

Capri

Motor Yacht

Art. 701

ASSEMBLY INSTRUCTIONS

English Version

*Newly translated and improved by
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For the

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BACKGROUND

The *Capri* is typical of a type of small motor yacht that is to be found in many harbours around the Mediterranean. Rigged as a ketch with the mainmast placed forward and a mizzenmast of almost equal size to the mainmast, the fast and maneuverable *Capri* uses triangular main and mizzen sails, plus other sails bent on the mainmast jib and fore stays. Also powered by a diesel engine and a single screw propeller, the boat is both sturdy and functional.

ASSEMBLY INSTRUCTIONS

General notes:

- All dimensions given are in millimetres. The symbol \varnothing means diameter
- English translations of the Italian notes on the plans are given in these instructions.
- Component numbers (n.11, etc) refer to the numbered plywood parts on Plan 1.
- Figure numbers given below (Figure.1, etc) refer to the numbered figures on Plan 1 and Plan 2.
- The sequence given here is the recommended order for completing the model.
- **If the boat is to be sailed, the hull must first be made waterproof.** Use aliphatic (waterproof) glue - such as Mantua Model Art.1016 – to build the structure and seal all joints. If the model is for static display only, then any suitable PVA wood glue may be used.

PLAN NUMBER 1

This plan shows how to construct the frame of the boat, how to plank the hull and stern, and how to add the superstructure including the cabin. The four drawings of the laser-cut plywood parts (Tav1-Tav3) can be used for reference to identify the parts once they have been removed from the sheets.

Figure 1. On the three plywood sheets, mark the identity numbers on the parts with a soft pencil. Provide yourself with three storage boxes. Remove all of the plywood parts from the plywood sheets with a craft knife, smoothing all edges with fine sandpaper and taking care not to destroy the laser-cut outline of each piece. Put the pieces in the storage boxes for safekeeping

Figure 2. This shows how the frames n.1-n.8 and the deck n.10 fit onto the keel n.9.

- Trial fit the parts together without glue, filing the slots in the parts as necessary so that they go together without being forced. **Warning: the parts are fragile and will fracture if forced.**
- It is useful to hold the keel in a vice or clamp such as Mantua Model Art.8155 (not supplied) as shown on the plan. If you do not have a suitable clamp, make up a working cradle by nailing two wooden runners 5mm thick and set 4mm apart onto a wooden base, so that the keel sits between the runners.

Figure 3. The deck determines the shape of the hull. The edges of frames n.1, n.2 and n.3 and frames n.7 and n.8 need to be filed so that the deck planks make a smooth curve around the frames to the bow and to the stern. Looking from above the deck, and using a strip of wood as a hull plank, check how much material needs to be removed from the edges of these frames. Remove all the frames and deck from the keel. File or sand the front edges of frames n.1, n.2 and n.3, and the rear edges of frames n.7 and n.8.

Figure 4.

- Sand the deck n.10 with fine (400 grain) sandpaper. Using a straightedge and a hard pencil, draw a centre line down the length of the deck. Draw in lines 5mm apart to simulate the deck planking. Draw in alternating joints between sections of plank using the overhead view on Plan 2 as a guide.
- Apply glue to the slots in frames n.1 to n.8 and assemble them into the keel, ensuring that they are fully seated into the keel slots. Before the glue sets, apply glue to the top of the frames and insert the deck n.10 pushing it fully down onto the frames. Clamp in position with clips or tape until the glue has set.

Figure 5. There are three hull planks to be fitted on each side of the hull. Chamfer the slightly larger ends of the hull planks n.11 and n.12 and the curved end of n.13 to about 30 degrees so that they will make neat butt joints against the keel at the bow.

Figure 6.

- Apply glue to the outside faces of the frames and the deck and fix the top hull planks n.11 in place level with the top of the ribs. Ensure that the two top planks are set identically each side of the bow, and against the edges of the deck, to make a neat bow shape. Hold them in place using clamps on the frames, two pins in the bow and two pins in the stern. The pins are temporary and will be removed once the glue has set. The planks may extend beyond the stern. This excess will be trimmed off later.

- Shape the middle hull planks n.12 as necessary to fit underneath and against the top planks n.11. Fix in place using glue on the frames and between the planks, and use pins in the bow and stern.
- Shape the lower hull planks n.13 as necessary to fit underneath and against the middle hull planks n.12. Note that the straight edges of the planks are to be placed against the keel. Chamfer the front end of n.13 at about 60 degrees to make a neat joint with the bow, and chamfer the bottom front edge to butt neatly against the keel. These planks are twisted to fit against the bow and under the stern and require considerable clamping force. Use sufficient clamps and clips to hold the planks firmly in position. Fix in place using glue on the frames and pins in the bow and stern. Put aside until the glue has set.

Figure 7.

- Trim the hull planking level with the back of the stern transom n.8. Sand the transom until smooth and cover with 1x6 Walnut planks laid horizontally and trimmed carefully to fit.
- Remove all the pins and sand the entire hull smooth with 180-grain sandpaper. Sand down the joints between the hull planks until flush.
- Glue rubbing strakes (protective timbers) along the length of the hull covering the joints between the hull planks. Make these from 0.5x3 Walnut plank and use instant glue.

Figure 8. Handrails

- Sand the tops of the frames, hull planks n.11 and the transom n.8 flush, ready to take the handrails.
- Fix the stern handrail n.15 to the transom n.8, ensuring that the handrail overhangs the stern by 2mm and that it is exactly central on the transom. Note that the handrail curves outwards from the stern. Drill three $\varnothing 0.7$ holes through the handrail into the transom. Apply a drop of instant glue to a brass nail, tap the nail through the pre-drilled hole in the handrail and into the transom, cut off the nail head with a pair of wire cutters, and then tap the nail home. Fix the other nails in the same way.
- Place the handrails n.14 on the frames along the hull, against the keel at the prow, lining up the inside the edge of the handrails with the inside edge of the ribs (the frame teeth that protrude above the deck) and butting against the stern handrail n.15. Mark the centres of the ribs on the handrails and drill a $\varnothing 0.7$ hole through the handrails into each rib.
- Glue the top of the gunwale n.11 and place the handrail n.14 in position. Apply a drop of instant glue to a brass nail, tap the nail through the pre-drilled hole in the handrail and into the rib, cut off the nail head with a pair of wire cutters, and then tap the nail home. Fix a nail into each rib in the same way.

Figure 9. Display Cradle. Assemble the cradle from parts n.16, n.17 and n.18 ensuring that the cradle is squared up and is placed on a flat surface to set. Varnish the cradle with two coats of matt varnish, sanding lightly between coats. Line the upper faces of the cradle with thin rubber strips such as draught excluder (not supplied) to protect the hull from abrasion. **Warning: this cradle is intended for display purposes and may fracture if put under pressure such as when hammering. Do not use this as a working cradle.**

Figure 10. Cabin Assembly. Caution: these parts are fragile

- Without glue, trial-fit the cabin sides n.19 to the cabin transoms n.20, n.21 and n.22. With a small file, open out the slots in the cabin sides n.19 as necessary to take the transom tenons without forcing. Note that the concave curves on the transoms go towards the deck.
- Glue cabin sides n.19 to the transoms n.20 and n.21. Square up the assembly and leave on a flat surface until the glue has set. Fit the front transom n.22 using a rubber band to hold the sides until set. Glue deck plate n.23 between the cabin sides at the stern end as shown. Fit cabin roof n.24 onto the structure, ensuring that the rear edge of the roof lines up with the rear face of n.21.

Figure 11. Cabin Windows. Measure the window apertures and then cut pieces from the blue plastic sheet provided - allowing an accurate 3mm overlap all round each aperture. Fix the pieces behind the window apertures with small drops of instant glue. **Caution: do not get this glue on the visible surfaces of the windows as it cannot be cleaned off.**

Figure 12. Companionway. Fit plywood parts n.25, n.26 and n.27 to the cabin roof ensuring that the rear edges line up with the rear face of n.21. Using a straightedge and a soft pencil, draw a line through the centre of n.28 to simulate the join between the two halves of the door and draw two circular door handles. Fix the two handrails n.35 to the cabin with drops of epoxy or instant glue.

Painting and Varnishing.

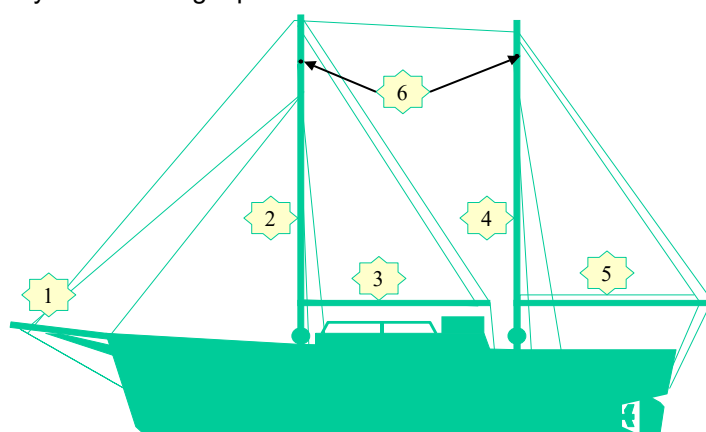
- Fill any cracks or joints in the hull with a plastic wood filler or slivers of wood. Sand the entire hull areas smooth, scraping the surface with a Stanley-type blade to remove any spots of glue. Apply two coats of a good sanding sealer (e.g. Mantua Model Art. 4401714 – not supplied in the kit), sanding lightly between coats.
- Lightly sand the deck and apply two coats of sanding sealer, sanding lightly between coats. *Note that the deck and handrails are not to be painted*
- Fill any cracks or joints in the cabin assembly with plastic wood filler. Lightly sand the cabin items and remove any spots of glue. Carefully mask off the cabin windows - inside and out - with masking tape and – inside and out - apply two coats of sanding sealer.
- Mask off the hull above the waterline (underneath the upper rubbing strake) and cover the deck area. Spray-paint the hull below the waterline to your own chosen colour scheme. Traditionally, the hull is painted red below the waterline, but green, black and blue are also common. *Note: we recommend the use of an airbrush and three coats of matt acrylic paint diluted 3:1 with appropriate thinners. Alternatively, paint by hand using matt paint, a good quality sable brush and employing long longitudinal strokes.*
- When the painting has been completed, remove all masking tape from the hull and cabin.
- Apply glue to the underside of the cabin and fix this to the deck, lining up the rear end of the cabin with the rear faces of frame n.6, checking that the cabin aligns with the centre-line of the boat. Allow to dry.

PLAN NUMBER 2

This plan provides full-sized side and overhead views showing the boat's details including the superstructure items, the masts and the rigging. Figures 13 to 15 show how the mast parts are constructed

Figure 13. Hatches. With a straightedge and a soft pencil, score the surface of stern hatch cover n.32 and draw in the mitred edge planks, then draw in hatch planks at 5mm intervals. Finally, add four hinges as shown in the overhead view. Glue the four hatch sides n.31 to make a frame and glue the cover n. 32 on top. Sand lightly and apply two coats of sanding sealer, sanding lightly between coats. Glue the hatch on deck at the stern. Make the bow hatch in the same way using parts n.29 and n.30.

Masts and Spars. The diagram below identifies the masts and spars used on the *Capri*. Cut the dowels provided to the lengths stated in the cutting table below. Taper the masts and spars using a drill and sandpaper, or using a hand plane and sandpaper, or preferably, using a lathe such as **Mantua Model Art. 8160**. Smooth and apply two coats of matt varnish to all masts and spars, sanding lightly between coats. Label the parts temporarily with masking tape.



Masts and Spars on the Capri

Identifier	Length	ØMax	ØMin	Name
1	105	4	2	Bowsprit
2	315	6	3	Mainmast
3	165	4	2	Mainsail boom
4	300	6	3	Mizzenmast
5	140	4	2	Mizzensail boom
6	25	2	2	Shroud supports – four required

Figure 14 – Part 1

- **Shroud supports.** Drill a $\varnothing 0.7$ hole in the end of each shroud support spar and glue a headless brass nail in each support to act as a tenon. Drill a $\varnothing 0.7$ hole through the mainmast 55mm from the top and drill another $\varnothing 0.7$ hole through the mizzenmast 60mm from the top. Glue the ends of the shroud supports and insert the tenons into the masts from each side, pushing them home until the shroud supports sit tight against the masts and are aligned correctly. Leave to set.
- **Masthead Lights.** Glue the three light supports n.34 to the top of the mainmast as shown in the side view. Make the three lights from $\varnothing 3$ dowel 4mm long rounding one end. Paint the top and bottom lights red and the middle light green. Glue to the light supports.

Figure 14 – Part 2

- Drill a $\varnothing 0.8$ hole through the mainmast 50mm up from the bottom and fit the two mainmast capstans either side of the mast on crank handles made from $\varnothing 0.8$ brass wire glued into the mast.
- Drill a $\varnothing 0.8$ hole through the mizzenmast 45mm up from the bottom and fit the two mizzenmast capstans either side of the mast on two crank handles made from $\varnothing 0.8$ brass wire glued into the mast.

Figure 14 – Part 3

- Drill a $\varnothing 0.8$ hole through the mainmast 70mm up from the bottom and use a brass nail and glue to fix the mainmast boom onto the mast. Support the assembly until the glue has set.
- Drill a $\varnothing 0.8$ hole through the mizzenmast 60mm up from the bottom and use a brass nail and glue to fix the mainmast boom onto the mast. Support the assembly until the glue has set.

Figure 15. Bowsprit. Mount the bowsprit between the two bowsprit supports n.33 and secure to the bow using epoxy glue. Check the alignment with the centre-line of the boat and clamp until set.

Rigging points. In the masts, spars and handrails wherever a rigging point is shown on the side view and overhead view, drill a $\varnothing 0.7$ hole, and glue in a brass eyelet.

Stepping the masts. Glue the two masts into the deck, checking that they are seated in the keel and are aligned correctly. Leave until set.

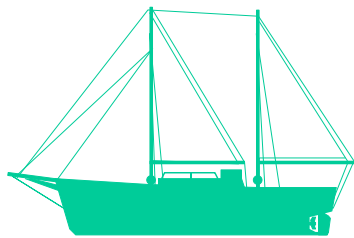
Rigging.

- Rig the boat with the rope supplied using the side view and overhead view as guides. Make the rigging tight, but not so tight that the masts or booms are deformed.
- The method for making knots on masts and eyelets is shown below. Twist the flying end around the rope three times and then pass the end through the loop against the mast. Pull tight and secure the knot with instant glue, including where the flying end is to be trimmed. Cut off the excess with a craft knife or sharp scissors, securing the cut end with a drop of instant glue. Use the same method for rigging eyelets. Where shown on the overhead view, coil the excess rope on deck and secure with a drop of instant glue.



Finishing off.

- Fettle and polish the cast parts provided. Paint the horn and the lamp white and fix to the cabin roof with epoxy glue.
- Paint the two lifebelts white with red bands and fix to each side of the cabin with epoxy glue.
- Fix the ship's wheel to the cabin transom n.21 with a brass nail and glue. See the illustration on the kit's box.
- Make two 4mm long sidelights from the $\varnothing 3$ dowel supplied, rounding one end. Paint one light red and the other green. Fix to the cabin sides with instant glue. The red light goes on the port side (left looking to the bow).
- Fix the "Capri" labels on either side of the bow and on the stern with instant glue, using the side view as a guide. Alternatively, write your chosen name for the boat on the bow and stern in acrylic paint.
- Fix the propeller to the keel with epoxy glue.
- Place the finished boat on the display cradle and congratulate yourself on a job well done.



Parts List

Laser-Cut Boards 3off sheets containing plywood parts n.1 to n.35

Walnut Planks

5 off 0.5x3x410 mm
1 off 1x6x400mm

Dowels

1 off Ramin $\varnothing 2 \times 100$ mm
1 off Walnut $\varnothing 3 \times 100$ mm
1 off Walnut $\varnothing 4 \times 410$ mm
1 off Walnut $\varnothing 6 \times 300$ mm
1 off Walnut $\varnothing 6 \times 310$ mm

Castings Set

2 off lifebelts
1 off horn
1 off wheel
1 off propeller
1 off brass wire $\varnothing 0.8 \times 100$ mm
4 off brass capstans
1 off sheet of nameplates

Nail Pack

50 off brass nails 10 mm

Eyelet Pack

30 off brass eyelets

Other

1 off sheet of clear blue plastic 70x100mm
2 off plan sheets

Rope Pack

10m rope $\varnothing 0.50$ mm