

# MARIA HF31

SCALE: 1/72  
Length: 365 mm  
width: 85mm  
height: 295 mm

## **HISTORY:**

Maria HF 31 is a fishing Ewer whose home base was Finkenwerder in northern Germany. Maria HF31 operated in the North Sea for more than 70 years in the period from 1880 to 1950. During this period the vessel has undergone several rebuilding, including motorization in the interwar period, and several serious incidents - two fatal accidents, collisions and damage. Currently the ship is restored and open to visitors at the Deutsches Museum in Munich.

## **A list of recommended tools:**

- 1) Modeler's knife or scalpel
- 2) Mini drill machine
- 3) Drills of various diameters
- 4) Sandpapers of various grit
- 5) Scissors
- 6) Tweezers
- 7) Clothes pegs
- 8) Pencil
- 9) Ruler
- 10) A set of needle files
- 11) Sewing Machine

## **Before the start of construction:**

Before the start of construction is required to read carefully the building instructions and pay attention to the construction sequence of assembly steps. Individual parts cut off from sheets very carefully by a sharp knife. Before gluing parts check if the parts fit together or possibly make corrections. During gluing, coloring, painting and working with other chemicals is needed well ventilated in the working area. For gluing of wooden parts you can use water based white glue and for gluing metal and resin parts can be used cyanoacrylate glue.

## **Coloring:**

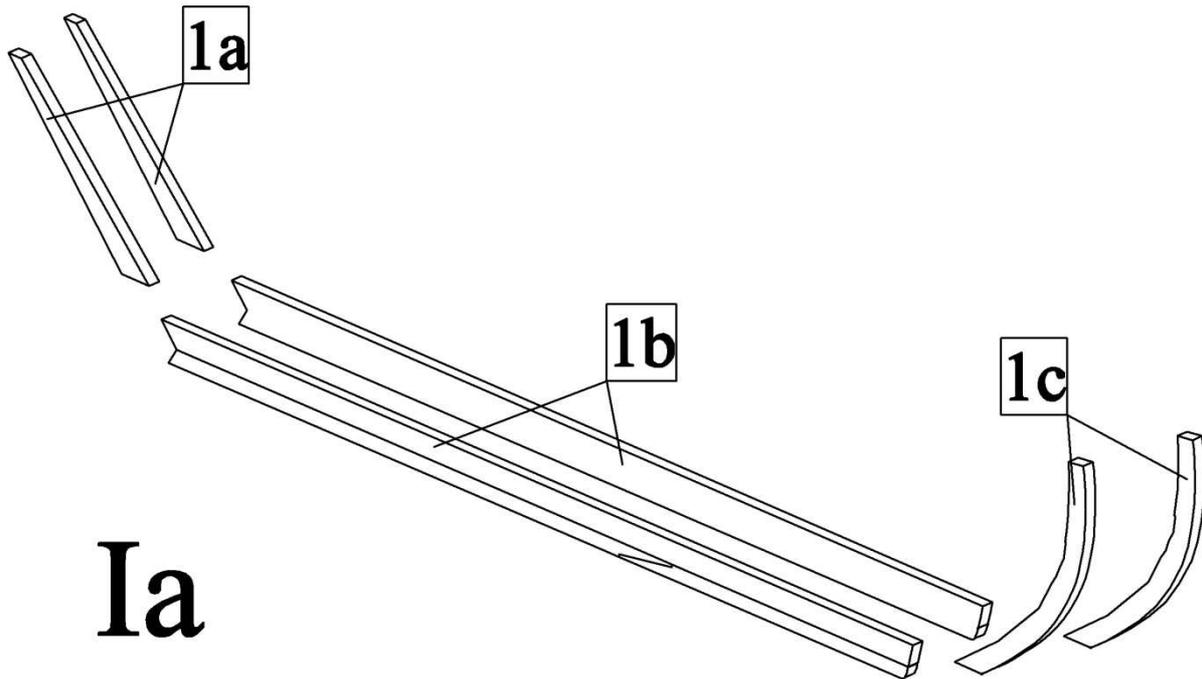
Ship's hull was painted black with white segments on the bow. On the bow is also sign HF.31 which can be done using self-adhesive mask included in the kit. Plank of outer side of gunwale is in natural wood color and inner side of gunwale is white. The deck is also in natural wood color. Anchor is black. Binnacle and motorized winch are green. Bow reinforcements are also green with white-lined around the perimeter. Skylight and entrance to the lower deck are red. The steering booth is red with white roof and white-lined windows. Lifebuoy is also White.

**Model building process:**

The model can be built as a variant of sailing (marked S in the instructions) or as a motorized version (marked M in the instructions). Parts for both versions are included in the kit.

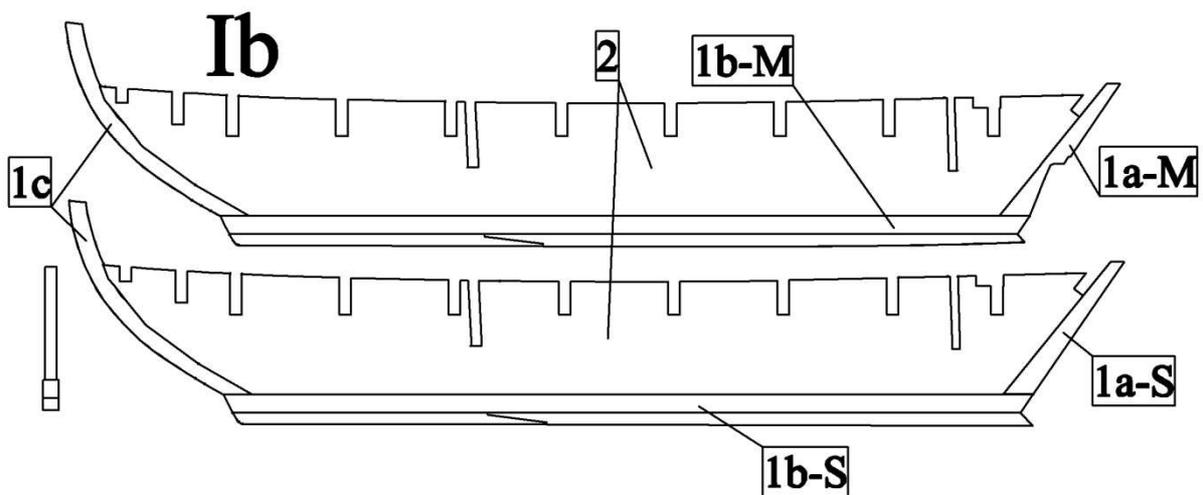
**I) Keel:**

a) First glue together the parts 1a-1c. Parts 1c are the same for sailing and motorized version. Parts 1a and 1b are marked with the letters S-sailing and M-motorized.



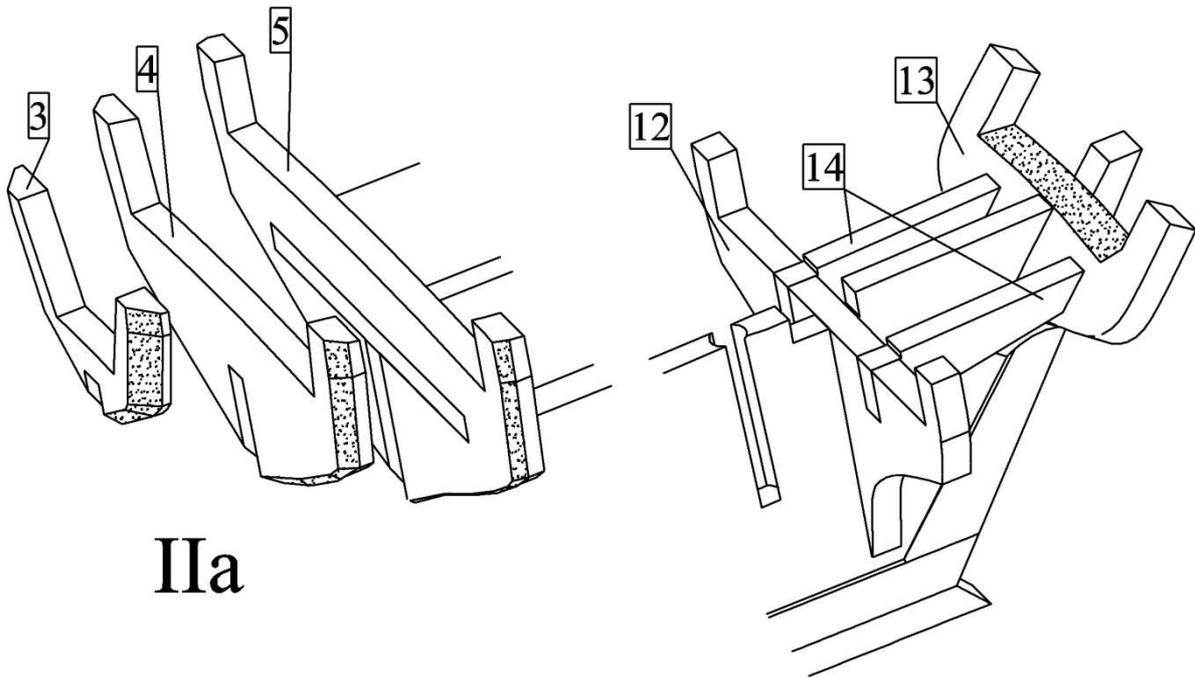
**Ia**

b) Glue parts 1a-1c to the part 2.



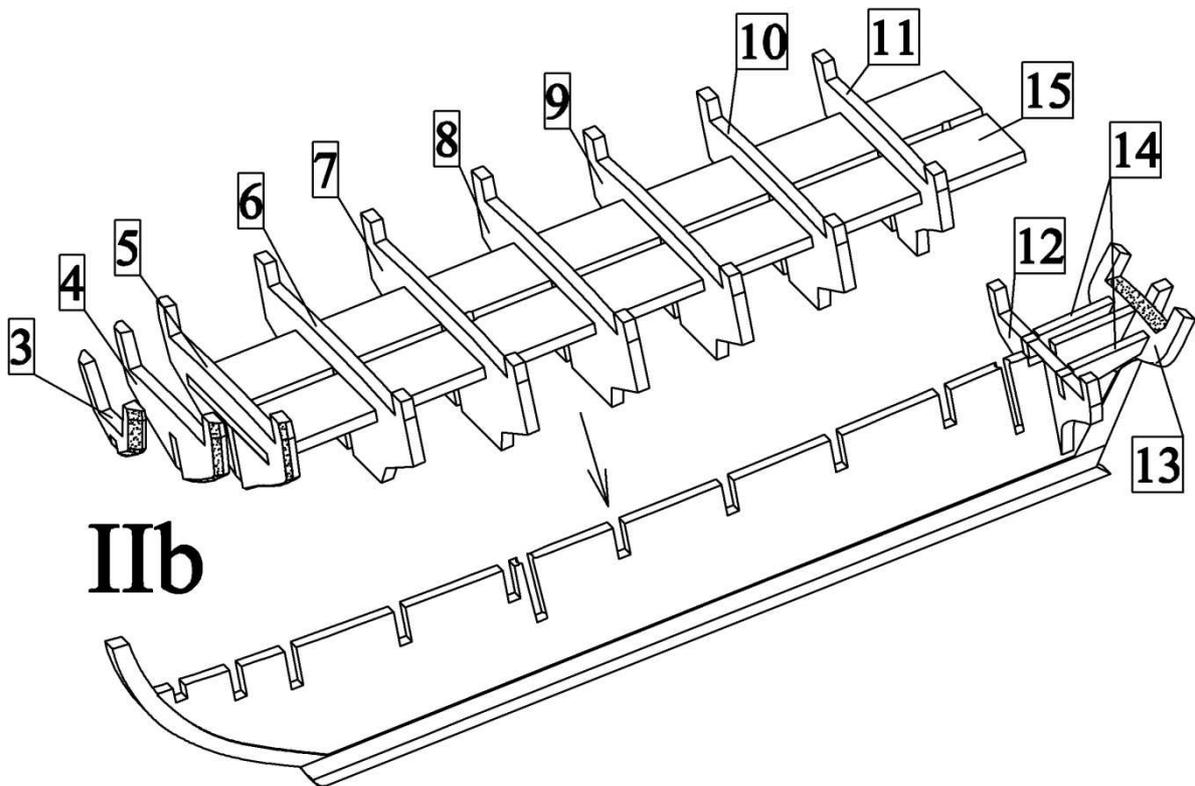
## II) Framing of the hull:

a) Grind frames 3-5 and 13 by needle files as it is shown in the figure. Then glue parts 12-14 to the stern.



IIa

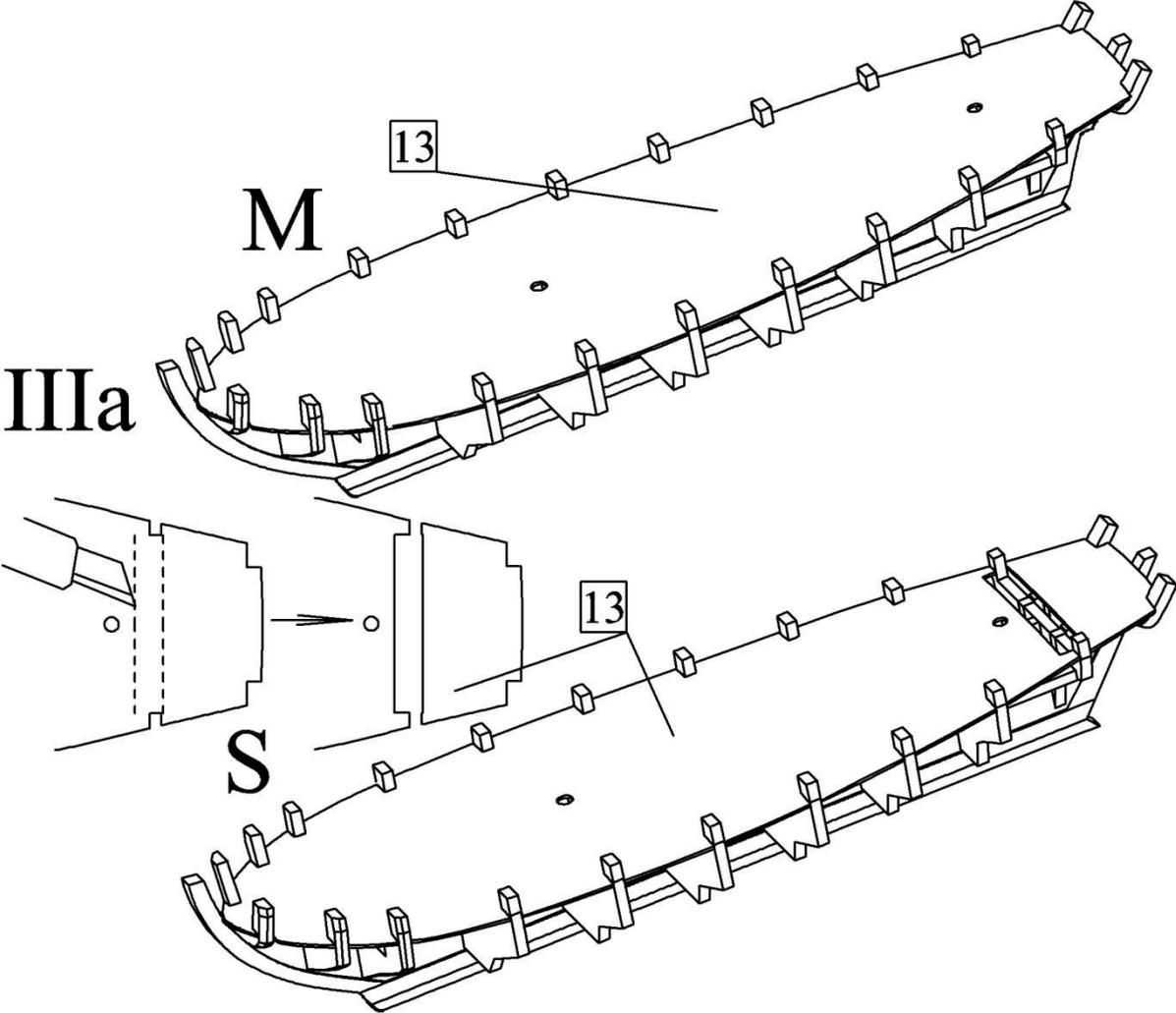
b) First insert part 15 into frames 5-11 and then glue them together with frames 3 and 4 to the keel 2



IIb

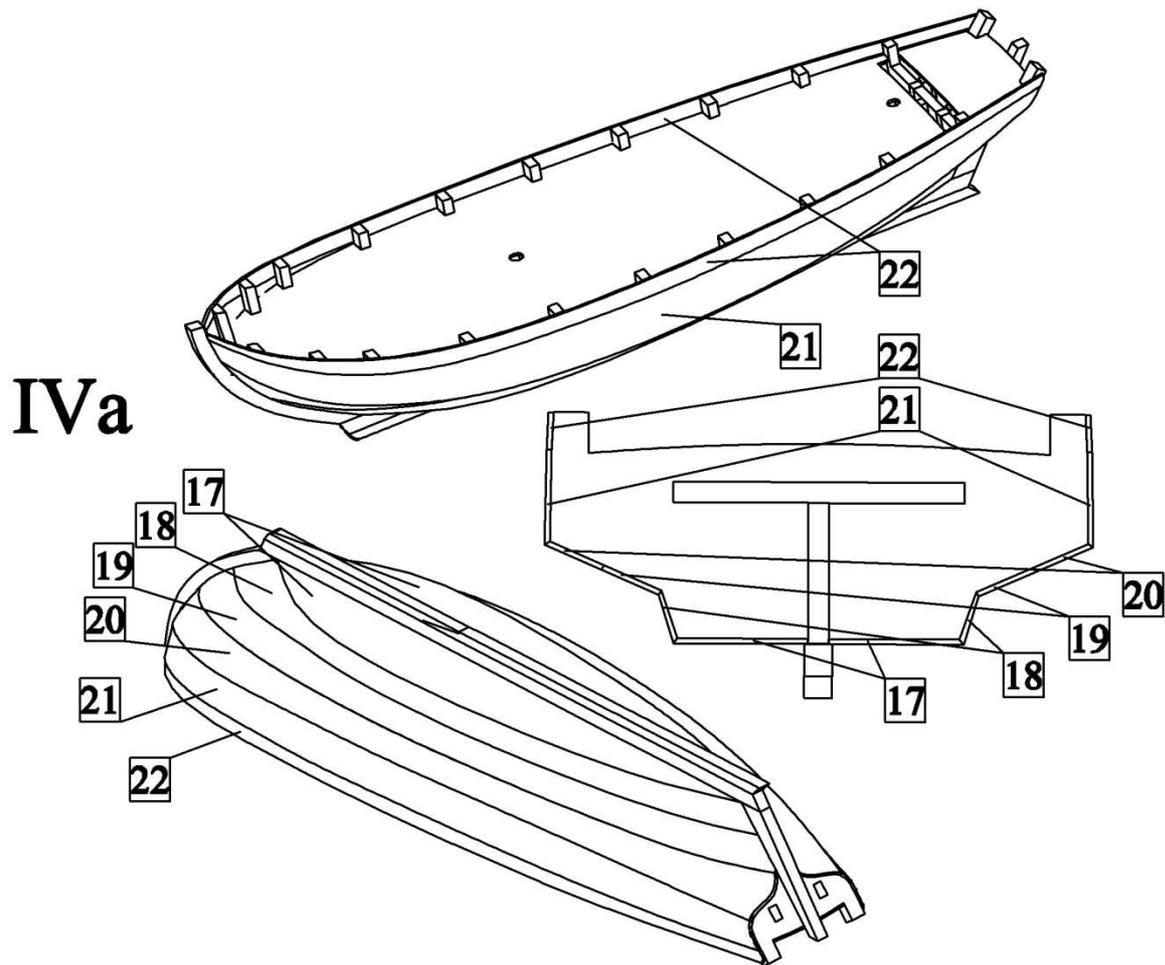
**III) Deck 1:**

a) First glue the deck 13 to the frames. If you build a sailing version is necessary first to cut a hole into the deck, as is shown in the picture.

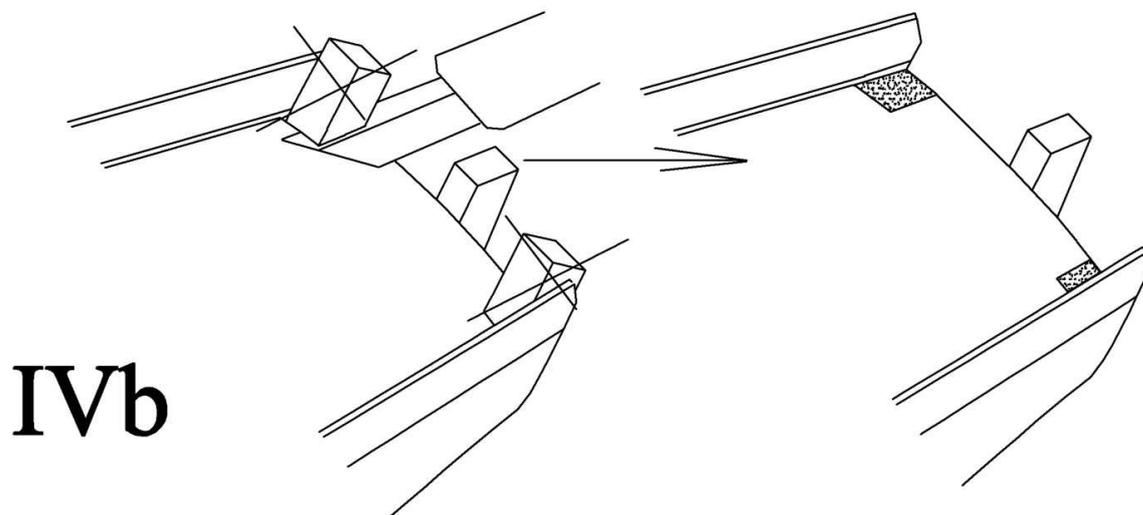


#### IV) Hull:

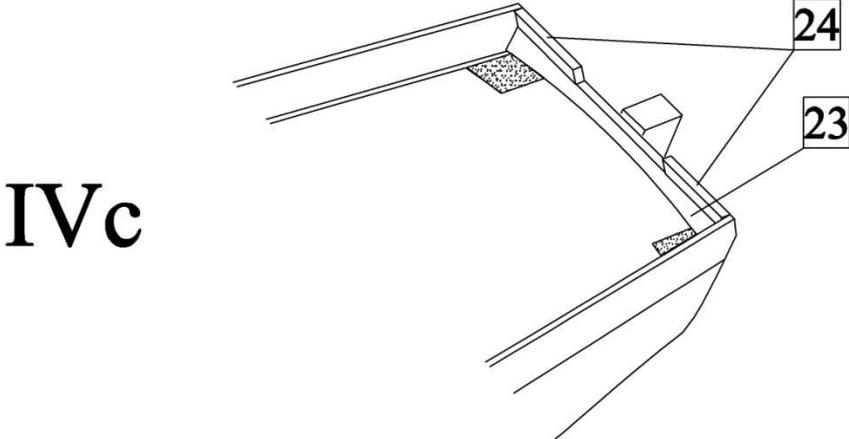
a) Glue planks 17-22 to the frames. Glue the planks in direction from stem to stern. Then grind by a sand paper parts 19-21 to form a rounded shape on the stern.



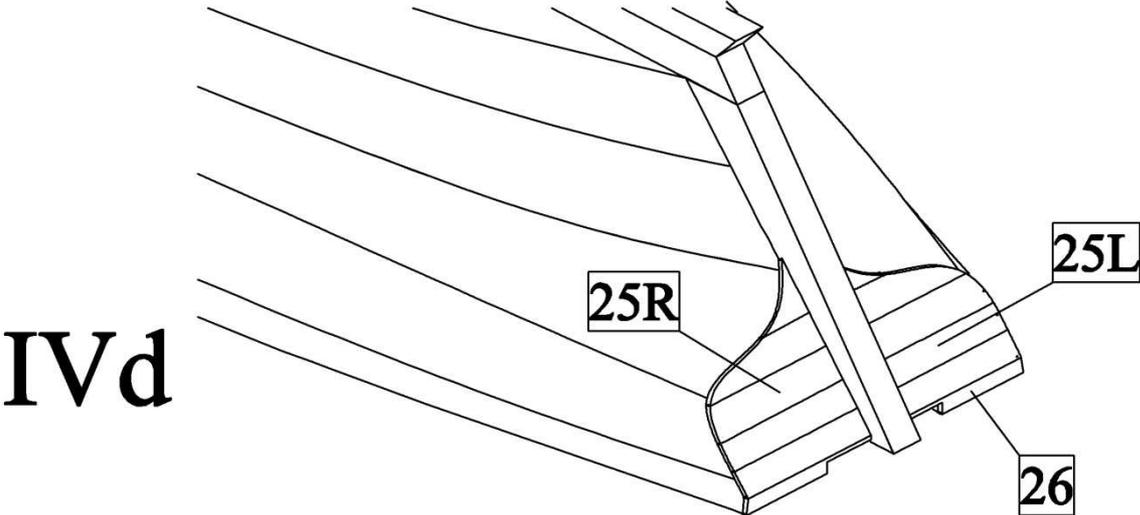
b) Cut the ribs 13 above the deck and then use sandpaper to smooth the place.



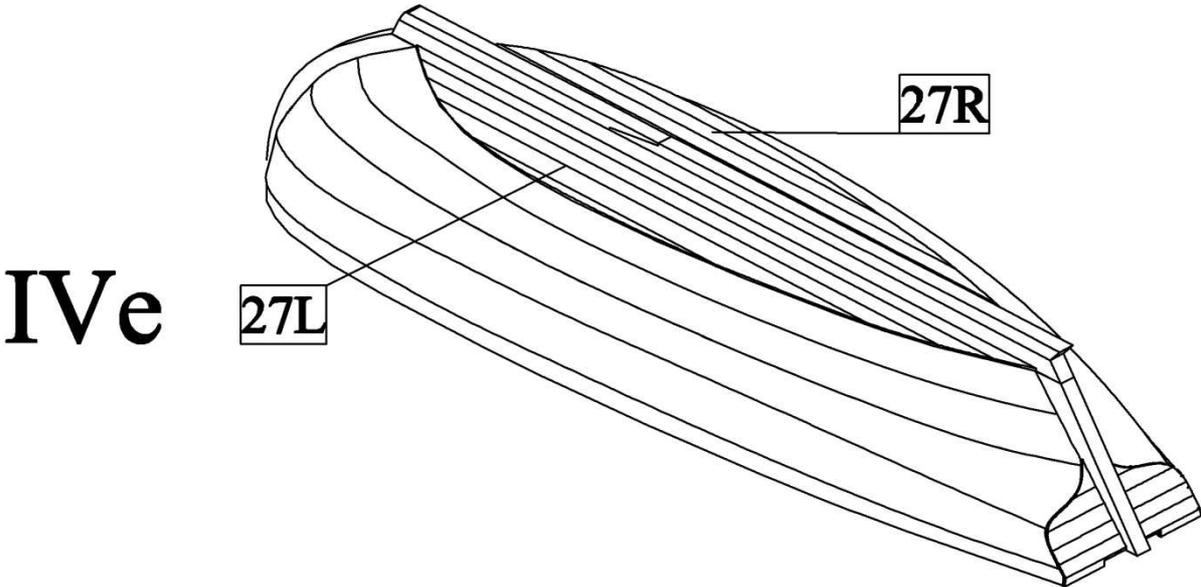
c) Glue parts 23 and 24 to the stern.



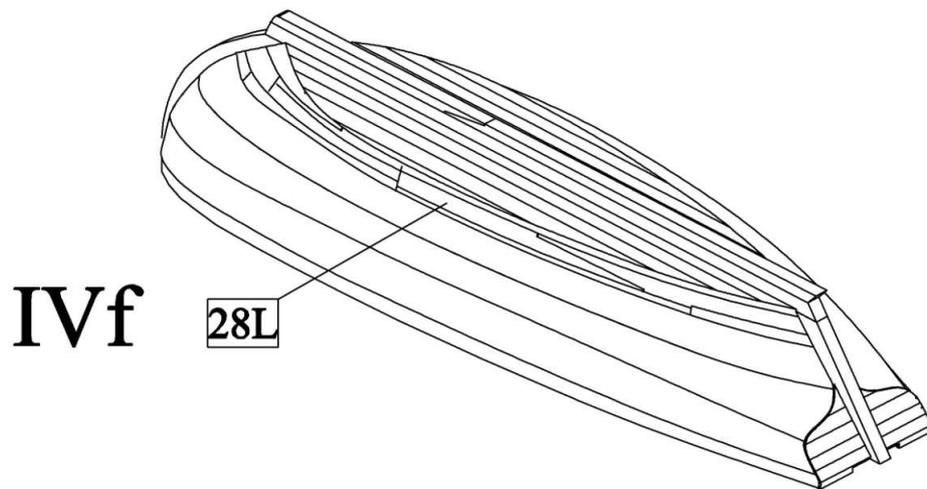
d) Glue second planking 25 and 26 to the stern.



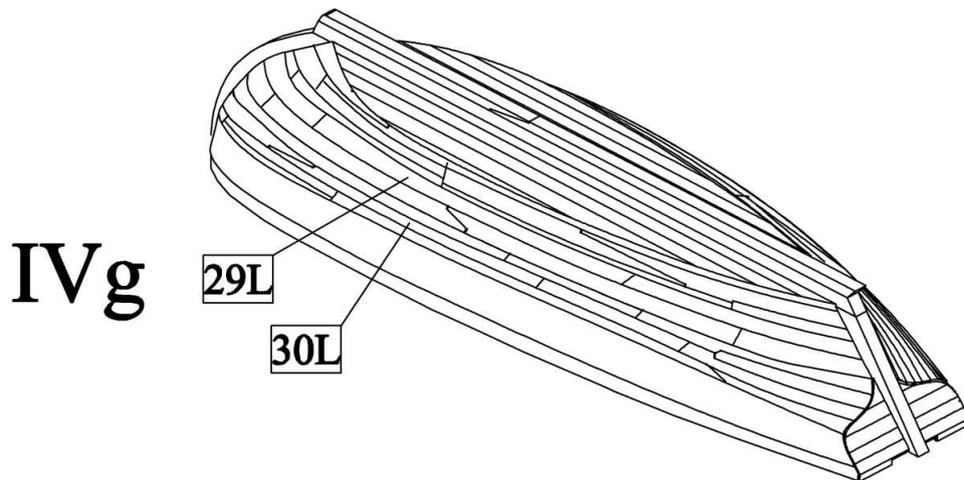
e) Glue second planking 27 to the hull.



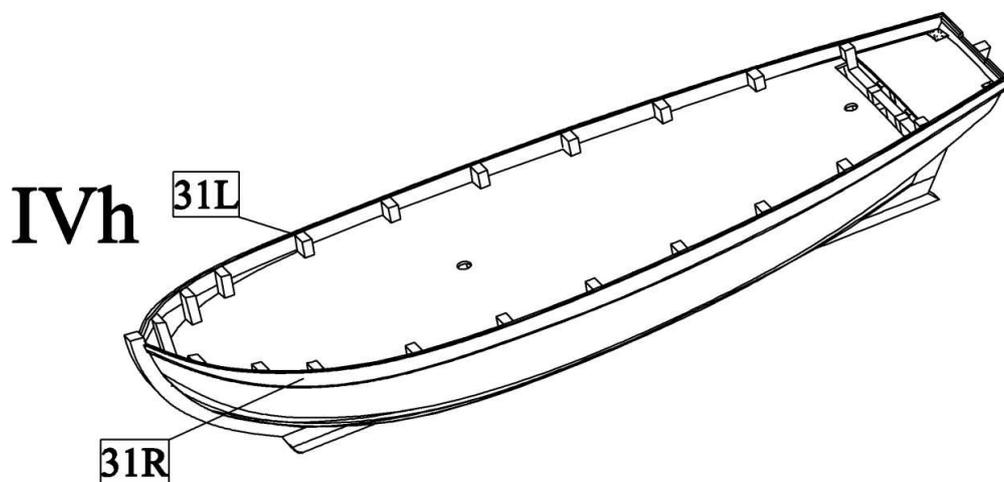
f) Glue second planking 28 to the hull. Glue the planks in direction from stem to stern.



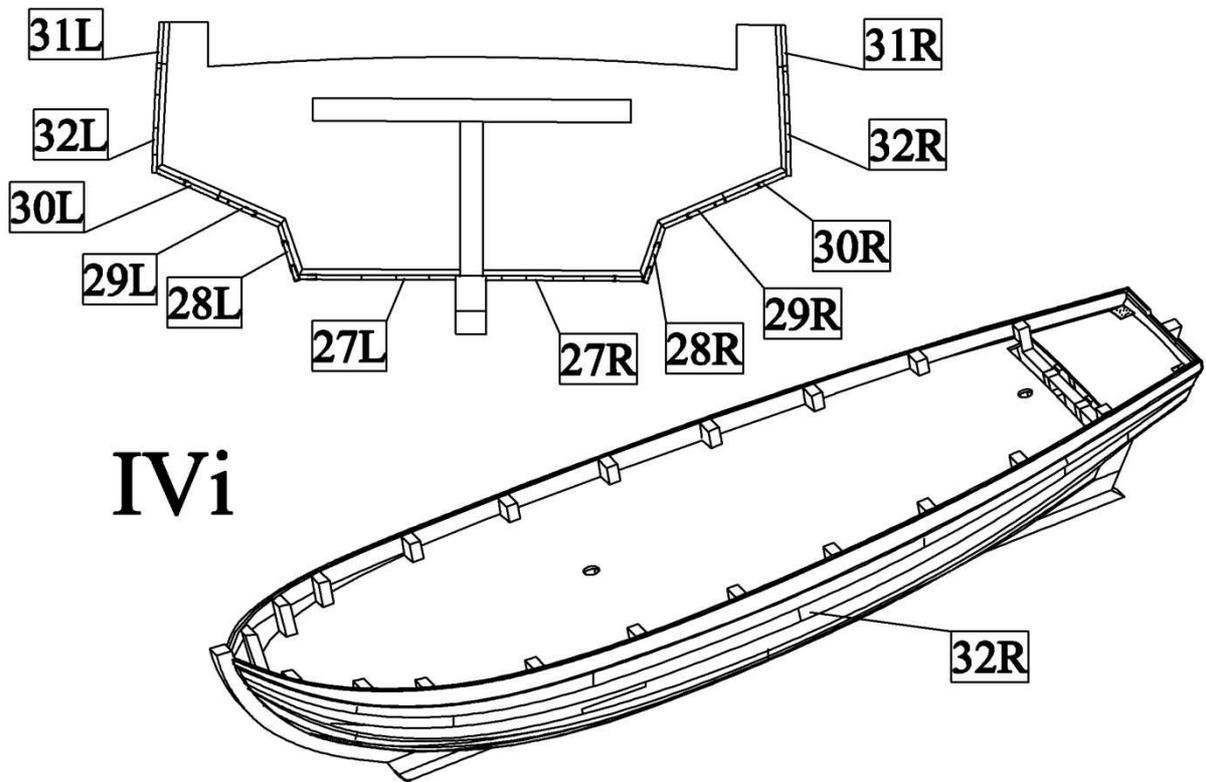
g) Glue second planking 29 and 30 to the hull. Glue the planks in direction from stem to stern.



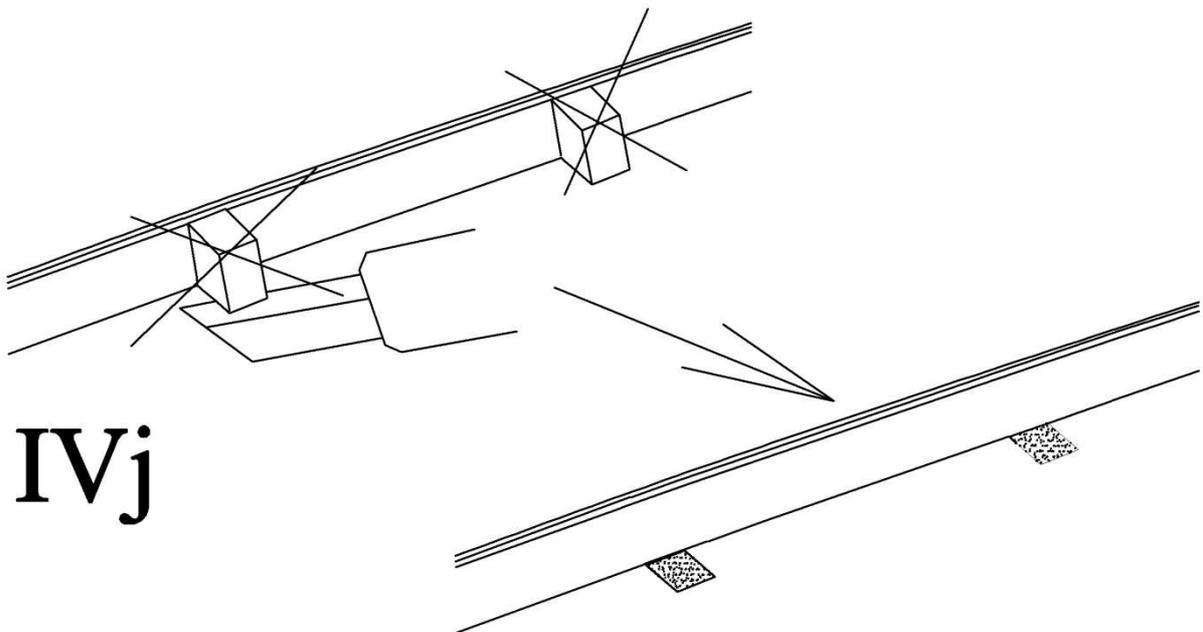
h) Glue second planking 31 to the hull. Glue the planks in direction from stem to stern.



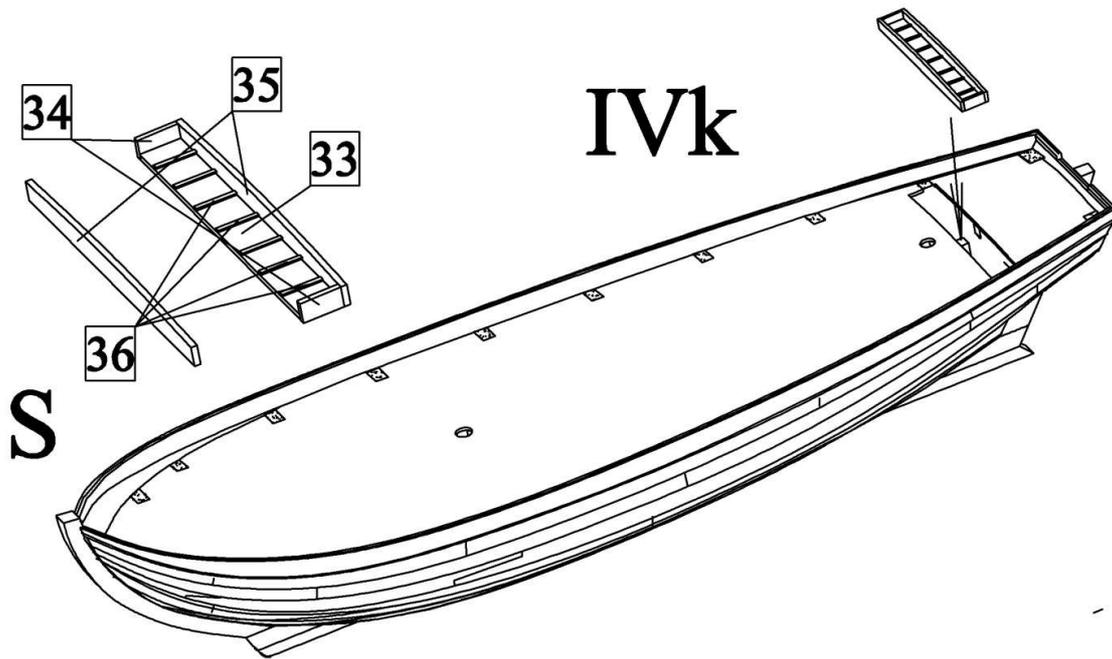
i) Glue second planking 32 to the hull. Glue the planks in direction from stem to stern.



j) Cut the ribs 13 above the deck and then use sandpaper to smooth the place.

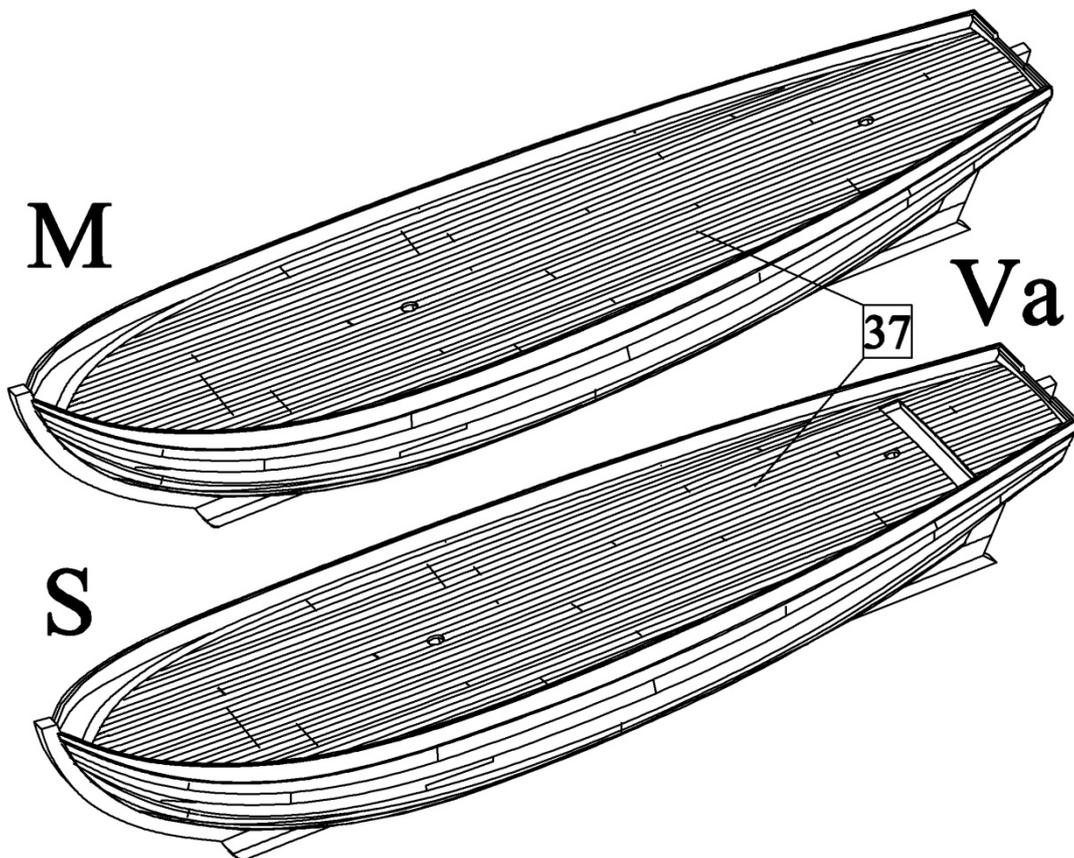


k) Glue from parts 33-36 steering post if you're building the sailing version and then glue it into hole in the deck as it is shown in the figure.



**V) Deck 2:**

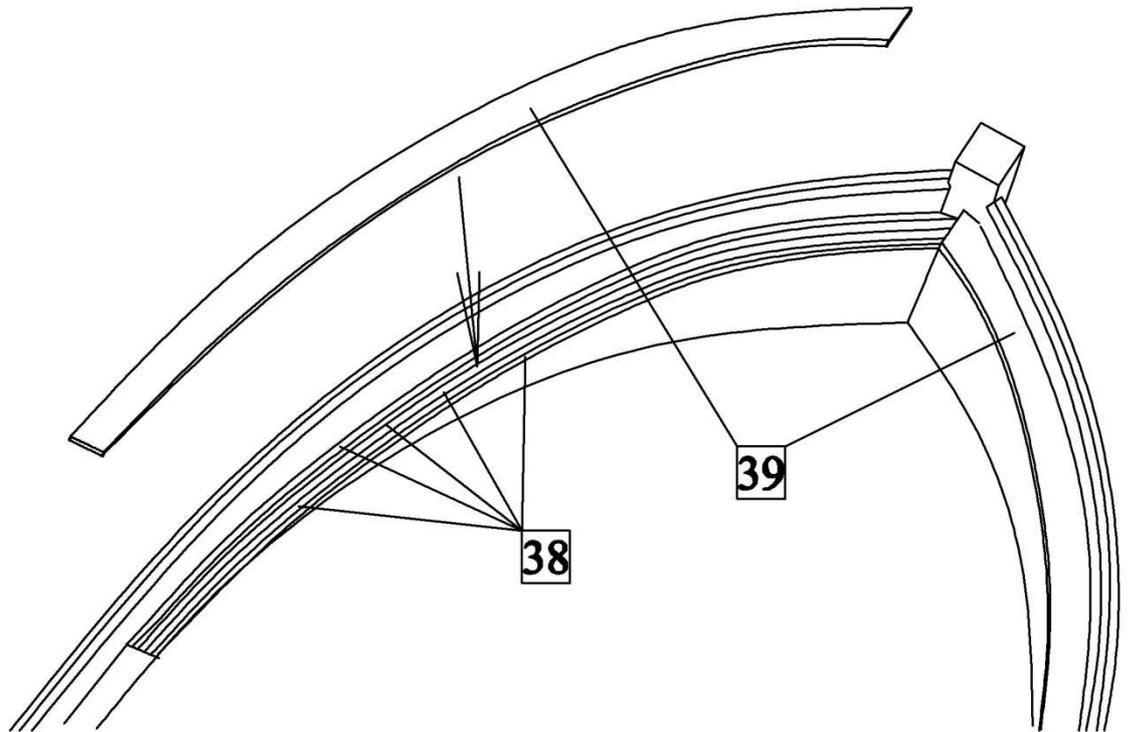
a) Glue the second layer of the deck 37 to the first layer 13. In the case of sailing version a hole in the stern for the steersman stand must be cut first.



## VI) Gunwale:

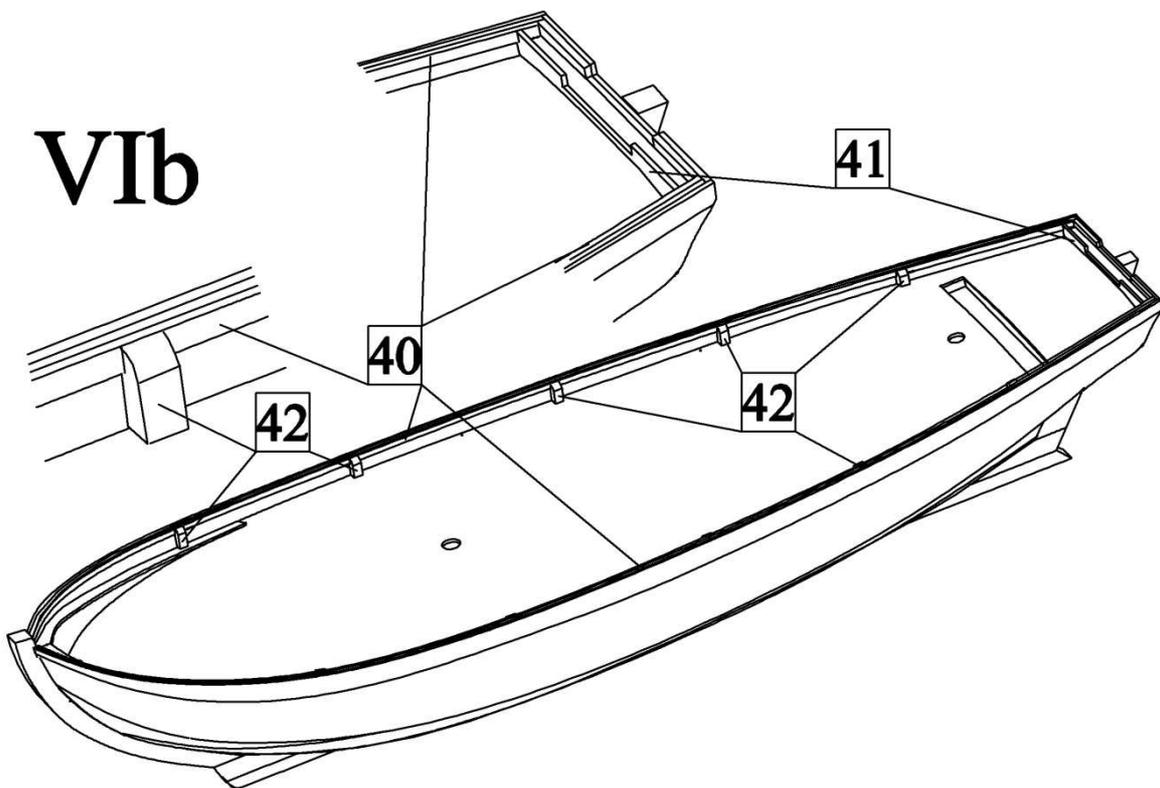
a) Glue reinforcements 38 and 39 to the bow.

### VIa



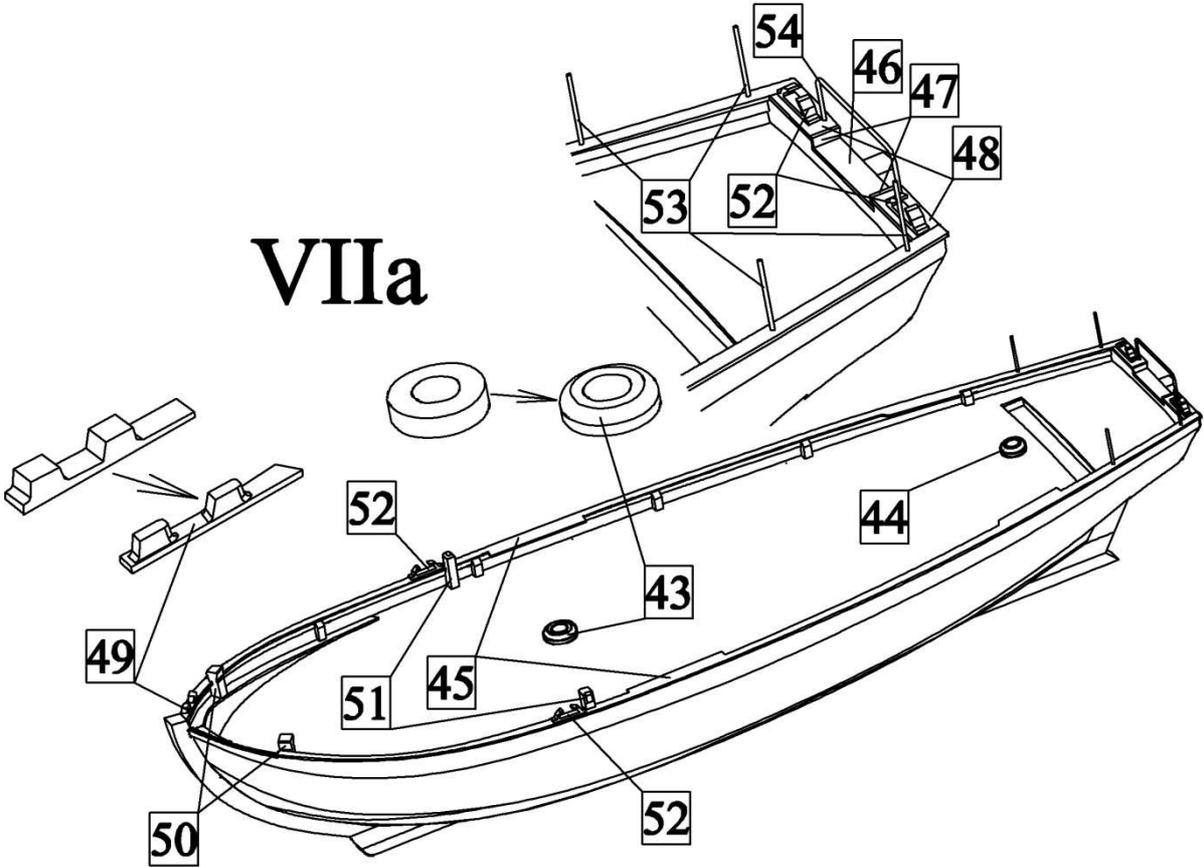
b) First glue planks 40 to the gunwales. Then glue part 41 to the stern and parts 42 to the gunwales.

### VIb

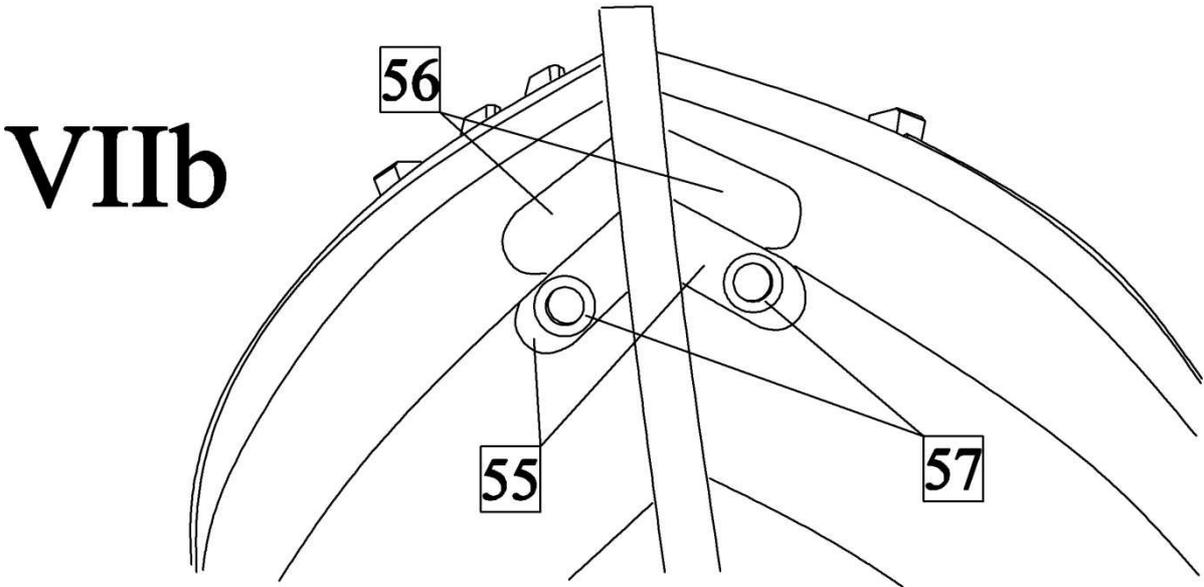


**VII) Details:**

a) First glue to the deck mast feet 43 and 44. Then glue to the gunwales parts 45-48. Finally glue parts 49-54 to their positions.

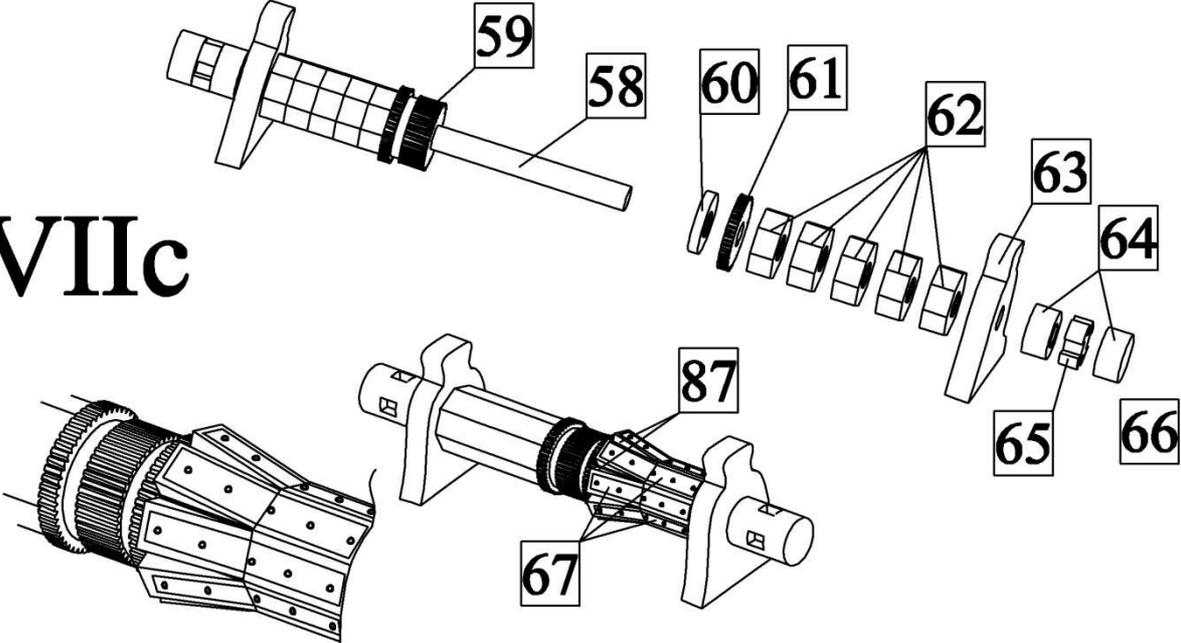


b) Glue reinforcements 56 and parts 57 to the bow. Then drill into the hull hawse holes.



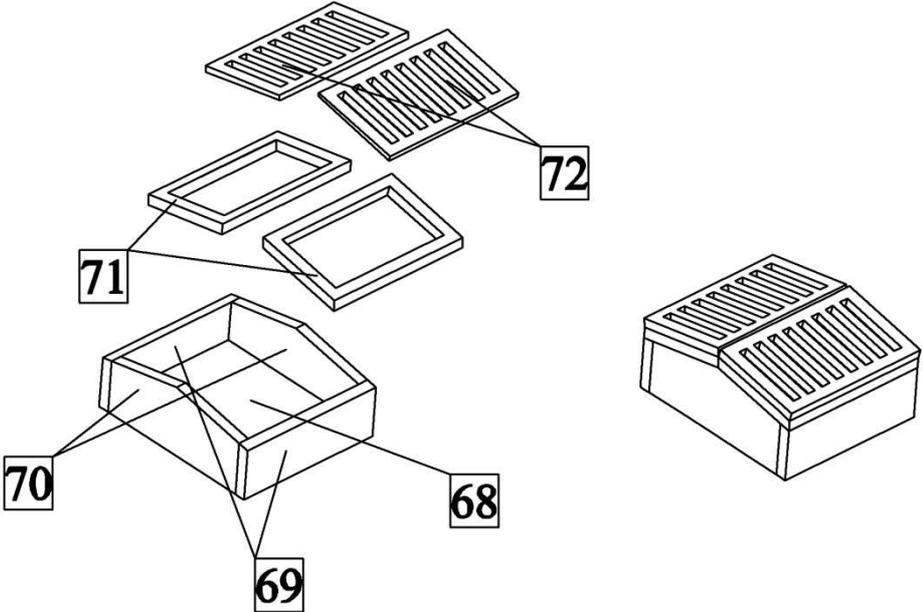
c) First glue parts 59-62 to axis 58 and then the axis string through parts 63. Then glue parts 64-66 to the axis from both sides. Finally glue also parts 87 and 67 to the windlass

# VIIc

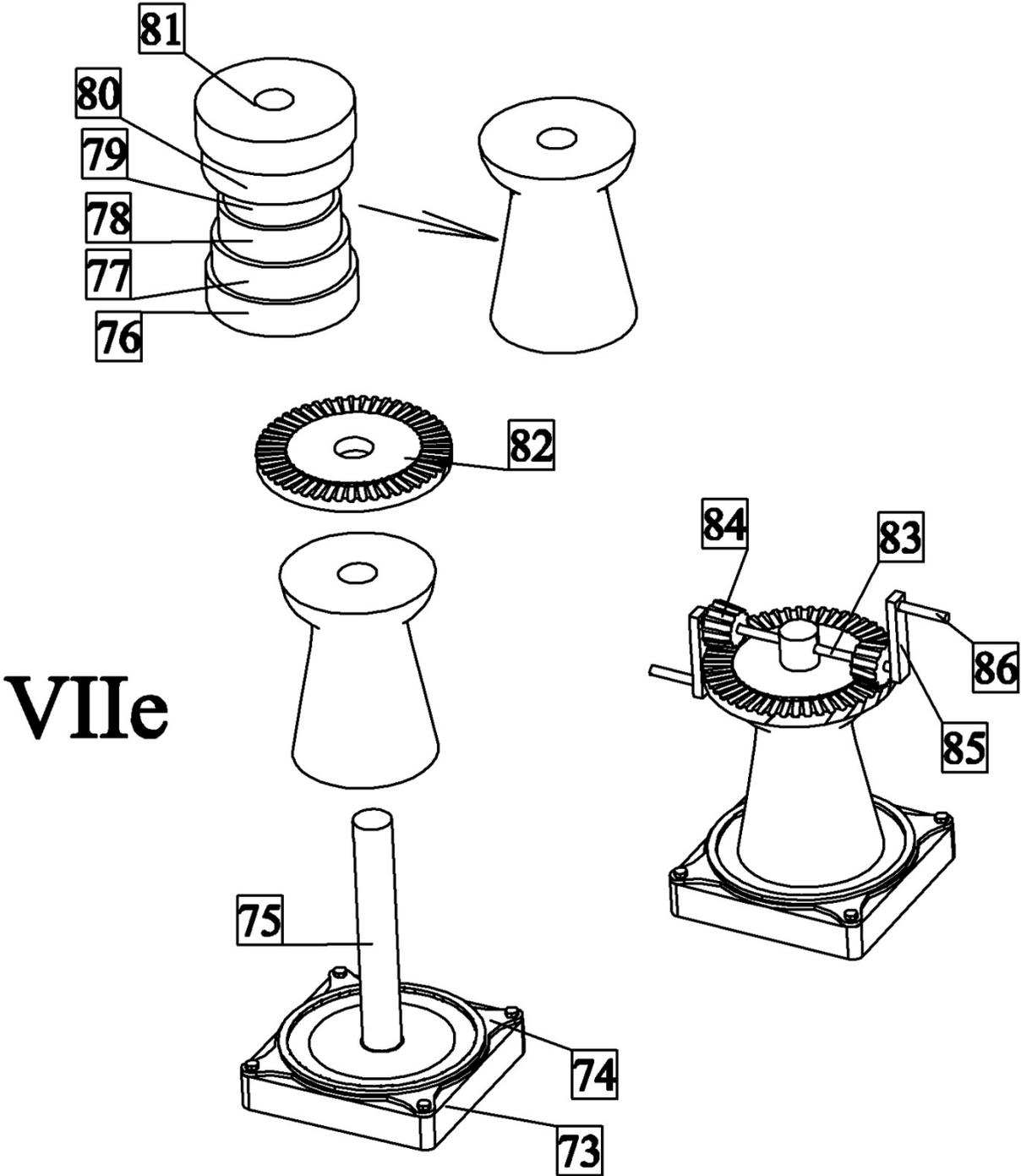


d) Glue skylight from parts 68-72.

# VIIId

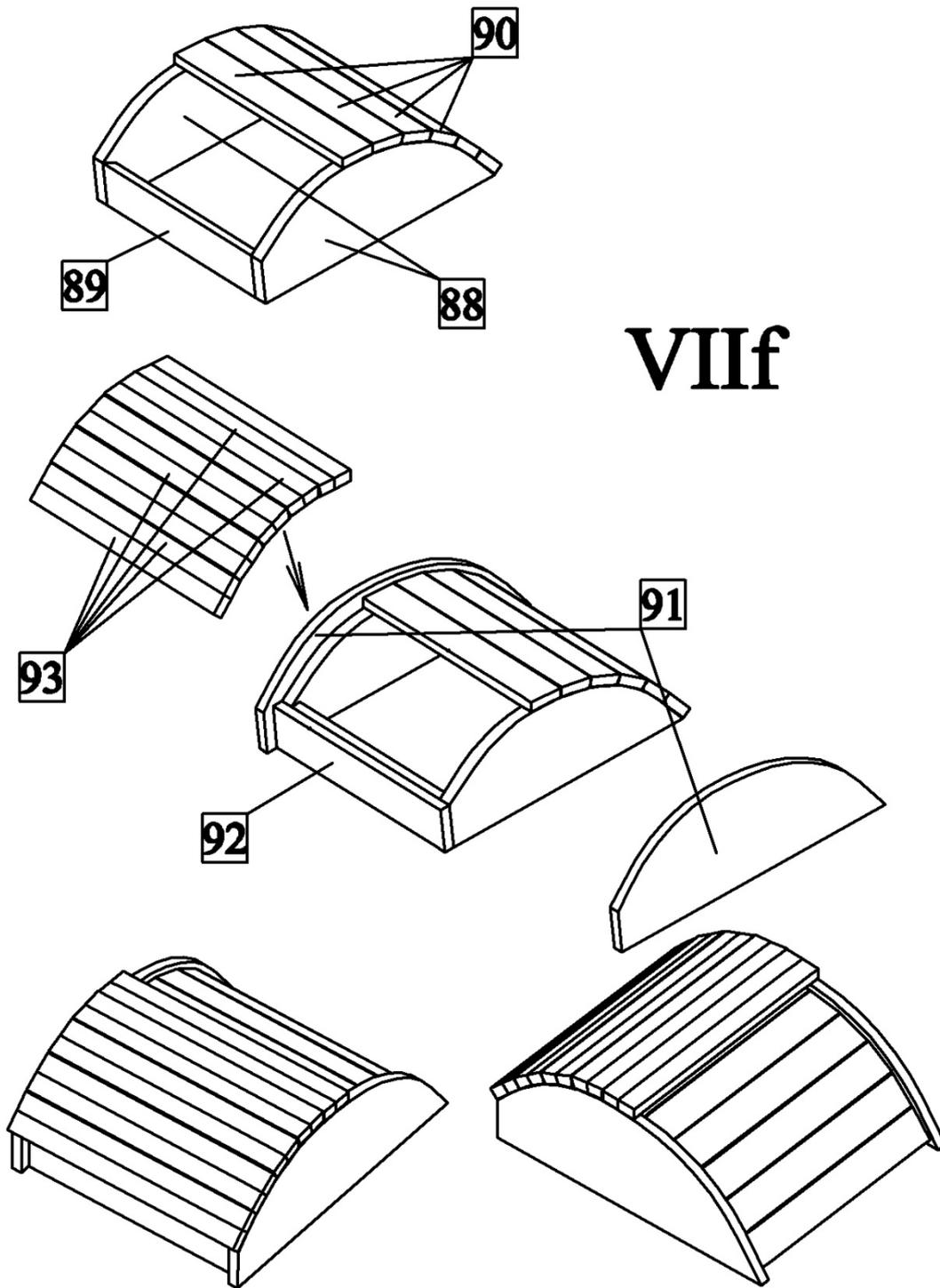


e) First glue body of the capstan from parts 76-81 and then grind them by a sand paper into smooth shape as it is shown in the figure. Then glue part 74 and axis 75 to the base part 73. Then glue also body of capstan a part 82 to the axis. Finally glue axis 83 with tooth wheels 84 and handles from parts 85 and 86.



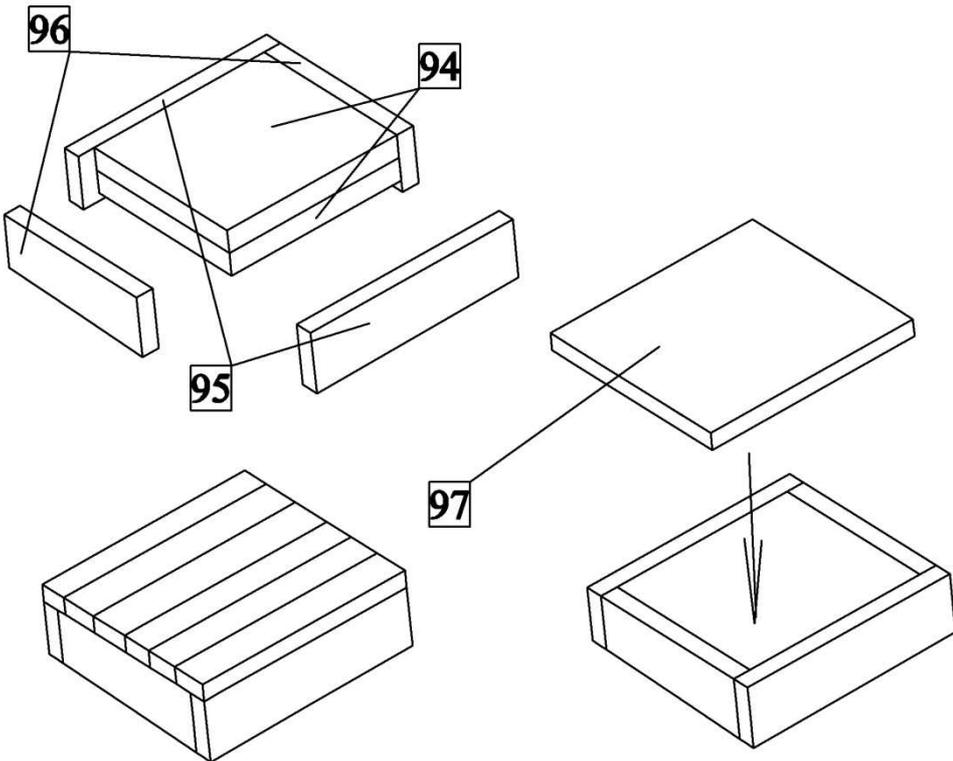
VIIe

f) First glue skeleton from parts 88-90. Then glue parts 91-93 to the skeleton.



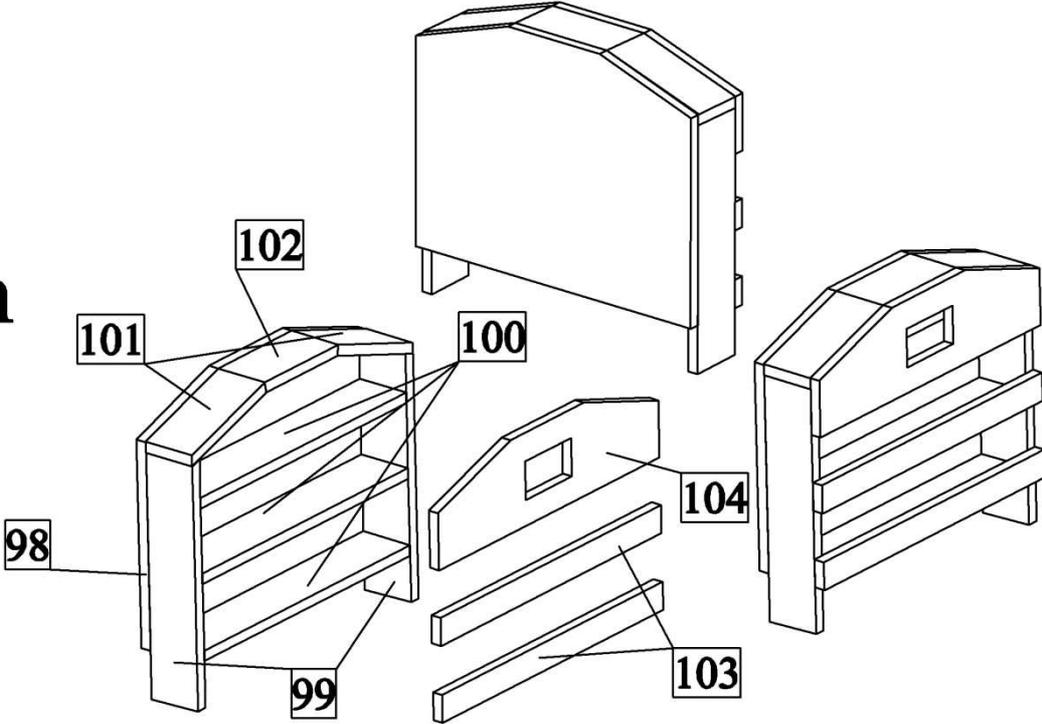
g) Glue deck hatches from parts 94-97.

# VIIg

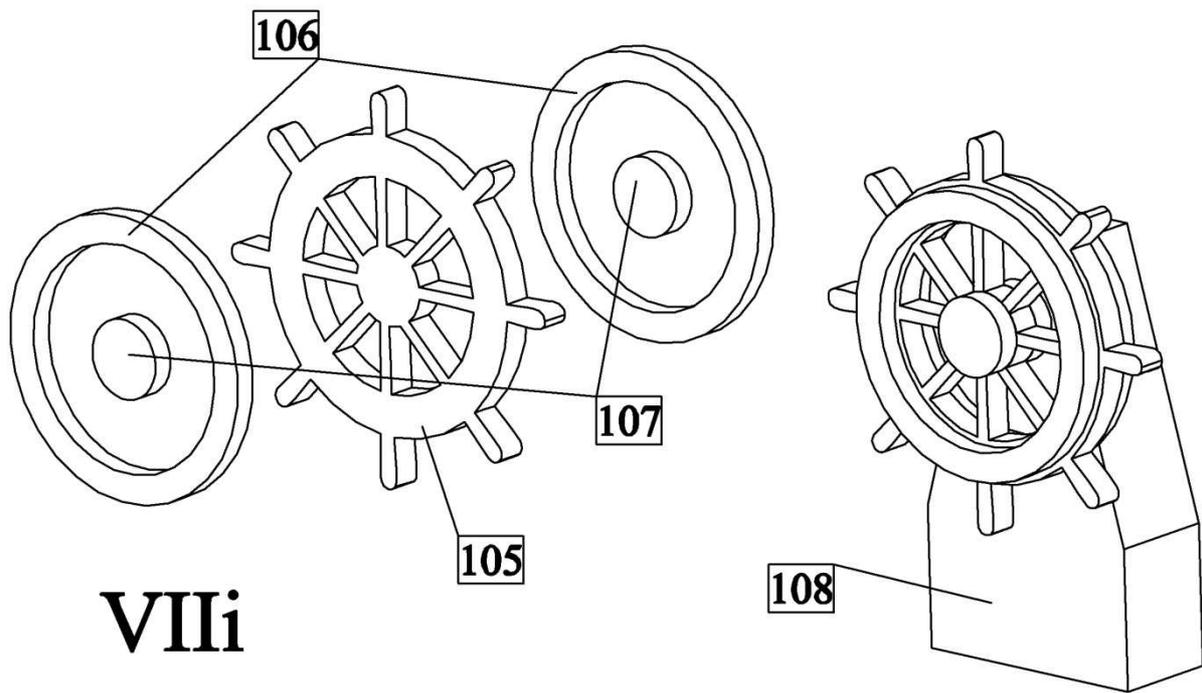


h) Glue binnacle from parts 98-104.

# VIIh

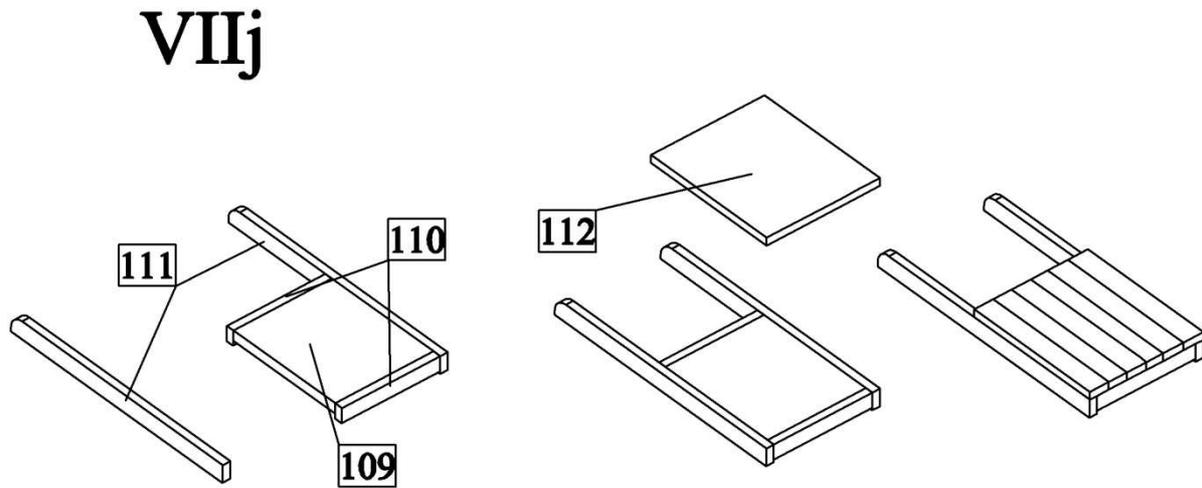


i) Glue steering wheel from parts 105-108.



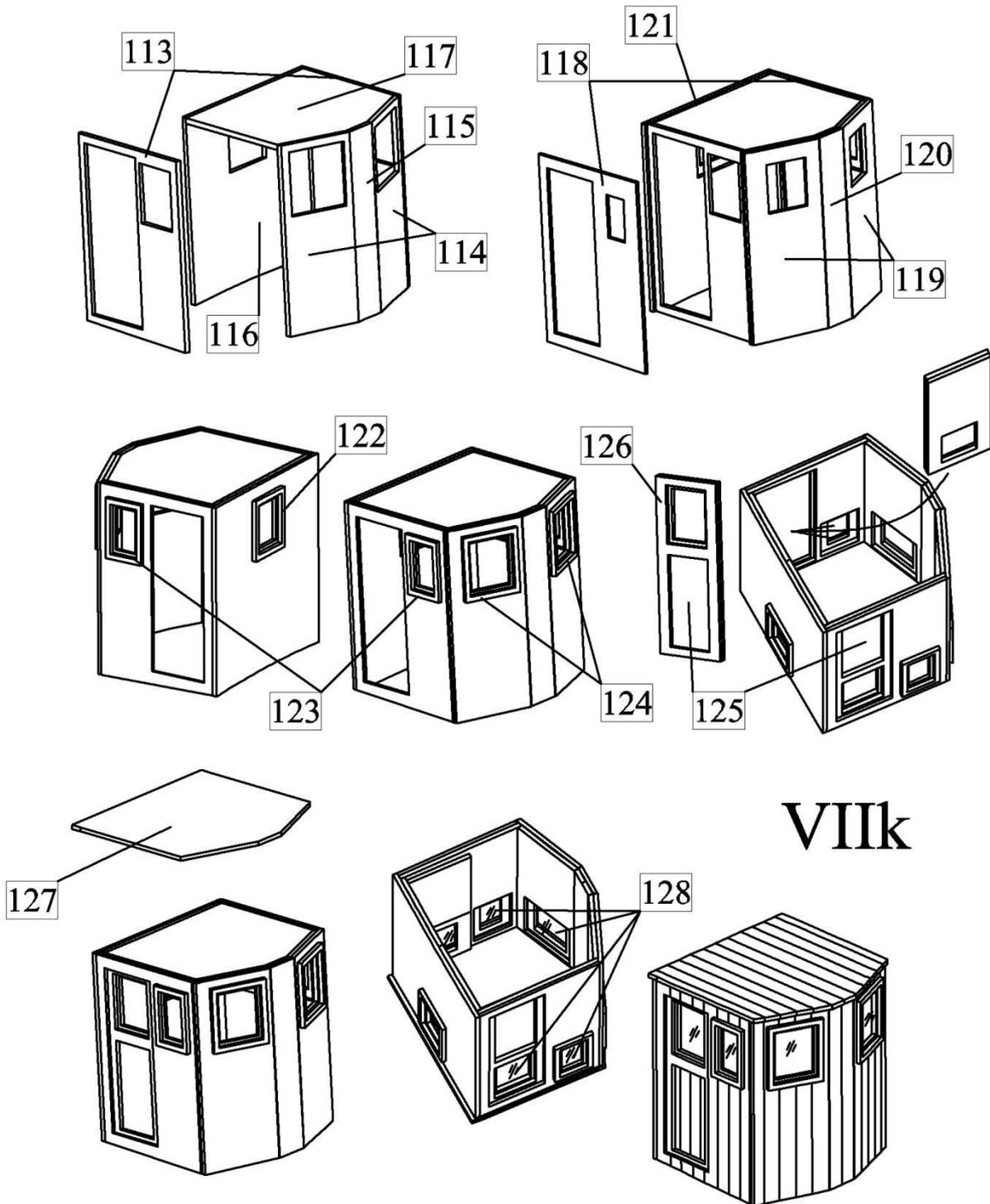
**VIIi**

j) Glue deck hatch from parts 109-112.

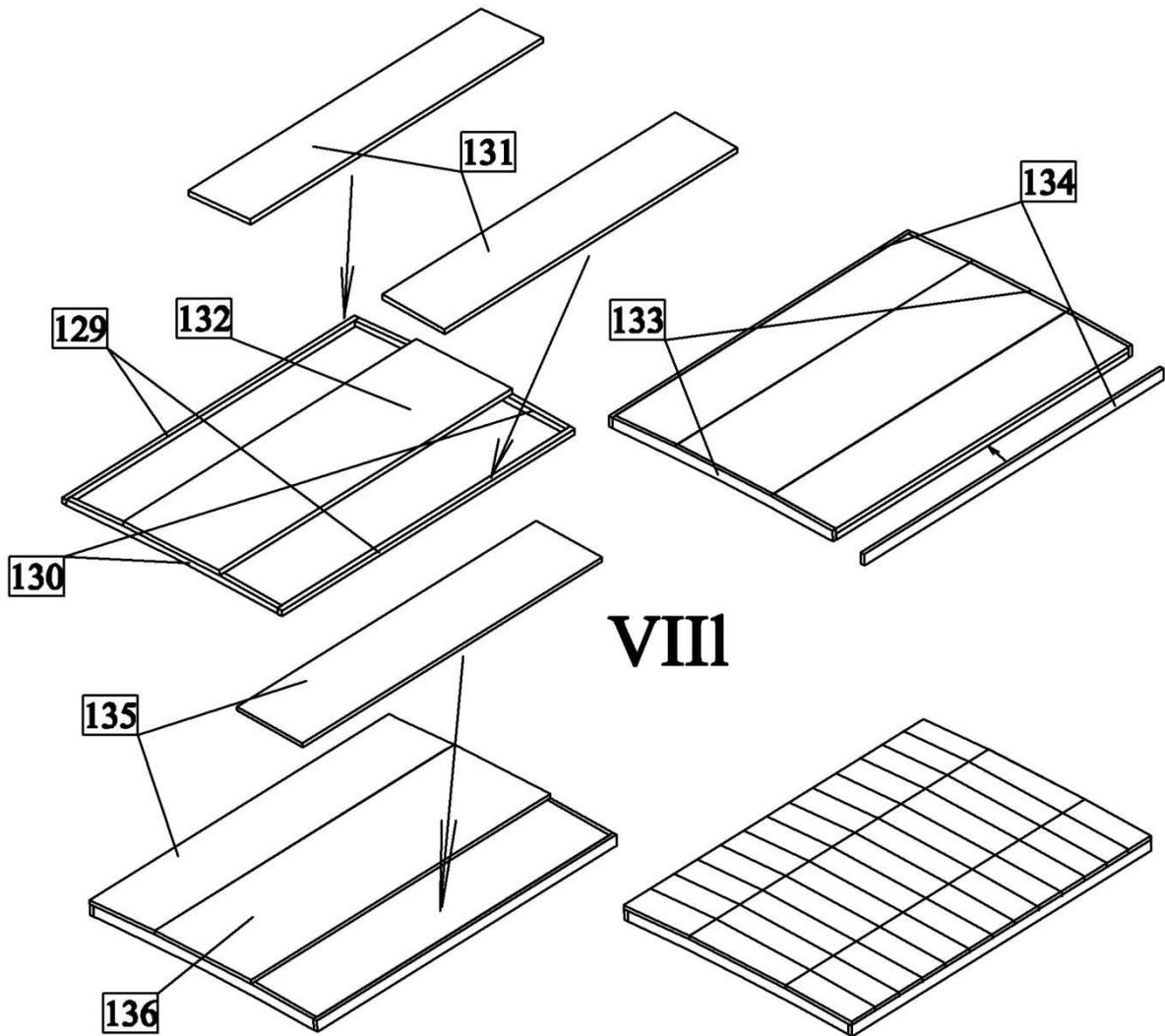


**VIIj**

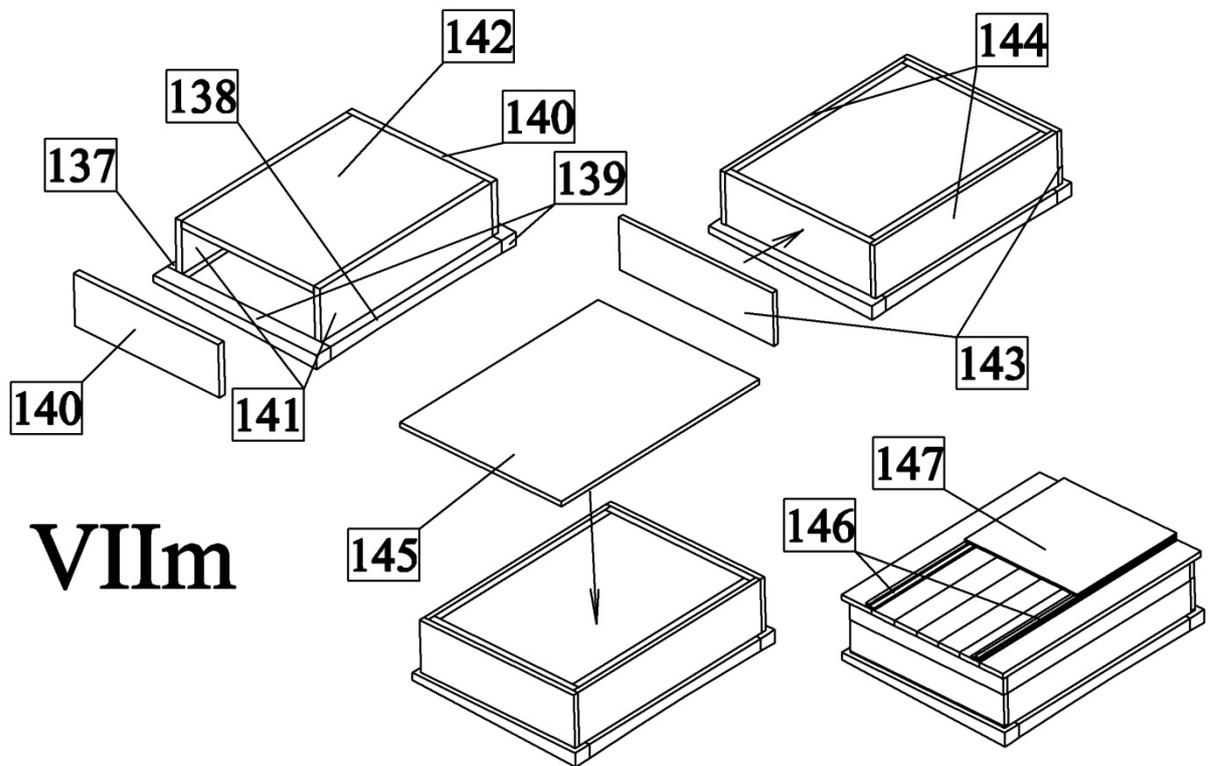
k) Make steering booth. First glue the skeleton structure from parts 113-117. Then glue parts 119-121 to the skeleton. Then glue window frames 122-124 to the booth. Then make doors from parts 125 and 126 and glue them into the booth. Then glue roof 127 to the booth and finally glass the booth by plastic foil 128.



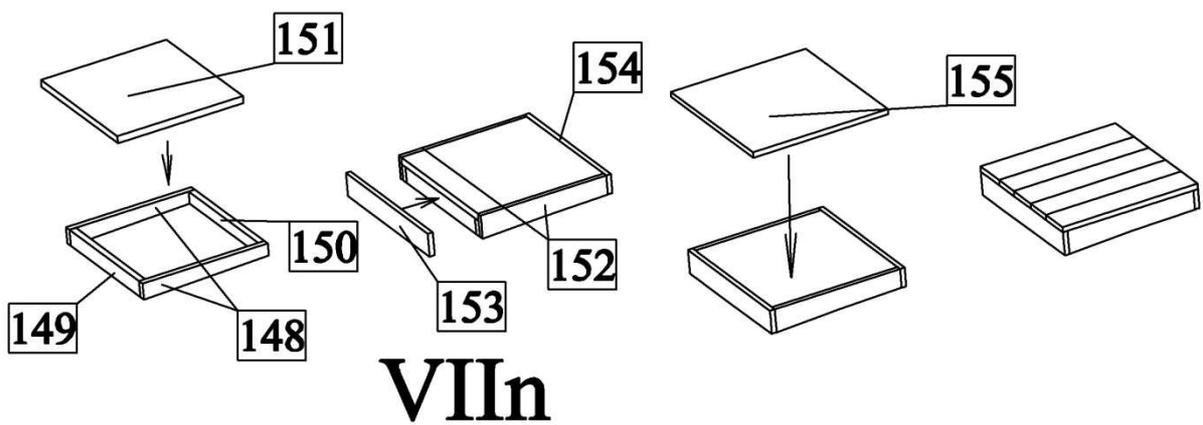
1) Glue deck hatch from parts 129-136.



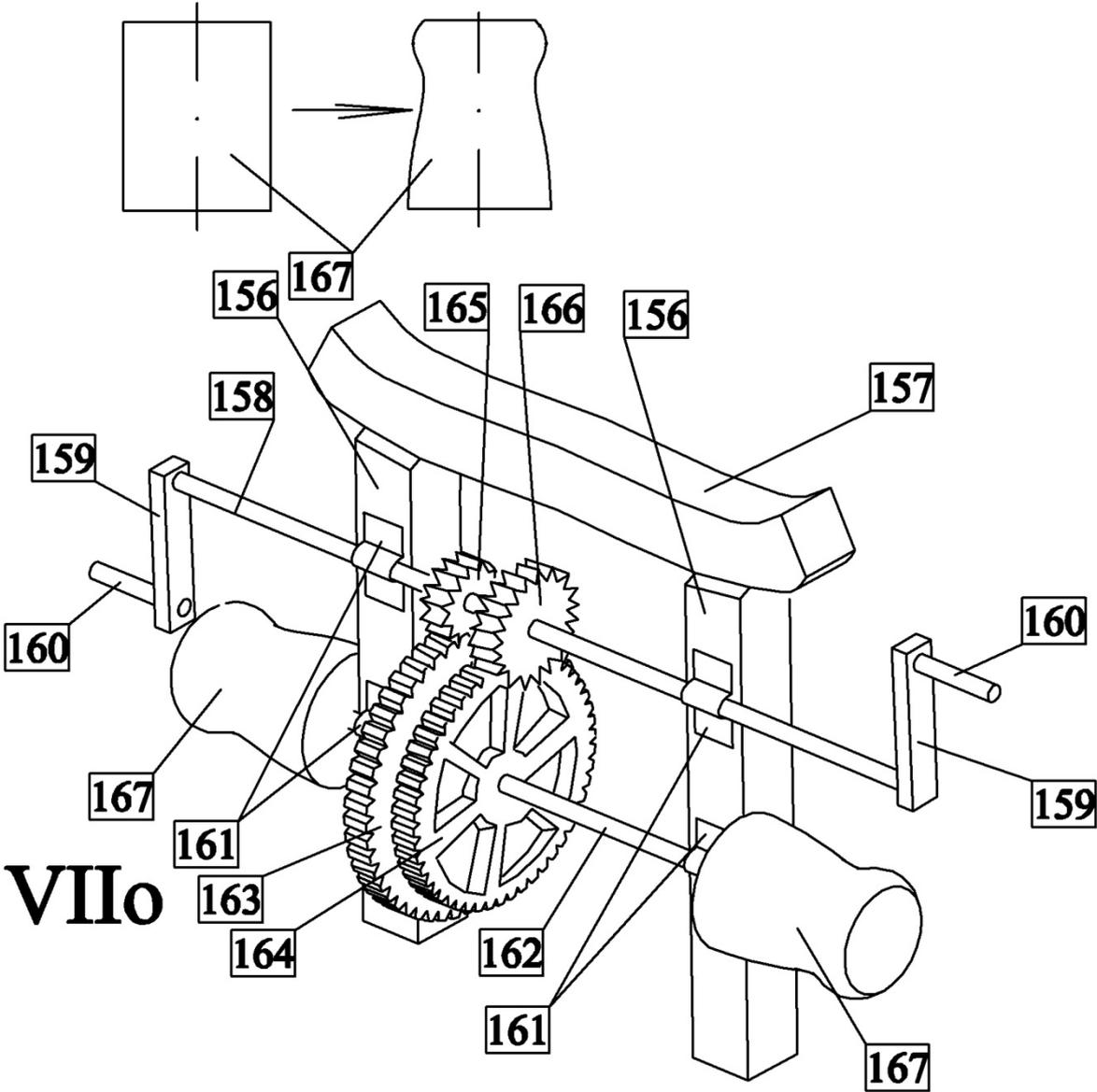
m) Glue deck hatch from parts 137-146.



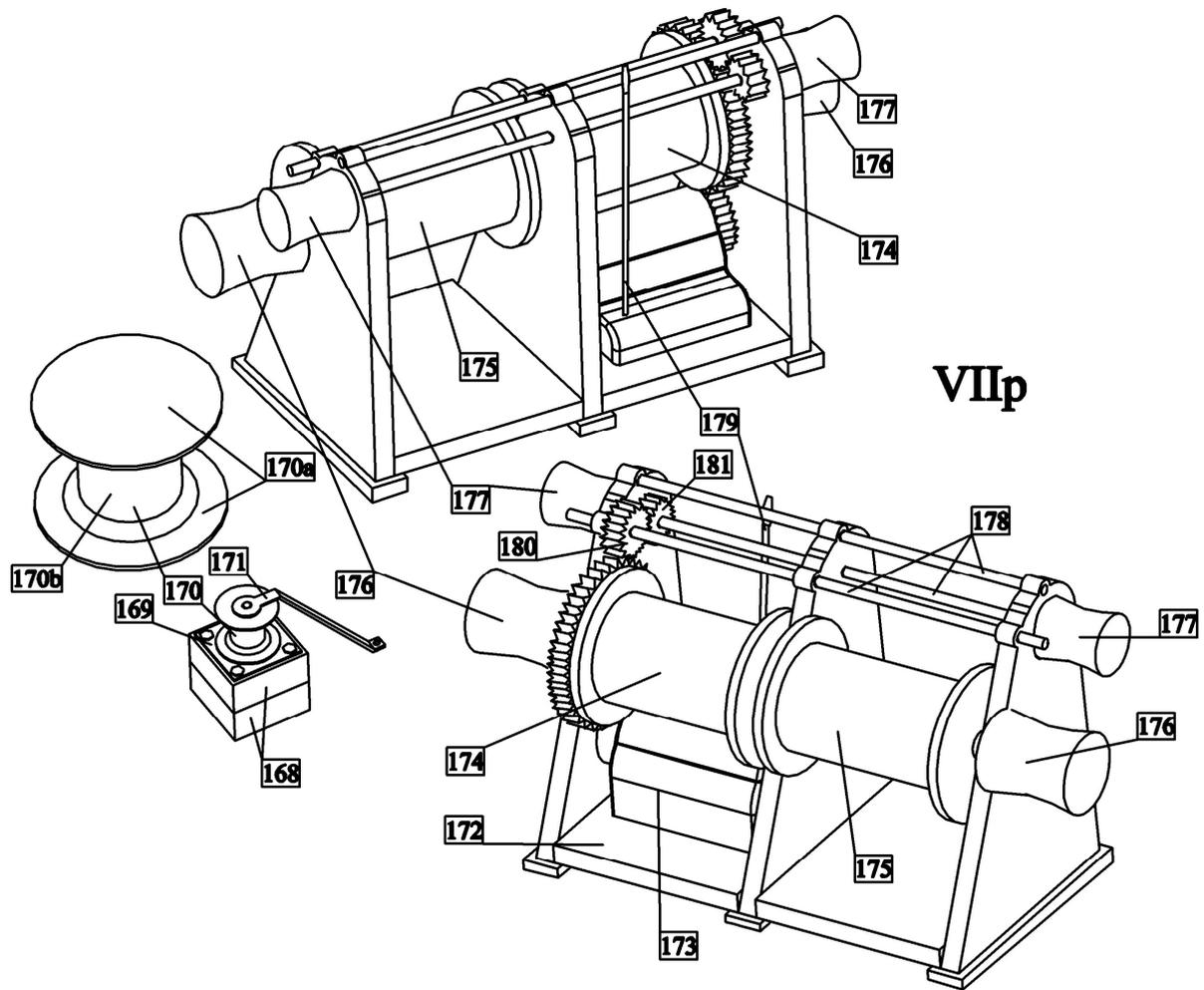
n) Glue deck hatch from parts 148-155.



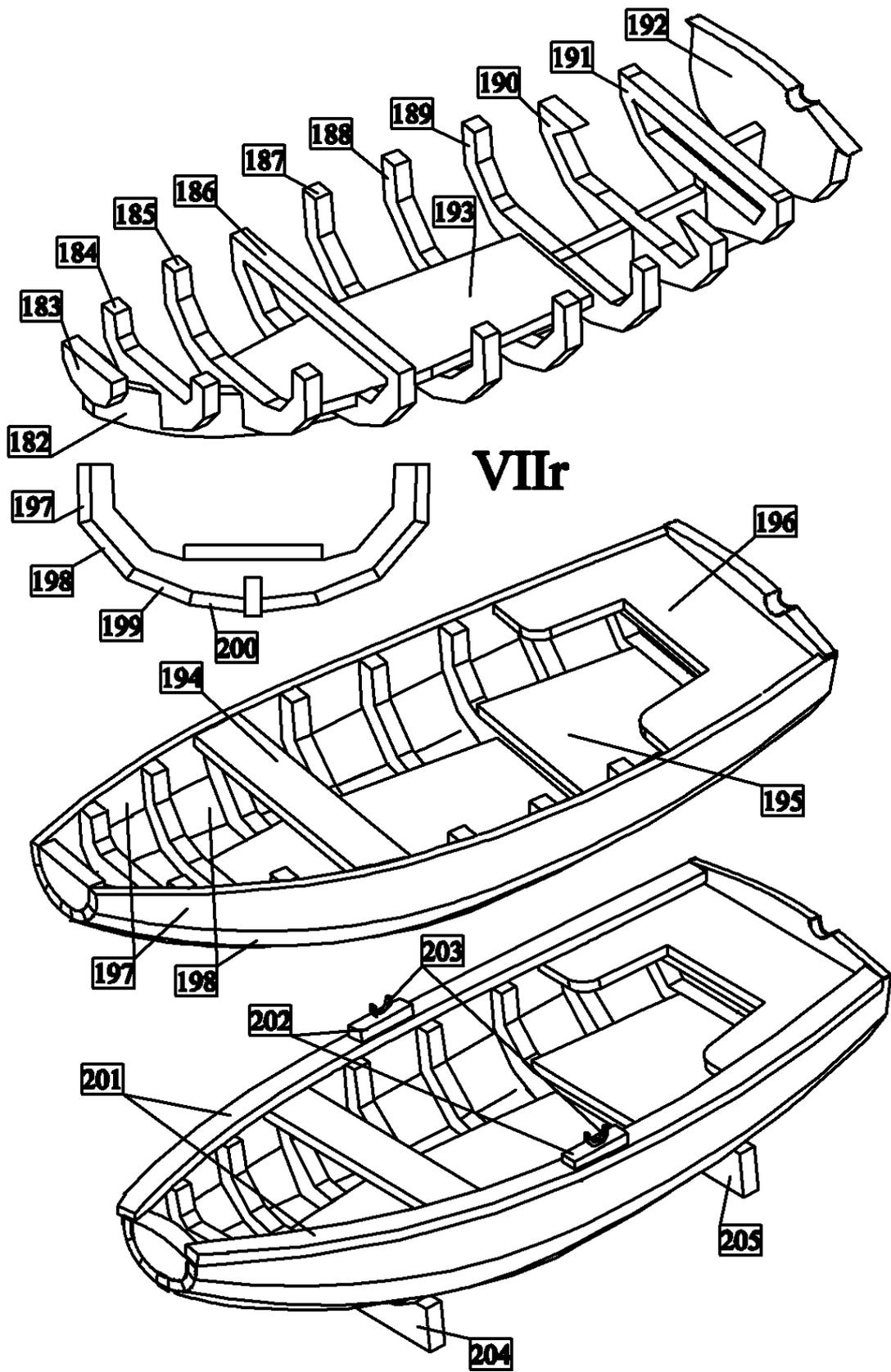
o) Make winch for sailing version. First glue the supporting frame of the winch from parts 156 and 157. Then glue tooth wheels to the axes 158 and 162 and then glue them together with parts 161 to the supporting frame. Then grind drums 167 from dowels (it is advantageous to use a mini lathe) and glue them to the axle. Finally glue handles 159 and 160 to the winch.



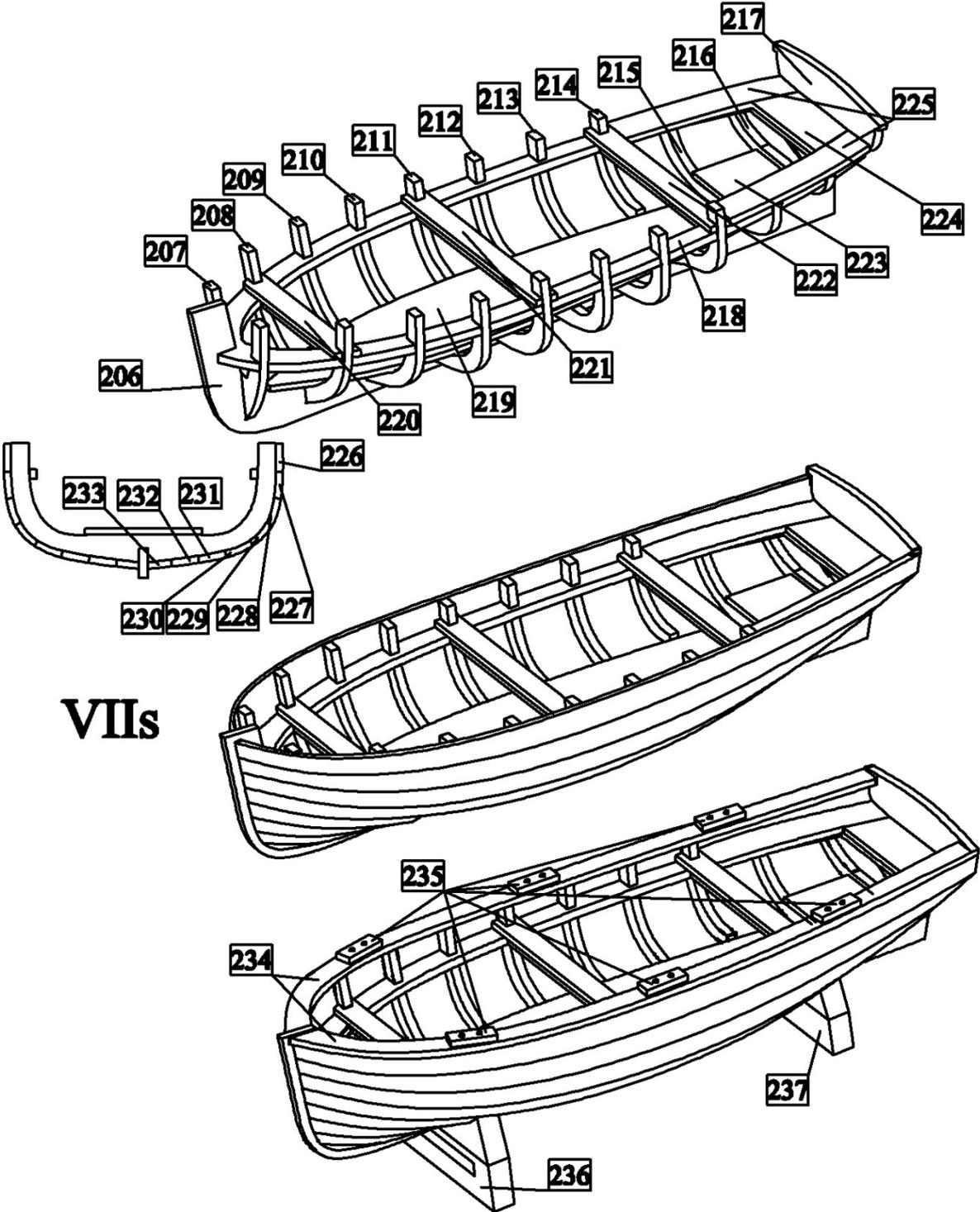
p) Make winch for motorized version. First glue tackle from parts 168-171. Then glue together parts 172-178. Then glue tooth wheels 181 and 182 with axis 178 and lever 179 to the winch.



r) Make boat for sailing version. First glue framing from parts 182-193. Then glue parts 194-196 to the framing. Then plank the boat by planks 197-200. Then glue parts 201-203 to the boat. The boat is placed in the stand 204 and 205.

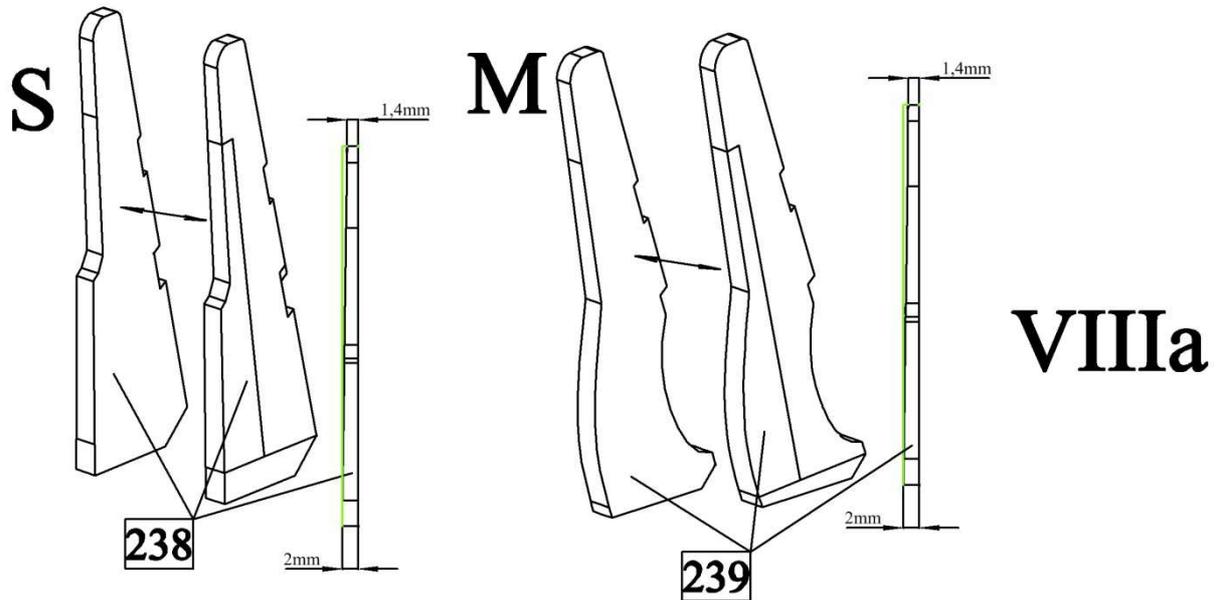


s) Make boat for motorized version. First glue framing from parts 206-225. Then plank the boat by planks 226-233. Then glue parts 234 and 235 into their positions. The boat is placed in the stand 236 and 237.

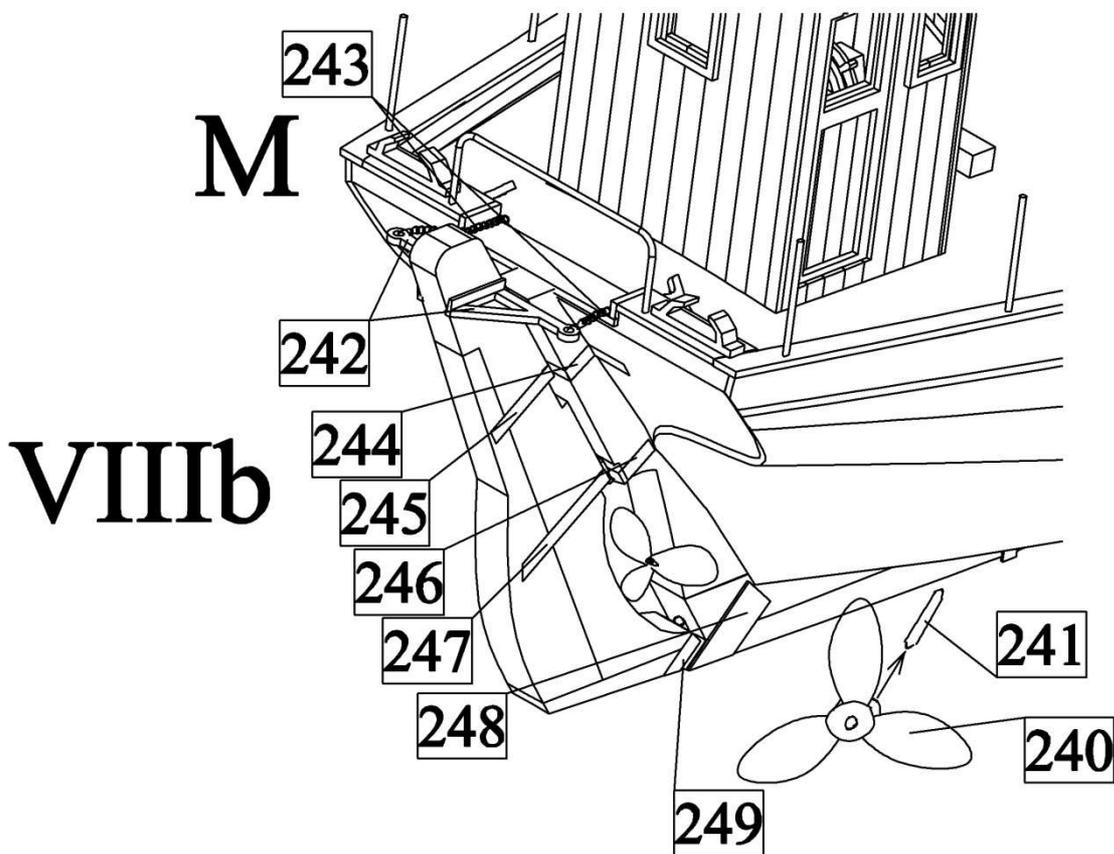


### VIII) Details:

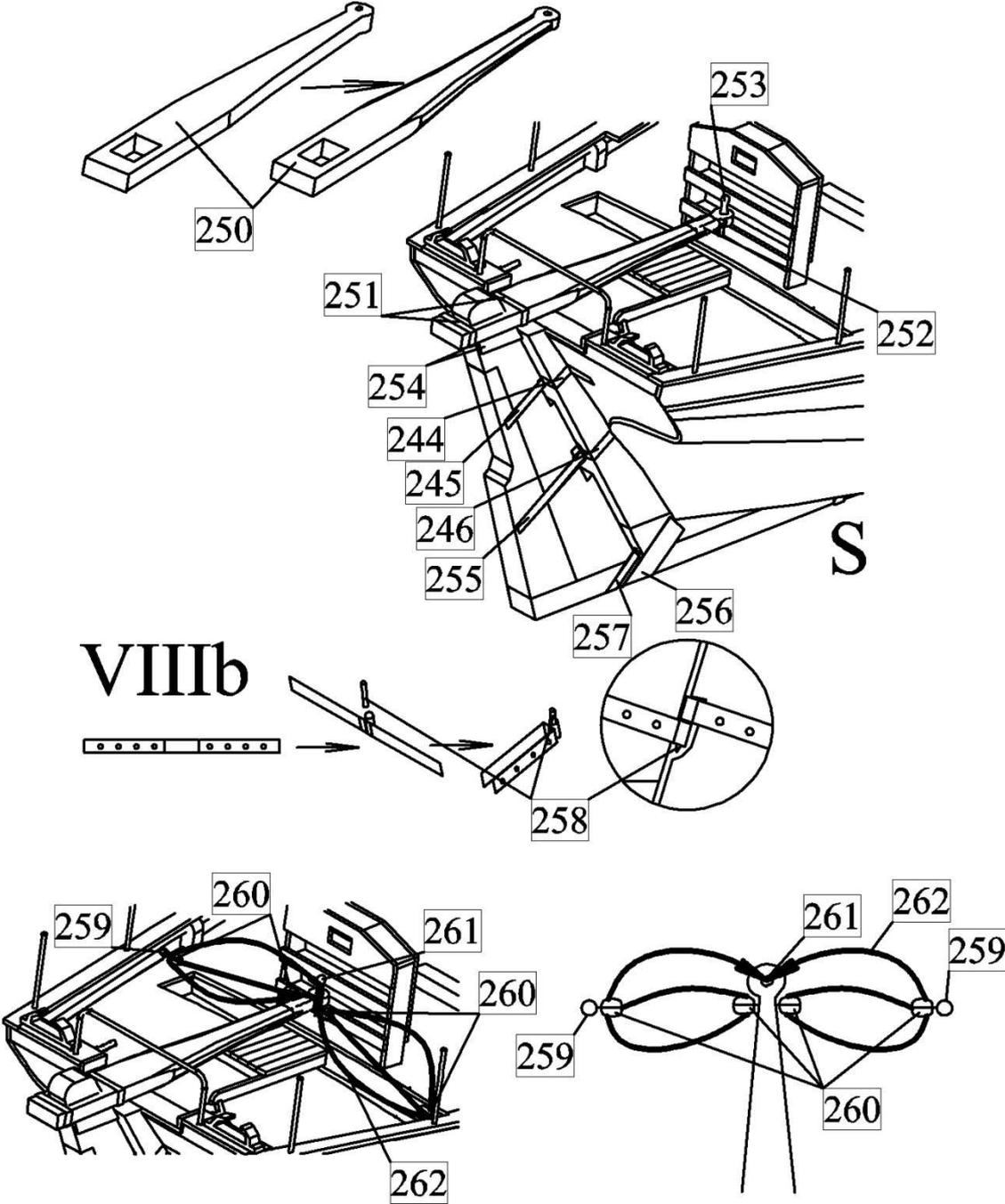
a) Make rudder form parts 238 (sailing version) or parts 239 (motorized version). Before gluing grind the parts on their non-engraved sides so that the part will be thick 2mm on bottom and about 1.4 mm on top.



b). In the case of motorized version first glue propeller 240 to the axis 241 of and after drilling a hole in the stern glue the axis with the propeller to the stern. Then glue parts 242 with tied chains 243 to the rudder. Then glue to the stern and rudder hinges 244-249 and install rudder to the stern. Finally drill into the deck holes for rudder chains.

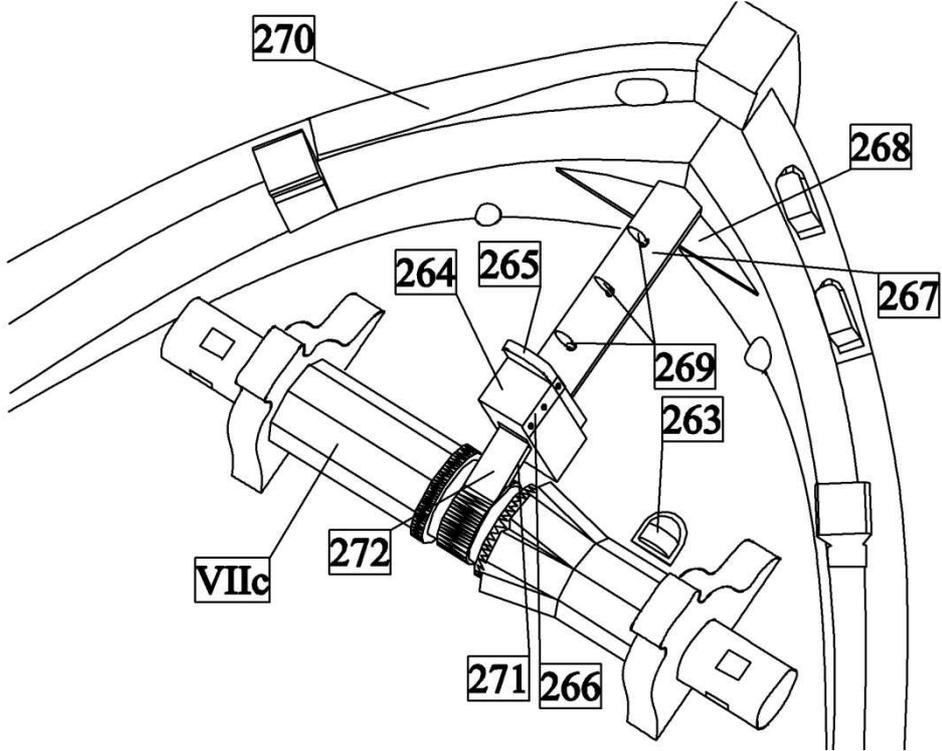


In the case of sailing version grind into the shape handle of the rudder 250 first. Then glue belaying pin 253 and fitting 251 and 252 to the handle. Then glue the handle together with parts 254 to the rudder. Then glue to the stern and rudder hinges and install rudder to the stern. Then glue eyebolts 259 to the gunwales and tie to them by blocks 260 the rudder.

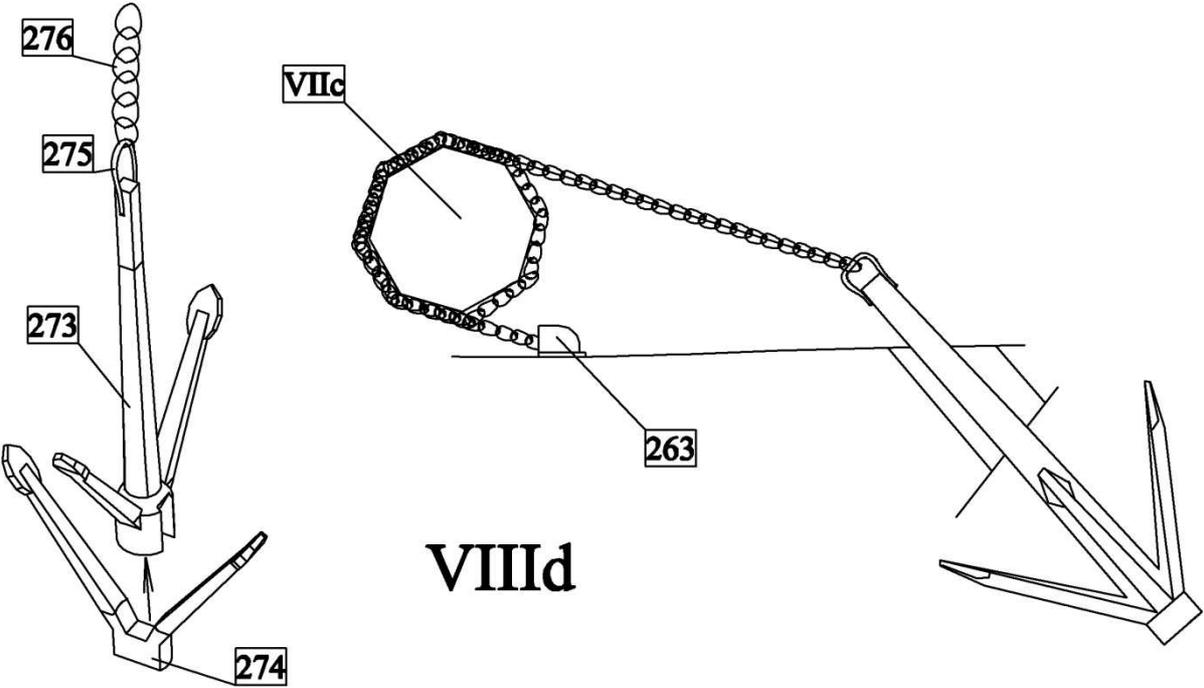


c) First glue windlass VIIc to the bow. Then glue also other parts to the bow as it is shown in the figure. Finally drill a hole for bowsprit.

**VIIIc**

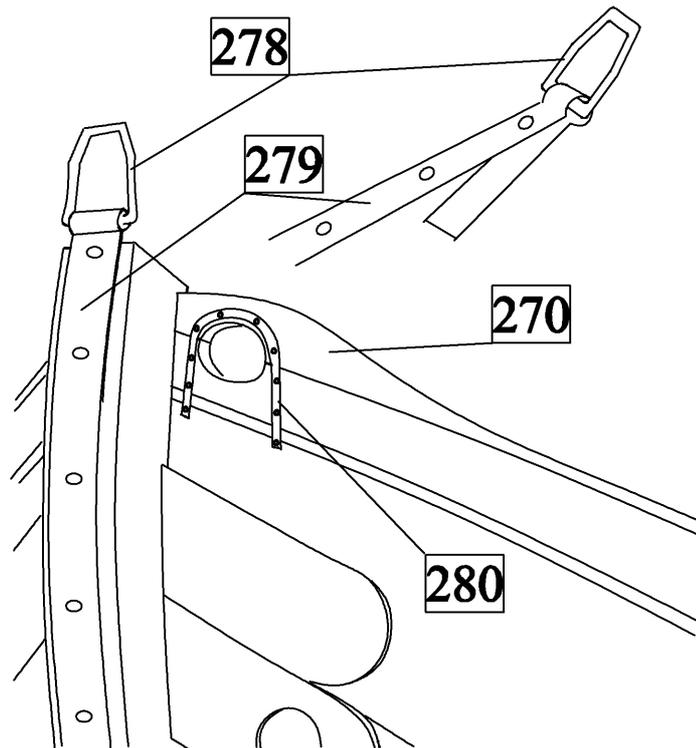


d) First make anchor from parts 273-274. Then glue part 275 with chain 276 to the anchor. Finally install the anchor into the ship as it is shown in the figure.



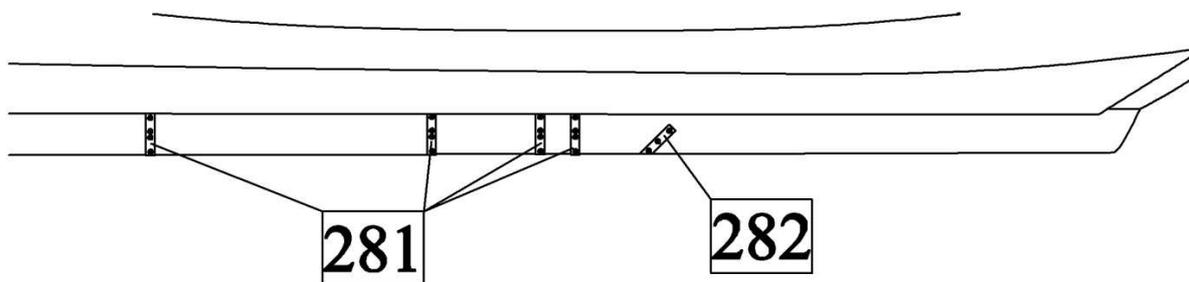
e) First glue part 270 to the bow. Then glue fittings 278-280 to the bow.

## VIIIe



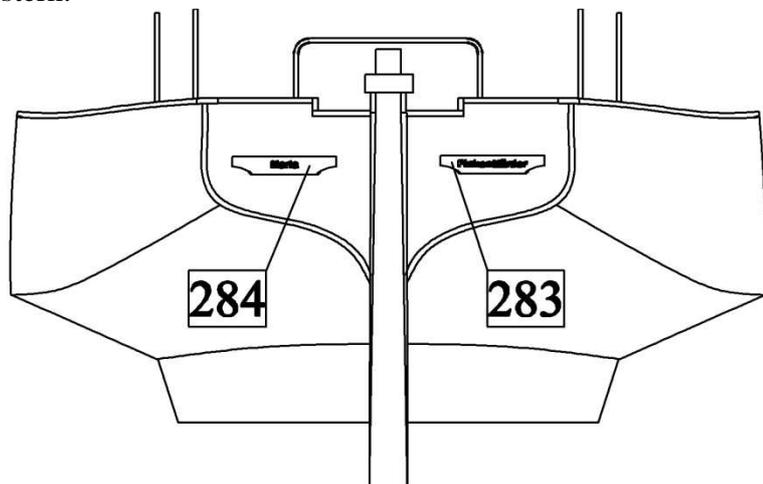
f) Glue fittings 281 and 282 to the keel.

## VIII f



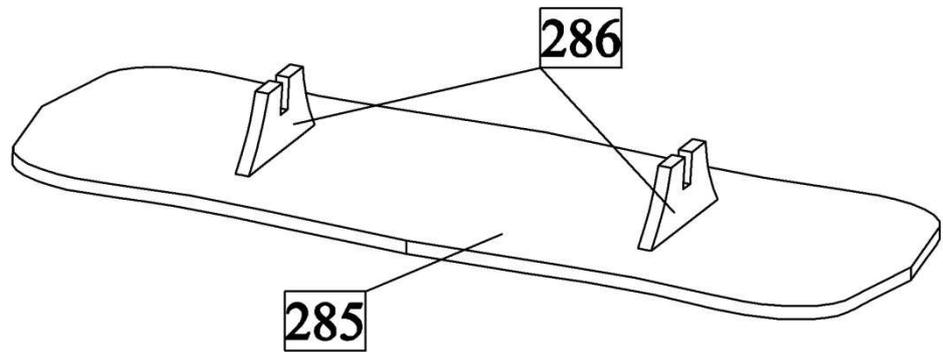
g) Glue plates 283 and 284 to the stern.

## VIIIg



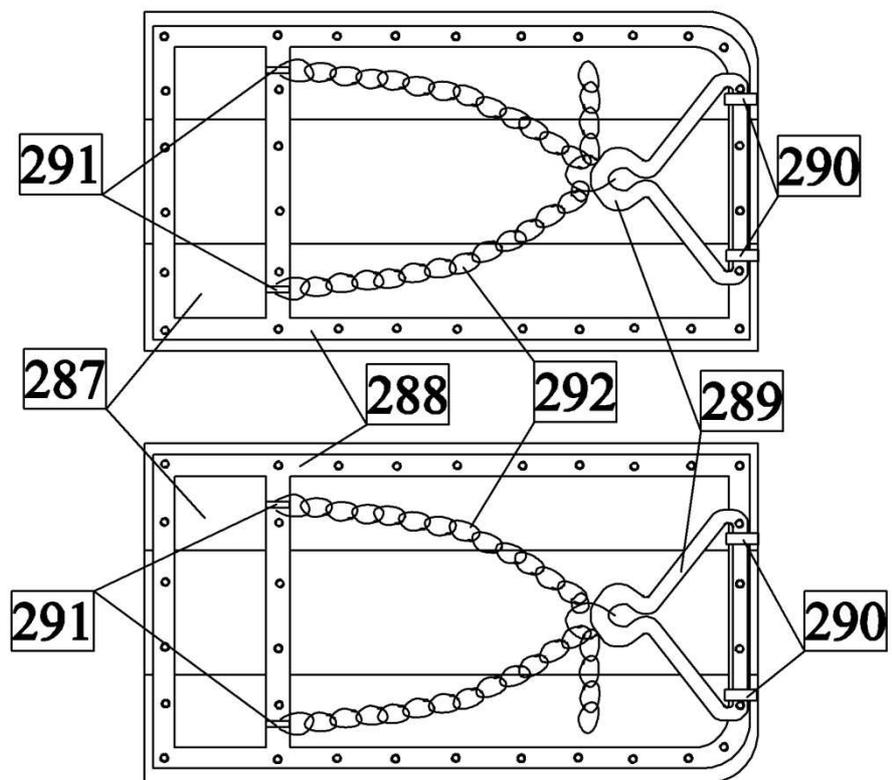
h) Make a stand form parts 285 and 286.

**VIIIh**



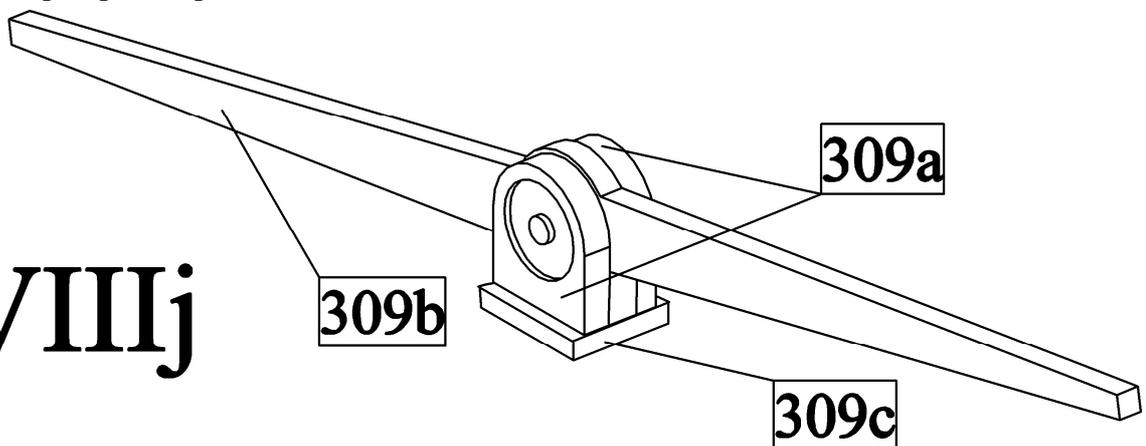
i) Make otters form parts 287-292.

**VIIIi**



j) Make pump from parts 309a-c.

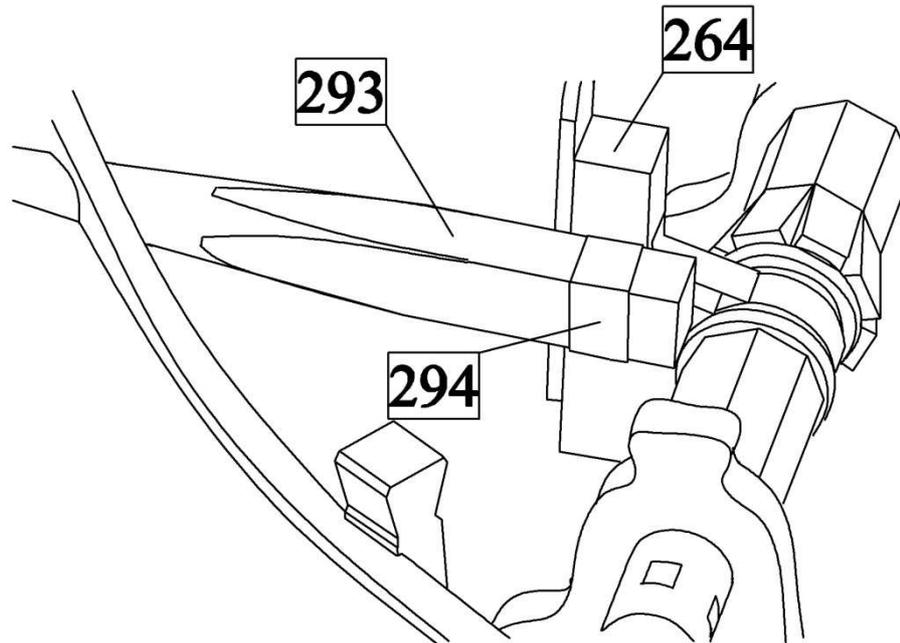
**VIIIj**



### IX) Bowsprit:

a) First grind bowsprit by sand paper into needed shape. Then glue the bowsprit together with fitting 294 to part 264.

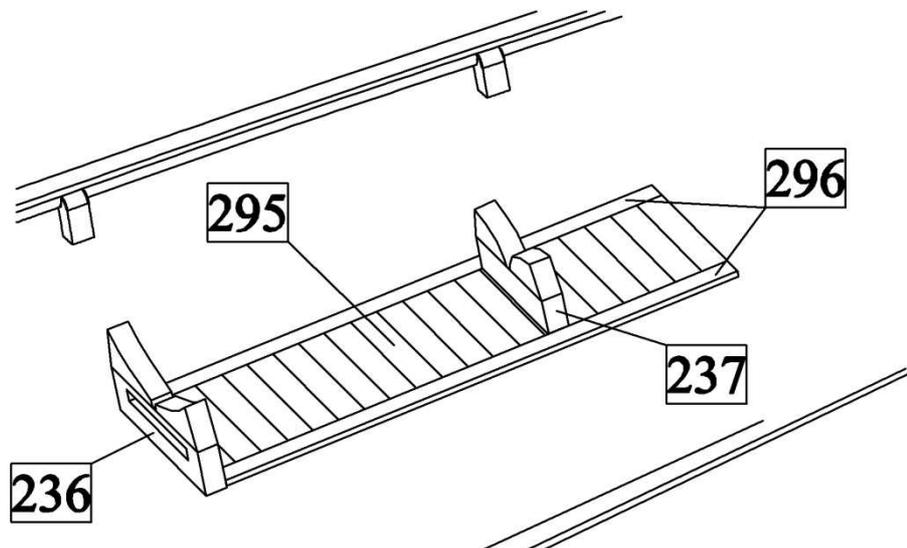
# IXa



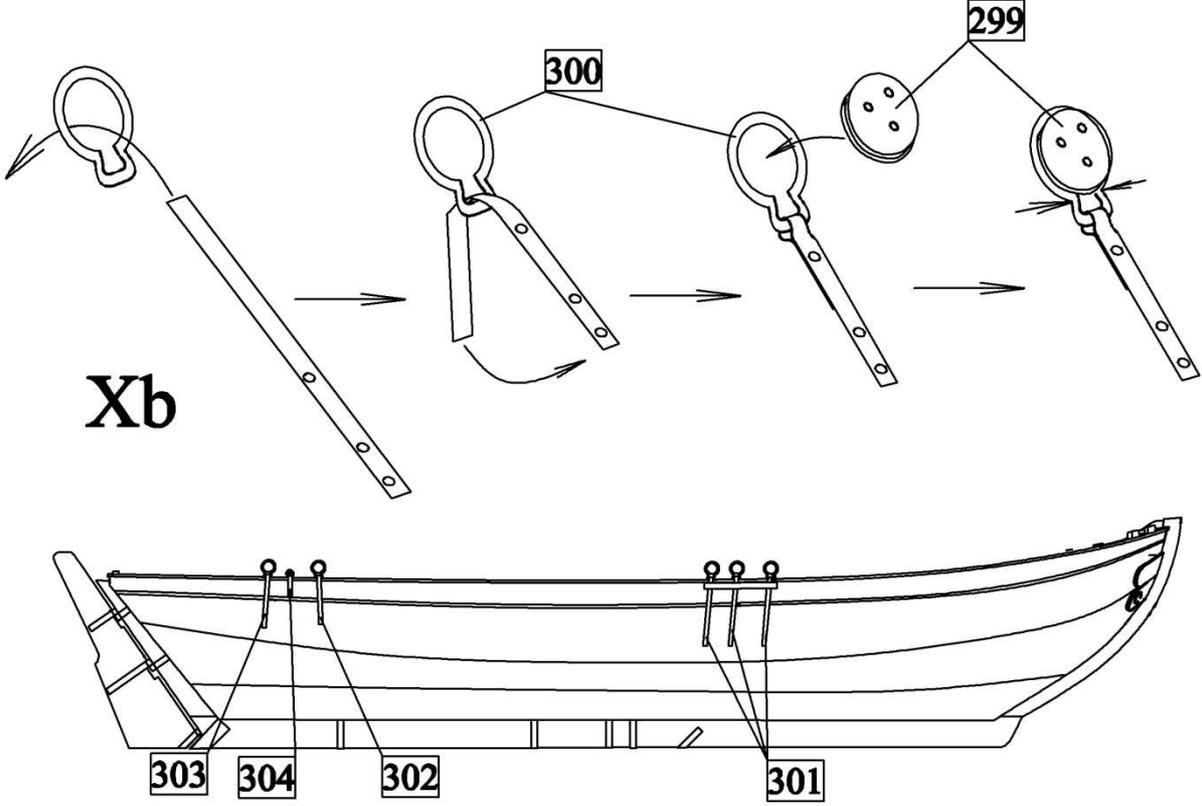
### X) Details III:

a) In the case of motorized version glue hatches 296-297 to the deck. Then glue stands 236 and 237 into their positions.

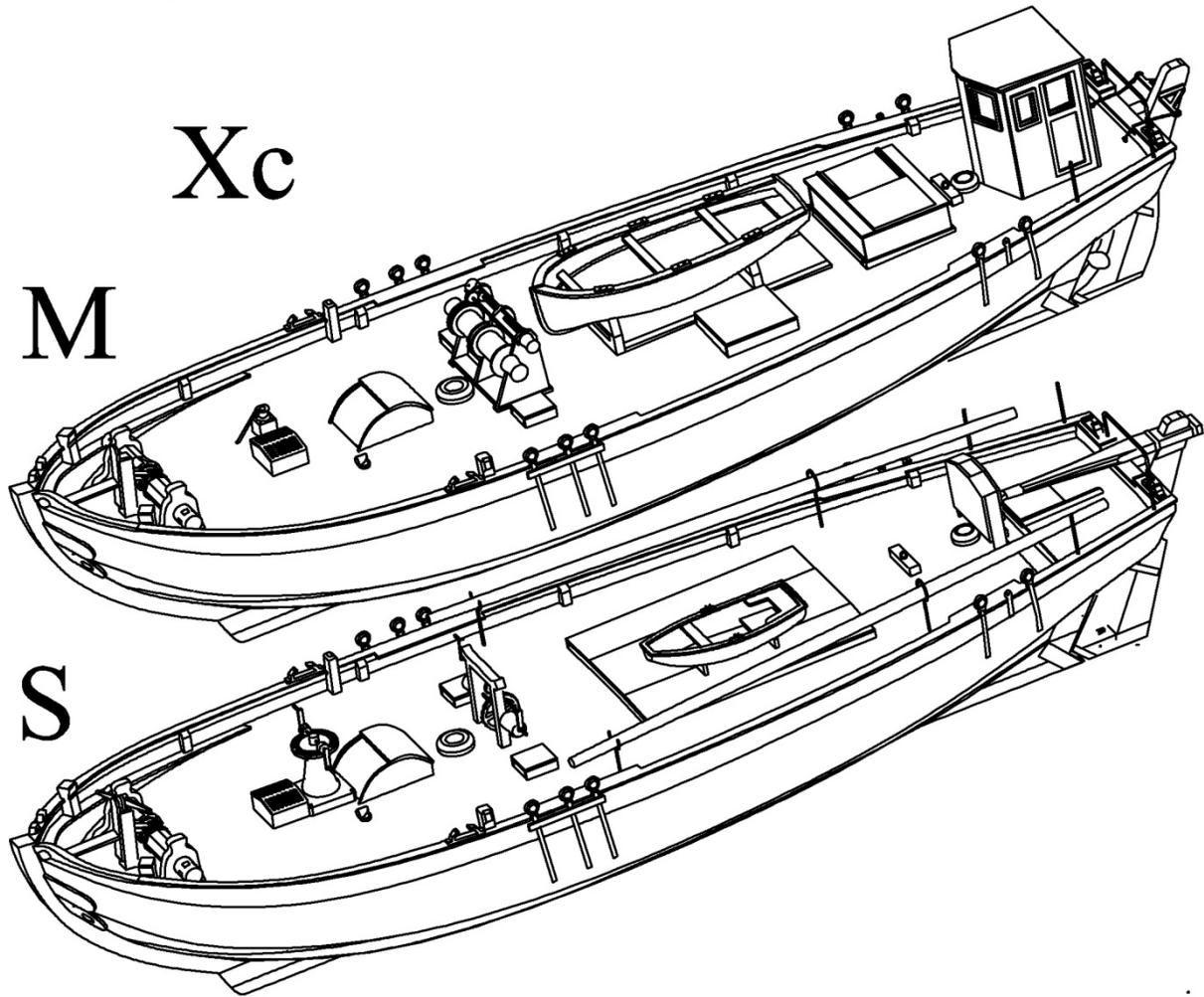
# Xa



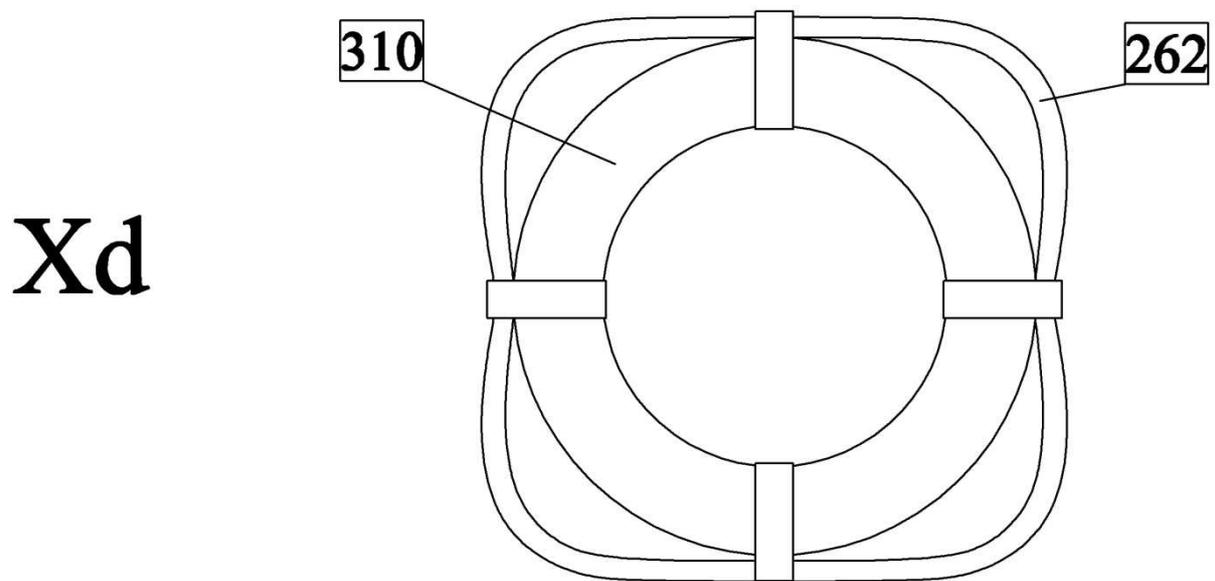
b) Install deadeye blocks to the hull. First thread the parts 301-303 through hoops 300. Then put deadeyes blocks 299 into the hoops 300. Finally press the hoops in their neck so that the deadeyes could not get out.



c) Install simple components into the deck.

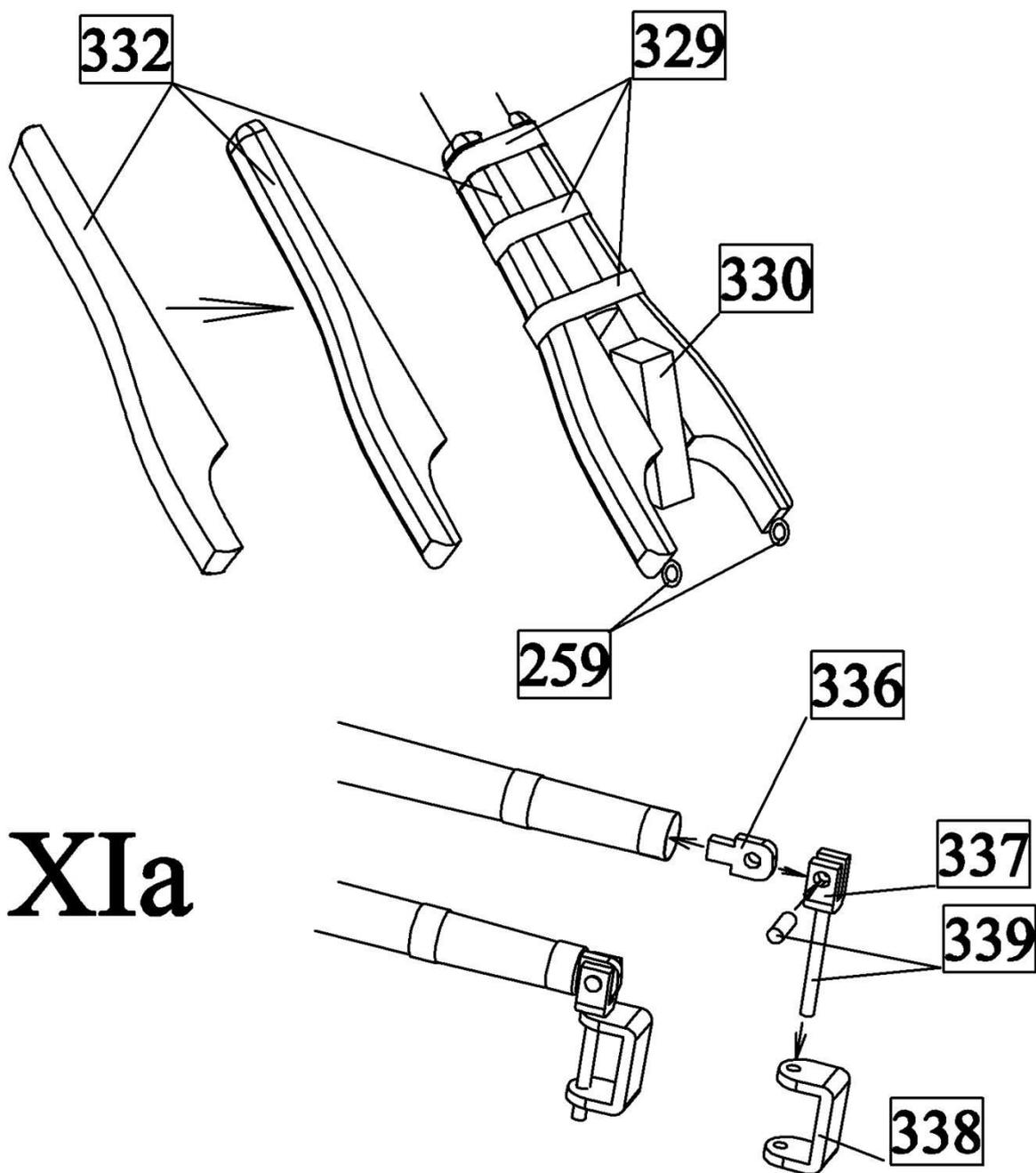


d) Glue rope 262 by paper strips to the lifebuoy 310.



**XI) Masts and yards:**

a) Make mast and yards.

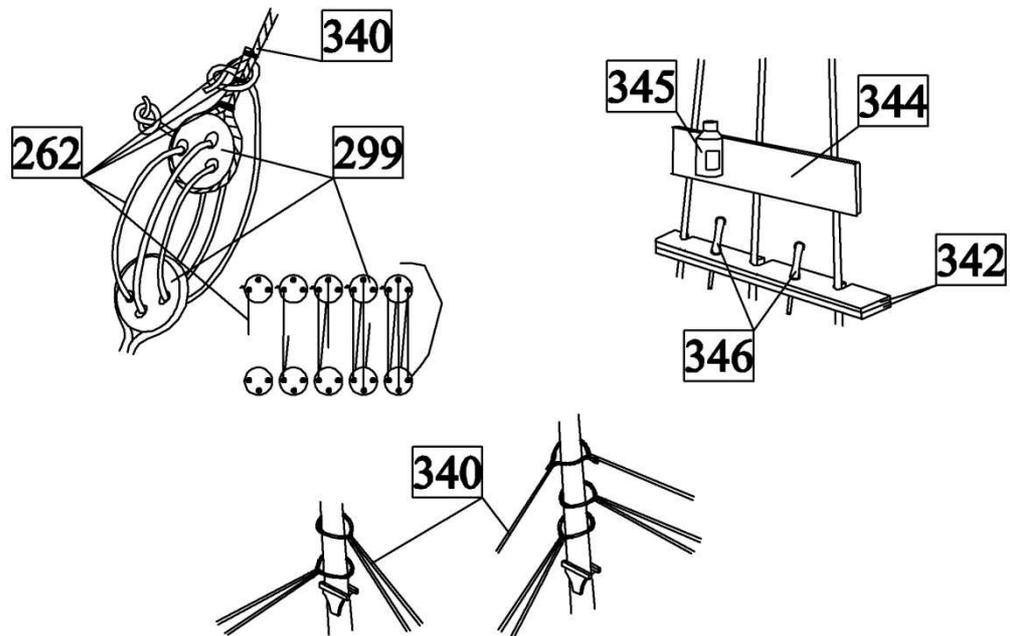


**XIa**

## XII) Standing rigging

a) Before tying ropes should be installed on the mast hoops for fastening sails 355. Then tie shrouds to the masts. Finally glue position lights and pin rails with belaying pins to the shrouds.

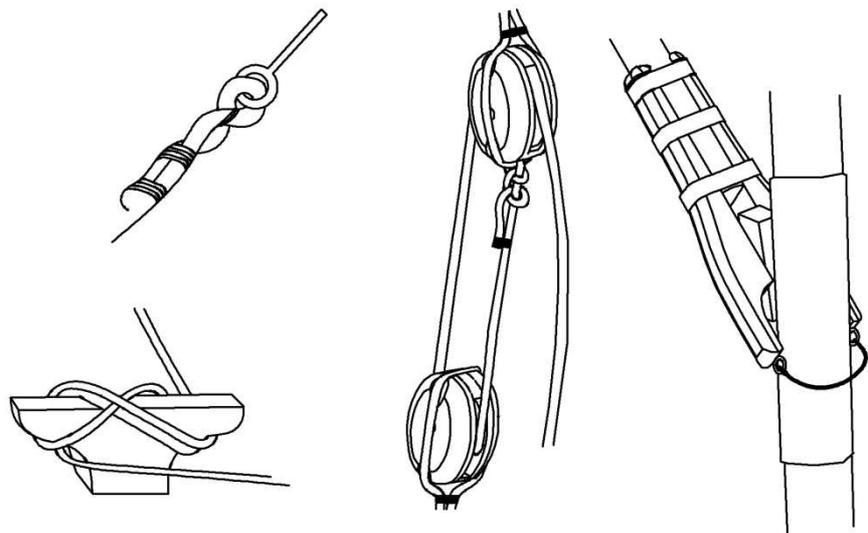
# XIIa



## XIII) Running rigging

a) Tie the running rigging as it is shown in the plan.

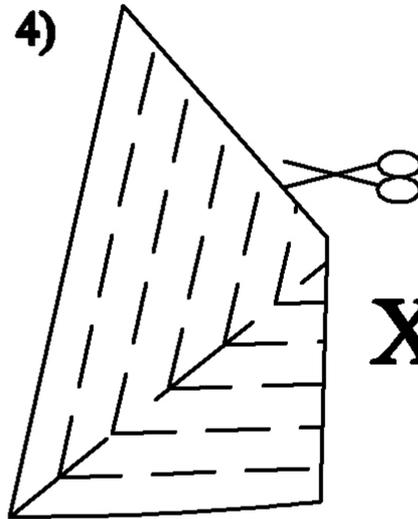
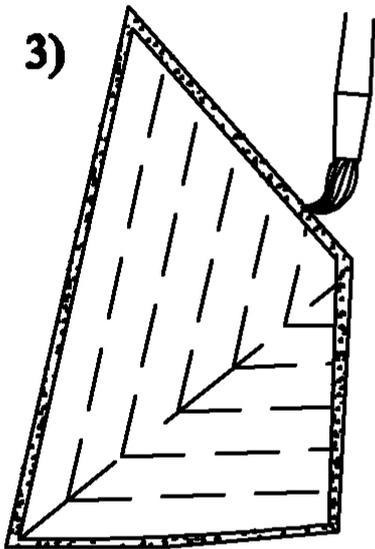
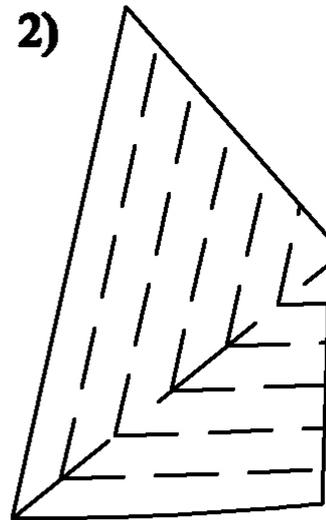
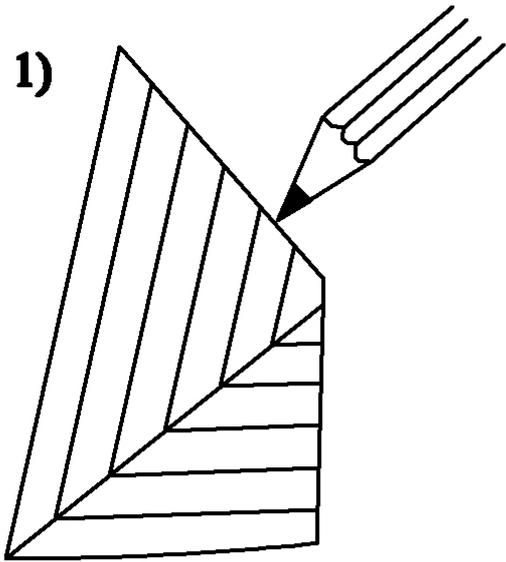
# XIIIa



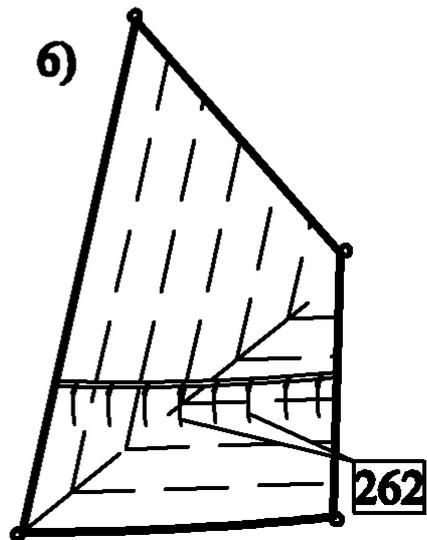
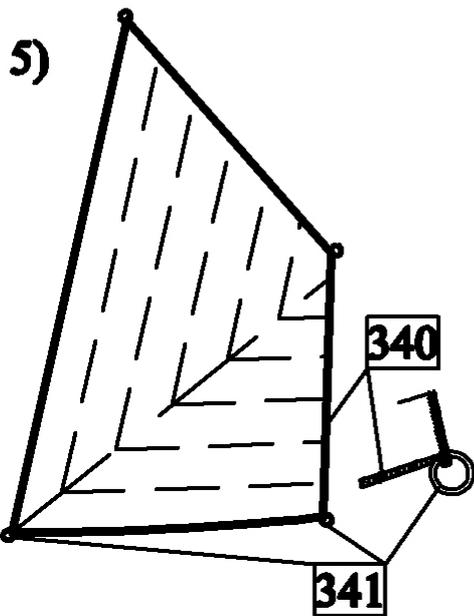
## XIV) Sails

a) Make sails:

- 1) Use a pencil to draw on the canvas the outlines of sails and their segments.
- 2) By a sewing machine sew outlines of the sails segments.
- 3) Paint outlines of the sails by water based white glue
- 4) Cut the sails from sheet
- 5) Glue ropes 340 with rings 341 to the sails.
- 6) Glue reinforcing tapes and ropes 262 to the sails.

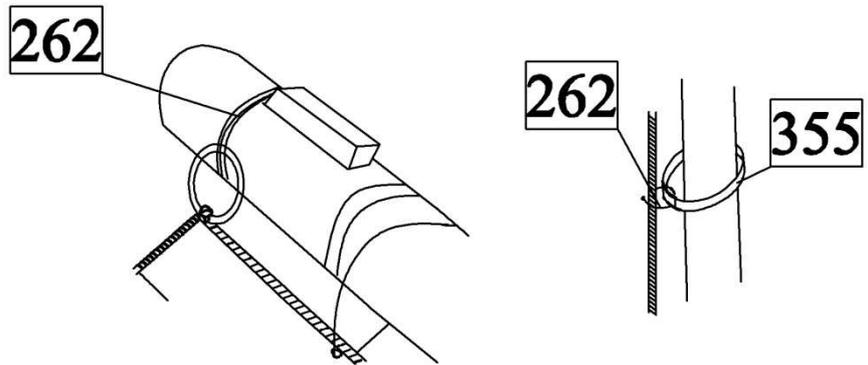


**XIVa**



b) Install the sails as it is shown in the plan.

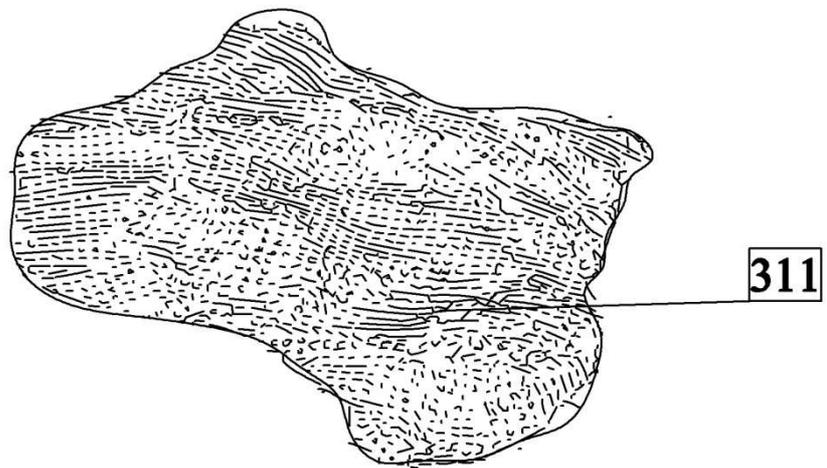
# XIVb



XV) Net

a) Make crumpled fishing net 311 from etched metal sheet.

# XVa



**Part list:**

1a-1c	Keel	wood 2mm	2pcs
2	Keel	plywood 3mm	1pc
3-13	Frames	plywood 3mm	1pc
14	Reinforcements	plywood 3mm	2pcs
15	Reinforcements	plywood 3mm	1pc
16	Deck	plywood 0,8mm	1pc
17-22	Planking	plywood 0,8mm	2pcs
23	Planking	plywood 0,8mm	1pc
24	Planking	plywood 0,8mm	2pcs
25	Planking	veneer 0,6mm	2pcs
26	Planking	veneer 0,6mm	1pc
27-32	Planking	veneer 0,6mm	2pcs
33	Steering post	veneer 0,6mm	1pc
34,35	Steering post	veneer 0,6mm	2pcs
36	Steering post	veneer 0,6mm	7pcs
37	Deck	veneer 0,6mm	1pc
38	Reinforcements	veneer 0,6mm	10pcs
39	Reinforcements	veneer 0,6mm	2pcs
40	Reinforcements	veneer 0,6mm	1pc
41	Reinforcements	veneer 0,6mm	2pcs
42	Reinforcements	wood 2mm	10pcs
43, 44	Mast foot	wood 2mm	1pc
45	Rail	veneer 0,6mm	2pcs
46	Rail	veneer 0,6mm	1pc
47, 48	Rail	veneer 0,6mm	2pcs
49	Bow chock	wood 2mm	1pc
50, 51	Cleat	wood 3mm	2pcs
52	Chock	Chocks	4pcs
53, 54	Railing	wire 0,5mm	0,5m
55, 56	Reinforcement	veneer 0,6mm	2pcs
57	Reinforcement	photo etched parts	2pcs
58	Windlass	dowel 2mm	1pc
59	Windlass	wood 2mm	1pc
60	Windlass	plywood 0,8mm	2pcs
61	Windlass	photo etched parts	2pcs
62	Windlass	wood 2mm	10pcs
63-66	Windlass	wood 2mm	2pcs
67	Windlass	photo etched parts	8pcs
68	Skylight	plywood 0,8mm	1pc
69-71	Skylight	veneer 0,6mm	2pcs
72	Skylight	photo etched parts	2pcs
73	Capstan	wood 2mm	1pc
74	Capstan	photo etched parts	1pc
75	Capstan	dowel 2mm	1pc
76-81	Capstan	wood 2mm	1pc
82	Capstan	plywood 0,8mm	1pc

83	Capstan	wire 0,5mm	0,5m
84	Capstan	resin parts	2pcs
85	Capstan	photo etched parts	2pcs
86	Capstan	wire 0,5mm	0,5m
87	Windlass	wood 2mm	8pcs
88	Deck hatch	plywood 0,8mm	1pc
89	Deck hatch	plywood 0,8mm	2pcs
90	Deck hatch	veneer 0,6mm	6pcs
91	Deck hatch	veneer 0,6mm	2pcs
92	Deck hatch	veneer 0,6mm	1pc
93	Deck hatch	veneer 0,6mm	10pcs
94	Deck hatch	plywood 0,8mm	2pcs
95, 96	Deck hatch	veneer 0,6mm	2pcs
97	Deck hatch	veneer 0,6mm	1pc
98	Binnacle	veneer 0,6mm	1pc
99	Binnacle	veneer 0,6mm	2pcs
100	Binnacle	veneer 0,6mm	3pcs
101	Binnacle	veneer 0,6mm	2pcs
102	Binnacle	veneer 0,6mm	1pc
103	Binnacle	veneer 0,6mm	2pcs
104	Binnacle	veneer 0,6mm	1pc
105	Steering wheel	plywood 0,8mm	1pc
106, 107	Steering wheel	veneer 0,6mm	2pcs
108	Steering wheel	wood 3mm	1pc
109	Deck hatch	plywood 0,8mm	1pc
110, 111	Deck hatch	veneer 0,6mm	2pcs
112	Deck hatch	veneer 0,6mm	1pc
113, 114	Steering booth	plywood 0,8mm	2pcs
115-117	Steering booth	plywood 0,8mm	1pc
118, 119	Steering booth	veneer 0,6mm	2pcs
120, 121	Steering booth	veneer 0,6mm	1pc
122	Steering booth	veneer 0,6mm	1pc
123-126	Steering booth	veneer 0,6mm	2pcs
127	Steering booth	veneer 0,6mm	1pc
128	Steering booth	foil	1pc
129-131	Deck hatch	plywood 0,8mm	2pcs
132	Deck hatch	plywood 0,8mm	1pc
133-135	Deck hatch	veneer 0,6mm	2pcs
136	Deck hatch	veneer 0,6mm	1pc
137,138	Deck hatch	wood 2mm	1pc
139	Deck hatch	wood 2mm	2pcs
139,141	Deck hatch	plywood 0,8mm	2pcs
142	Deck hatch	plywood 0,8mm	1pc
143, 144	Deck hatch	veneer 0,6mm	2pcs
145	Deck hatch	veneer 0,6mm	1pc
146	Deck hatch	photo etched parts	2pcs
147	Deck hatch	photo etched parts	1pc
148	Deck hatch	plywood 0,8mm	4pcs
149-151	Deck hatch	plywood 0,8mm	2pcs
152	Deck hatch	veneer 0,6mm	4pcs

153-155	Deck hatch	veneer 0,6mm	2pcs
156	Winch 1	wood 2mm	2pcs
157	Winch 1	wood 2mm	1pc
158	Winch 1	wire 0,5mm	0,5m
159	Winch 1	photo etched parts	2pcs
160	Winch 1	wire 0,5mm	0,5
161	Winch 1	photo etched parts	4pcs
162	Winch 1	wire 0,5mm	0,5mm
163-166	Winch 1	resin parts	1pc
167	Winch 1	dowel 4mm	1pc
168	Winch 2	wood 2mm	2pcs
169	Winch 2	photo etched parts	1pc
170a	Winch 2	photo etched parts	2pcs
170b	Winch 2	resin parts	1pc
171	Winch 2	photo etched parts	1pc
172-175	Winch 2	resin parts	1pc
176, 177	Winch 2	resin parts	2pcs
178	Winch 2	wire 0,5mm	0,5m
179	Winch 2	wire 0,5mm	0,5m
180, 181	Winch 2	resin parts	1pc
182-192	Boat 1	plywood 0,8mm	1pc
193-196	Boat 1	veneer 0,6mm	1pc
197-202	Boat 1	veneer 0,6mm	2pcs
203	Boat 1	photo etched parts	2pcs
204, 205	Boat 1	veneer 0,6mm	1pc
206-218	Boat 2	plywood 0,8mm	1pc
219-224	Boat 2	veneer 0,6mm	1pc
225-233	Boat 2	veneer 0,6mm	2pcs
235	Boat 2	veneer 0,6mm	6pcs
236, 237	Boat 2	wood 2mm	1pc
238	Rudder 1	wood 2mm	2pcs
239	Rudder 2	wood 2mm	2pcs
240	Propeller	propeller	1pc
241	Axis	wire 1mm	1cm
242	Rudder 2	photo etched parts	2pcs
243	Rudder 2	chain	20cm
244-249	Rudder 2	photo etched parts	1pc
250	Rudder 1	wood 2mm	1pc
251	Rudder 1	photo etched parts	2pcs
251	Rudder 1	photo etched parts	1pc
253	Rudder 1	belaying pin	1pc
254	Rudder 1	veneer 0,6mm	2pcs
255-257	Rudder 1	photo etched parts	1pc
258	Pin	wire 0,5mm	0,5m
259	Eyebolt	photo etched parts	8pcs
260	Block 2mm-1hole	blocks 2-1	24pcs
261	Belaying pin	belaying pins	12pcs
262	Rigging 0,25mm	rope 0,25mm	20m
263	Cover	resin parts	1pc
264	Pump	wood 3mm	1pc

265	Pump	veneer 0,6mm	1pc
266	Pump	photo etched parts	1pc
267	Pin rail	veneer 0,6mm	1pc
268	Reinforcement	veneer 0,6mm	1pc
269	Belaying pins	belaying pins	12pcs
270	Bow reinforcement	wood 2mm	1pc
271, 272	Windlass stopper	photo etched parts	1pc
273, 274	Anchor	resin parts	1pc
275	Anchor	photo etched parts	1pc
277	Anchor chain	chain	20cm
278-280	Fittings	photo etched parts	1pc
281, 282	Fittings	photo etched parts	1pc
283, 284	Plates	photo etched parts	1pc
285	Stand	plywood 3mm	1pc
286	Stand	plywood 3mm	2pcs
287	Otter	veneer 0,6mm	2pcs
288, 289	Otter	photo etched parts	2pcs
290, 291	Otter	photo etched parts	4pcs
292	Otter	chain	20cm
293	Bowsprit	dowel 4mm	1pc
294	Bowsprit	photo etched parts	1pc
295	Deck hatch	veneer 0,6mm	1pc
296	Deck hatch	veneer 0,6mm	2pcs
297, 298	Boom's stands	photo etched parts	2pcs
299	Deadeyes blocks	deadeyes block 2,5mm	20pcs
300	Chain plates	photo etched parts	10pcs
301	Fittings	photo etched parts	6pcs
302	Fittings	photo etched parts	2pcs
303	Fittings	photo etched parts	2pcs
304	Fittings	photo etched parts	2pcs
305	-----		
306	Net booms	dowel 3mm	2pcs
307	Block	wood 2mm	1pc
308	Chimney	resin parts	1pc
309a	Pump	photo etched parts	2pcs
309b, c	Pump	photo etched parts	1pc
310	Lifebuoy	resin parts	1pc
311	Fishing net	photo etched parts	1pc
312	Cleat	plywood 0,8mm	2pcs
313	Main mast	dowel 4mm	1pc
314	Mizen mast	dowel 3mm	2pcs
315	Main boom	dowel 3mm	2pcs
316	Main gaff	dowel 3mm	2pcs
317	Mizen boom	dowel 2mm	1pc
318	Mizen gaff	dowel 2mm	1pc
319	Main mast top yard	dowel 2mm	1pc
320	Mizen mast top yard	dowel 2mm	1pc
321	Mast cheeks	veneer 0,6mm	4pcs
322	Trestletrees	veneer 0,6mm	4pcs
323	Fittings	photo etched parts	1pc

324	Fittings	photo etched parts	4pcs
325	Fittings	photo etched parts	16pcs
326	Stoppers	plywood 0,8mm	2pcs
327	Cleats	plywood 0,8mm	5pcs
328	Cleats	plywood 0,8mm	2pcs
329	Fittings	photo etched parts	6pcs
330, 331	Blocks	wood 2mm	1pc
332, 333	Gaff jaws	wood 2mm	2pcs
334, 335	Stoppers	veneer 0,6mm	1pc
336-338	Yard hinges	photo etched parts	2pcs
339	Yard hinges	wire 0,5mm	0,5m
340	Rigging 0,5mm	rope 0,5mm	5m
341	Rings	ring 2mm	25pcs
342, 343	Pin rails	veneer 0,6mm	4pcs
344	Position lights	veneer 0,6mm	2pcs
345	Position lights	resin parts	2pcs
346	Belaying pins	belaying pin	12pcs
347	Block 2mm-2holes	blocks 2-2	9pcs
348-354	Sails	cloth	1pc
355	Hoops	photo etched parts	12pcs
356	Transverse plate	veneer 0,6mm	2pcs
357	Boat's oars	plywood 0,8mm	2pcs
358	Boat's oars	plywood 0,8mm	6pcs