

**PICHLER** **HOLGER**

**1/18 Vintage Tug Boat Build instructions**



**Specifications**

length	720mm
Width	180mm
Height	270mm
Scale	1 / 18

**Requires**

RC equipment	RC transmitter with at least 2 channels
Servo	43g standard servos*1
Motor	380 Brushed motor
ESC	30A ESC for brushed motor
Battery	lipo 2s /LiFe/Pb battery

**BEFORE YOU BEGIN**

**Attention and Tips**

1. Read through the manual before you begin, so you will have an overall idea of what to do.
2. Check all parts. If you find any serious defects or missing parts, please contact your local dealer.
3. Please build your kit in strict accordance with the sequence of the user manual.
4. Pre-Sanding: Before removing any parts from the laser-cut plywood sheet, use a sanding block loaded with 250 - 400 grit sandpaper and lightly sand the back side of the sheet. Which can significantly reduce burn marks of the wood and make the parts match better
5. Before building the model part on drawings, It is recommended to cover a layer of kitchen cling film (polyethylene film) on the drawing. This way can prevent parts from sticking to the drawing and causing damage.
6. Parts Assembly: This product's tabs and notches interlock like a 3D puzzle. We strongly suggest that when fitting parts, you "dry fit" (use no glue) the parts together first. It is advised to work 1 - 2 steps ahead in the instructions, using this dry-fit technique. This allows the opportunity to inspect the fit and location of assembled components, and shows the benefits of our construction technique. As each successive part is added, it contributes to pulling the entire assembly square. Once you arrive at the end of a major assembly sequence, square your work on a flat work surface, and bond the dry-fit joints with glue. Using the dry-fit process, you'll be able to recover from a minor build mistake, and will ultimately end up with a square and true assembly.
7. This is a precision laser-cut kit. Our lasers cut to within 0.2mm in accuracy. Yet the wood stock supplied to us by the mill may vary in thickness by up to 0.2-0.3mm. This variance in the wood stock can cause some tabs and notches to fit very tightly. With this in mind, consider lightly sanding or lightly pinching a tight-fitting tab, rather than forcing the parts together. You may break some parts in assembly, but please don't worry, after the final covering work, it will not affect the strength and appearance of your model. You will end up with a circle and true airframe.



## KIT INVENTORY



### Sheet Wood Inventory

Item:	Quantity
1mm Plywood	1
2mm Plywood	5
3mm Plywood	2

**PICHLER MODELLBAU GMBH**

5mm Balsa	3
1mm Paulownia	2
0.5mm cherry	1

<b>Wood Strips Inventory</b>	
Item:	Quantity(Approximate number, excess equipped)
1mm Paulownia(Width:5mm, Length: about 50cm)	133
1mm walnut (Width:5mm, Length: about 24cm)	36
0.5mm Sapele wood(Width:8mm, Length: about25cm)	48

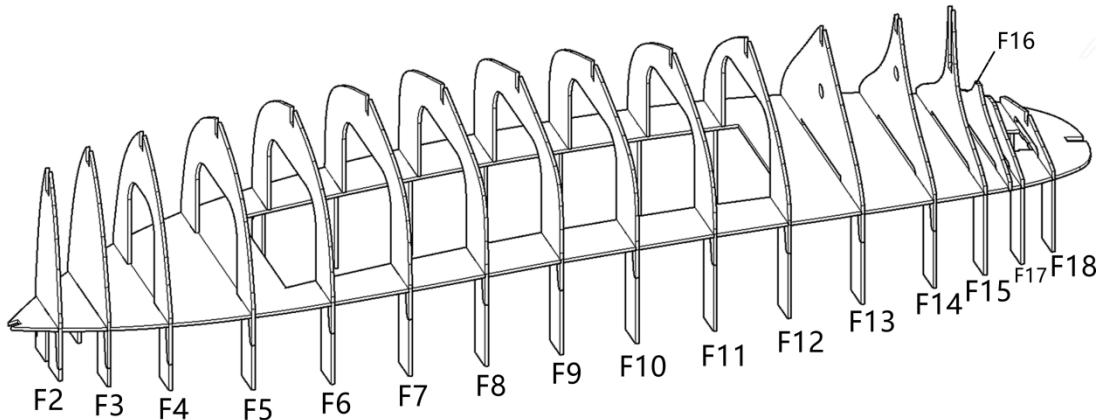
<b>Hardware</b>	
M3*8 screw	4
M3 Screw nut	4
M3 washer	5
M2*8 screw	10
M2 Screw nut(black version)	2
Eye Screw	10
M2 Steel push rod (Thread at both ends Length:35mm)	1
Rubber ring	2
M1.2*4 screw	16
Steel push rod(Diameter1.2mm )	1
PVC Tube(Outer diameter:32mm,length 20cm )	1
PVC Tube(Outer diameter:3mm Inner diameter:2mm)	1
Mental chain (Length: 30cm)	1
ABS half cylinder(Length: 50cm)	4
PVC windows	1
Steel rod adapter	1
<b>Copper parts</b>	
Copper shaft system (Outer diameter:8mm, Shaft diameter:4mm,Length : 20cm )	1
Copper Decorative ring (Inner diameter:10mm)	6
Copper Decorative ring (Inner diameter:3.5mm)	5
Copper Rod (Diameter :1mm, Length: 20cm )	1
Copper bell	1
<b>Resin parts</b>	
Anchor	2
Steering wheel	1
Air intake	2

Bollard module	1
Tow hook module	1

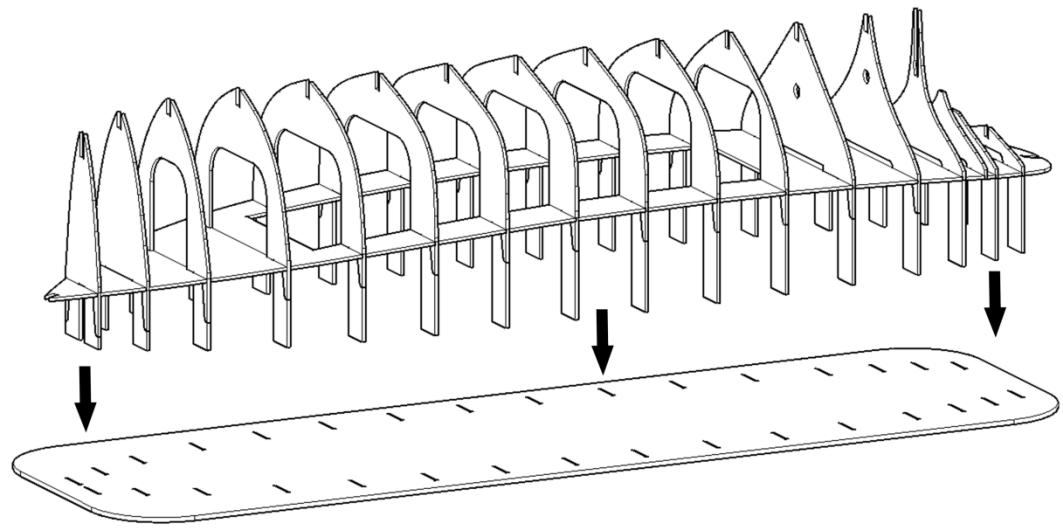
<b>Electronics pack (Included in Kit with full sets version)</b>			
1. MG955 Servo	2.380 motor	3.ESC 30A	4. Cooling bushing
			
5.Universal connector	6.Metal motor bracket	7.Propeller	8.JST 2p Plug for motor
			

## Instruction - Part1

1.1 Please remain the jig when removing the bulkhead from wood sheet.

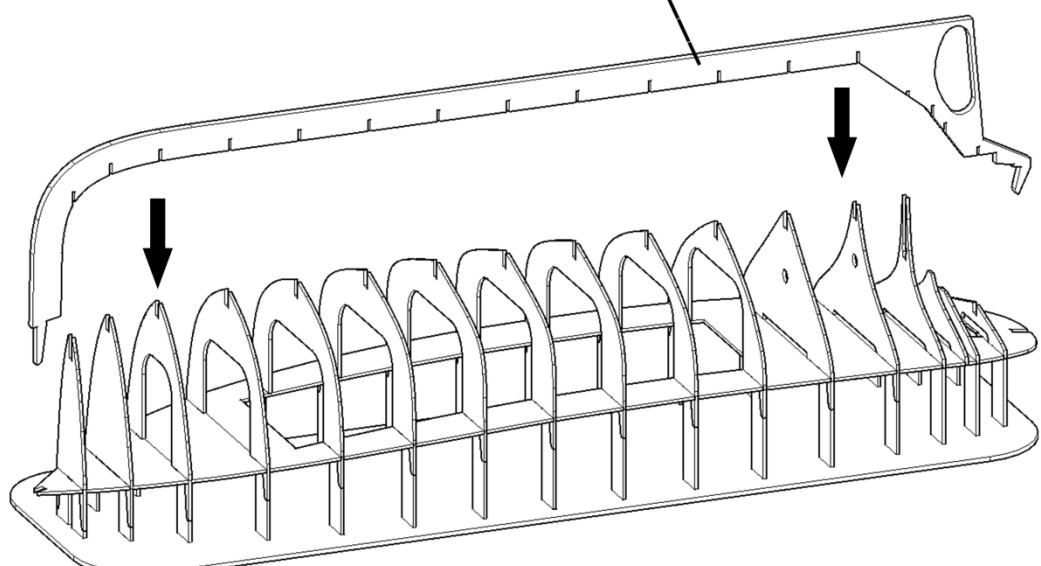


1.2

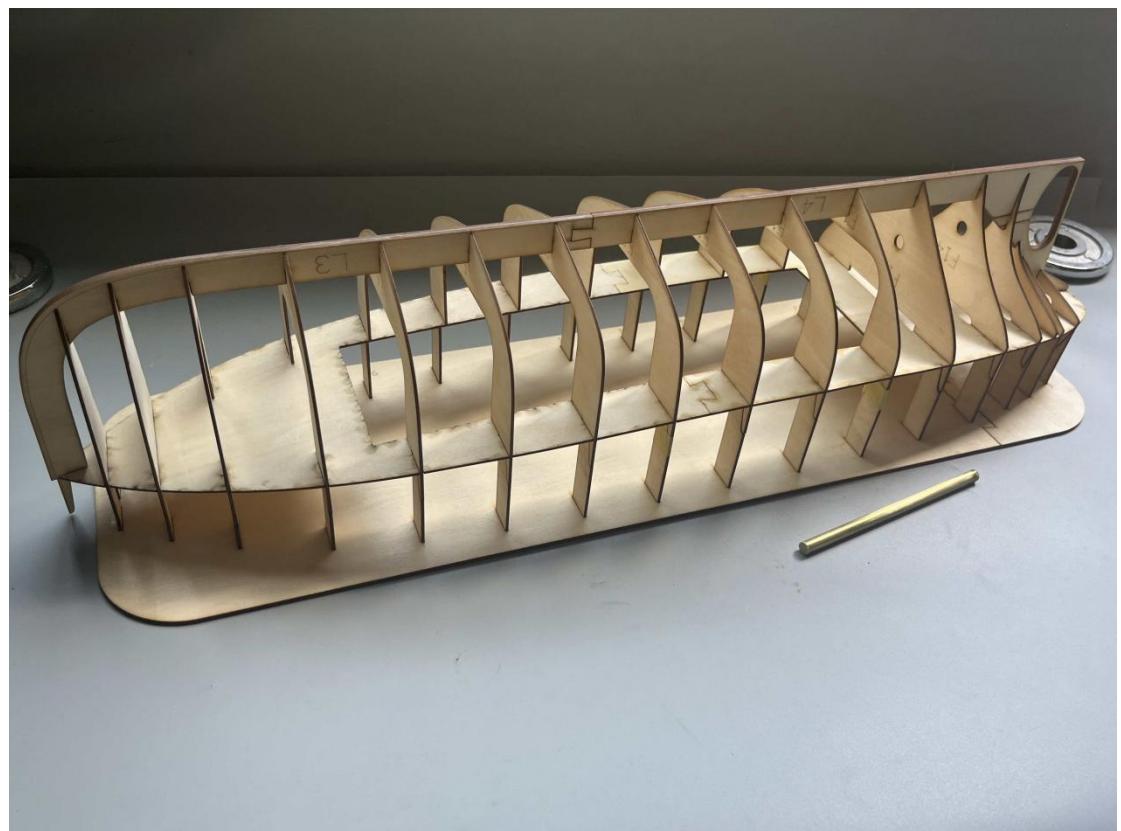


1.3

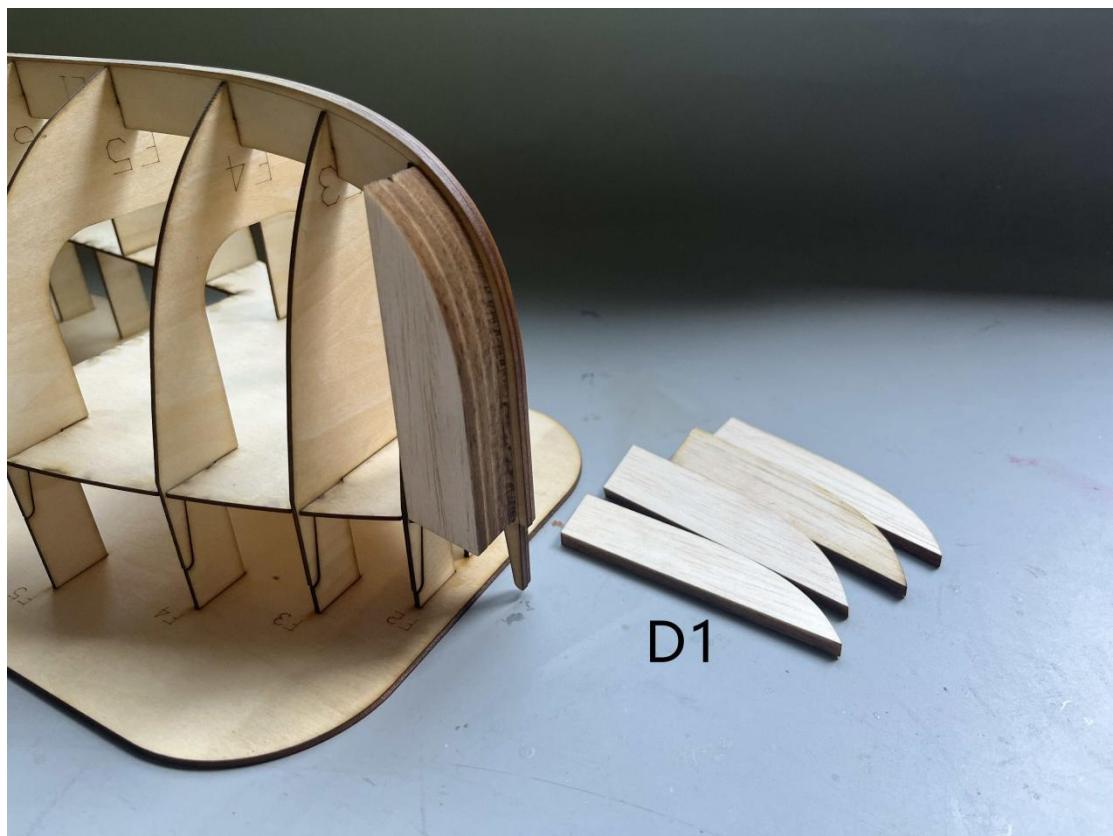
The keel is assembled from L1,L2,L3,L4



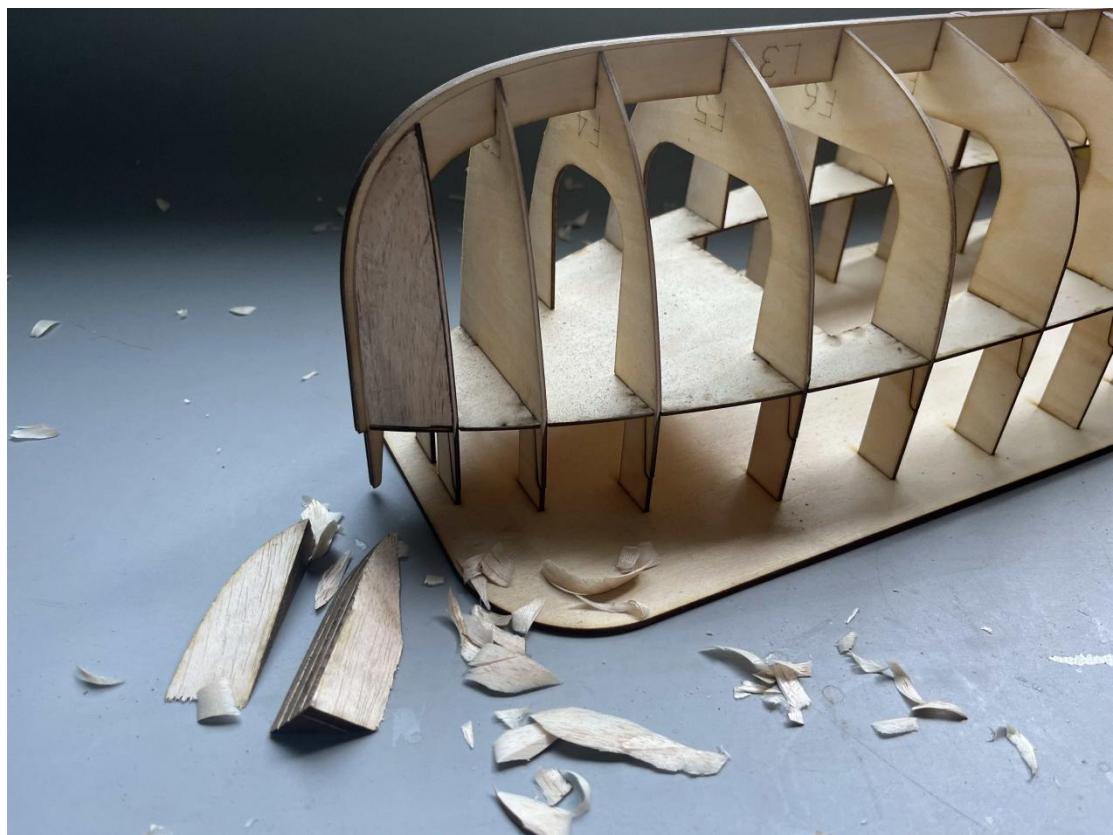
1.4



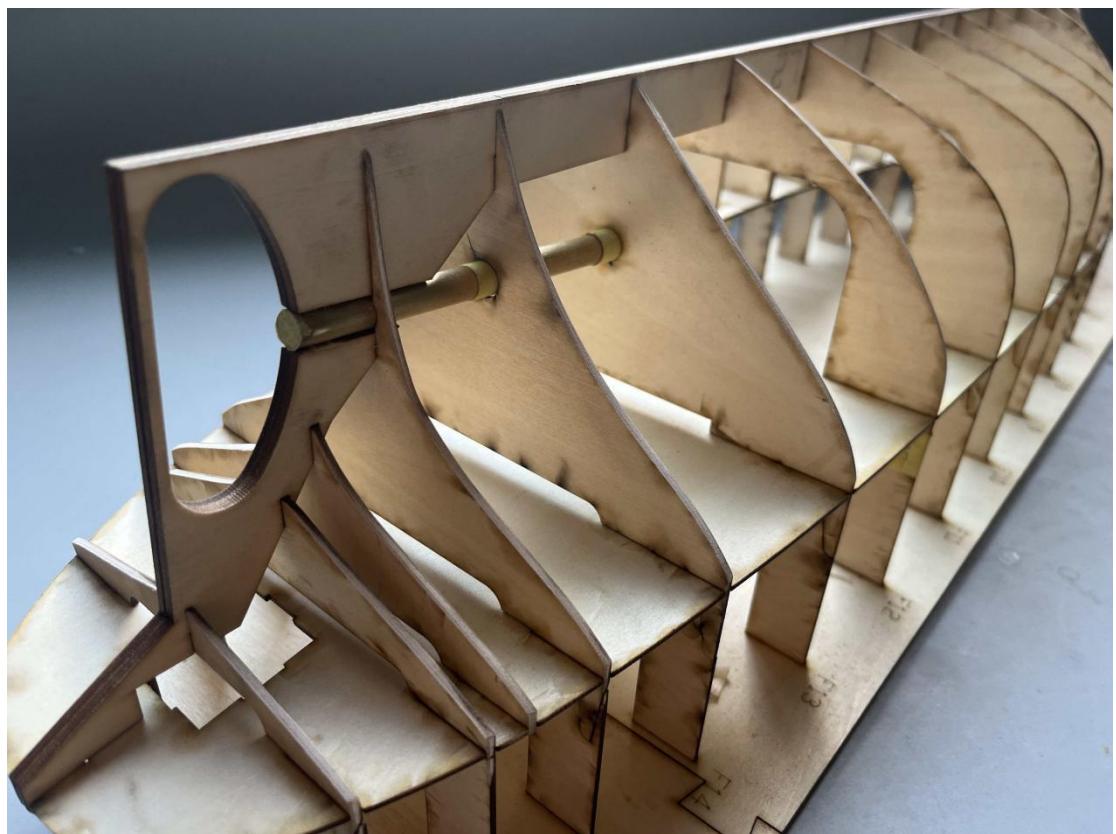
1.5 Install D1, D2, D3 and polish them



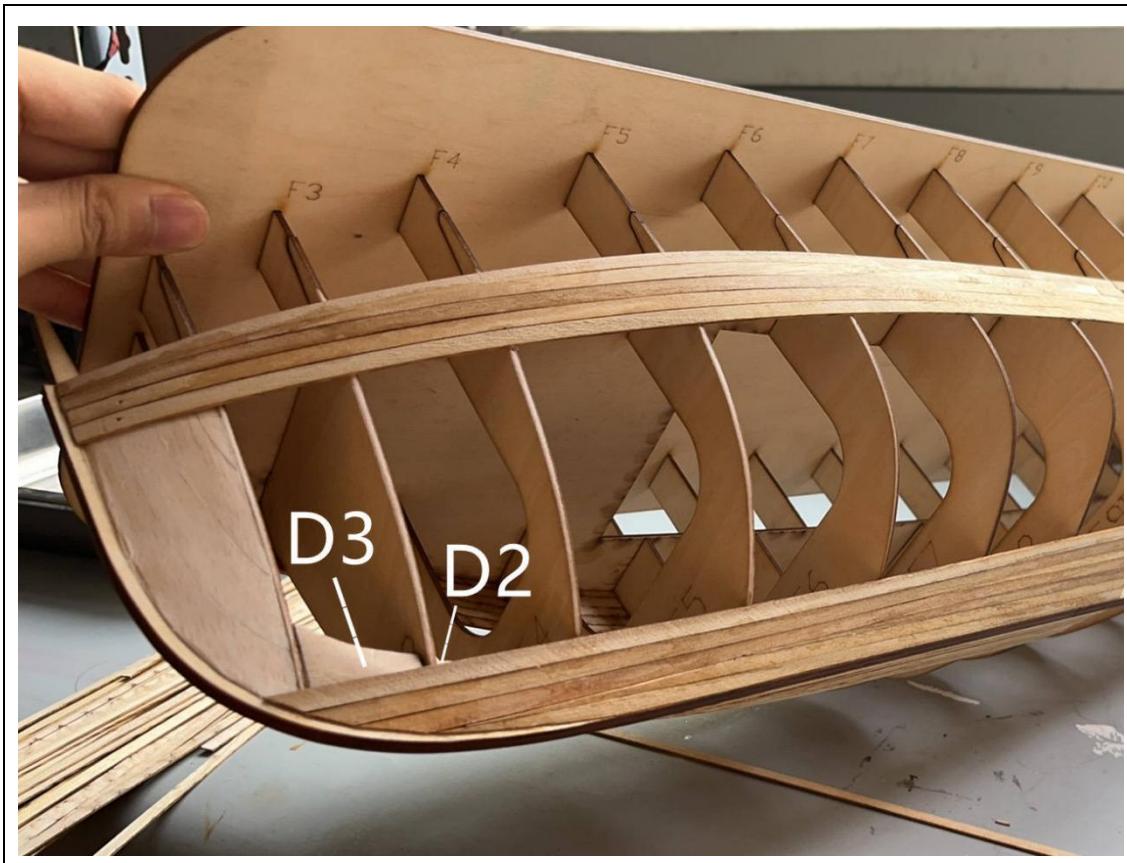
1.6



1.7



1.8



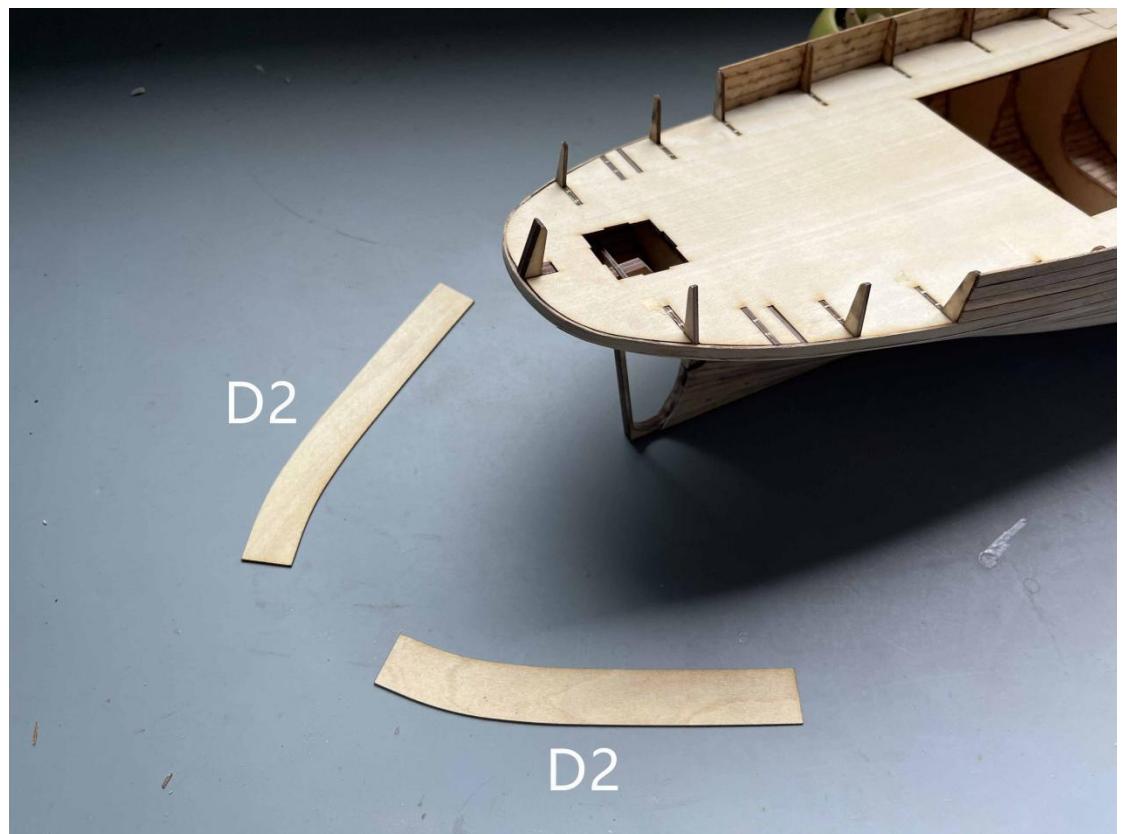
1.9



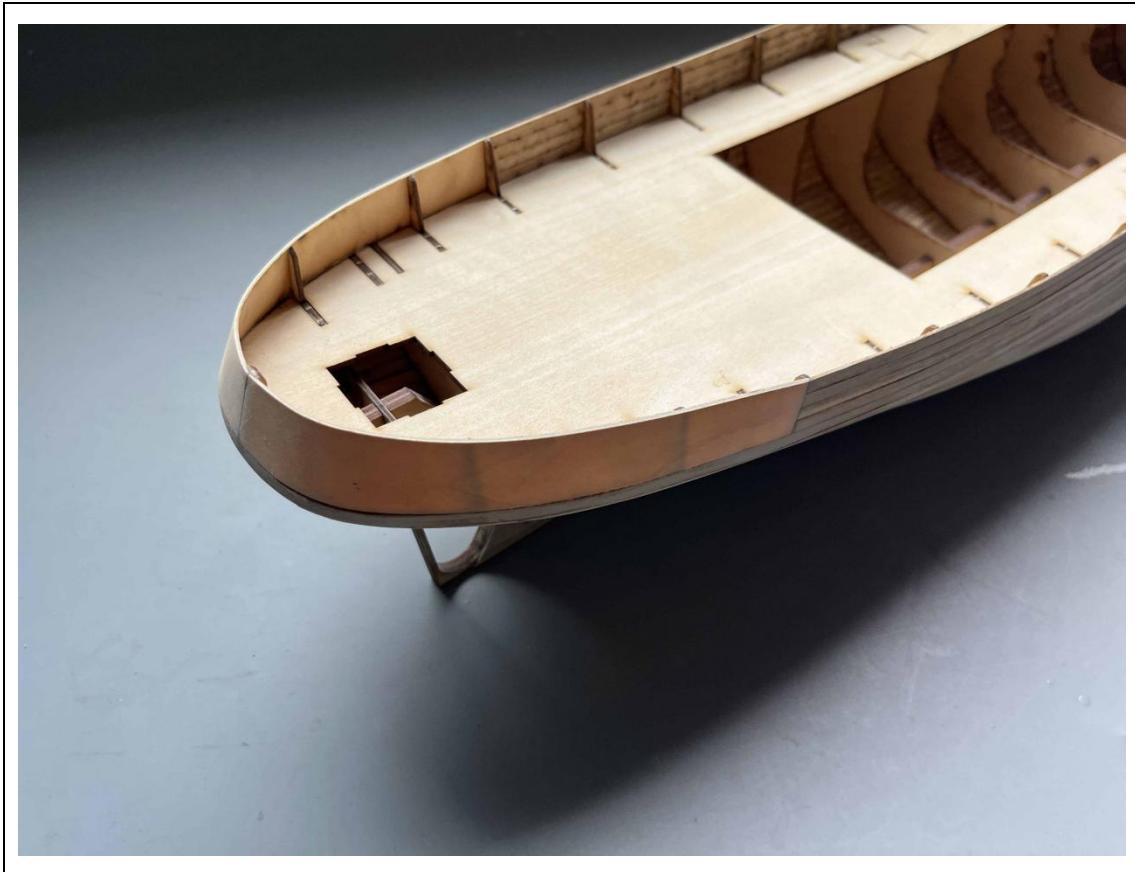
1.10 Remove the jigs



1.11



1.12



1.13 Install ABS half cylinder. Heat it in advance to make it easier to bend



1.14



1.15



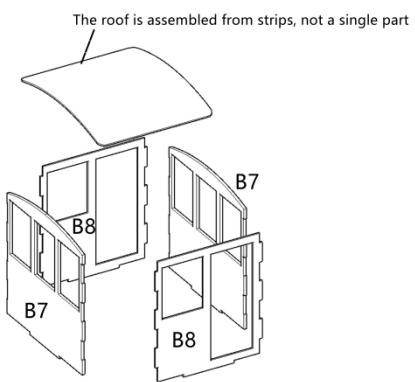
**Appendix: Hull surface treatment process before 1.12-1.13**

**(For Reference only)**

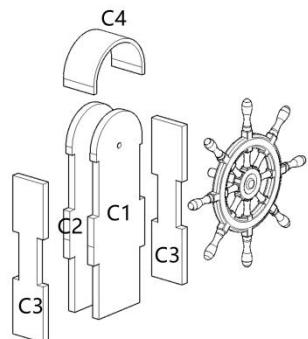
Step1	Sand the hull (Using sandpaper#180-#1000)
Step2	Cover the hull with fiberglass cloth(0.03-0.1mm thickness)and apply epoxy resin
Step3	Grinding and polishing the hull. (Needs water; Using sandpaper#180-#1000)
Step4	Check the hull, if the wood is exposed due to the excessive sanding, we need repaint the epoxy resin to repair the exposed surface. The sand the patched surface.
Step5	Spray varnish on the surface
Step6	Polishing the surface

## Instruction - Part2

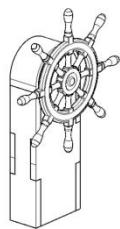
2.1



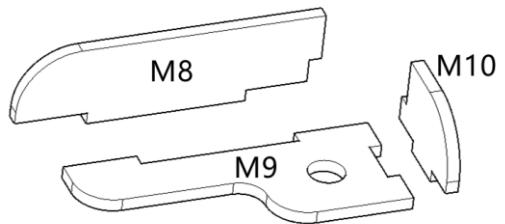
2.2



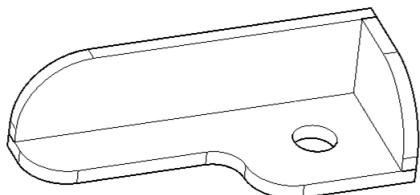
2.3



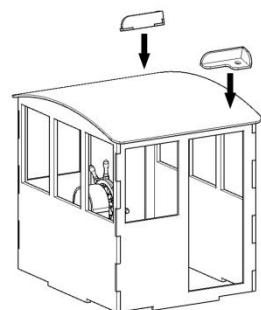
2.4



2.5



2.6

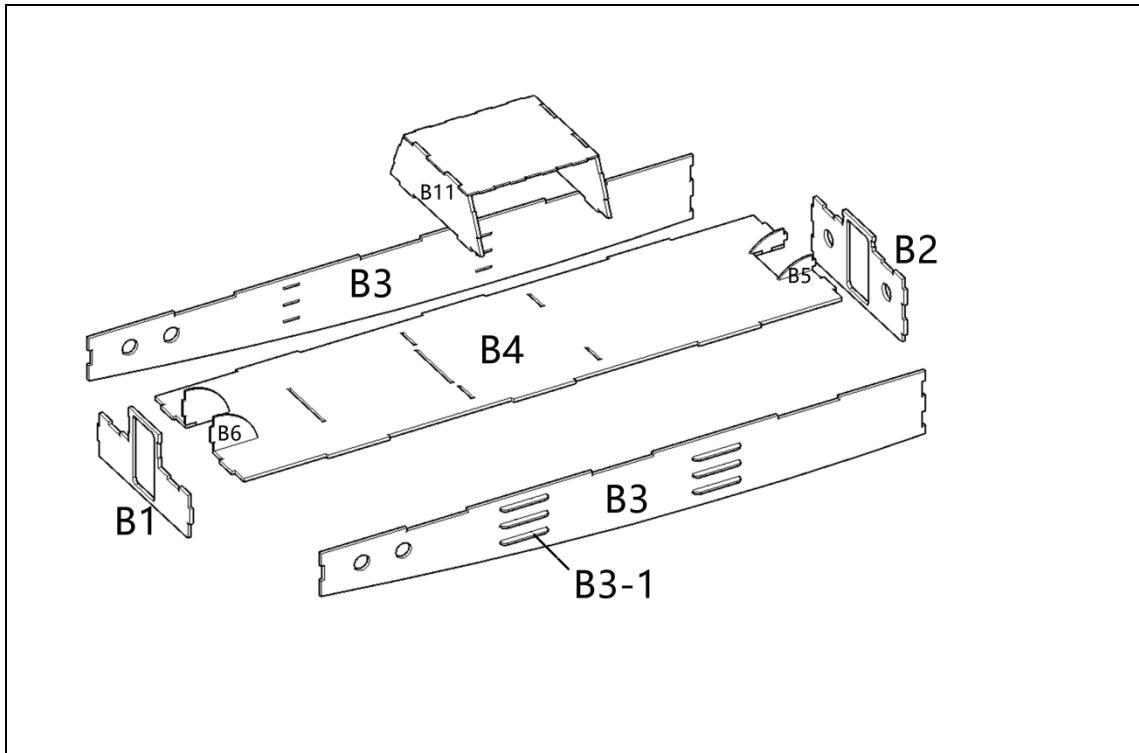


2.7 Use walnut to decorate the outer frame of the cockpit. The middle section and window border is cherry wood sheet. The picture is for reference only, you can make your unique exquisite cockpit

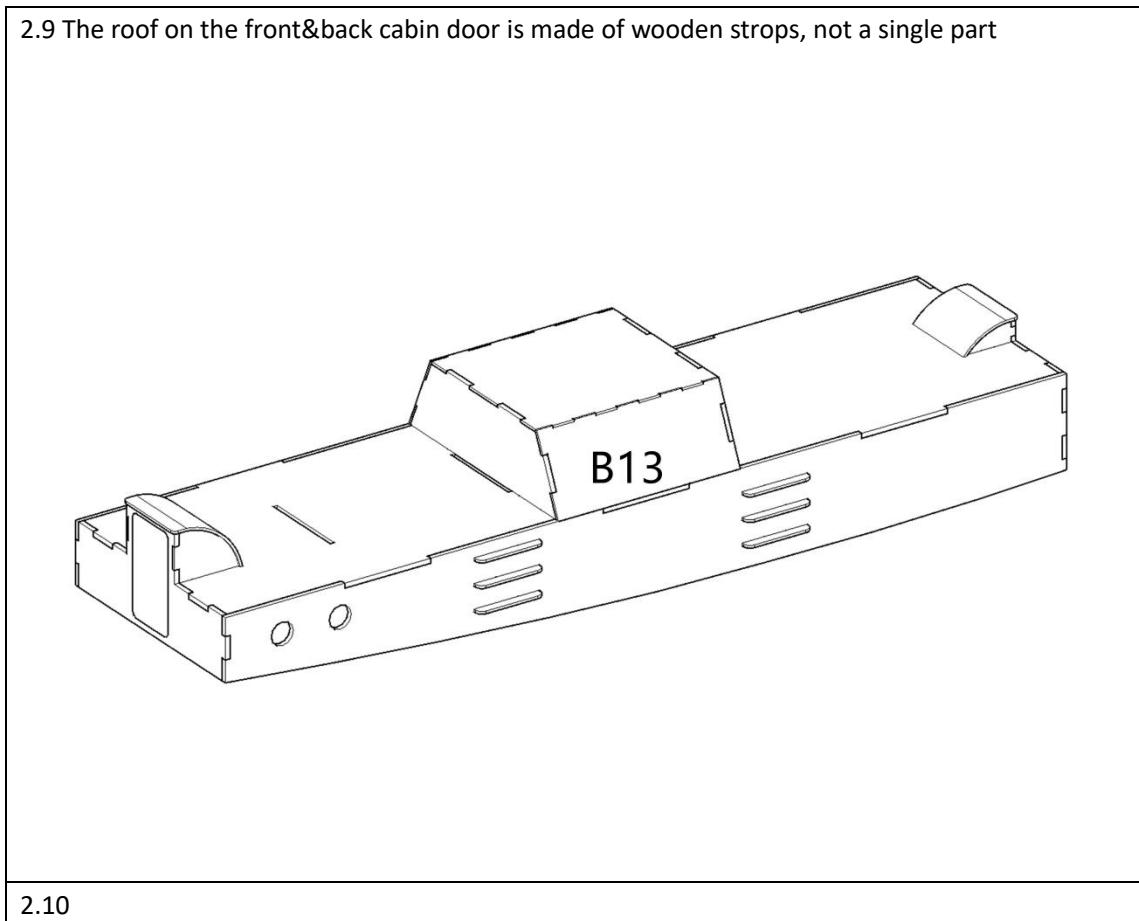
Install the copper hinge. The door handle is obtained by bending the 1mm copper rod



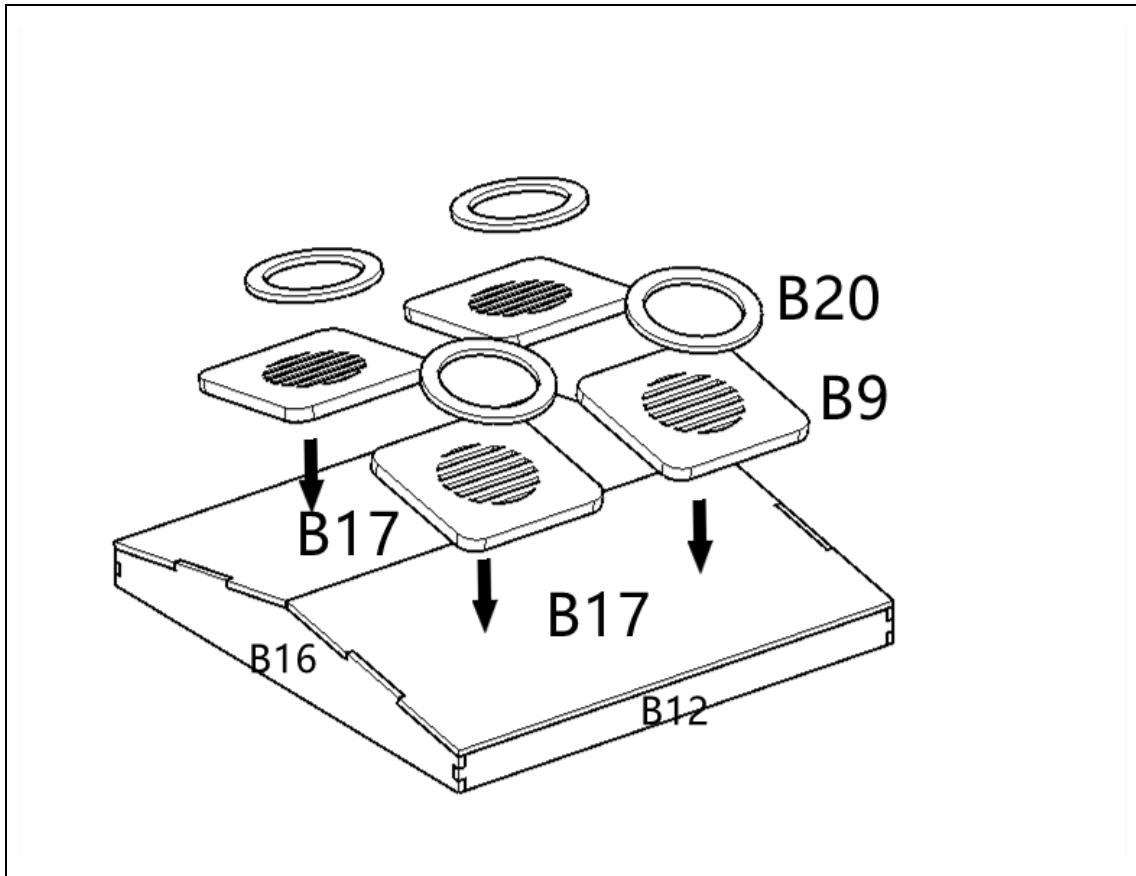
2.8



2.9 The roof on the front&back cabin door is made of wooden strops, not a single part



2.10



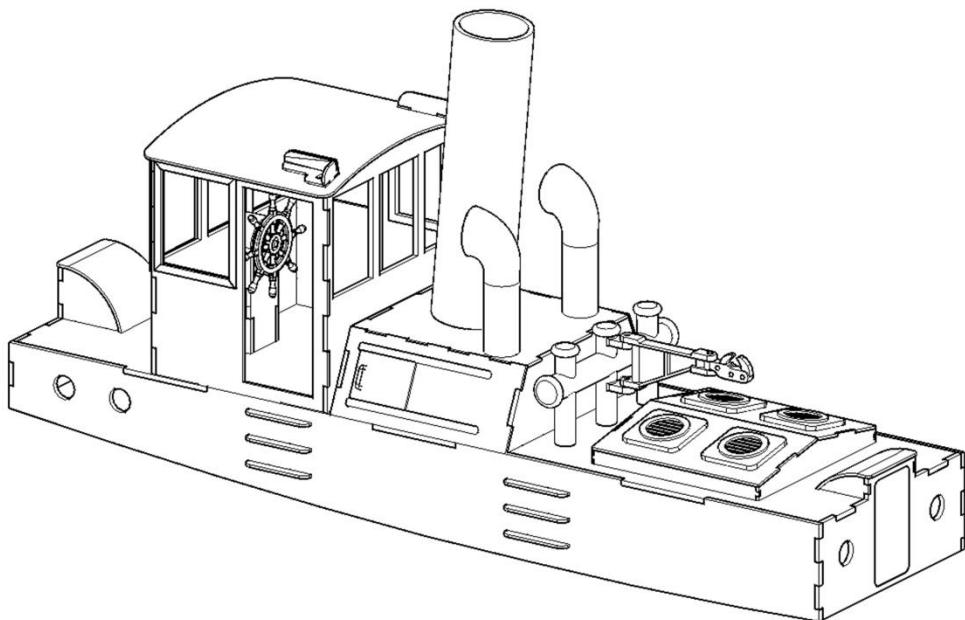
2.11 Assemble the Chimney, White PVC Tube(Outer diameter:32mm,length 20cm ), Thin PVC Tube(Outer diameter:3mm Inner diameter:2mm), Use copper rods to connect after pre -drilling



2.12



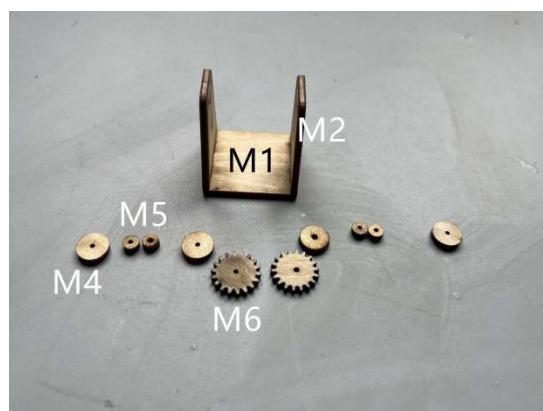
2.13 Install the air intake, tow hook module and other decorative objects in 1mm plywood.



2.14



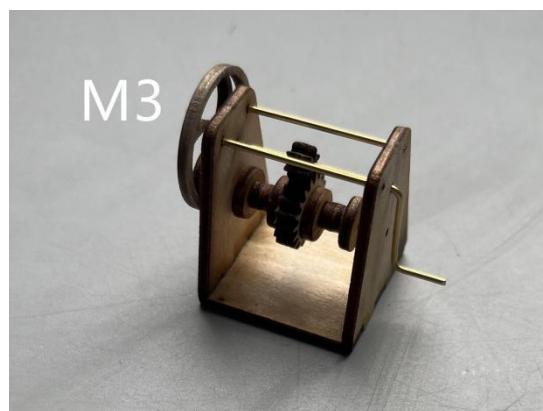
2.15



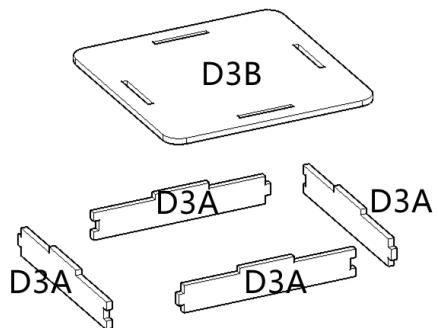
2.16



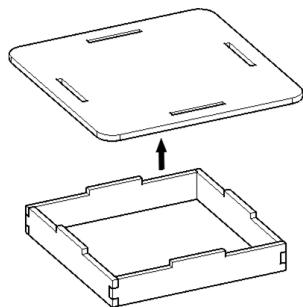
2.17



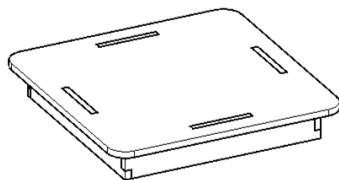
2.18



2.19

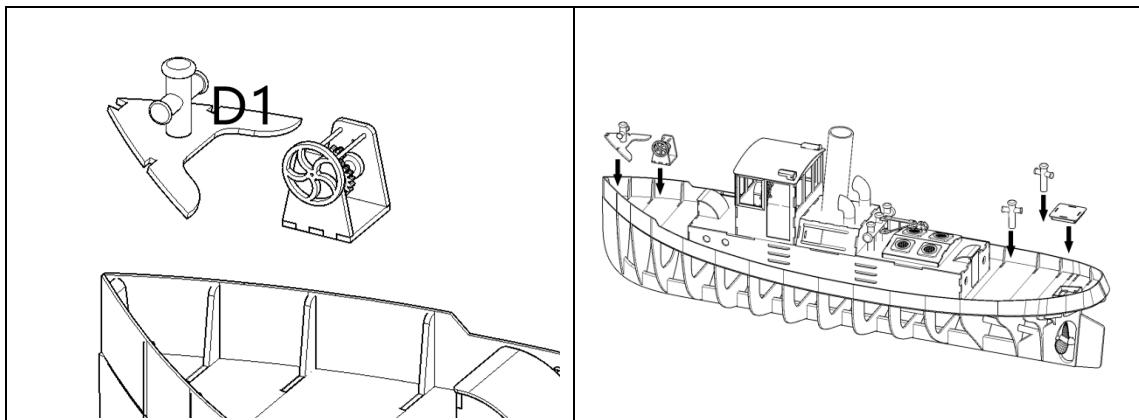


2.20



2.21

2.22



2.23



2.24



2.25



## ***Instruction - Part3***

3.1 Drill a 2mm diameter hole at the upper and lower ends of the rudder. Install the M2 Steel push rod (Thread at both ends Length:35mm) at the upper hole



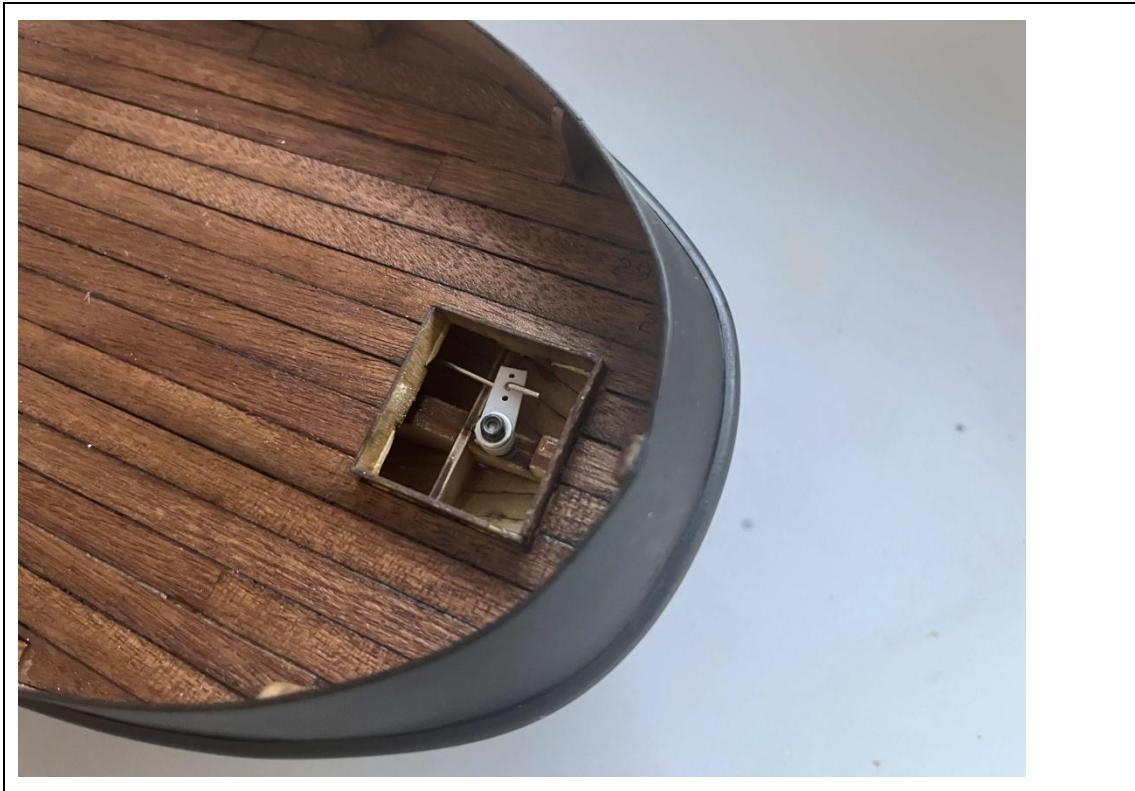
3.2 Drill a 2mm diameter hole and Install 2 eye screws at the hull, according to the position of the rudder rotation axis.



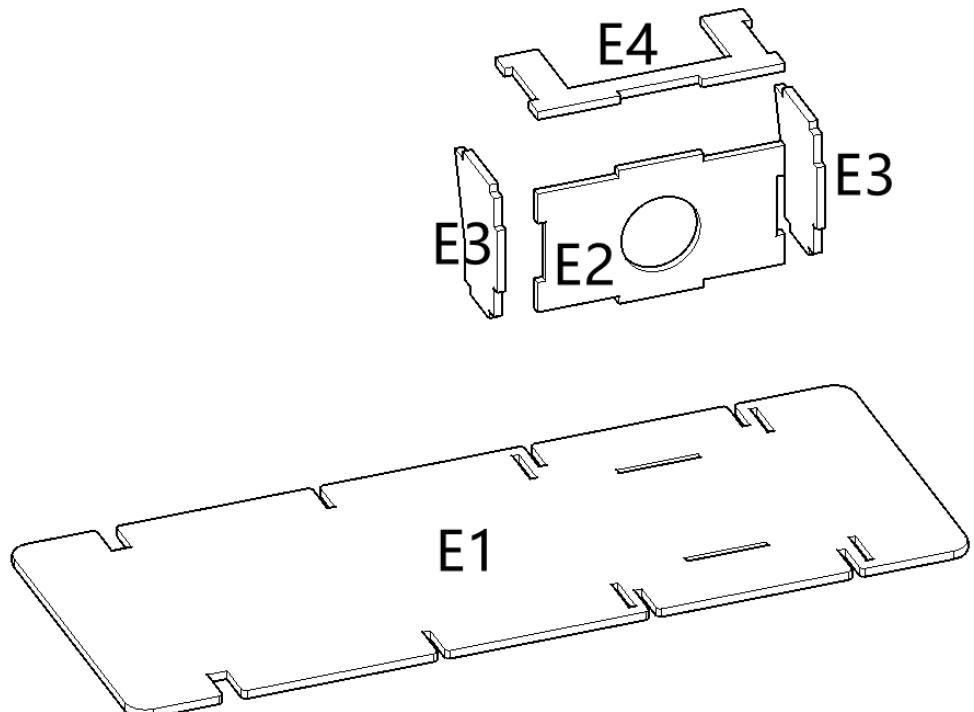
3.3 Install Rudder module: Use the M2\*8 screw to pass through the eye screw, and then install it into the hole at the bottom of the rudder



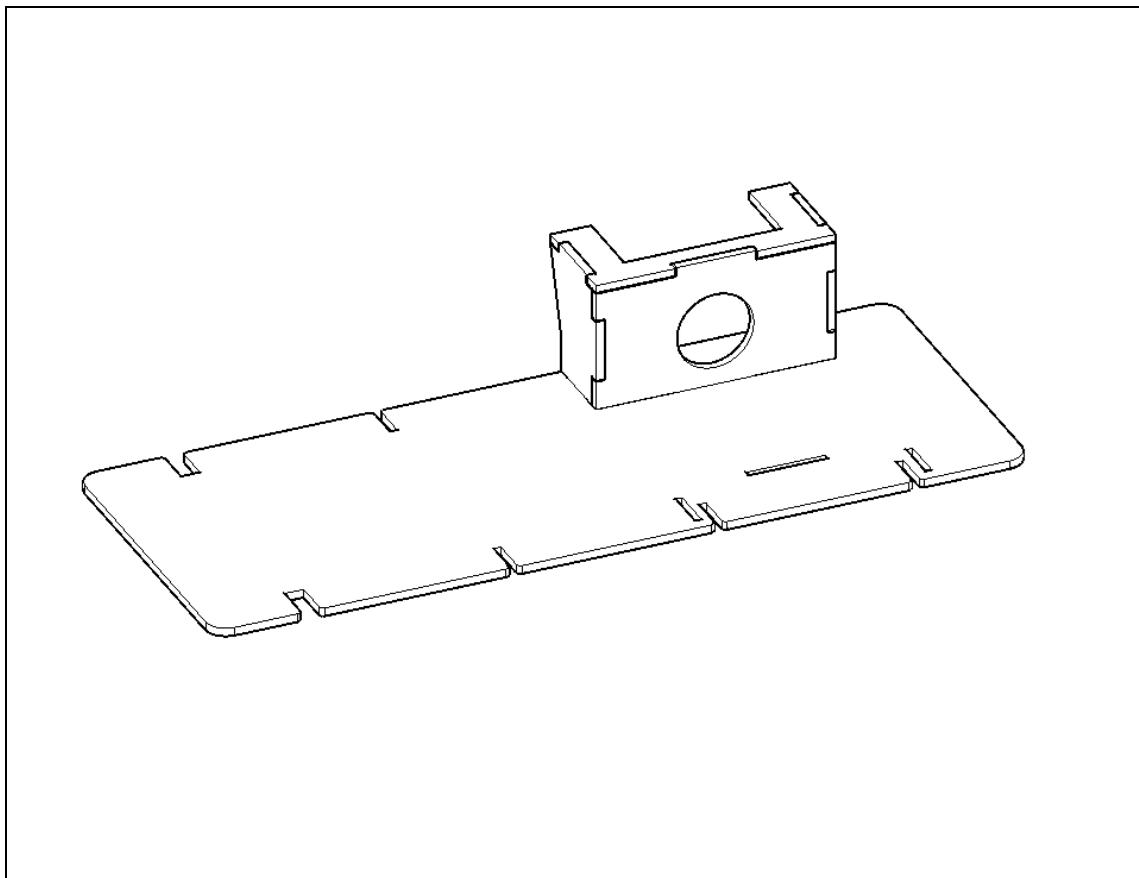
3.4 M2 Steel push rod as shaft, passed through the hole in the hull and entered the cabin.  
Use 2 M2 Screw nut(black version) and 1 M3 washer clamp the rocker arm up and down.  
The rocker arm comes from the extra rocker arm when we buy servos



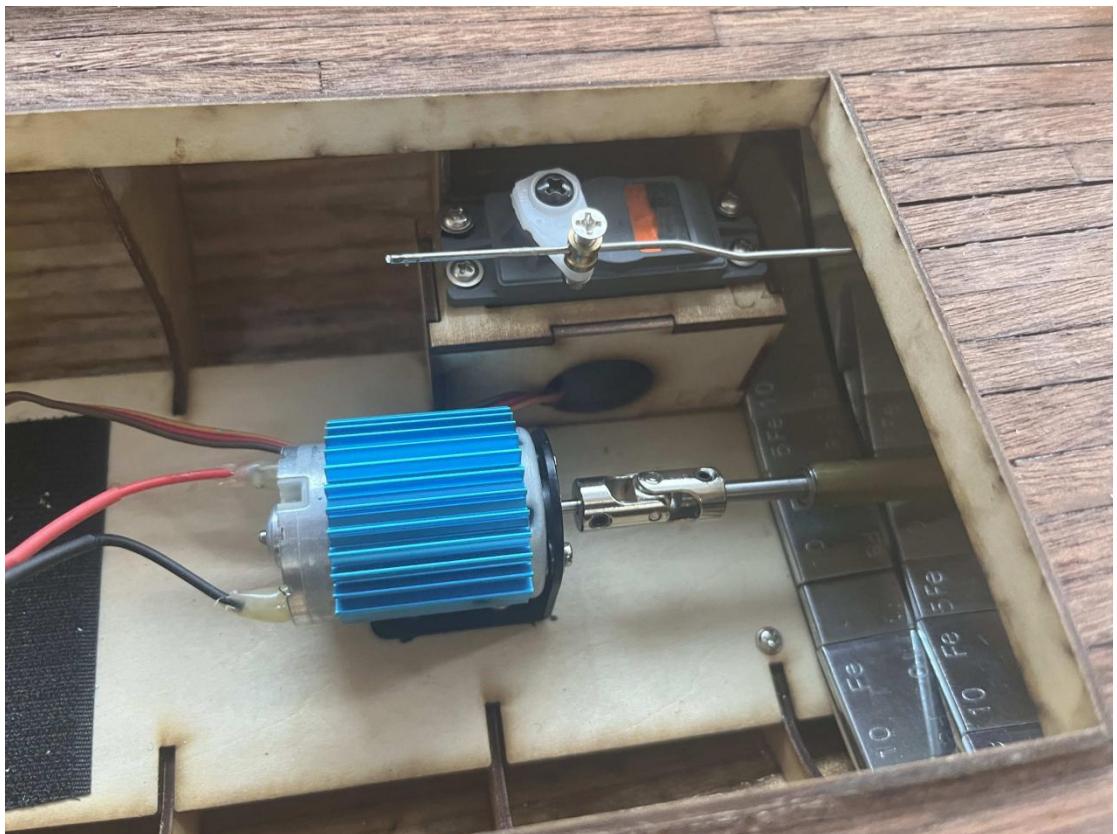
3.5 Electronics mounting bracket



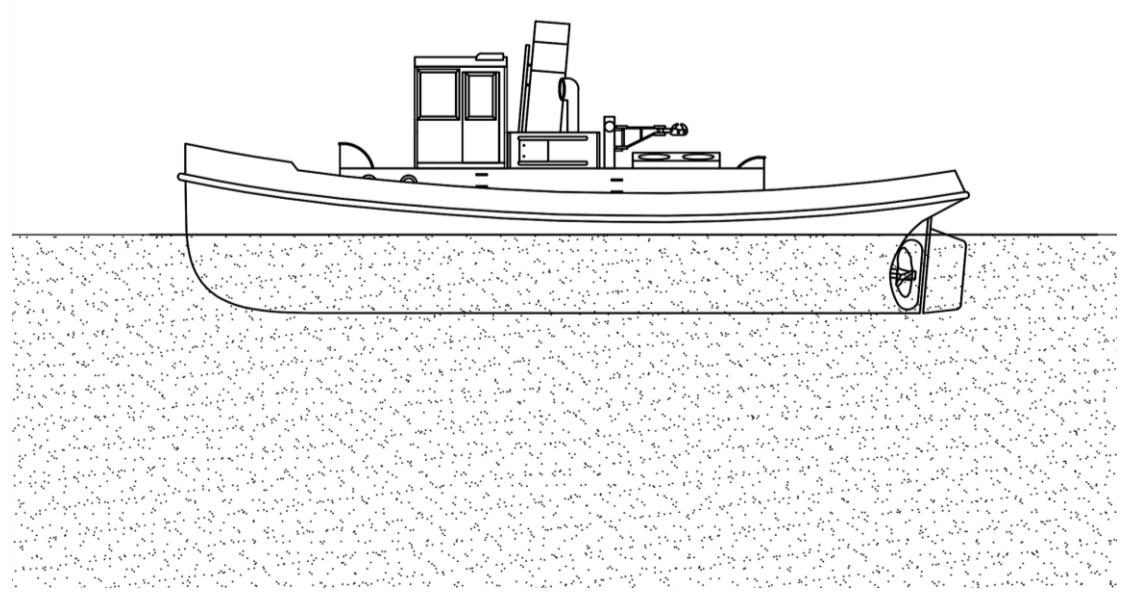
3.6



3.7



3.8 Waterline diagram. Before sailing, you need to add additional ballast to cabin.



**Thank you!**

