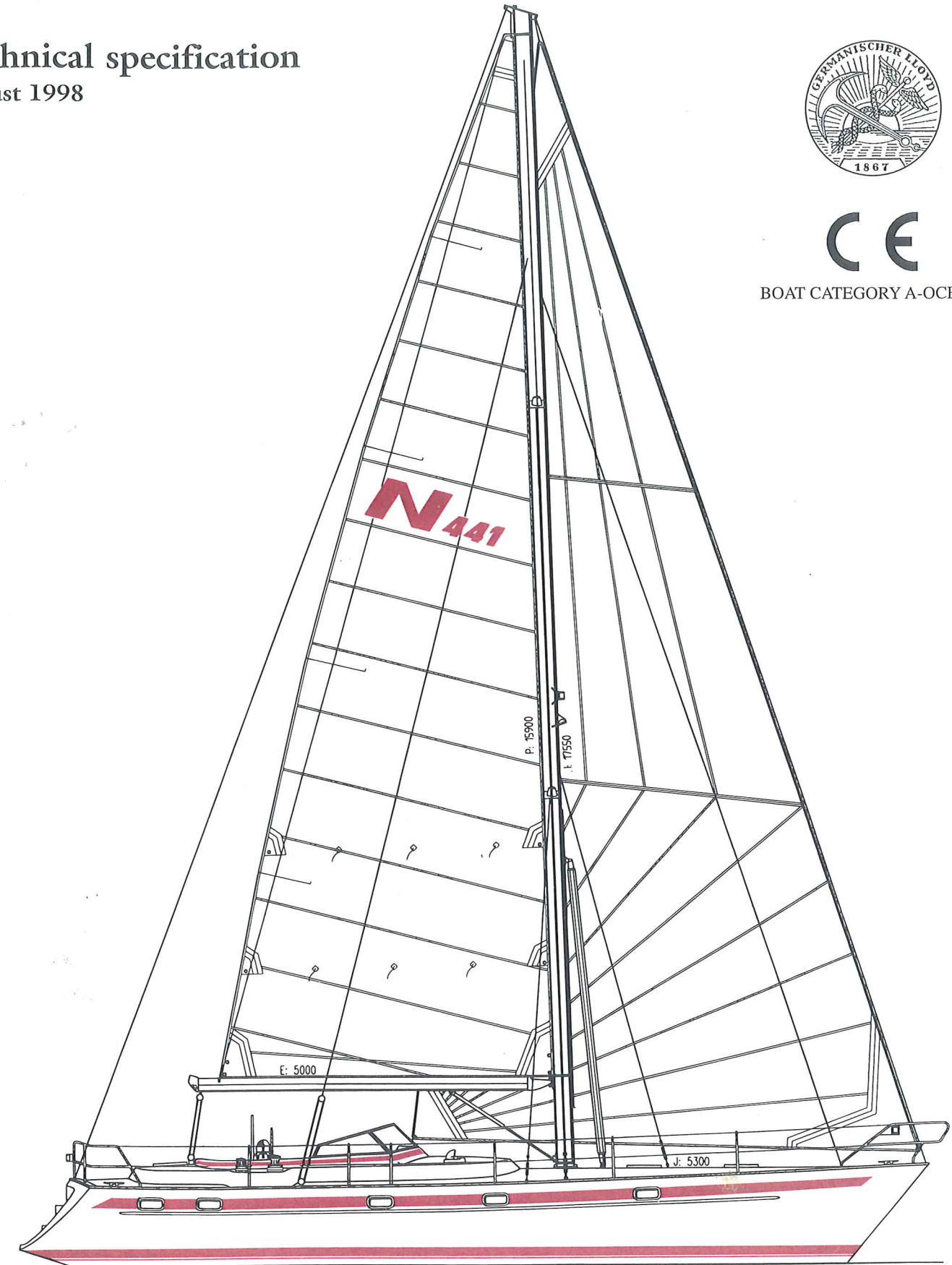


Technical specification  
August 1998

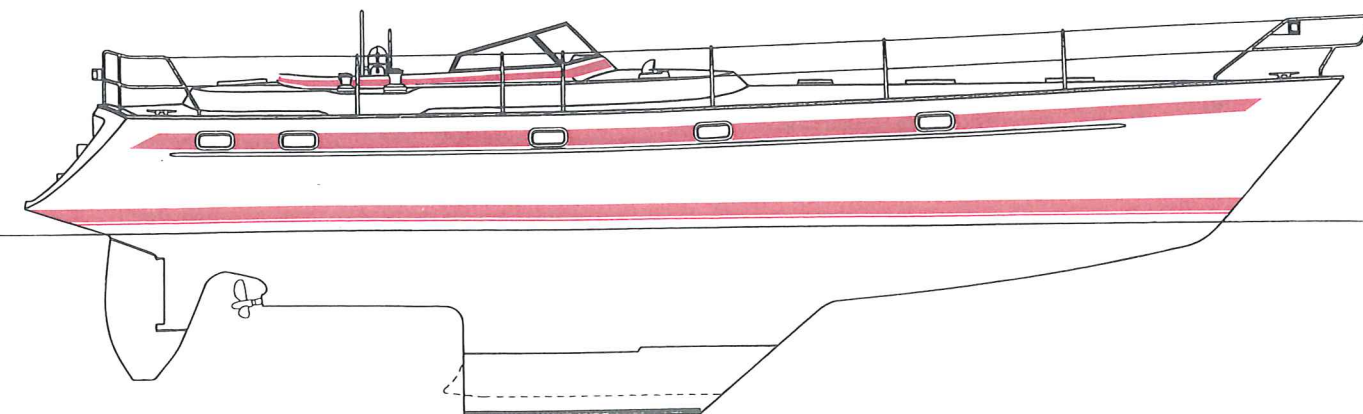
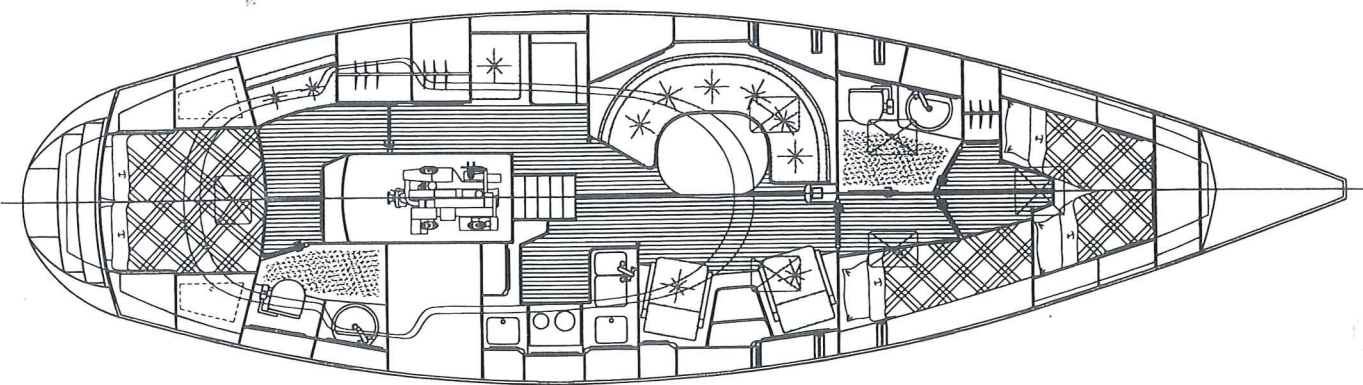
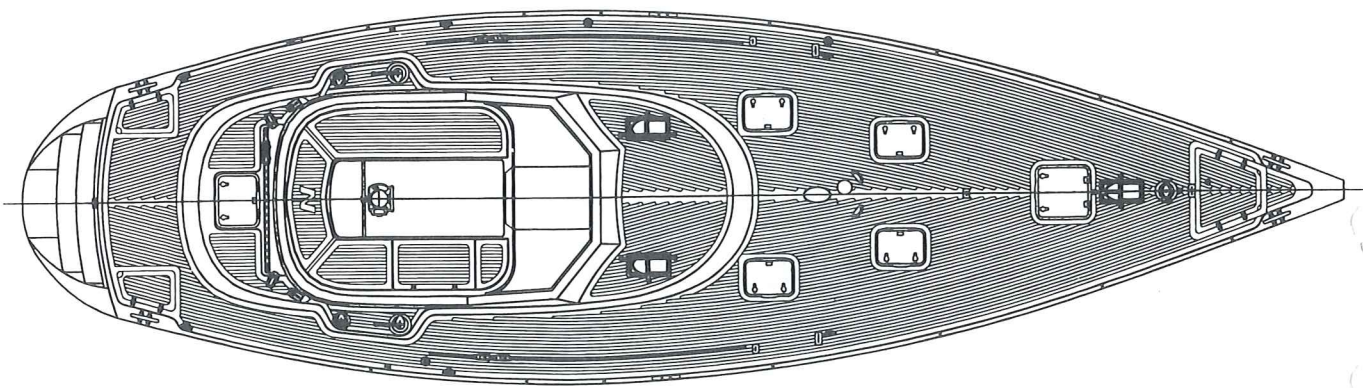


BOAT CATEGORY A-OCEAN



**NAJAD**  
**441**

# NAJAD 441



## Specification

Design: Najadvarvet

### Dimensions

Length overall	44'3" (13.50 m)
Length waterline	37'10" (11.55 m)
Beam	13'1" (3.99 m)
Draught	6'6" (2.00 m)
Displacement	14 500 kg (14.5 t)
Bolted lead keel	6 000 kg (6.0 t)
Mast height above water line	63'1" (19.25 m)
Headroom in saloon	6'4" (1.95 m)
Total height for transportation	14'9" (4.50 m)

### Gelcoat

hull	Neste GN 1000 LSE
deck	Neste GN 1205 LSE
trim and water lines	Jotun GE 2001

### Engine

Yanmar 4 JH2-UTBE	
prop. shaft output	70,6 kW/96 h.p.
Flexible shaft connection	

### Name of tanks

Fuel tank in stainless steel.	
Water and holding tanks in acid resistant stainless steel.	
Water capacity	154 gal. 700 l
Warm water heater	9 gal. 40 l
Fuel capacity	72 gal. 330 l
Holding tank, forward	15 gal. 70 l
Holding tank, aft	22 gal. 100 l

### Sail areas

Cruising	990 sq.ft. (92 m <sup>2</sup> )
Main	484 sq.ft. (45 m <sup>2</sup> )
Working jib 110%	506 sq.ft. (47 m <sup>2</sup> )

* Fully batten main	506 sq.ft. (47 m <sup>2</sup> )
* In-mast reefing main	463 sq.ft. (43 m <sup>2</sup> )
* Furling Genoa, 140%	689 sq.ft. (64 m <sup>2</sup> )
* Cutter jib	301 sq.ft. (28 m <sup>2</sup> )
* Storm jib for cutter stay	172 sq.ft. (16 m <sup>2</sup> )
* pinnaker	1 722 sq.ft. (160 m <sup>2</sup> )
* Cruising chute	1 399 sq.ft. (130 m <sup>2</sup> )

\* = Extra equipment

Stemhead rigged with two pairs of spreaders, twin lower shrouds and baby stay. Removable inner forestay (cutter stay) with adjuster. Running backstay with tackle and stopper.

Seldén mast in silver anodised aluminium profile 237/162 mm, height 58' (17.7 m) above deck, stepped on the coachroof and supported by a galvanised steel pillar that is based on the longitudinal and transverse bottom reinforcements.

19-ply stainless steel wire standing rigging. 12 mm cap shrouds. 10 mm forestay, backstay, running backstay and lower shrouds. 8 mm intermediate shrouds, inner forestay and baby stay.

Stainless steel rigging screws. 7/8" for top shrouds. 3/4" for lower shrouds and 5/8" for intermediate shrouds and baby-stay.

Head sail furling system, Seldén Furlex 310S, with control line on port side, drawn through blocks on the stansions and stopper on the cap rail to cockpit.

Backstay adjuster, hydraulic. Seldén rockkick with gas damper. Topping lift.

The mast is fitted with deck light, steaming light, international approved signal horn and prepared for spinnaker equipment. 2 x stainless steel selftailing Andersen 40ST halyard winches, winch handle pocket, stainless steel reefing winch, Windex and flag halyards. Rope to wire main, Genoa and cutter halyards.

Ample cleats. Stainless steel chain plates, bolted to transverse bulkheads which are laminated to both sides of the hull (see drawing at the end of specification). Seldén boom in silver anodised aluminium profile 200/117 mm with internal outhaul and double reefing lines with stoppers.

Main sheet to two stainless steel selftailing winches Andersen on adjustable ball bearing car on a track. Headsail sheet.

### Sails

Main sail with sliders on luff mast and bolt rope on foot in 450 g/m<sup>2</sup> high quality Dacron cloth. The main sail is fitted with sail number, battens telltales and two reefs.

The working jib, Cross-Cut, in 450 g/m<sup>2</sup> high quality Dacron cloth fitted with sheets and telltales.

Sailbags.

### Deck fittings

2 x stainless steel Genoa sheet winches, self-tailing Andersen 58 ST.

2 x stainless steel main sheet/spinnaker sheet winches, self-tailing Andersen 40 ST with stoppers.

4 x 10" (25 cm) lockable winch handles. 4 x 15" (40 cm) mooring cleats, through bolted.

2 x 12" (30 cm) spring cleats, midships, through bolted.

Stemhead fitting with integrated anchor roller for 30 kg Bruce anchor on deck.

Electrical windlass, Lofrans Leopard, 24 volt, 1500 W with 40 m, 9 mm anchor chain.

30 kg Bruce anchor.

Pulpit and pushpit in acid resistant steel, through bolted. A teak step is fitted to the pulpit.

Double lifelines with five pairs of stanchions screwed to fittings, which are through bolted to the rail below the capping (see drawing at end of specification).

Folding bathing and safety ladder fitted in the integral swimming platform.

Main sheet track, with trimlines to ball bearing car.

10'9" (3.30 m) long genoa tracks and 2 x with trimlines adjustable sheet blocks on each track.

Windscreen of toughened glass in aluminium frame with optional stainless steel grab rails.

6 x deck hatches one of these (372x500 mm) over the aft cabin, four (320x450 mm) over the saloon, toilet and stb cabin, and one (500x500 mm) over forward cabin.

(Numbers and positions of deck hatches may vary depending on the layout.)

10 x stainless steel portholes in the hull sides, 4 x to be opened.

3 x dorade deck ventilators with stainless steel protection bars.

Deck fillers for water and fuel and for evacuation of the holding tank. One stainless steel deck fitting to run all cables to mast. All mast cables are connected below deck.

### Additional deck fittings

- International approved navigation lights.
- Illuminated compass.
- Sprayhood from the top of the windscreen.
- Shower at the swimming platform.
- 23 kg folding anchor, 3 m chain and 40 m 16 mm warp.
- 6 x 10 m 16 mm mooring lines.
- 6 x 8"x 27" fenders with lines.
- Ensign staff and boat hook.

### Deck and superstructure

Deck and coachroof are built in sandwich construction in glass fibre reinforced polyester with balsa core for strength and insulation.

The colour is Ivory white with carmine red trim line.

Hull and deck are laminated together.

Strengthened glass fibre laminate beneath stressed areas.

Substantial teak capping.

The deck, coachroof and swimming platform are laid with solid caulked teak, screwed with acid resistant stainless steel screws and laid in silicon.

Large self-draining locker forward for anchor chain, warps, fenders and gaz bottles. Two self-draining lockers aft.

Two 32 mm deck drains with outlets at the waterline to avoid smears to topsides.

### Cockpit

Spacious cockpit with large navigation table and sliding hatch in varnished teak below fixed windscreen.

Integrated grab rails in the curved angles of the navigation tables.

Seats covered with seamed untreated teak. Helmsman's seat with inlaid Najad logo behind the wheel.

Removable teak grating on the sole.

Steering pedestal with covered wheel, engine lever and stainless steel protection bar for the compass which also supports the cockpit table.

Recesses in the coamings on both sides with ventilation to the engine room. The one on starboard side also contains the engine control panel.

Behind the windscreen and in the recesses there is space for additional instrumentation.

Two 12 volt plugs and two chart lamps.

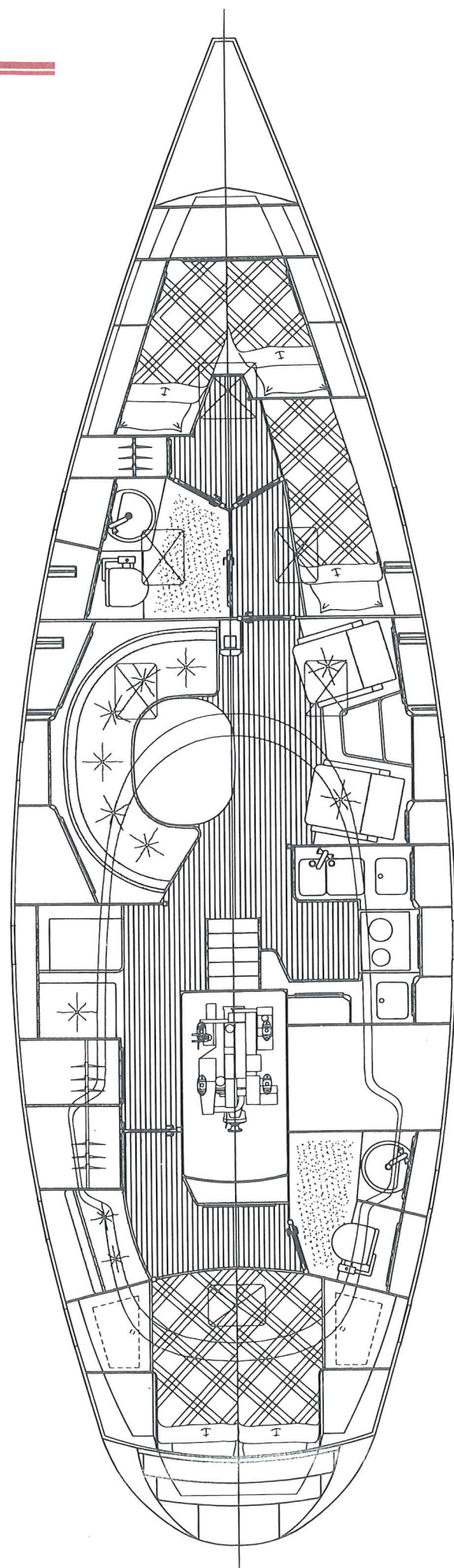
The sprayhood is splash-proof and fitted in a groove to the top edge of the windscreen. The sprayhood offers a completely protected area at the forward end of the cockpit. A sprayhood extension can be fitted to cover the whole cockpit (extra equipment).

Spacious cockpit locker under the starboard seat which contains cockpit table, washboards and fire extinguisher.

Below the cockpit locker space for the hot water boiler, holding tank, pumps, etc.

Manual bilge pump operated from the cockpit. Electrical bilge pump with both automatic and manual switch.

2 x 32 mm cockpit drains with drains from the seats.



## Interior

The interior is handcrafted in selected and unstained African mahogany, hand polished and varnished to a satin finish. Cupboards and doors in solid mahogany with profile-milled frames.

Hull sides above berths are lined in mahogany.

Flooring of varnished teak and holly plywood.

Removable hatches for the bilge and tank gauges.

Headlining of white vinyl covered panels with mahogany strips.

### Layout

In the Najad 441 the layout may be altered according to different requirements.

Saloon, cabins, toilets, galley and navigation area may be adjusted to number of persons and how the yacht is intended to be used.

Essential areas such as the galley and navigation area are placed amidships close to the companionway steps where movements of the yacht at sea is a minimum.

In the saloon the whole crew can be together for meals and social life. There is also space for comfortable easy chairs for relaxation.

A large cabin with toilet and shower can be built forward in the yacht, or it can be divided into two cabins with a separate toilet compartment.

In the aft cabin we usually build a wide double berth amidships. There is also ample space for cupboards, wardrobe and a separate seat. A separate toilet with wash basin and shower is also placed here.

The drawing in this specification shows a practical and comfortable layout for 6 persons. It is also the starting point for discussions about alterations or other layouts.

The layout and all interior alterations have to be confirmed by the yard.

### Galley

The galley is separated from the saloon by a bulkhead and located amidships to the starboard side allowing free passage between the cockpit and saloon.

Work area in Corian with stainless steel twin sinks.

Pressure system with accumulator tank for hot and cold fresh water. Foot pump for manual operation.

Single lever tap for hot and cold water.

Gimballed twin burner gas cooker with oven.

Gaspipes with remote controlled shut-off valve between cooker and gas bottle.

Two gas bottles 2.5 kg. Camping gas in forward anchor box.

Work top over sink, easy to stow.

A well insulated refrigeration box with compartments and refrigeration unit and a refrigeration box prepared for freezer.

Plenty of storage cupboards for plates, cups and glasses.

Cupboard under cooker for pans, etc.

Waste basket under sink.

Drawers. Cutting board with crumb box.

Lights over work area.

### Navigation area

The navigation area is located amidships to port side.

Chart table with stowage for charts.

Drawers and a separate chart stowage under the deck.

Wet locker aft of navigation area.

Chart lamp with dimmer.

Ample space for individual instrumentation and modern navigation equipment.

Folding switchboard for easy access, equipped with circuit breakers and prepared for additional circuits.

### Toilets

Matching Corian to sole and sink area with white laminate elsewhere.

Manually operated toilets drained to holding tanks.

Large wash basin built into the sink area.

Hot and cold pressurised water with single lever tap. The tap may be lifted out to use as a shower in the forward toilet and a mixer tap with thermostat in the aft toilet.

Below the sole a shower sump drained to the sea with an electrical pump.

Mirror, 12 volt socket and lights.

Large upper and lower cupboards.

### Textiles

Saloon sofa and settees: 125 mm cushion with raised forward edge made up from 75 mm, 35 kg/m<sup>3</sup> polyeter and topped with 50 mm, 26 kg/m<sup>3</sup> foam.

Berths: 120 mm cushion made from 100 mm, 35 kg/m<sup>3</sup> polyeter and topped with 20 mm fibre fill.

Upholstery: All cushions are covered with hardy and strong furniture Manchester plush fabrics in blue colour. Flame-proof BS 5852.

Underside the berth bottoms are unvarnished and ventilated with holes to avoid dampness.

### Ventilation (may vary according to layout)

Forward cabin: Opening deck hatch and dorade deck ventilator.

Starboard forward cabin: Deck hatch.

Port side forward toilet: Deck hatch.

Saloon: Two opening deck hatches.

Ventilation grills in washboards and two dorade deck ventilators.

Aft toilet: Ventilator.

Aft cabin: Opening deck hatch.

## Hull

The hull is built in a sandwich construction of glass fibre reinforced polyester. The outermost laminate is laid by hand with roving using Isophall in polyester resin. A core of balsa for strength and insulation. The surface layer is of NGA gelcoat for maximum protection against water penetration.

At the stern there is an integral swimming platform with a bathing and safety ladder.

① The bilge is reinforced with a longitudinal and transverse floor plate construction. This supports keel fittings, mast pillar, engine frame, tanks and the cabin floor. There are additional longitudinal reinforcements (stringers) in the hull in the forward cabin and saloon.

All main bulkheads are laminated on both sides to the hull. Transverse chain plate fittings laminated to the hull.

② The galvanised steel mast pillar is bolted to the floor plate construction.

The rubbing strake is an integral part of the hull and is fitted with a brass capping. The colour is white with carmine red trim line and water lines laid in the gelcoat. Below the water line the hull is treated with epoxy primer and black antifouling paint. The hull is topcoated internally.

### Keel

③ The entire keel is built by NACA profiles. The lead keel is bolted on with 15 x 20 mm acid resistant stainless steel bolts. A small wing at the bottom of the keel reduces the water flow beneath the keel which results in less drag.

The join between the hull and lead ballast is stepped up to eliminate the shearing forces when going aground.

### Rudder and steering

④ Rudder and skeg in NACA profile. Semi-balanced rudder in glass fibre reinforced polyester with 55 mm acid resistant stainless steel rudder post.

Rudder fittings in cast bronze bolted to the skeg.

Steering pedestal in glass fibre reinforced polyester with covered stainless steel wheel of diameter 1 000 mm.

Compass and top fitted single lever control for the engine.

Friction brake on wheel.

Stainless steel chain and wire cable to a large quadrant.

Rudder post sealed with greased stuffing box. A fitting for the autopilot can easily be installed to the top of the rudder post.

Emergency steering on rudder post by tiller.

### Tanks

⑤ Fresh water tank in acid resistant stainless steel installed between floor plate construction amidships. The tank is fitted with inspection hatches and level gauge.

⑥ Fuel tank in stainless steel on top of floor plate construction on port side amidships with level gauge. Suction pipe with manual pump to the tank bottom for evacuation of dirt and condensation.

⑦ Holding tanks in acid resistant stainless steel. The aft tank below starboard cockpit locker and the forward tank below the floor in toilet.

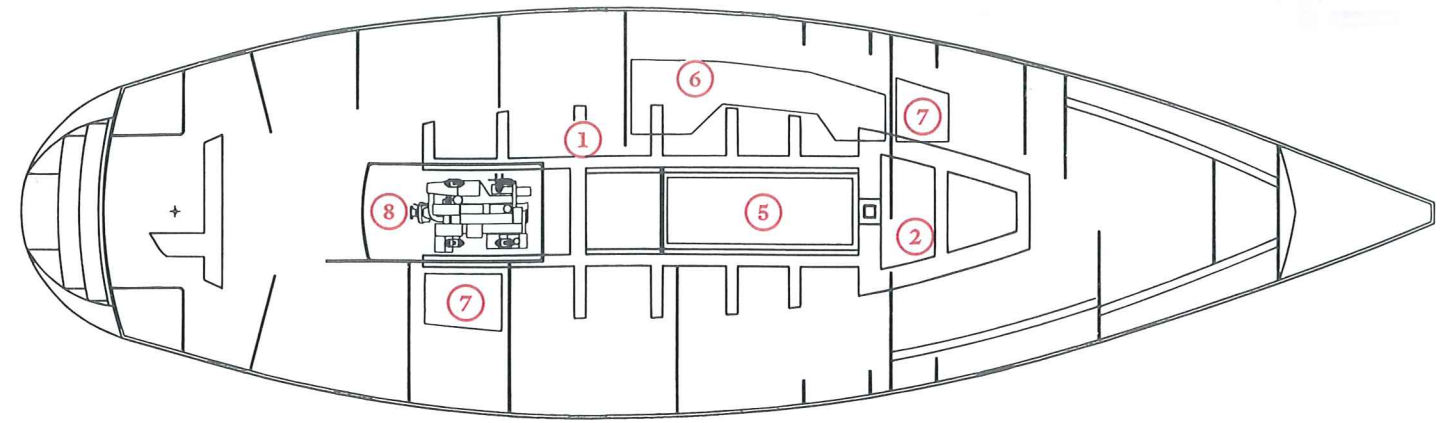
Manual pump in the toilet compartment for drainage via through hull fitting. Connected to deck fitting for evacuation ashore.

All hoses connected to the tank are gas tight.

### Through hull fittings

All through hull fittings below the waterline are fitted with sea cocks.

The reinforced hoses have twin clips in acid resistant stainless steel.



### Engine

⑧ Yanmar 4 JH2-UTBE, 4-cylinder, direct injected, 4-stroke turbo marine diesel with fresh water cooling.

Propeller output at prop. shaft is 70,6 kW (96 hp).

Mechanical reverse gear.

40 mm propeller shaft in acid resistant stainless steel.

Flexible shaft connection

Stern gland with water lubricated rubber bearing.

3-bladed fixed propeller in bronze with shaft anode.

Single lever engine control at the pedestal.

Instrument panel fitted to starboard recess in cockpit including:

- rev. counter
- displays for
  - low oil pressure
  - high engine temperature
  - charging
- audible warning for oil pressure and engine temperature
- switch for instrument lights and alarm test
- key starter

Electrical starting motor, 1,8 kW.

Electrical stop.

The engine is suspended in four rubber mounts for effective vibration damping.

Wet exhaust pipe with swan neck and effective rubber silencer.

Well sound insulated engine room.

The engine is easily accessible for servicing through a door in galley companionway, behind the companionway steps and through the cockpit floor.

### Electrical system

24 volt domestic lighting circuit with 2 x 140 Ah battery capacity.

24 volt/60 amp. alternator.

12 volt/115 amp.hr. engine battery.

12 volt/80 amp. alternator.

Current regulator for battery charging.

Twin diodes for automatic charging of two battery banks.

Well dimensioned electrical cables. The cables are to a large extent run in conduits.

Main switch panel with automatic circuit breakers adjacent to chart table.

Water and fuel meters, voltmeter.

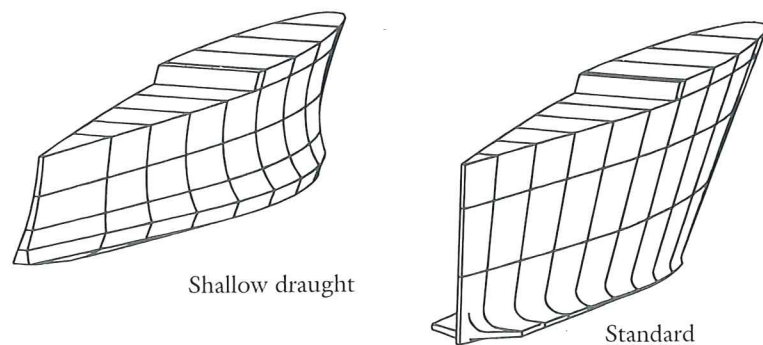
Two main switches.

6 x 12 volt power sockets.

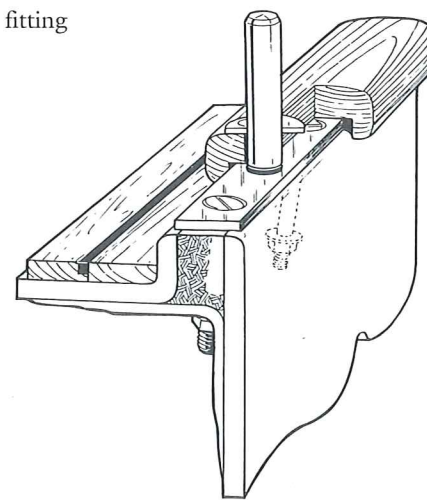
### Additional installed equipment

- Heater Eberspächer D5L-C, 5 outlets: Forward and aft head, aft cabin saloon and forward cabin.
- Diaphragm bilge pump installed in the cockpit locker.
- Electrical drainage pump for the shower sump.
- 3 x fire extinguishers (powder ABE).
- 2 x 2,75 kg gas bottles.

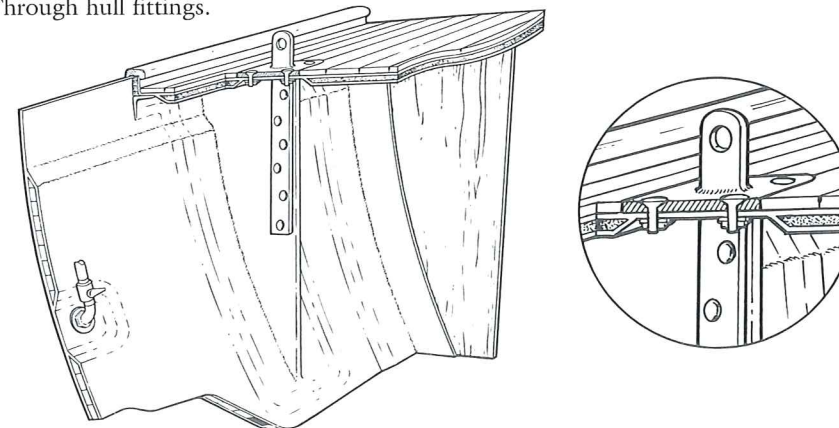
③ Keel



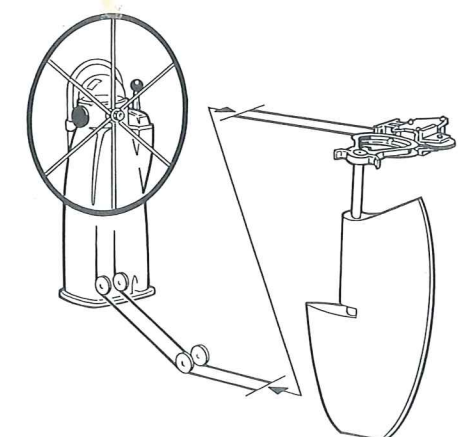
Stanchion fitting



Bulkhead and chain plate fittings.  
Through hull fittings.



④ Rudder and steering system



## Design

The Najad 441 offers, due to her size and volume, a variety of individual layout solutions. The layout is designed by our design department and together with the client the boat is planned for 2-6 persons. Hereby the Najad 441 is adjusted as to where the boat is to be sailed and how it is to be used.

The Najad 441 has the same hull as her forerunner but with a new keel and rudder, which has further improved her sailing performance. An integral swimming platform is also built into the stern for comfort and safety.

The keel and rudder are built up by NACA wing sections. The keel is slightly shorter than at the forerunner, but still relatively long for good course stability and motion at sea.

The keel is long enough to ensure stability when drying out.

The ballast lead keel with a ratio of 41 per cent is bolted on and a small wing at the bottom of the keel reduces the water flow which results in less drag.

The rudder is semi-balanced with a strong half skeg, which ensures the steering is light and positive.

This combination of keel and rudder design enables the boat to have a turning circle of her own length.

The strong floor plate construction and stringers are laminated into the hull in order to take the external and rigg loads.

Based on modern techniques and many years of experience the Najad 441 is a product of perfection from the Najad yard.

## Built to order

The Najad 441 is built to order. Therefore, the layout and the equipment can be specified to each customer's requirement. Layout or equipment that are non-standard have to be confirmed by the yard regarding price and delivery time. Owners will have access to the boat during the whole building period as far as possible, providing production is not disturbed.

Due to extra equipment the Najad Yard reserve the right to trim the boat with internal ballast.

## Built according to Germanischer Lloyd's specifications

Each boat is designed and built to Germanischer Lloyd's specifications for "GL100 A5". This includes hull, deck, superstructure, main bulkheads, engine bed, chain plate attachments and stem fittings as well as Plumbing, Electricity and Electronics.



A Germanischer Lloyd's Certificate is supplied with each boat.

## CE

Najad 441 is classified according to the CE rule "Boat Category A-Ocean", and to each boat is delivered documentation for this rule.

## Engine installation certificate

Engine installation and other equipment in the engine room is approved by Yanmar regarding fuel and air inlets, temperature and ventilation.

## Insurance

The yard's own insurance will cover the boat and other equipment supplied by the builder during the building time until delivery. Owner supplied items to be insured by the same.

## Warranty

The hull has five (5) years warranty against faults in the laminate caused by water penetration (see warranty condition).

The boat has one year (12 months) warranty against production and material faults. Installed equipment has the manufacturer's warranty according to their warranty conditions.

## General

This specification is valid at the time of printing. Details of the construction, manufacture and equipment may be changed as a result of development from production and sailing the boats. The standard of quality and equipment will, however, be equal as specified herein. Drawings may in some cases show extra equipment.

## Extra equipment

For additional equipment, please see separate list of accessories.

# NAJAD