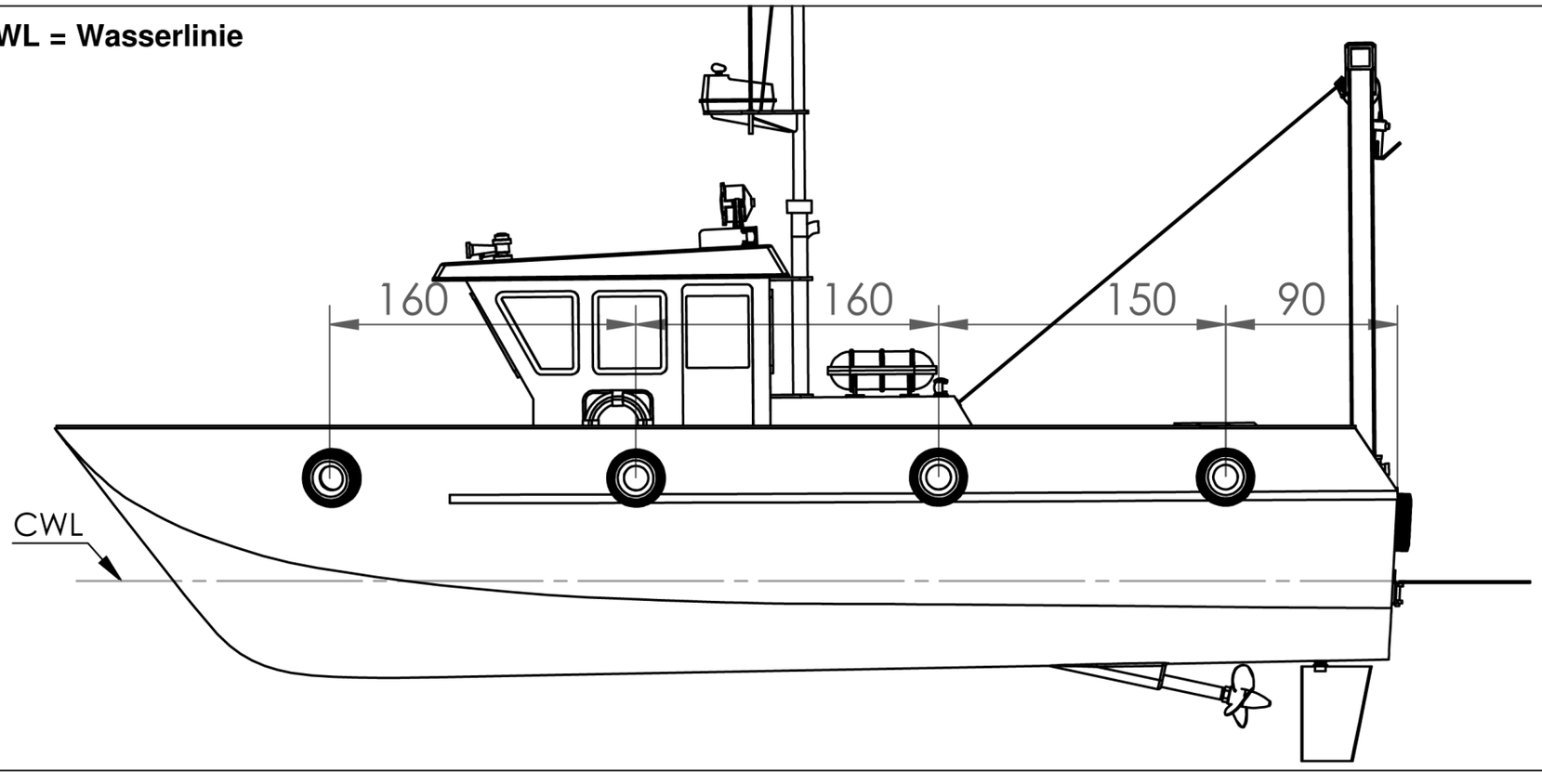


②

Trennschalter

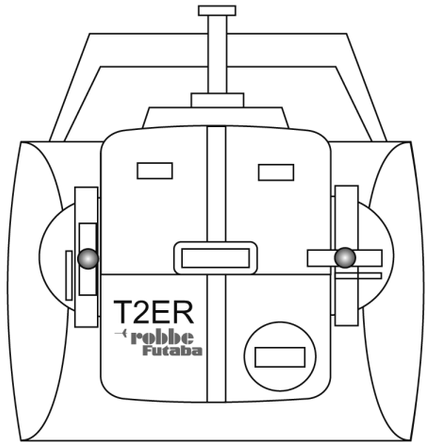


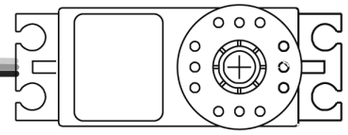
CWL = Wasserlinie

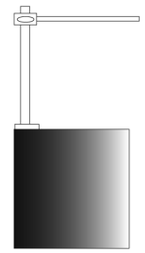


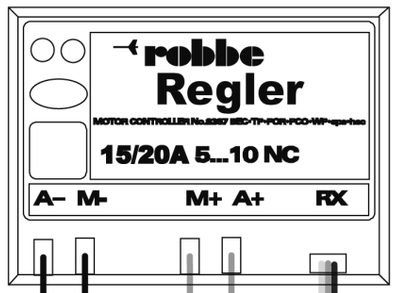
Stage 7 – RC installation

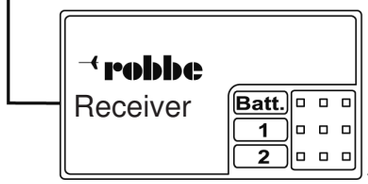
Wiring diagram



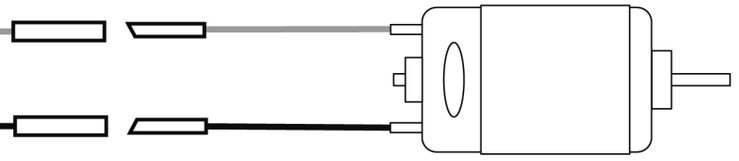


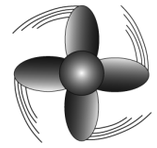






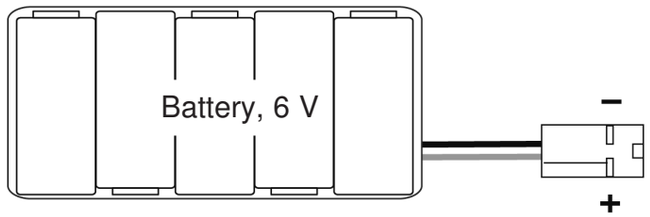
1
2

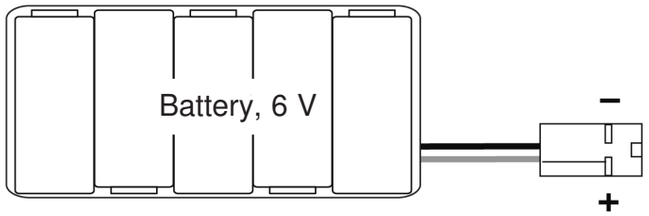




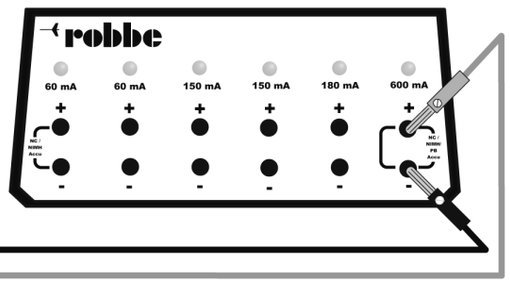
Prepare the Y-lead for connecting
and charging the batteries:

1 x TAM gold-contact socket, pack of 5	No. 4060
1 x TAM gold-contact plug, pack of 5	No. 4061
1 x High-flex stranded cable, 1.5mm²	No. 4089





Charge



Stage 7 – RC installation

- Temporarily install the components, but do not fix them in place permanently at this stage.
- Place the complete model boat in water, and check that the waterline is parallel to the surface. If this is not the case, you can correct the model's attitude by re-positioning the RC system components.
- Check the range of the radio control system before running the boat for the first time. You may need to alter the position or deployment of the receiver aerial to obtain adequate range.
- It is possible to install a second drive battery - as shown in the wiring diagram - in order to obtain longer running times.

Checking the working systems

- Place the hull in the boatstand, and set the transmitter sticks and trims to centre. Check that the throttle stick is at the „Motor stopped“ position.
- Switch the transmitter on. Install the drive batteries, connect them to the speed controller, and secure them well.
- The rudder should now be at centre. Adjust the rudder linkage if necessary.
- Check the right / left function. If the servo rotates in the wrong direction, correct it using the transmitter‘s servo reverse facility.
- Checking the power system:
  If necessary, reverse the direction of rotation by swapping over the wires between motor and speed controller (e.g. if you are using components other than those we recommend).
- Check all the auxiliary working systems.

Caution when testing the motor

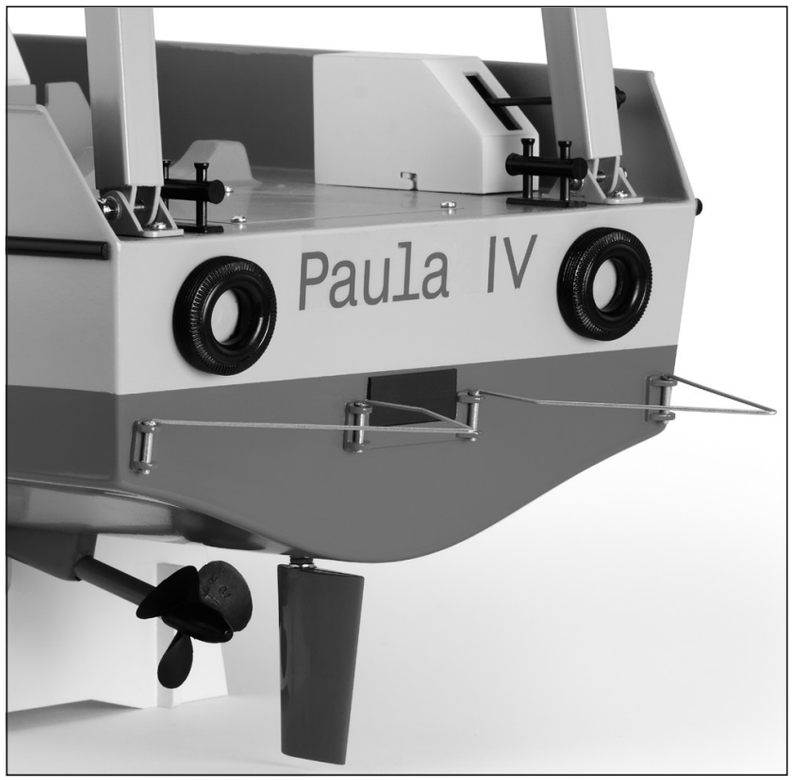
- Always switch on the transmitter first.
- The motor should only be allowed to run slowly and briefly.
- First disconnect the battery from the speed controller, then switch the transmitter off.
- **Caution:** check very carefully that the propeller is able to turn freely whenever you are working on the boat with the battery pack connected. Keep your hands well clear of the spinning propeller - injury hazard.

Trimming

- Assemble the model completely, ready to run, and place it in a bath full of water.
- If you have installed the recommended robbe components, the boat will automatically float at the Construction Waterline (CWL). The trim can be adjusted by shifting the **drive batteries fore and aft**, and the **RC components to either side**.
- If you are using different RC system components, you may need to adjust the boat's trim.
- Once you have recharged all the batteries, the boat is ready for its maiden run.

Running the model

- Read the sections in the **Safety Notes** entitled **“Routine checks before starting”** and **“Operating the model”** before attempting to operate the model for the first time.
- Wait for a day with little or no wind, and seek out a large stretch of calm water.
- Always switch on the transmitter first, then install the drive battery and connect it to the speed controller.
- Place the model in the boatstand, and repeat the check of all the working systems.
- Place the boat in the water, and check that it floats absolutely level.
- Start by running the boat at moderate speed so that you become accustomed to its steering response.
- Reduce the throttle setting to slow the boat. Never switch directly from full-throttle forward to full-throttle reverse.
  Caution: keep the boat's speed very low when running it in reverse.
- When approaching the edge of a lake or an obstacle - such as a buoy - be sure to reduce the throttle in good time.
  Do not run the boat near swimmers or boats.
- Note: towards the end of the running time the battery will lose power quite quickly; the boat will then slow down markedly. If the model is unable to reach the bank, set the throttle to the "Stop" position and wait about three minutes. In this time the battery will recover sufficiently to allow the boat to return to the bank.
- At the end of each run disconnect the drive battery from the speed controller before switching the transmitter off.
- Open the boat and allow the battery pack and motor to cool down. Leave the inside of the boat to dry out (condensation).
- From time to time it is advisable to grease the propeller shaft: loosen the shaft and withdraw it. Apply robbe precision grease to the stern tube, then re-fit the propeller shaft. Ensure that there is adequate axial play in the shaft.



robbe Modellsport GmbH & Co. KG hereby declares that this device conforms to the fundamental requirements and other relevant regulations of the corresponding EC Directive. You can read the original Conformity Declaration on the Internet at www.robbe.com: click on the „Conformity Declaration“ logo button which you will find next to the corresponding device description.

Par la présente, la société robbe Modellsport GmbH & Co. KG déclare que cet appareil est conforme avec les exigences fondamentales et les autres prescriptions de la directive CE correspondante. Vous trouverez l'original de la déclaration de conformité sur Internet à l'adresse wwww.robbe.com, à la description de l'appareil en question en cliquant sur le bouton portant le logo « Déclaration de conformité ».

Con la presente robbe Modellsport GmbH & Co. KG dichiara che questo apparecchio è conforme ai requisiti base e ad altre disposizioni rilevanti della relativa direttiva CE.

This symbol means that you should dispose of electrical and electronic equipment separately from the household waste when it reaches the end of its useful life.

Take your unwanted equipment to your local council collection point or recycling centre. This requirement applies to member countries of the European Union as well as other non-European countries with a separate waste collection system.

Ce symbole signifie que les petits appareils électriques et électroniques en fin de vie doivent être mis au rebut séparément des ordures ménagères.

Portez-les dans les collecteurs communaux appropriés ou un centre de recyclage spécialisé. Cette remarque s'applique aux pays de la Communauté européenne et aux autres pays européens pourvus d'un système de collecte spécifique.

Questo simbolo indica che al termine del loro utilizzo gli apparecchi elettronici di dimensioni limitate devono essere smaltiti separatamente.

Smaltire l'apparecchio presso gli appositi punti di raccolta, come i punti autorizzati dal comune. Questo vale per tutti i Paesi dell'Unione Europea e per tutti gli altri Paesi europei che attuano la raccolta differenziata dei rifiuti.

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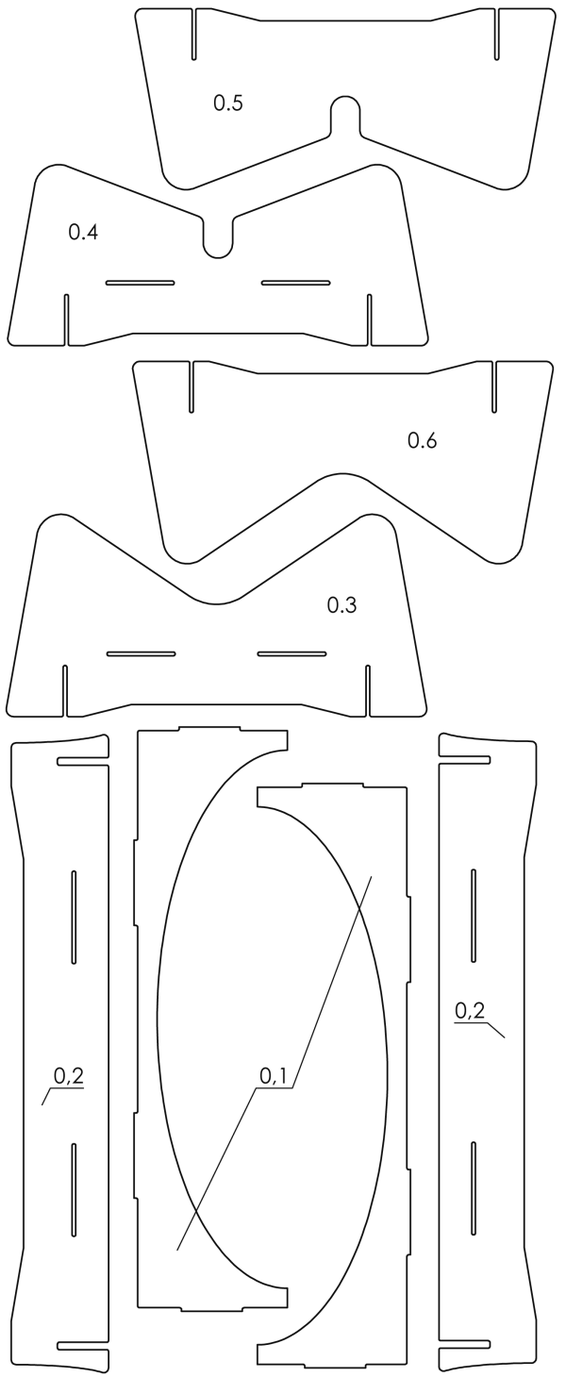
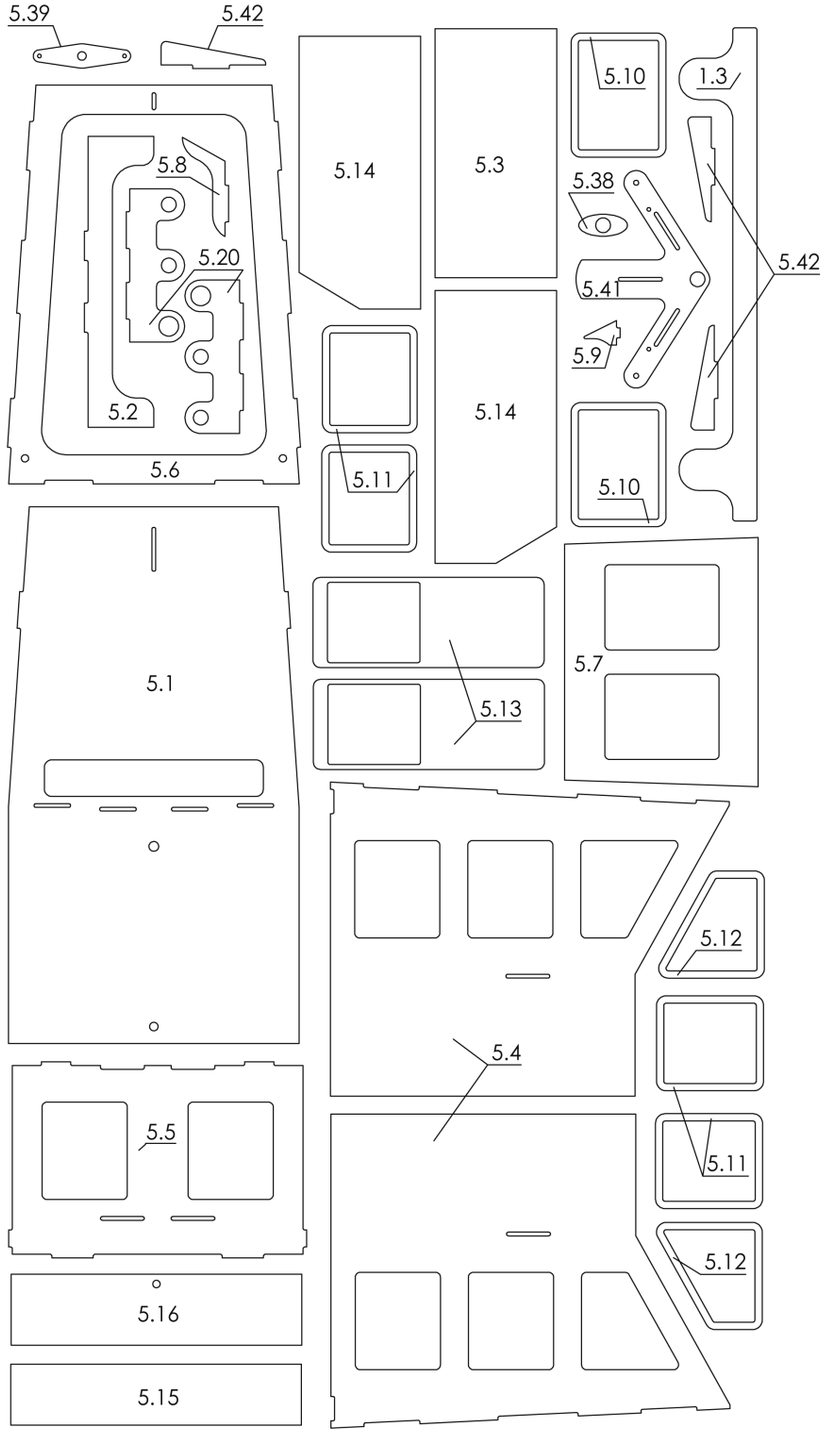
Baustufe	Stckl.Nr.	Bezeichnung	Material	Maße in mm	Stück	Bemerkung
0 Ständer	0.1	Horizontalspant	ABS	1,5 Frästeil	2	
	0.2	Längsträger	ABS	1,5 Frästeil	2	
	0.3	Auflage Bug, innen	ABS	1,5 Frästeil	1	
	0.4	Auflage Heck, innen	ABS	1,5 Frästeil	1	
	0.5	Auflage Heck, außen	ABS	1,5 Frästeil	1	
	0.6	Auflage Bug, außen	ABS	1,5 Frästeil	1	
1 Rumpf	1.1	Rumpf	ABS	Tiefziehteil 1,5	1	bohren
	1.2	Deck	ABS	Tiefziehteil 1,5	1	
	1.3	Heckverstärkung	ABS	1,5 Frästeil	1	
	1.4	Umlenkhebelverstärkung	ABS	1,5 Frästeil	1	
	1.5	Rahmen für Ruderluke	ABS	1,5 Frästeil	1	
	1.6	Ruderluke	ABS	1,5 Frästeil	1	
	1.7	Blechschraube	Ms	2,2x6,5	4	
	1.8	Stevenrohr	Ms	Ø6,5x175	1	
	1.9	Welle	Stahl	Ø4x223	1	
	1.10	Sechskantmutter	Ms	M4	1	
	1.11	Propeller	Ku	Ø35	1	
	1.12	Stellring	Ms	Ø5x7x5	1	
	1.13	Stiftschraube	Stahl	M3x3	3	
	1.14	Wellenkupplung	Alu	Ø12x17	1	
	1.15	Motorspant	ABS	1,5 Frästeil	2	
	1.16	E- Motor		Fertigteil	1	nicht enthalten
	1.17	Innensechskantschraube	Stahl	M3x10	2	
	1.18	Fächerscheibe	Stahl	Ø3,2	2	
	1.19	Motorspantadapter	ABS	1,5 Frästeil	2	
2 Ruder	2.1	Ruderplatte	ABS	1,5 Frästeil	1	
	2.2	Ruderplatte-Rumpfspant	ABS	1,5 Frästeil	1	
	2.3	Längsträger	ABS	1,5 Frästeil	2	
	2.4	Ruderplatte-Heckspant	ABS	1,5 Frästeil	1	
	2.5	Ruderplatte- Querstütze	ABS	1,5 Frästeil	1	
	2.6	Kranservo-Rasthaken	ABS	1,5 Frästeil	2	
	2.7	Rasthaken-Stützplatte	ABS	1,5 Frästeil	1	
	2.8	Kranservo-Adapterplatte	ABS	1,5 Frästeil	1	
	2.9	Kranservo-Seitenplatte	ABS	1,5 Frästeil	2	
	2.10	Servoaufnahme	ABS	1,5 Frästeil	1	
	2.11	Kranservo	Fertigteil	20x40	1	nicht enthalten
	2.12	Bef.-schrauben für Servo			4	nicht enthalten
	2.13	Schraube für Servohebel			1	nicht enthalten
	2.14	Servohebel	Ku		1	nicht enthalten
	2.15	Zylinderschraube m. Schlitz	Stahl	M2x10	1	
	2.16	Kugel	Ms	Ø 4,8	1	
	2.17	Sechskantmutter	Stahl	M2x10	1	
	2.18	Blechschraube	Stahl	2,2x6,5	2	
	2.19	Ruderservo	Fertigteil		1	nicht enthalten
	2.20	Bef.-schrauben für Servo			4	nicht enthalten
	2.21	Servohebel	Ku		1	nicht enthalten
	2.22	Schraube für Servohebel			1	nicht enthalten
	2.23	Akkuauflage	ABS	1,5 Frästeil	1	
	2.24	Kopfspant f. Akkuauflage	ABS	1,5 Frästeil	1	
	2.25	Seitenverstärkung	ABS	1,5 Frästeil	2	
	2.26	Heckverstärkung	ABS	1,5 Frästeil	1	
	2.27	Ruder	Ku	37x50	1	
	2.28	U-Scheibe	Ms	Ø3,2x7x0,5	1	
	2.29	O-Ring	Ku	Ø2,8x1,6	1	
	2.30	Ruderkoker	Ms	Ø4x0,4x55	1	
	2.31	Zentrierscheibe	ABS	1,5 Frästeil	1	
	2.32	U-Scheibe	Ms	Ø3,2x7x0,5	1	
	2.33	Stellring	Stahl	Ø3x7x5	1	
	2.34	Hebel 1-Armig	Ku	L: 30	1	
	2.35	Stiftschraube	Stahl	M3x6	1	
	2.36	Gestänge 1-Seitig Z	Stahl	Ø1,5x70	1	
	2.37	Gestängekupplung	Alu	Ø5x7	1	
	2.38	Zylinderschraube m. Schlitz	Stahl	M2x4	2	
3 Deck	3.1	Hebel 2-Armig	Ku	L: 30	1	
	3.2	Lagerflansch	ABS	1,5 Frästeil	2	
	3.3	Lagerscheibe	ABS	1,5 Frästeil	2	
	3.4	Lagerstift	Stahl	Ø2x7,8	1	
	3.5	Lagerplatte	ABS	1,5 Frästeil	1	
	3.6	Zylinderschraube m. Schlitz	Stahl	M2x10	2	
	3.7	Kugel	Ms	Ø 4,8	2	
	3.8	Sechskantmutter	Stahl	M2x10	2	
	3.9	Unterlagen	ABS	1,5 Frästeil	4	
	3.10	Blechschraube	Stahl	2,2x9,5	2	
	3.11	Hebelkasten-Seitenteil	ABS	1,5 Frästeil	2	
	3.12	Hebelkasten-Front	ABS	1,5 Frästeil	1	
	3.13	Hebelkasten-Heck	ABS	1,5 Frästeil	1	
	3.14	Hebelkasten-Deckel	ABS	1,5 Frästeil	1	
	3.15	Hebelkasten-Durchführung	ABS	1,5 Frästeil	1	
	3.16	Gestänge Kranservo-Hebel	Stahl	2xM2x8x56	1	
	3.17	Kugelkopf	Ku	17,5-M2	2	
	3.18	Gestänge Hebel-Kran	Stahl	2xM2,5x8x60	1	
	3.19	Kugelkopf	Ku	17,5-M2,5	2	
4 Kran	4.1	Kranelement	PVC	12,8x12,8x210	3	
	4.2	Rollenhalter	ABS	1,5 Frästeil	2	
	4.3	Elementverbinder	ABS	1,5 Frästeil	4	
	4.4	Fußteil, außen	ABS	1,5 Frästeil	2	
	4.5	Sechskantmutter	Stahl	M2	1	
	4.6	Zylinderschraube m. Schlitz	Stahl	M2x12	1	
	4.7	Kugel	Ms	Ø4,8	1	

Baustufe	Stckl.Nr.	Bezeichnung	Material	Maße in mm	Stück	Bemerkung
4 Kran	4.8	Fußteil, innen	ABS	1,5 Frästeil	2	
	4.9	Kranlager-Platte	ABS	1,5 Frästeil	2	
	4.10	Kranlager-Flansch	ABS	1,5 Frästeil	4	
	4.11	Zylinderschraube m. Schlitz	Stahl	M3x18	2	
	4.12	U-Scheibe	Stahl	Ø3,2x9x0,8	4	
	4.13	Stopmutter	Stahl	M3	2	
	4.14	Seilrolle	Alu	Ø20x5	1	
	4.15	Lagerhülse	Ms	Ø4,5x5,5	1	
	4.16	U-Scheibe	Stahl	Ø 3,2x7x0,5	2	
	4.17	Innensechskantschraube	Stahl	M3x14	1	
	4.18	Stopmutter	Stahl	M3	1	
	4.19	Seilführung	ABS	1,5 Frästeil	2	
	4.20	Deckstrahler-Gehäuse	Ku	10x14	2	
	4.21	Deckstrahler-Glas	Ku	9x13	2	
	4.22	Deckstrahler-Halter	Ku		2	
	4.23	Blechschraube	Stahl	2,2x9,5	4	
5 Aufbau	5.1	Aufbau-Grundplatte	ABS	1,5 Frästeil	1	
	5.2	Aufbau-Spant	ABS	1,5 Frästeil	1	
	5.3	Aufbau-Frontwand	ABS	1,5 Frästeil	1	
	5.4	Aufbau-Seitenwand	ABS	1,5 Frästeil	2	
	5.5	Aufbau-Rückwand	ABS	1,5 Frästeil	1	
	5.6	Aufbau-Dachrahmen	ABS	1,5 Frästeil	1	
	5.7	Aufbau-Frontwand,schräg	ABS	1,5 Frästeil	1	
	5.8	Aufbau-Frontwandstütze	ABS	1,5 Frästeil	1	
	5.9	Aufbau-Wandstütze oben	ABS	1,5 Frästeil	1	
	5.10	Fensterrahmen Front	ABS	1,5 Frästeil	2	
	5.11	Fensterrahmen Seite, Heck	ABS	1,5 Frästeil	4	
	5.12	Fensterrahmen Seite, Vorn	ABS	1,5 Frästeil	2	
	5.13	Tür	ABS	1,5 Frästeil	2	
	5.14	Aufbau Seitenwand-Hinten	ABS	1,5 Frästeil	2	
	5.15	Aufbau Heckwand-unten	ABS	1,5 Frästeil	1	
	5.16	Aufbau Heckwand-schräg	ABS	1,5 Frästeil	1	
	5.17	Fenster- Front	PVC-Klar	1 Frästeil	2	
	5.18	Fenster- Seite, Rückwand	PVC-Klar	1 Frästeil	6	
	5.19	Fenster- Seite, vorne	PVC-Klar	1 Frästeil	2	
	5.20	Masthalter	ABS	1,5 Frästeil	2	
	5.21	Windens.- Grundplatte	ABS	1,5 Frästeil	1	
	5.22	Verstärkung	ABS	1,5 Frästeil	2	
	5.23	Längsspant	ABS	1,5 Frästeil	2	
	5.24	Querspant	ABS	1,5 Frästeil	2	
	5.25	Einbauseitenteil	ABS	1,5 Frästeil	2	
	5.26	Aufbausicherung	ABS	1,5 Frästeil	2	
	5.27	Rohrniet	Ms	Ø3x4	1	
	5.28	Dach	ABS	Tiefziehteil 1,5	1	bohren
	5.29	Post.-Lampenbord R	Ms	10x30	1	
	5.30	Post.-Lampenbord L	Ms	10x31	1	
	5.31	Lampengehäuse	Ms	Ø7x9,5	3	
	5.32	Nebelhorn	Ku	L: 23,5	1	
	5.33	Nebelhorn	Ku	L: 15	1	
	5.34	Bügel f. Suchscheinwerfer	Ku	Ø 20	1	
	5.35	Suchscheinwerfer	Ku	Ø 20	1	
	5.36	Glas f. Suchscheinwerfer	Ku	Ø 18	1	
	5.37	Mastrohr	Alu	Ø 6x330	1	
	5.38	Verstärkung	ABS	1,5 Frästeil	1	
	5.39	Mastabschlußplatte	ABS	1,5 Frästeil	1	
	5.40	Rundumlampe	Ku	Ø 7x9,5	1	
	5.41	Radarpodest	ABS	1,5 Frästeil	1	
	5.42	Podeststütze	ABS	1,5 Frästeil	3	
	5.43	Radargehäuse-Unterteil	Ku	Formteil	1	
	5.44	Radargehäuse-Oberteil	Ku	Formteil	1	
	5.45	Welle Für Radarantenne	Ms-Draht	Ø 1x10	1	ablängen
	5.46	Radarantenne	Ku	Formteil	1	
	5.47	Rohrniet	Ms	Ø 2x12	2	
	5.48	Antenne	Ms-Draht	Ø 1x120	2	biegen
	5.49	Flaggenleine	Takelgarn	Ø 0,7	2	ablängen
	5.50	Lüfterrrohr	Ms	Ø 8x85	1	
	5.51	Lüfterkopf	Ku	Formteil	1	
	5.52	Abgasrohr	Alu	Ø 6x75	1	
	5.53	Abgaskrümmer	Ku	Formteil	1	
	5.54	Rettungsinsel, Hälfte	Ku	Formteil	2	
	5.55	Rettungsinsel, Fuss	Ku	Formteil	2	
	5.56	Rettungsring	Ku	Ø 33 Formteil	2	
6 Endausstattung	6.1	Bojenhalter	ABS	1,5 Frästeil	1	
	6.2	Bojenhalter, Stütze	ABS	1,5 Frästeil	2	
	6.3	Fangdraht-Halteplatte	ABS	1,5 Frästeil	2	
	6.4	Fangdraht-Halteplatte	ABS	1,5 Frästeil	1	
	6.5	Fangdraht-Halter	ABS	1,5 Frästeil	8	
	6.6	Rohrniet	Ms	Ø 2x12	4	
	6.7	Fangdraht	Ms-Draht	Ø 1	2	biegen
	6.8	Magnethalter	Magnet	12,7x30	1	
	6.9	Scheuerleiste	ABS-Profil	4,5x2,1x500	2	
	6.10	Doppelkreuzpoller	Ku	7x25 Formteil	4	
	6.11	Rad	PVC	Ø 30 Formteil	10	
	6.12	Befestigungsleine	Takelgarn	Ø 0,7	8	ablängen
	6.13	Kranseil	Takelgarn	Ø 0,7	1	ablängen
	6.14	Haken, lang	Ms-Draht	Ø 1	1	biegen
	6.15	Rohrniet	Ms	Ø 4x19	1	
	6.16	Stellring	Ms	Ø 4x7	1	
	6.17	Stiftschraube	Stahl	M3x3	1	
	6.18	Haken, kurz	Ms-Draht	Ø 1	2	biegen
	6.19	Schalterplatte	ABS	1,5 Frästeil	1	

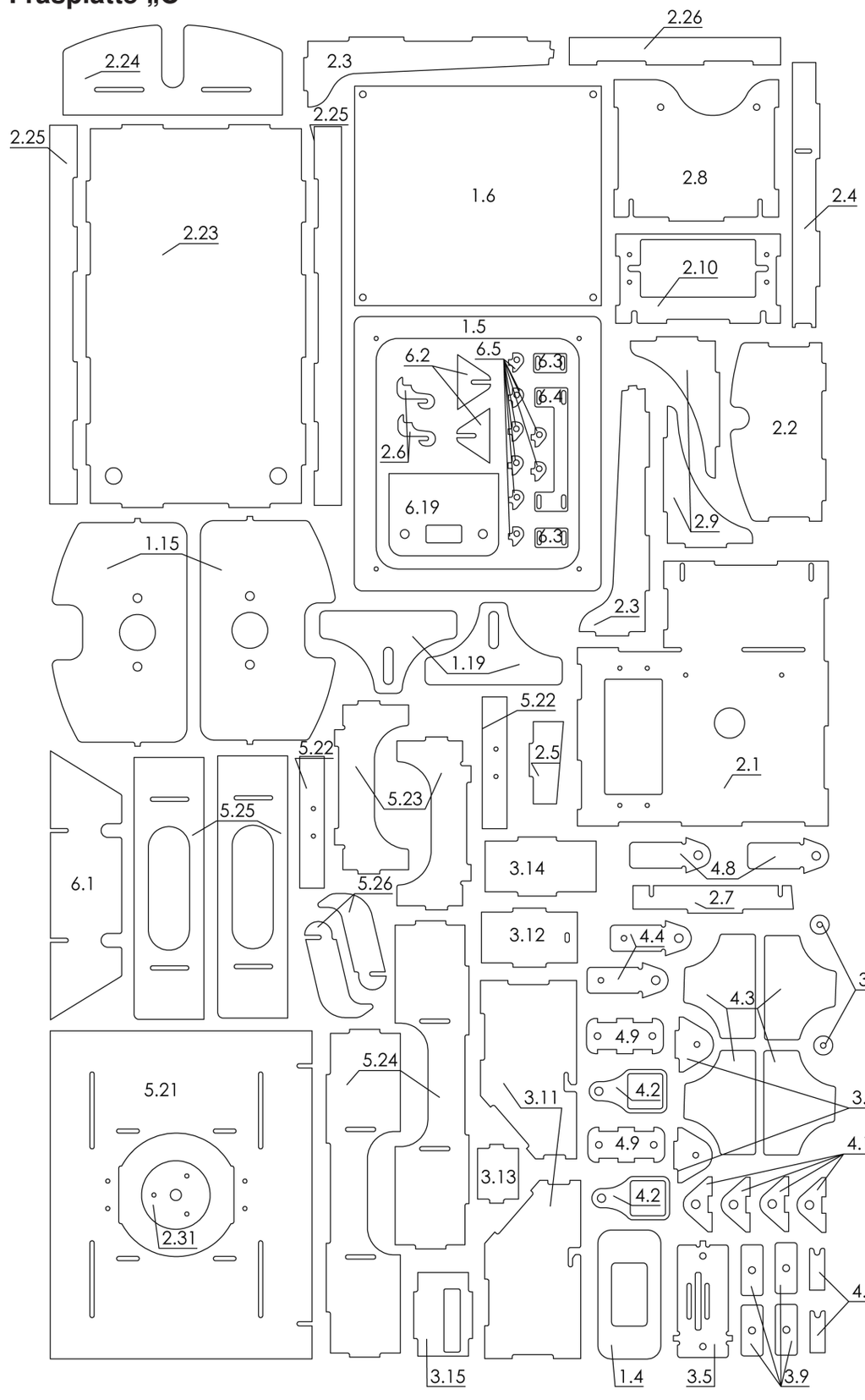
Fräsplatte „A“



Fräsplatte „B“



Fräsplatte „C“



Fräsplatte „D“