

Manual for owners and skippers



Sailing yacht „BAVARIA 40 – 2 cabins“

BAVARIA YACHTS



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INDEX

Introduction	page 3
Category of design	page 4
Builder's plate	page 5
Warnings	page 5
Declaration of Conformity	page 6

1. Description of the yacht

1.1 Main particulars	
1.1.1 Principal dimensions	
1.1.2 Displacement and weight	
1.1.3 Motorization	
1.1.4 Electrical installation	
1.1.5 Tank capacities	
1.1.6 Fixing point for cranes, resting-points for slipping and transport	

1.2 General arrangement	
1.2.1 Rigging plan	
1.2.2 Deck arrangement	
1.2.3 Accommodation plan	

1.3 Drive system	
1.3.1 Sails	
1.3.2 Rigging	
1.3.3 Motorising, engine room, gear, propeller	

2. Installations and circuits

2.1 Tanks and piping - water	
2.1.1 Fresh water, drinking water - cold	
2.1.2 Sea-water circulation	
2.1.3 WC-installation, holding tank	

2.2 Tanks and piping - fuel

2.3 Steering gear	
2.3.1 Description of the system	
2.3.2 Rudder blade and rudder bearing	

2.4 Bilge pump, bilge lines

2.4.1 Description of the pumping arrangement	
--	--

2.5 Electric installation

2.5.1 AC-installation	
2.5.2 DC-installation	
2.5.3 Operating the installation and	

specific features

2.5.4 Important warnings on the DC-installation	
2.5.5 Important warnings on the AC-installation	
2.5.6 Distribution of electric devices	
2.5.7 Wiring plans	
2.5.8 Distribution plans	
2.5.9 AC-distribution	

2.6 L.P.G. installation

2.6.1 The components	
2.6.2 Operation	

2.7 Fire protection

2.8 Anchor-, towing- and warping facilities	
2.9 Engine cooling system	
2.10 Exhaust gas system	
2.11 Ventilation/Airng	
2.12 Board ducts, sea water valves	

3. Environmental protection

3.1 Fuel and oil	
3.2 Waste	
3.3 Sound	
3.4 Swell	
3.5 Exhaust gas	
3.6 Antifouling, coatings	
3.7 Varnish remover	

4. Maintenance

4.1 Maintenance, cleaning	
4.2 Wearing- and spare parts	
4.3 Repair work	
4.4 Winter storage	

5. Final remarks and notes

6. List of manuals supplied

Introduction

This manual will help you to handle your yacht safely and with pleasure. Apart from information about the yacht itself and installed or additionally supplied fittings the manual also contains information on operation and maintenance. Please familiarise yourself with everything before you go on your first voyage.

If this is your first yacht or if you are not really familiar with the special characteristics of a motor yacht please make sure you get proper training before you put it into operation. Do not hesitate to contact the dealer or our shipyard for information about further training possibilities.

As the scope of supply depends on the order, the equipment of your yacht can deviate with some descriptions and illustrations. In order to be able to adapt our yachts to the constantly progressing technical standard, we must reserve ourselves changes in form, equipment and technology. For these reasons no requirements can be derived from all data, illustrations and descriptions in this manual.

**PLEASE KEEP THIS MANUAL IN A SAFE PLACE
AND HAND IT OVER TO THE NEW OWNER IF YOU SELL THE YACHT.**

BAVARIA would like to welcome you to the circle of **BAVARIA** owners and would like to thank you for placing your confidence in our products by acquiring this yacht.

Your contract partner and the management and staff of Bavaria Yachtbau GmbH hope you will enjoy your new yacht.

Bon voyage, fair winds and fine weather.

BAVARIA Yachtbau GmbH
Management



W. Herrmann

Category of design

Following the European Recreational Craft Directive each boat has to be classified according to a category of design.

All sailing yachts of BAVARIA belong to the category of design A.

designed for extended voyages where conditions may exceed wind force 8 (Beaufort scale) and significant wave heights of 4m and above, and vessels largely self-sufficient.

Certification

Actually the EC Directive intends for yachts of this size the certification module Aa only. That means that the manufacturer certifies the correspondence of construction and equipment with the Directive itself but stability and buoyancy is checked by another notified body

IMCI (International Marine Certification Institute) located in Bruxelles was put into charge as a notified body (see: Declaration of Conformity).

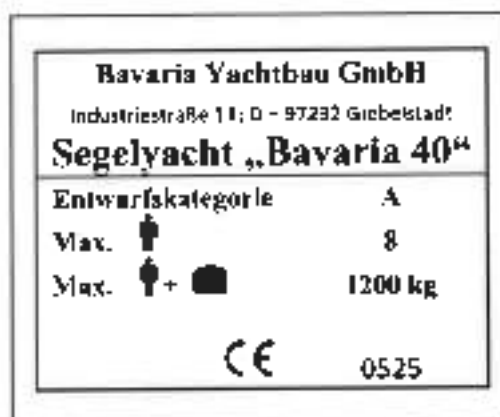
Identification

The hull identification was formed into the transom on starboard side. This is a unique sequence of digits and letters. It is

***DE-BAVR40* _ _ _ _ _**

Builder's plate

The builder's plate on the front wall of the cockpit is a demand of the Directive because certain information are required which will be explained in the following.

**Explanations**

- Category of design A: Ocean
- Max. = 8: Maximum number of persons recommended by the manufacturer if the yacht is situated in the sea area corresponding to the category of design. The number of crew can be increased under consideration of the maximum additional loading capacity if the yacht is on a voyage in non-ocean areas.
- Max. + = 1200 kg: Maximum additional loading including 8 persons, stores, provisions and personal equipment (excluding tank capacities).
- CE 0525: CE marking which indicates the conformity of the yacht with all provisions of the Directive. The sequence of digits is the code number of the certifying body, in this case the **Lloyds Register Quality Assurance GmbH** (see: Declaration of Conformity).

Warnings

Many chapters of this manual will support a troublefree operation, maintenance or draw your attention to signs of dangers. To find them more easily they are especially marked (in boxes or in bold). We advise you to study them carefully although the experienced skipper might be quite familiar with many of them. The following chapters contain such warnings/notes or other important information for operating the yacht.

**Danger**

means that an extreme real hazard which will lead to the death or too irreparable injuries with great probability exists if no adequate precautions are found.

**Warning**

means that a hazard which can lead to injuries or death exists if no adequate precautions are found.

**Caution**

means, that a minority of safety measures or the attention judges on handling, that can be unsure or lead to personal injuries or to harm of the vessel or from components.

Declaration of Conformity Recreational Craft Directive 94/25/EC

Name of the manufacturer: Bavaria Yachthau GmbHAddress: Bavariastr. 11Post Code: 97212Town: CirbelstadtCountry: (code) D (printed) GermanyModule(s) used (check): A A2 B-C B-D B-F G H

IF THE DECLARATION IS MADE BY AN AUTHORISED REPRESENTATIVE

Authorised Representative:

Address:

Post Code:

Town:

City:

Country: (code) (printed)

IF INTERVENTION OF A NOTIFIED BODY IS REQUIRED

Name:

Identification number:

Address:

Post Code:

Town:

Country: (code) (printed) Belgium

EC type-examination certificate number:

Date: (yy/mm/dd)

DESCRIPTION OF THE CRAFT

Hull Identification Number (HIN):

DE - BAVR40

Brand name of the craft: BavariaType or number: Bavaria 40Design category : AType of craft* : 01Type of hull* : 01Deck* : 01Construction material* : 02Propulsion* : 01-03Type of engine* : 02Maximum recommended engine power (kW) : 21Length and beam of hull (m) : 12.23 / 3.98Draft (m) : 1.65/1.95

*codes on opposite side

I declare at my own and sole responsibility that the craft mentioned above complies with all applicable essential requirements in the way specified overleaf (and is in conformity with the type for which above mentioned EC type examination certificate has been issued) - include text between brackets only if such certificate has been issued.

Name:

Signature and title:

W. Herrmann

Manager


Date (yy/mm/dd): 14.06.2002

Type of craft:

- 01 sp/boat
 02 inflatable
 03 other (specify): _____

Type of hull:

- 01 monohull
 02 multihull
 03 other (specify): _____

Construction material:

- 01 aluminium, aluminum alloys
 02 plastic, fiber reinforced plastic
 03 steel, steel alloys
 04 wood
 05 other (specify): _____

Propulsion:

- 01 sails
 02 petrol engine
 03 diesel engine
 04 electrical motor
 05 o/s
 06 other (specify): _____

Type of engine:

- 01 outboard
 02 inboard
 03 z or stern drive
 04 other (specify): _____



EC Type Examination Certification

This is to certify that Lloyd's Register Quality Assurance GmbH, a Notified Body under the terms of the Recreational Craft Directive 94/25/EC has undertaken an EC-Type Examination on the stated Yacht for the compliance with the essential safety requirements and Module B of the Directive. The Product identified below, was shown to comply.

This Certificate is issued to	:	Bavaria 40 e2/e3
Applicant	:	Bavaria Yachtbau GmbH Industriestraße 11 D - 97232 Giebelstadt
Boat Type	:	90 e2/e3
Boat Design Category	:	A
Hull Length	:	12,23 m
Manufacturer's Maximum Recommended Load	:	1.200 kg
Maximum Number of Persons	:	4
Manufactured by	:	Bavaria Yachtbau GmbH Industriestraße 11 D - 97232 Giebelstadt
Specified Standards	:	ENR, ISO 10987; 14945; 14946; 10240; 15005; 11591, 12215-1; 12217-2; 12216; 9093; 11812; 15003; 13084; 10080; 7040; 8460; 8846; 8849; 9007; 10239; 9094

"This certificate is not valid for equipment, the design, ratings or operating parameters of which have been entered from the specimen tested. The manufacturer should notify LRQA of any modification or changes to the equipment in order to obtain a valid certificate."

Certificate-No. : HYS 0011004

Date of Issue: : 27. July 2000

LRQA GmbH
EC Distinguishing Number 0625

Name: G. Müller
Lloyd's Register Quality Assurance GmbH



Any disputes concerning the purchase of LRQA GmbH Services and / or the contract under which such services are provided is subject to the exclusive jurisdiction of the Hamburg Courts and will be governed by German Law. Lloyd's Register Quality Assurance GmbH is a subsidiary of the International Classification Society Lloyd's Register of Shipping, Registered office: 71 Broadchurch Street, London EC3N 4DF.

Declaration of conformity
Applied harmonised standards or drafts for standards, respectively,
corresponding to the EC-Recreational Craft Directive 94/25/EC

EC-Directive	ISO-Norm
1. Principal Data	8666
2.1. Identification of hull	<u>10087</u>
2.2. Manufacturer's plate	<u>14945</u>
2.3. To go over the side protection	15085
2.5. Owner's manual	<u>10240</u>
3.1. Structure	<u>12215 Part I</u>
3.2. Stability and freeboard	12217 Part 2
3.3. Buoyancy and flotation	12217 Part 2
3.4. Openings in the hull	12216; <u>9093-1, 9093-2</u>
3.5. Flooding	11812; 12217; 12216; 15083
3.6. Manufacturer's maximum recommended load	<u>14946</u>
3.7. Place for life rafts	Sallye guide of DSV
3.8. Emergency exit	9094 Part 1, 12216
3.9. Anchoring, mooring and towing	15084
4. Handling characteristics	<u>8665, 11592</u>
5.1. Engine and engine spaces	<u>7840, 9094; 10088 11812; 16147</u>
5.2. Fuel system	<u>7840; 8469; 9094; 10088,</u>
5.3. Electrical system	<u>9097, 10133, 13297, 28849</u>
5.4. Steering system	<u>13929, 28848, 28847</u>
5.5. Gas system	<u>10239</u>
5.6. Fire protection	9094
5.7. Navigation lights	KVR
5.8. Discharge prevention	<u>8099</u>

(e.g. 8099 - harmonised standards)

1. Description of the yacht

1.1 Main particulars

1.1.1 Principal dimensions

Length overall	L_{OA}	12,48 m	Length of hull	L_H	12,23 m
Length on waterline	L_W	10,95 m	Breadth max.	B_{max}	3,99 m
Draught - normal keel	D_{max}	abt 1,95 m	Draught - flat keel	D_{max}	abt 1,65 m
Headroom (without antenna and similar things)			H_1	abt 17,05 m	
Headroom (for transport)			H_1	abt 3,80 m	

1.1.2 Displacement and weights

Weight of the empty yacht -incl. safety equipment	7900 kg
Weight of the fully equipped yacht- ready for sailing with crew	9590 kg
Ballast	2850 kg

1.1.3 Motorization

Diesel engine:

Manufacturer	Volvo	Type	MD 2030
Output	21 kW	Cooling	indirect (sea/fresh-water)
Reverse-reduction gear	Saildrive 120S-D	Reduction ratio	2.48 : 1
propeller	2-bladed fix propeller (Option folded propeller)		

1.1.4 Electrical installation

220/110 V (option) AC-Installation

shore connection (option)	socket CEE-plug	current operated	230 V earthed socket
battery charger (option)	230 V AC / 12 V DC with 27 A max. current (option)		

12 V DC-system

1 x engine battery 12 V 55 Ah 1 x hold battery (option 2 x) 12 V 140 Ah
 motor generator (alternator) battery charger (option)

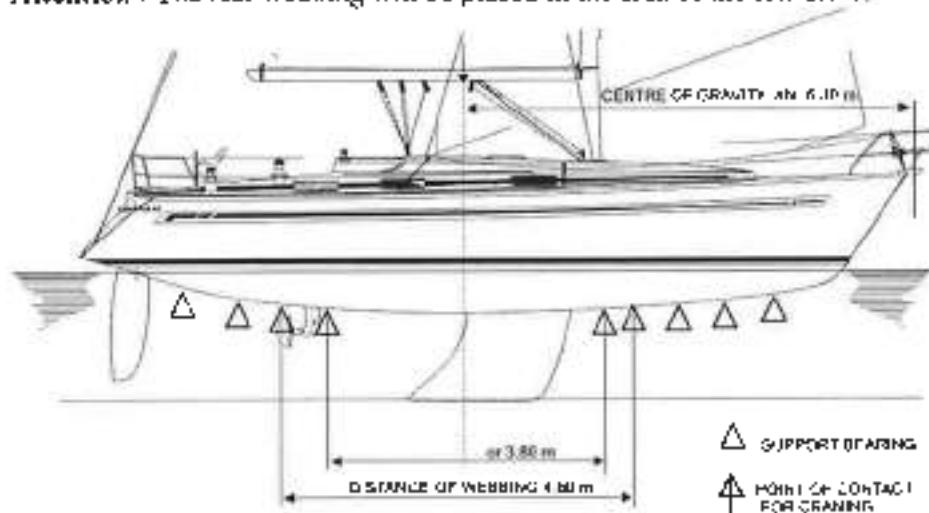
The distribution occurs about switchboard, electric circuits with thermal safety switches, LED display, rocker switches and voltmeters with changeover switch.

1.1.5. Tank capacities

1 fresh water tank	abt 150 l	on port side below the aftcabin berth.
1 fuel tank	abt 150 l	on starboard side below the aftcabin berth.
1 fresh water tank	abt 150 l	into the bow.
1 holding tank (option)	abt 40 l	in the locker in hatch on starboard side.
1 gas cylinder	abt 3 kg cylinder (Butane)	

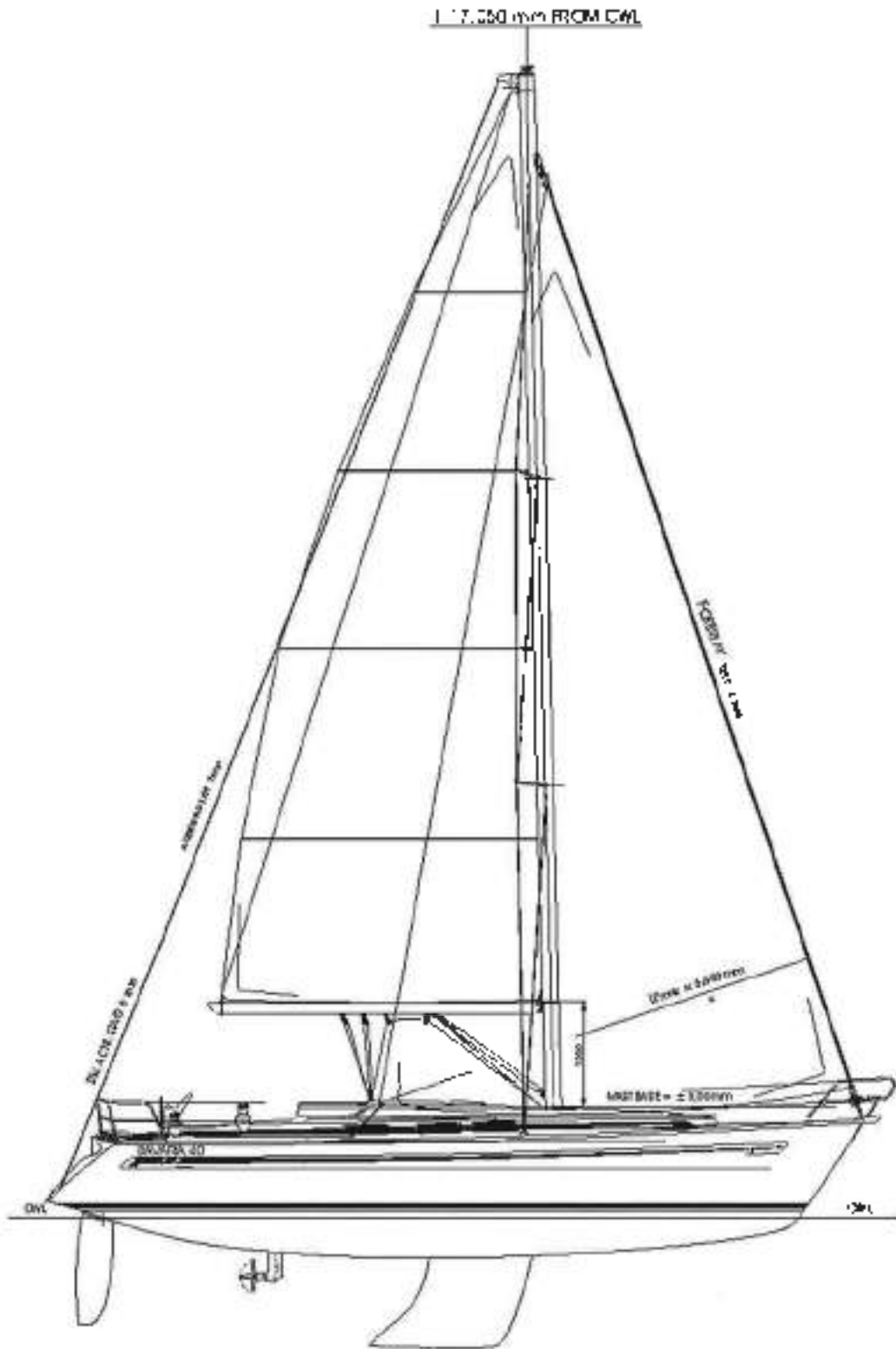
1.1.6. Fixing points for cranes, resting-points for slipping and transport

Attention ! The rear webbing will be placed in the area of the sail drive.



1.2 General arrangement

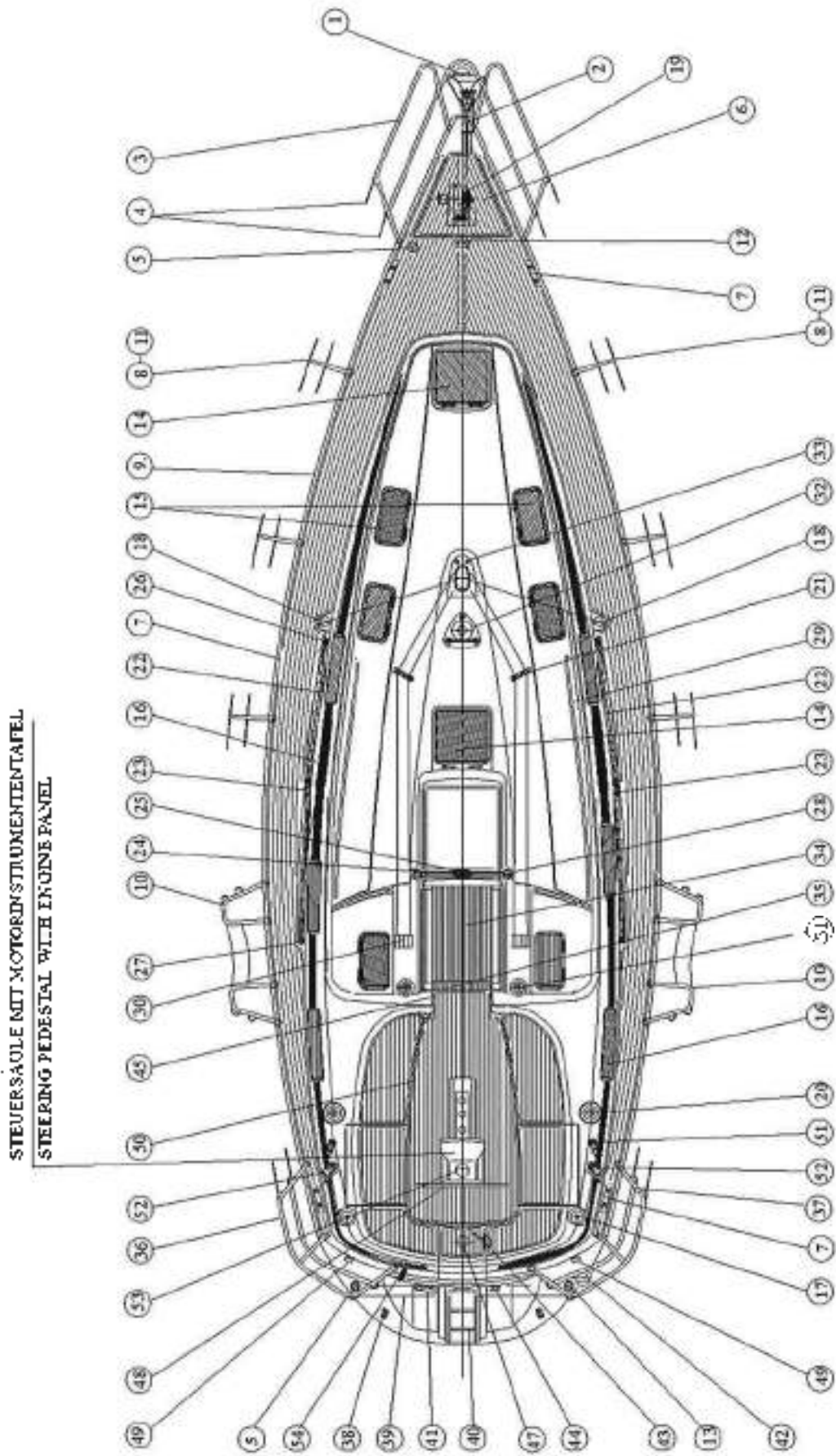
1.2.1 Rigging plan



Reference

The valid measuring of the foresail reefing gear are on the enclosure note at the carton of the Furlex-foresail reefing gear.

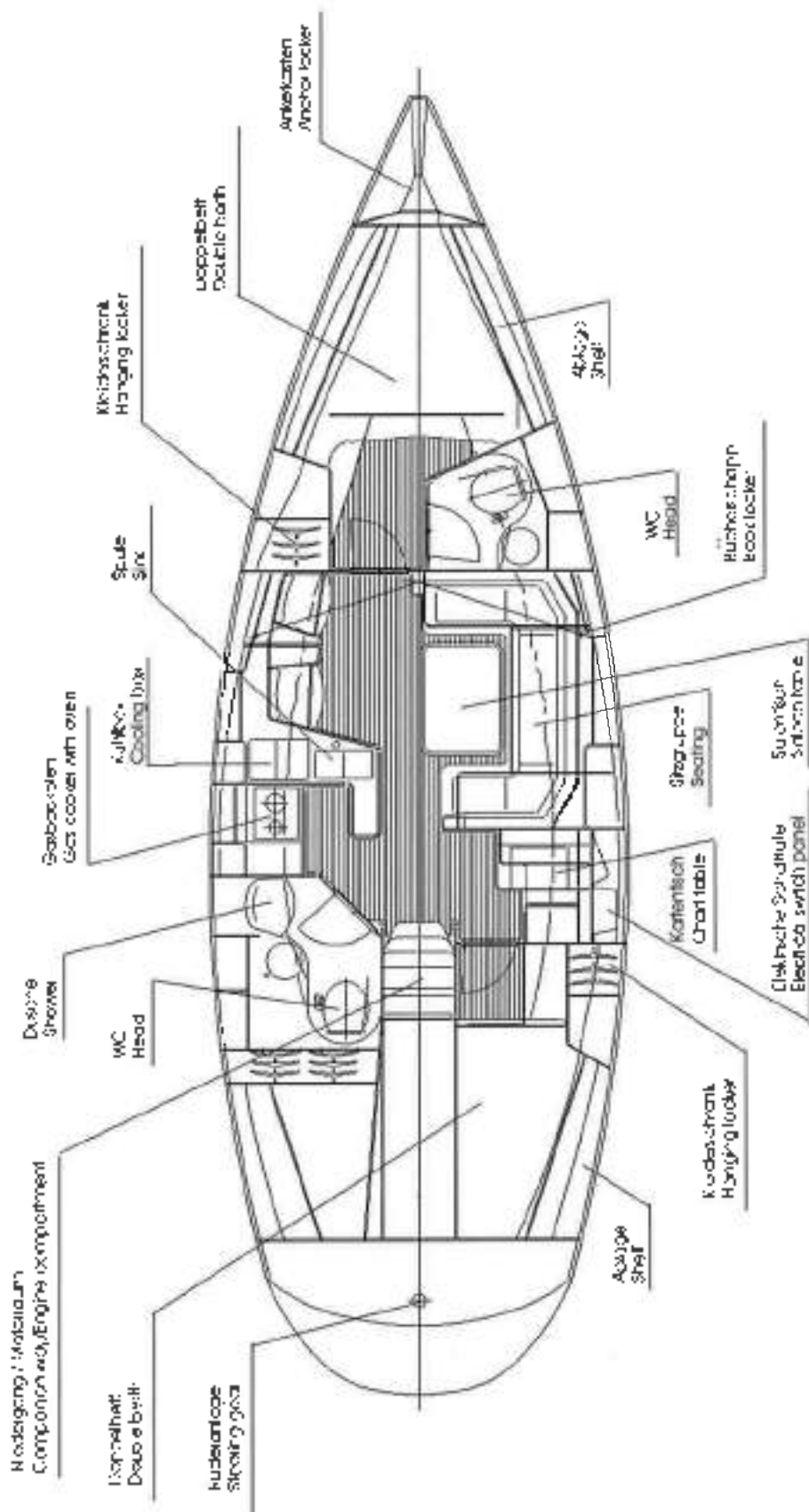
1.2.2 Deck arrangement



Explanations in the deck plan

BAVARIA 40			
	Description	Beschreibung	Stk
1	Bow navigation light	Zweifarbigeleuchte	1
2	Bow fitting	BLGbeschlag	1
3	Bow pulpit	BLGkorb	1
4	Life lines	Relingsdurchringe	4
5	Water inlet	Wassereinfüllstutzen	2
6	Anchor locker	Ankerkassen	1
7	Moorring cleats	Belegklampen	4
8	Stanchion	Relingsstütze	10
9	Tee rail	Fußreling	2
10	Passage location	Relingsdurchgang (Option)	2
11	Stanchion base	Relingsfuß	10
12	Eye-bolt (option)	Decksoege (Option)	1
13	Fuel inlet	Dieseleinfüllstutzen	1
14/15	Hatch	Luke	8
16	Opening portlight	Portlight	6
17	Sonnaker winch	Sonnakerwinde	2
18	Main show-staff lowers egk	Wannenpütting	2
19	Electric windlass	Elektrische Ankerwinde	1
20	Winch	Genauwinde	2
21	Deck organizer	Umlenkblöcke	2
22	Genoa track	Genoaschiene	2
23	Genoa track car	Genoaschienen	2
24	Main sheet track	Großschotlschiene	1
25	Main sheet track car	Großschotlschiene	1
26	Front endstop (g. track)	Vorderes Schienenendstück	2
27	Aft endstop (g. track)	Achteres Schienenendstück mit Umlenkblock	2
28	Endstop main sheet track	Schienenendkappe	2
29	Genoahills	Handreling	2
30	Stopper	Stopper	8
31	Halyard winch	Fallwinde	2
32	Ventilator	Decklüfter	1
33	Through deck cable fitting	Kabeldurchführung	1
34	Sliding hatch	Schiebeluke	1
35	Washboard	Steckschot	1
36	Aft port pushpit	Heckkorb links	1
37	Aft starboard pushpit	Heckkorb rechts	1
38	Backstay champlate	Achterstagpütting	2
39	Aft pushpit life line	Heckkorbsicherung mit Pelikanhaken	2
40	Swim ladder	Badeleiter	1
41	Shower	Cockpitdusche	1
42	Stem light	Heckleuchte	1
43	Hand operator bilge pump	Handlenzpumpe	1
44	Shore supply 220 V	Landanschluß 220 V	1
45	Engine ventilation inlet	Belüftungsraste für Motorraum	2
46			
47	Emergency tiller fitting	Notpinnenbeschlag	1
48	Steering wheel	Steuerrad	1
49	Tank venting	Tankenlüftung	2
50	Cockpit portlight	Cockpitportlight	2
51	Footblock with lockoff	Liegender Block mit Stepper	2
52	Check block-part	Liegender Block 0b	2
53	Engine panel	Motorinstrumententafel	1
54	Backstay champlate	Stopper für Achterstag	1

1.2.3. Accommodation plan



1.3 Drive systems

1.3.1 Sails

The SY Bavaria 40 is equipped with the following standard sails:

Main sail - standard	abt 37,00 sqm weight of cloth: 240 g/sqm
Main sail - fully-battened	abt 37,00 sqm weight of cloth: 240 g/sqm
Main sail ** - mast reefing gear	abt 32,20 sqm weight of cloth: 240 g/sqm
Furling Genoa	abt 41,40 sqm weight of cloth: 240 g/sqm

1.3.2 Rigging

Mast

- LM- Profile, without taper, - 18 deg double spreaders, angular; - 2 halyards, topping- and boom lifts,
- topping line and fittings.

Boom

- LM-Profile; - clew outhaul; - 2 reefing lines; - eye for mainsheet; - eye for topping line.

Standing rigging (made of 1x19 lace, material 4401), consisting of:

forestay with excessive footage (headsail reef system)			1x
intermediate shroud	2x		
lower shroud	2x	permanent backstay with hndle	1x
upper shroud	2x	permanent backstay tackle	1x

Running Rigging

Inside the mast:

- Main halyard
- Genoa halyard
- Boom lift
- 3 additional weighing lines

Option:

- Spinnaker halyard (attached)
- Spinnaker uphaul
- Spinnaker downhaul

Inside the boom: 2 reef lacing (battened sail); 1 foot jig

Complementing we refer onto the enclosed trim instructions of the manufacturer.



Caution

before of every sail: Test strings, cordage, lanyards and split pins. Safeguard the split pins through adhesive tape or bending. Transpose deformed or damaged bolts.

1.3.3 Motorizing, engine room, gear, propeller

This yacht is equipped with a inboard diesel engine with a sail-drive gear and a fixed propeller (option folded propeller).

The engine room is separated from living quarters by plywood-bulkheads covered with sound-insulating material. An access is possible through:

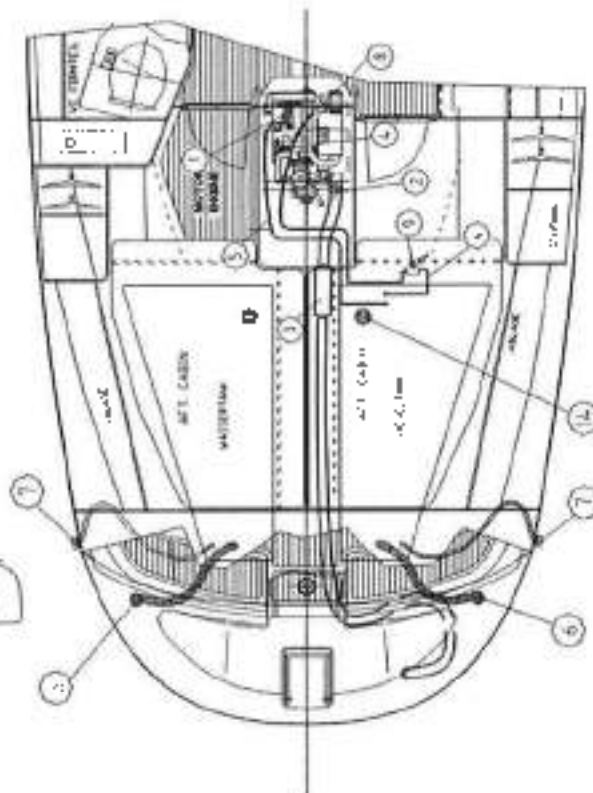
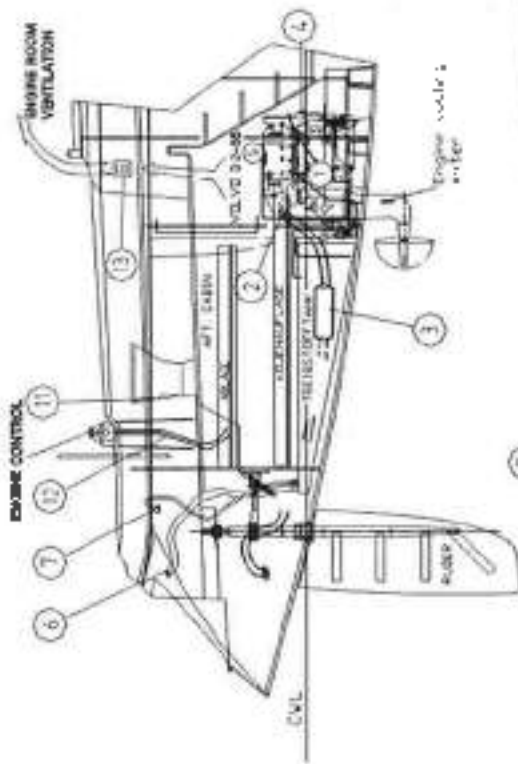
- a shutter below the companion way,
- detachable bulkhead in the aftcabin beside the engine room

Cooling-water supply to the engine is realised via the saildrive-gear.

Engine plant

MULTIPLA 700 MOTOR

1	MOTOR VOLVO D2-65	ENGINE VOLVO D2-65
2	MOTOR AUSPUFFSYSTEM	ENGINE EXHAUST SYSTEM
3	AUSPUFF WASSERSCHLÜPF	EXHAUST WATERCUT
4	KRAFTSTOFFTANK	FUEL TANK
5	KRAFTSTOFFROHRELEHRUNG	FUEL TANK FEED BACK
6	DESEL EMPFÜLLSTÜTZEN	FUEL TANK FILLING HOSE
7	TANKENILLUEFTER	FUEL TANK VENTILATOR
8	KRAFTSTOFF FILTER	FUEL FILTER
9	KRAFTSTOFF KUGELHAHN	FUEL COCK
10	BELOFTUNGSSCHROTE	VENTILATOR COCK
11	MOTORINSTRUMENTENTAFEL	ENGINE PANEL
12	MOTOR-FERNBEDIENUNGSKABEL	ENGINE CONTROL CABLE
13	MOTOR BELOFTUNGSSCHROTE	VENTILATOR ENGINE
14	VORRATGEBER FÜR KRAFTSTOFFTANK	FUEL GAUGE



2. Installations and circuits

2.1 Tanks and piping - water

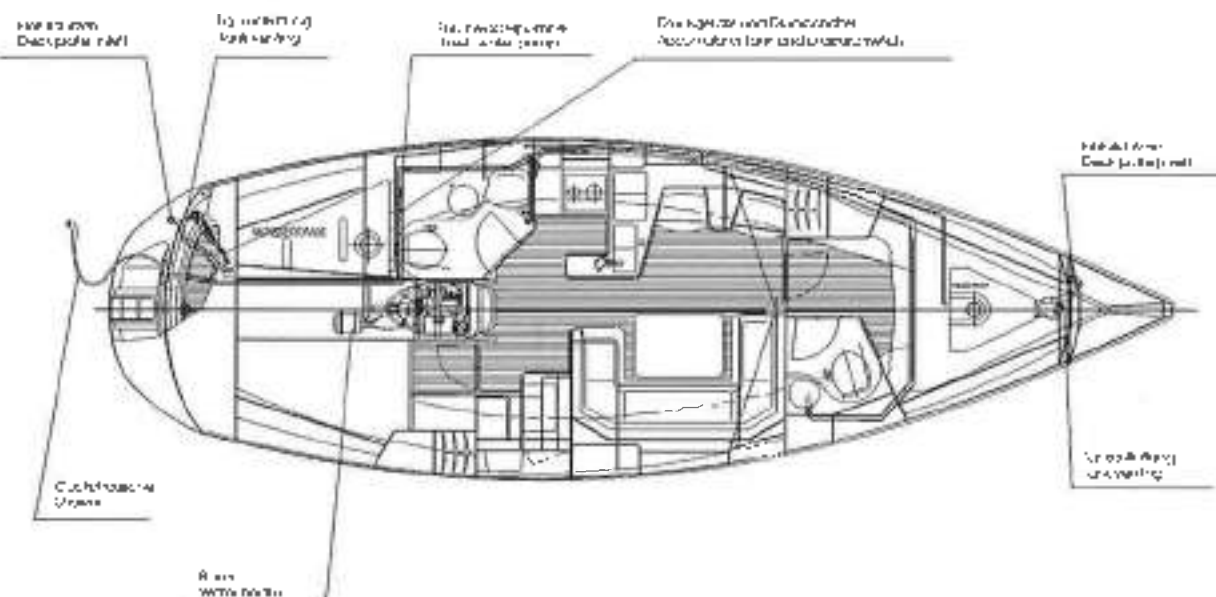
2.1.1 Fresh water, drinking water - cold

The yacht has two water tanks with a capacity of altogether abt 300 l. Fresh water is supplied via a water inlet (with a blue cover) at the transom, port side and on the forecabin near the chain locker. You can take water from the tank over a hose connection leading to the pressure water-pump.

This pump, realising the complete cold water circulation, is fitted in the head. An interruption of the operation of the pressure pump is done by cutting off all ducts. All pipes/hoses should be checked for leaks if the pump continuous working though all ducts were cut off properly.

The pump is protected by a filter which should be regularly checked and cleaned if necessary.

Components:



Note

Exchange the water in tank from time to time.
Additionally you should use common purifiers.

2.1.2 Sea-water circulation

Sea-water is necessary for both WC flushing and engine cooling (see: 2.9).

2.1.3 WC installation: see enclosed directions for use



Attention

If you are not aboard for a longer time you should close all sea-valves.

2.3 Steering gear

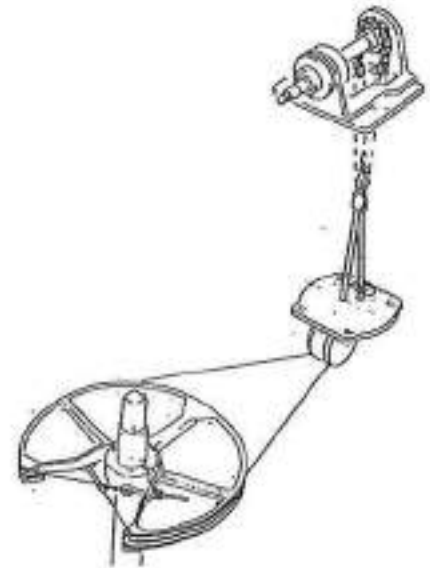
2.3.1 Description of the system

The rudder is a suspended, balanced hydrofoil midship rudder. It is operated by hand from the steering wheel at the steering post in the cockpit. Transmission of power is realised by means of bowden control to the rudder quadrant. With the autopilot (option) there is a electric motor installed.

2.3.2 Rudder blade and rudder bearings

The rudder blade is a profiled one. It consists of a I RP-body. The rudder post with a diameter of 60mm is made of a sea-water resistant aluminium alloy and is laminated into the blade. The post runs in two easy-going and special rudder bearings. The rudder is fixed by a mounting clip at the upper end of the post that also serves for the keeping of the rudder tiller.

The mounting clip is additionally secured with a straight stud bolt on the rudder post.



Attention



Check regularly and repair if necessary:
- tight hold of the mounting clip on the rudder post

The rudder bearings used by BAVARIA YACHTBAU are self-setting bearings. Since rudder bearings are subject to wear and tear they should be inspected and maintained regularly.

Emergency tiller

The emergency tiller is stored in the starboard locker seat.

In case of emergency remove the steering wheel, the rudder quadrant for rope pulls and the quadrant for the auto pilot (option).

Moreover the rudder head-cover has to be removed and the emergency tiller to be mounted and secured.



Attention

Please ensure a suitable bearing lubrication of the necessary parts of the rudder installation with water-proof lubricants (or Teflon).
Bearing clearance has to be avoided and can be adjusted at the top bearing.
The post must have no clearance but should not need heavy movements.

You can brake or even fix the steering wheel by turning a screw home. Make always sure that this brake is not drawn especially when sailing with the auto pilot. This would mean an overload for the electric motor.

The socket of the steering gear is integrated into the deck's form. On the socket there is the casing of the wheel hub. A chain is laid over a tooth-wheel of the hub.

2.4. Bilge pumps, bilge pipes

The chain locker is made watertight against the yacht. It is self-bailing through two holes in the skin.

All BAVARIA yachts have got a self-bailing cockpit, too. Water in the cockpit runs by the abaft trim to the back through the aperture.

2.4.1 Description of the pumping arrangement

The yacht is equipped with both a manual pump and an electric bilge pump. The main line bilge suction has a capacity of 75 l/min.

A draw bucket is an ideal means for bailing out water . It should always be ready in a cockpit seat locker.



Attention

Close all sea valves if you leave your yacht for a longer period. Valves being not clearly visible, like e.g. in the toilet room, should only be opened before use and closed short after.



Warning

In a serious situation, e.g. in case of a heavy inrush of water as a consequence of a collision, the pumping capacity might not be sufficient. Take measures for damage control with collision mats or other suitable means.

Note

In case of spherical valves a transverse lever-direction indicates: CLOSED and a longitudinal ones means : OPEN

Maintenance note

The tightness of ducts should be inspected regularly
Retighten all hose clips and the stuffing boxes of valves

Components of the bilge pumping installation:

see page 16

2.5 The electric installation

2.5.1 The AC-installation

The yacht has got a shore connection (option) by which it can be supplied with electric power from ashore when being berthed in a port. The plug box (meeting the CEE-norm) is installed at the transom of the yacht. The power is supplied into a shore connection unit, placed under the chart table.

The plug box is operational as soon as the shore supply cable has been plugged in. It only serves the operation of electric machines

2.5.2 The DC-board net

All electric devices aboard are supplied with the 12 V DC. A main-switch is installed in the electric panel at the chart table. Power distribution is effected by a switchboard above the chart table. The lettering next to each switch refers to the corresponding consumer.

You can find all the switches for the 12 V consumers at the switchboard. By this you can operate different consumer-groups being marked with logos or lettering, separately. Some of the switches are designed for an installation of additional electric devices. There are only automatic fuses used. So you only have to press them in case of a breakdown. If a fuse blows repeatedly you should spot the cause or consult a specialist (electrician)

2.5.3 Operating the installation and specific features

The combination of an AC- with a DC- installation offers a clearly higher comfort but requires some special knowledge.

Charging the batteries

All batteries are maintenance poor and drain protected. They are charged via a hullter diode by the motor-generator. Charging the starter battery always takes priority to ensure a safe start of the engine.

AC-consumers

The only fixed link is the one to the battery charger. The safety contact plug-box at the electric panel is designed for electric tools to be used for small repair work.

DC-consumers

The essential consumers are:

- | | |
|-----------------------------|---------------------|
| - navigation lights | -bilge pumps |
| - engine displays | -tank display |
| - VHF-radio wiring (option) | -electronic devices |
| - devices for comfort | |

Navigation lights have absolute priority. In case of a lack of capacity all other consumers have to be switched off first. By a stand-by operation of the engine, even when under sail, the batteries can be brought up rather quickly. After a while you can switch on the other consumers again.

2.5.4 Important warnings on the DC-installation**Attention****You should never**

- work at the electric installation if it is in operation,
- alter fuses or overload switches.
- change the electric wiring and/or wiring plans; this has to be done by specialists only,
- install electric devices or add parts that exceed the allowed load limit,
- leave the yacht unattended with the electric installation in operation. This does not go for automatic bilge pumps, fire protection and alarm devices.
- As long as the diesel engine is in operation, you must not disconnect the 12 V charging circuit.

Before starting a voyage you should always check

- the battery voltage,
- the correct function of navigation lights.

Have spare lamps for all navigation lights aboard.

2.5.5 Important warnings on the AC-installation



Attention

- the electric wiring of the yacht and/or corresponding wiring plans must not be changed.
- Service and maintenance must be carried out by a qualified specialist.

Warning

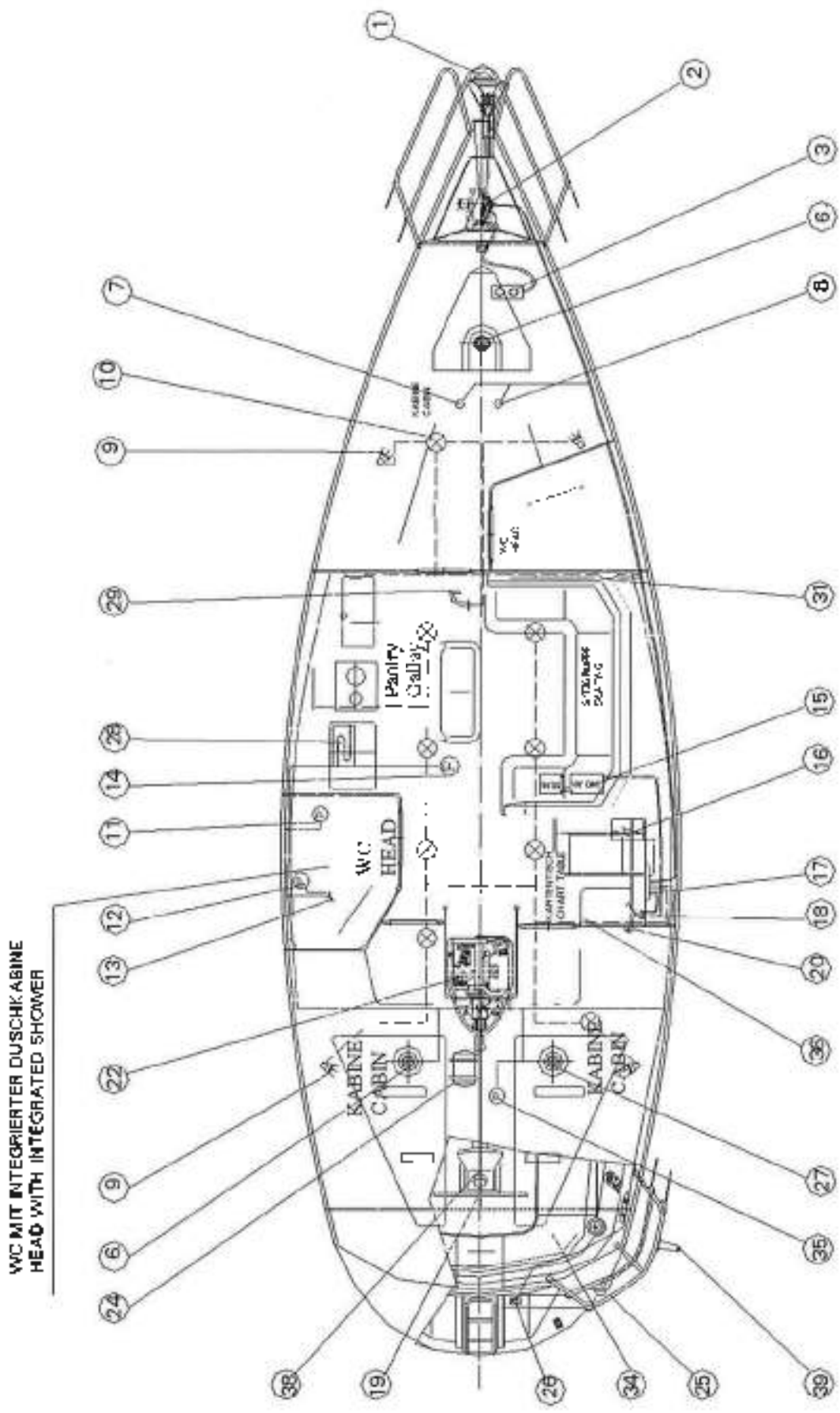
To avoid the danger of a rush of current or fire :

- The shore connection cable must never hang into water.
- Plug the shore connection cable first aboard and then ashore.
- Do not alter plugs of shore connection cables

Disconnecting the shore connection cable:

First disconnect the shore connection cable ashore and then aboard.

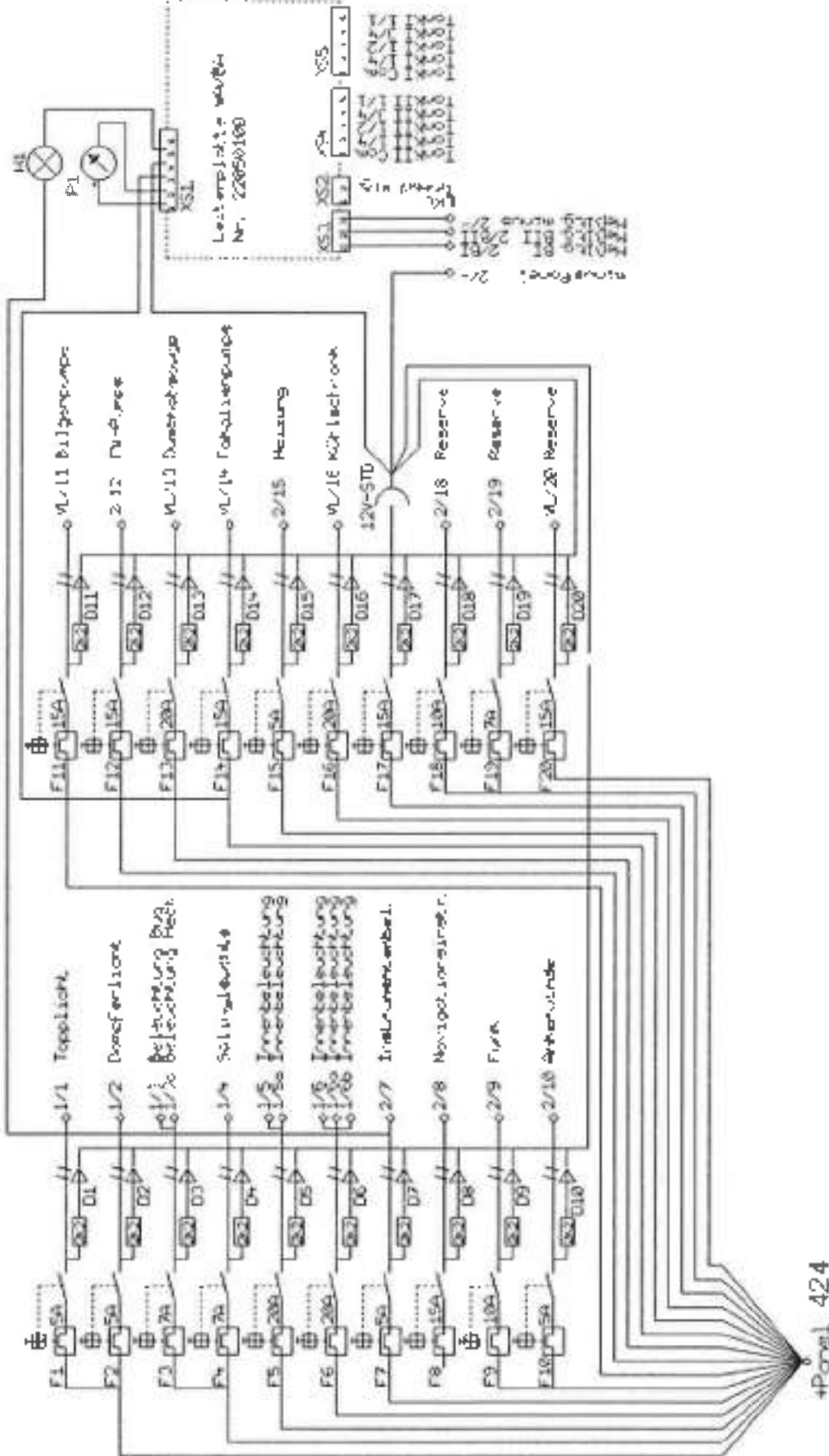
2.5.6 Distribution of electric devices:



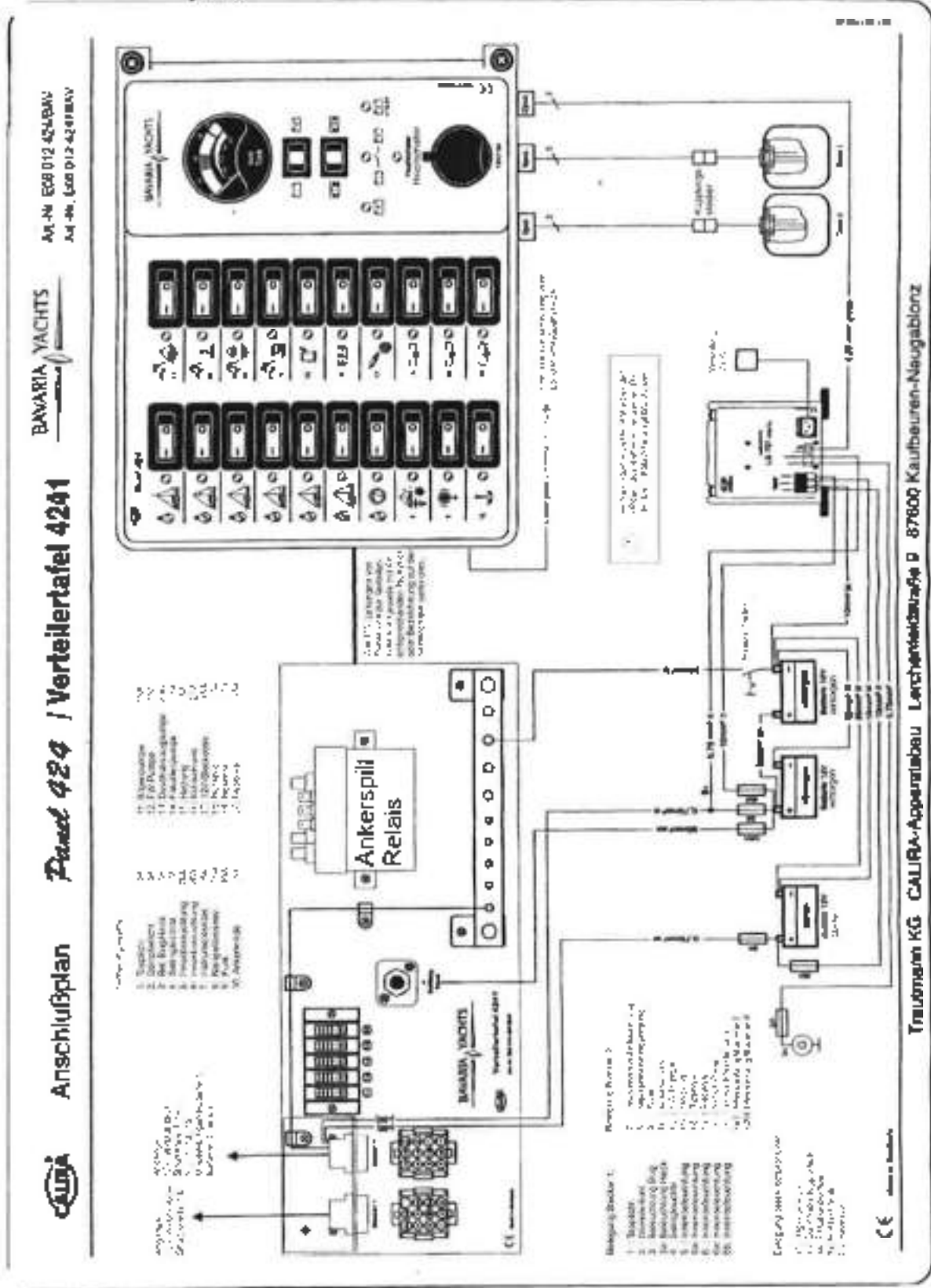
Explanations on the distribution of electric devices

	Description	Beschreibung	Stek. PCS	Kabel / wire Ø
1	motoring light	Zweifachenleuchte	1	2 x 2,5
2	el. windlass	el. Ankerwinde	1	2 x 2,5
3	windlass switch	Ankerwinde-Bedienteil	1	
4				
5				
6	fresh water gauge	Vorratgeber für Frischwassertank	2	5 x 0,75
7	through-hull depth sounder	Echolotgeber	1	
8	through-hull speedometer	Summloggeber	1	
9				
10	ceiling light	Deckenleuchte	10	2 x 2,5
11	fresh water pump	Druckwasserpumpe	1	2 x 2,5
12	shower drain pump (option)	Duschpumpe (Option)	1	2 x 6
13	shower pump switch (option)	Duschpumpenschalter (Option)	1	2 x 6
14	bilge pump	el. Leitzpumpe	1	2 x 6
15	batteries group	Batterie		
	engine battery 55 Ah	Motorstromkreisbatterie 55 Ah	1	95
	board battery 140 Ah	Bordstromkreisbatterie 140 Ah	1	95
16	battery charger (option)	Batterieladegerät (Option)	1	2x10
17	electric panel	Elektropanel	1	
18	main switch	Batteriehaupschalter	1	95
19	auto pilot (option)	Autopilot (Option)	1	2 x 2,5
20	electronic compass (option)	elektronischer Kompass (Option)	1	5 x 0,75
21	instrument repeater	Instrumentenwiederholer	1	
22	engine start	Anlasser	1	95
23				
24	water heater	Boiler	1	3 x 1,5
25	stern light	Heckleuchte	1	2 x 2,5
26	shore pickup 220 V (110 V)	Landanschluß 220 V (110 V)	1	3 x 2,5
27	fuel gauge	Vorratgeber für Kraftstofftank	1	5 x 0,75
28	el. reffridgeration	el. Kühlschrank	1	2 x 6
29	mast lights (navigation light)	Kabeldurchführung	1	4x2,5 + VHF
30				
31	speaker (option)	Lautsprecher (Option)	2	2 x 1,5
32				
33				
34	air heater (option)	Heizungsfühler (Option)	1	2 x 1,5
35	air heater-pump diesel (option)	Heizung Dieselpumpe (Option)	1	2 x 2,5
36	air heater-thermostat (option)	Heizung Thermostat (Option)	1	
37				
38	engine instrument panel	Motorinstrumententafel	1	
39	radio antenna (option)	Antennenkabel (Option)	1	VHF

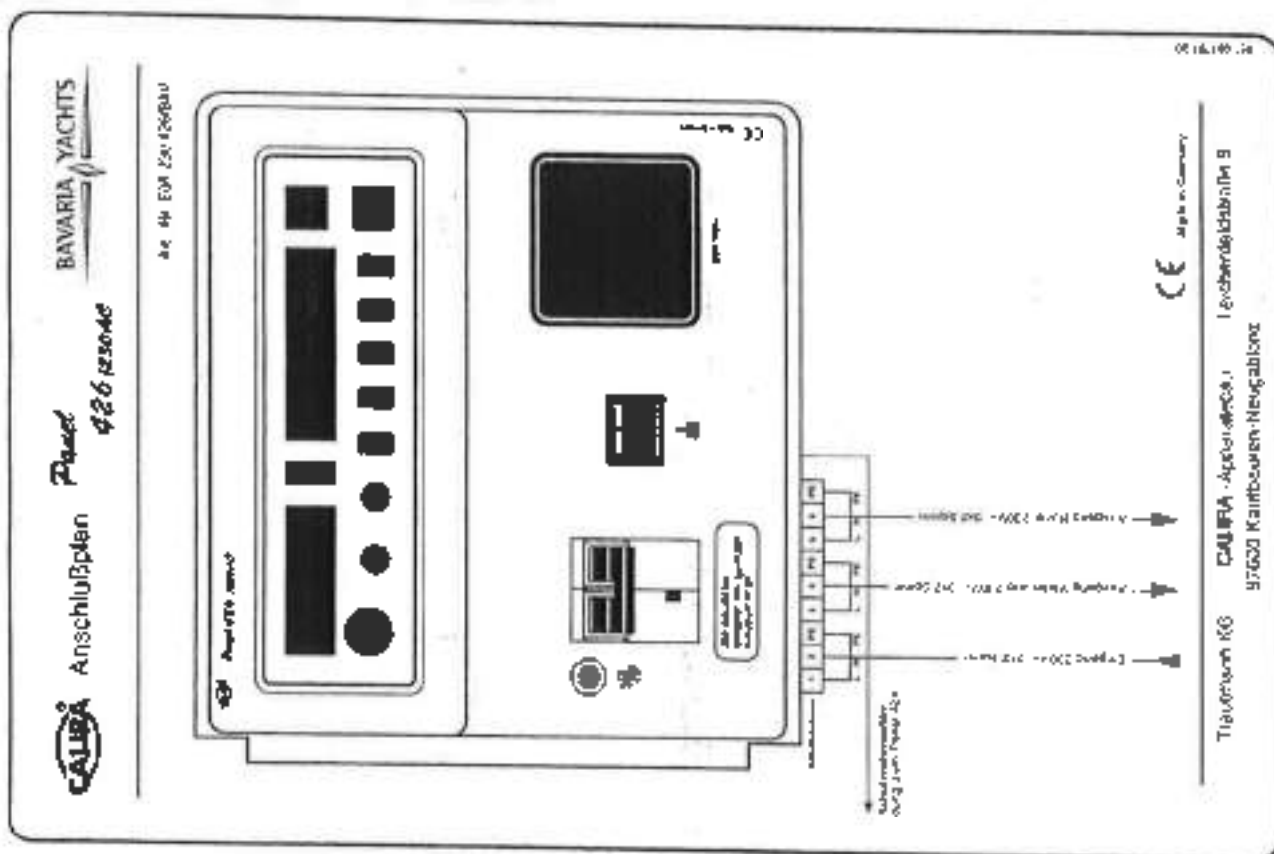
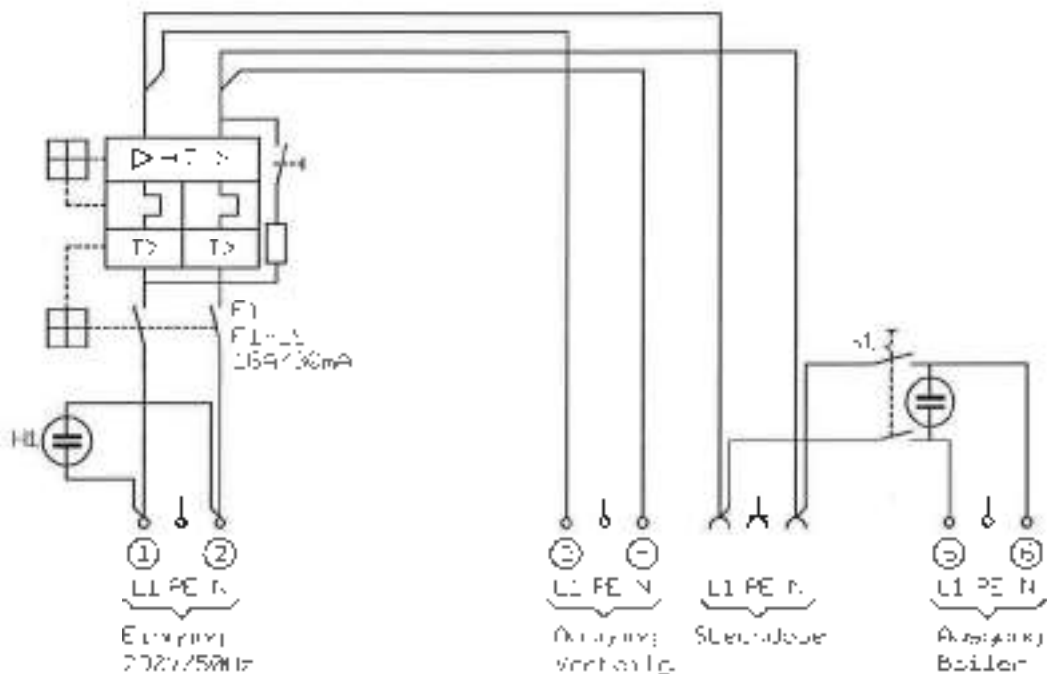
2.5.7 Wiring plans



2.5.8 Distribution plans



2.5.9 AC-distribution



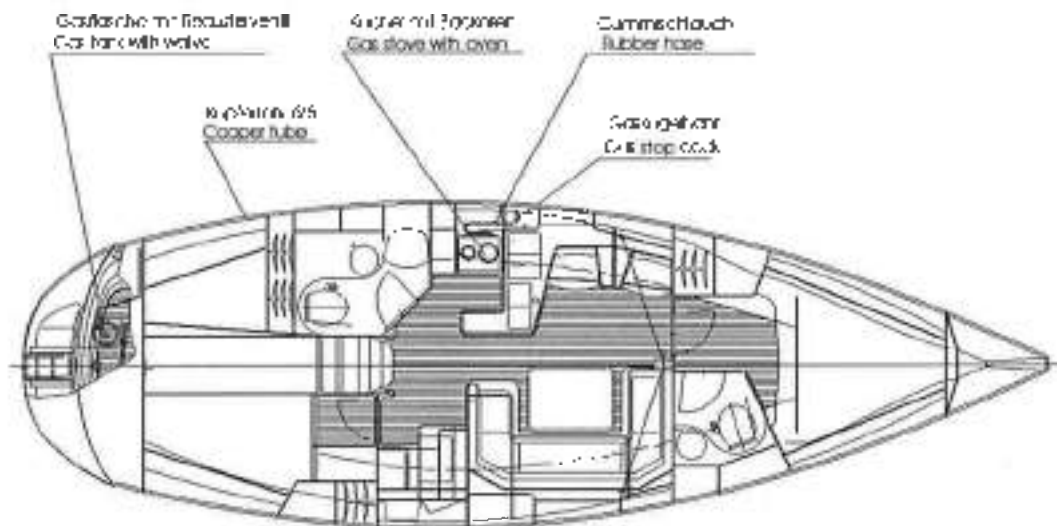
2.6 L.P.G. installation

The gas installation for the stove meets the European norm EN 10239. The test-certificate is attached.

The gas pipe leading to the stove from the standard 3 kg-gas cylinder is an 8 mm copper pipe. It is placed into a self-bailing casing moulded into the deck in the rear cockpit area. All gas pipes have been installed according to the German safety regulations. The best-by date for the soft connection hoses between the gas cylinder and the copper pipe and between copper pipe and stove is printed onto the hoses. They have to be replaced after the expiry date.

The reducing valve in the gas cylinder casing has a service pressure of 30 mbar. The flow rate is 1 kg/h.

2.6.1 The components



2.6.2 Operation

Gas installations require care. That's why you should follow this sequence:



Attention

- Open the stop valve in the gas cylinder casing
- Open the valve before the stove
- Open a stove valve and lighten the gas
- Keep the valve open until the glow timer allows further burning.



Attention

For finishing follow the same (above mentioned) sequence from the valve in the gas cylinder casing to the stove valve to allow all gas in the piping to escape and burn



Attention:

- Do not use liquids containing ammonia for checking the pipe
- Never handle with open light and do not smoke if you look for leakage or if you connect a new gas cylinder.

And here is some more advice on how to prevent difficulties with the gas installation:

- Close all gas valves if the stove is not in use. In a case of emergency you should close the valves immediately.
- The stove valves have to be closed before the gas cylinder valve is opened.
- Check the L.P.G. installation for possible leakages regularly. Check all connections with soap suds or the like (for doing so the stove valves have to be closed – all other valves of the installation have to be open).
- If you find any leakages close all valves and have the installation repaired by a specialist before further use.
- Since the flames consume oxygen a proper airing and deaeration is necessary. Do not use the stove for heating the cabin.
- Valves of empty gas cylinders have to be closed and disconnected from the installation. Have the covers ready.
- Do not use the gas cylinder casing for storing other equipment.
- Never leave your yacht unattended if the stove is in use.
- Check the hose pipes at least once a year. Have them replaced if necessary.
- If you install a new stove make sure that it has got the same working pressure.
- Check the exhaust gas pipes at least once a year. Replace them if they are defective.

2.7 Fire protection

When building the yacht special attention was paid to avoid the risks of fire. This includes the choice of materials, the distance of stove flames to the surrounding built-in furniture and an island position of the engine. The engine room has got a lining with fire resistant insulating material.

As the owner of the yacht you should keep this state and pay attention to the following advice:

Attention:

Keep the bilge clean and check regularly if there is a smell of fuels or gas.

Do not have any freely suspended curtains above or close to the stove or other devices with open fire.

Inflammable material must not be stored in the engine room. If you store non-inflammable materials in the engine room make sure that they are protected against falling into the engine installation or are in the way.

Furthermore you and your crew can support fire protection if you follow the following advice:

Never

- obstruct any exits or hatches.
- alter safety installations like fuel- and gas valves and electric switches and the like.
- leave the yacht unattended if the stove or the heating is in use.

Never

- use gas lights in the yacht.
- fuel the tank or replace gas cylinders if the engine is running or if the stove or heating is used.
- smoke or use open lights while handling with fuel or gas.

The well-known sources of danger on board are

- the stove in the pantry and
- the engine room.

If, despite all precautionary measures, a fire should break out aboard, there are three fire extinguishers on board which are fixed at the following places:

Nr. 1 and 2 : **Powder extinguisher** in the navigational seat, at least fire grade 10A/68B

Nr. 3 : **Powder extinguisher** in the starboard locker seat, at least fire grade 10A/68B

Additionally you should place in the pantry a **light fire retarding cloth**, which is made of glass cloth and is very useful in the case of fire caused by overheat fat.

It is the yacht owner's duty

- to have all fire extinguishers regularly checked and maintained :
- to have fire extinguishers replaced after the expiry date. The same goes if the extinguishers should have been used. The new extinguishers should at least have the same capacity as the discussed ones.

It is the yacht owner's or skipper's duty

to make sure that

- all extinguishers are freely accessible
- to inform all persons on board about:
 - the position and use of all fire extinguishers and the fire retarding cloth,
 - the position and function of the opening for the extinguisher's nozzle in the engine room bulkhead,
 - the exit through the escape hatch above the fore-hatches.



Caution

Test the fire extinguishers regularly!
Train yourself as regards fire fighting
Consider always the seamanlike care duty.

2.8 Anchor-, towing- and warping facilities (option)

Anchor (option)

The bow anchor (plough anchor), abt. 17 kg, hot-galvanised, (as known for its high holding power). It lays ready-to-fall in an anchor stowage device and is secured with a bolt. The chain has a length of 50 m and a nominal thickness of 8 mm. It is run out by an electric anchor windlass (option) operated with a remote control. The remote control is placed in the chain locker before use and its function is activated at the switch board.

Furthermore it is recommendable to have a stern anchor as well as sufficient mooring- and towing lines with the necessary strength on board.

E.g.: 1 stern folding anchor (4-fluke grapnel anchor) , 12 kg, hot-galvanised, fixed at the aft guard-rail. 6m chain forerunner, thickness 8 mm, 34 m polyamide anchor rope, 18 mm, 3-strand hawser laid. It is stored in the port transom seat.

The rope is cleated aft.

2.9 Engine cooling system

Engine cooling

The engine has got a two-circuit cooling system. Water enters through the saildrive, is led to the heat exchanger and then injected into the exhaust gas pipe. Together with the exhaust gas the cooling sea water is exhausted via the silencer and the exhaust pipe at the stern. This guarantees a trouble-free engine operation. Moreover the engine noise is reduced.

All hose connections of the system are secured with double stainless steel clips.



Attention

- Check and clean the sea water filter in regular intervals, depending on the water quality.
- Before starting the engine make sure that the cooling water inlet is open.
- Have a short look into the engine room for possible leakage.
- When the engine is running it is highly recommendable to check regularly if cooling water is escaping with the exhaust gas.

2.10 Exhaust gas system

The yacht is fitted with a "wet" exhaust gas system, i.e. cooling sea water is injected into the exhaust gas elbow causing a cooling of exhaust gases. This mixture is led down into a silencer/water lock, runs through a pipe in the locker seat on the starboard side of the aft cabin, is led upwards at the stern and escapes to the side above the water-line.

The exhaust gas hose consists of a synthetic rubber material with an integrated steel spiral.

The hose is heat-resistant (for some time) and should be checked and replaced if necessary.

A constant flow of sea water has to be guaranteed. The hose is secured at its joints with two clips.

If there is an interruption of the sea water flow, the temperature sensor in the exhaust gas hose will release an visual and acoustic warning. In this event you should stop and switch off the engine immediately until the problem has been settled (see manual of the engine manufacturer).



Attention:

A regular inspection if saltwater comes out of the exhaust, is urgently advisable.

2.11 Ventilation/Airlog

We have taken the following measures for a proper ventilation of all rooms:

Chain locker

A certain ventilation is achieved through the hawser port in the cover of the chain locker and through its bilge holes.

Living cabins/ Salon and forward quarter

one ventilators

Aftcabin

2 side lights /bull's eye showings to the cockpit

Components:

1 deck ventilators, 8 side lights, 8 folding hatches

2.12 Board ducts, sea water valves

Openings below the water line are possible weak spots. That is why we pay special attention to them. All board ducts in the **underwater part**, with the exception of the duct for the transmitter of the echo sounder, consist of **brass-made screwed joints with spherical sea valves and hose nipples**. All hose connections are secured with two clips each. For the cockpit drain special plastic joints are used.



Attention

Close all sea valves if you leave the yacht for a longer time. Valves being not clearly visible, like e.g. in the toilet room, should only be opened for use.

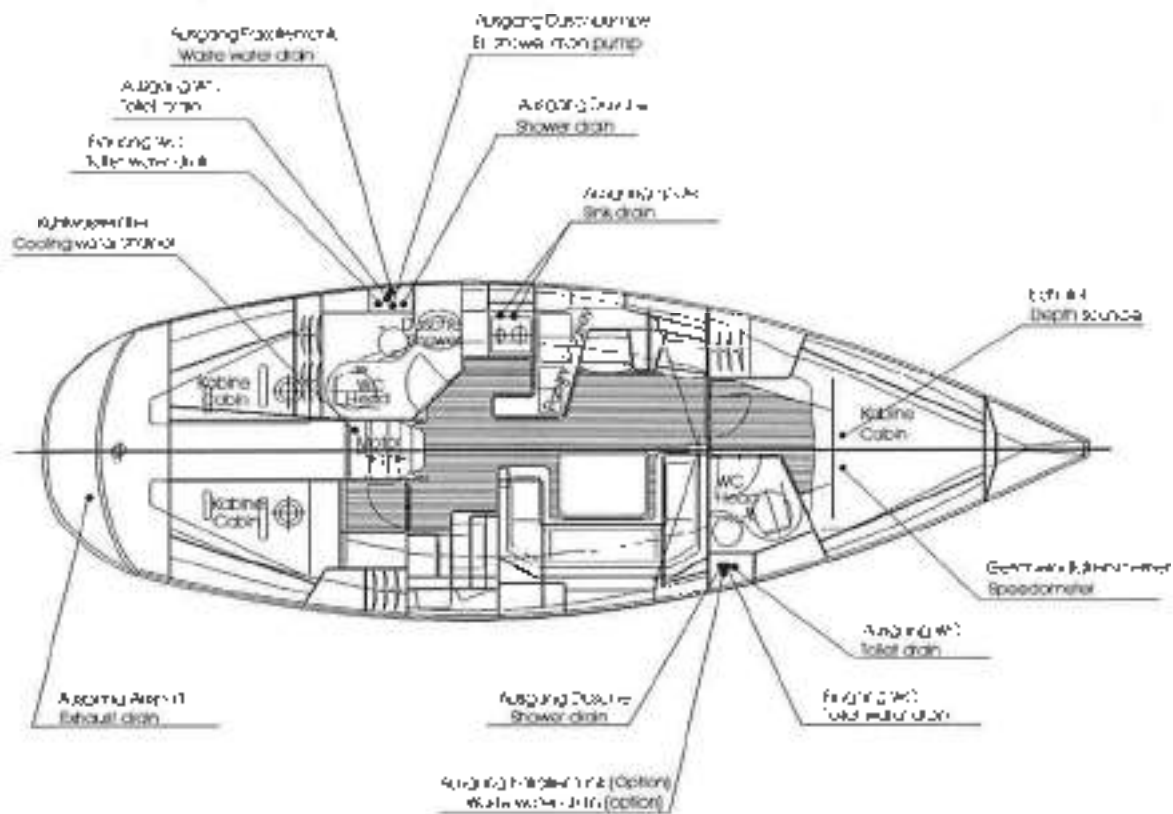
Maintenance note

The tightness of board ducts should be inspected regularly. Check and retighten all hose clips and stuffing boxes of valves if necessary.

Note

In case of spherical valves a transverse lever-direction indicates : CLOSED
And a longitudinal direction means : OPEN

Board ducts:



3. Environmental protection

BAVARIA YACHTBAU has already met the legal requirements referring to exhaust gas regulations with its choice for the inboard diesel installed. An exhaust gas type-examination certificate can be handed in or sent on later.

3.1 Fuel and oil

You should be especially careful when filling the tank. A (wet) cloth around the fuel inlet can prevent fuel from dripping into water. In your engine manual you can also find a diagram with a curve about the specific fuel consumption thus offering you some good hint on the most favourable engine speed.

For a necessary exchange of oil you should use a suction pump, because you cannot drain it off like a car. The oil has to be exchanged at least once a year, even in case of a little operation time of the engine. A well-maintained engine should never leak. But in order to prevent even smallest amounts of oil being discharged overboard with the pumped out bilge water, the engine bed has been designed in form of a closed oil sump. All water from this sump, being possibly mixed with oil, has to be pumped into a separate canister and has to be deposited ashore. In any case there should be oil-binders aboard.

3.2 Waste

For all water sportsmen it goes without saying: waste is not thrown overboard. This is also true for biodegradable waste. There should be a regular waste bag or -bin in a locker seat.

3.3 Sound

The wet exhaust pipe of the diesel engine reduces the engine sound considerably. Additionally rubber bearings, elastic couplings and the engine room insulation minimise sound emissions. Nevertheless you should not turn up the engine too quickly and, please, reduce the engine speed in waters with dense traffic.

3.4 Swell

Natural bank areas are sensitive against swell. Please keep sufficient berth. Formation of waves, caused by your yacht, is an indicator of where and when you should reduce your speed to avoid unnecessary swell. Pay attention to relevant signs.

3.5 Exhaust gas

Check the escaping exhaust gas regularly. The exhaust gas should show neither black smoke nor blue clouds. In such a case you should either clean the air filter or have a repair shop readjusted the engine.

3.6 Antifouling coatings

The underwater part of the hull of each yacht has to be protected with an antifouling coating because marine growth means more energy for propulsion. Today there is a wide range of protective paint with various effects for different bodies of water. Trust the recommendations of specialists for your decision. Coatings that are effective for years without any grinding in between are especially recommendable. But if the coating has to be sanded to some extend you should arrange these activities with the port officials. Generally the ground under the yacht has to be covered with some plastic cloth to collect the rubbed down dust and dispose it.

3.7 Varnish removers

Most varnish removers contain aggressive substances and should not be used or as little as possible. A mechanical removal of paint is the much better way.

4. Maintenance

4.1 Maintenance, cleaning

1. Mast and rigging

See: Notes of the manufacturer

2. Sails

The sails are made of Dacron. This material is very robust and resistant. Thus the sails keep their form for a very long time.

Inspect all your running and standing rigging carefully for sharp edges, splints, protruding ends of wire and the like because laminated cloth is especially sensitive against touching them. Those parts of the cloth that can chafe at spreaders or shrouds should be protected on both sides by sticking self-adhesive cloth to them. The same goes for the foot of the sail if there is the possibility of chafing at the rails.

Note:

- Please remember: Damage to the cloth is mainly caused if it is incorrectly treated or handled. Especially if you let it shake, expose it to UV rays constantly or store it improperly.
- If there are any questions on the cloths do not hesitate to contact the manufacturer or your sailmaker.
- Never remove track cars with ball bearings from the tracks carelessly. Always use sheet tracks with endstops.

Cleaning

Please clean your yacht immediately after you have taken it out of the water. High pressure cleaning devices will remove any growth. This is followed by an upkeeping of the surface of the yacht. All paint manufacturers provide detailed instructions for their coating systems.

For ships sailing in salt waters: remains of salt absorb water and can cause a faster corrosion. Where- and whenever it is possible you should rinse the yacht and parts of it with fresh water.

Care and maintenance of teak decks

Untreated teak weathers to an natural silver-grey color, with no detriment to the timber's strength or other mechanical/physical properties. Because of teak's inherent durability and weather-resistant properties, the use of protective paints or coatings is neither necessary nor advisable.

Practical tips on care and maintenance:

Protective woodcare oils – penetrate deep into the timber, and under the influence of heat and moisture can adversely affect the adhesion of the caulking material to the sides of the joint. As a result, the seal between the caulking material and the sides of the joint may break down, allowing water to enter.

Paints and lacquers are decorative coatings which, when applied to a teak deck, dry to form a continuous film over the caulking material as well. Some paints will not dry properly where they come into contact with the caulking material, leaving the surface tacky. In time most paints will flake away along the line of the joint. This spoils the appearance of the teak deck and causes cracks to open up along the joints.

Teak cleaners should be used only if they contain no other active ingredients apart from normal soap.

Additives such as phosphoric or oxalic acid, which are often incorporated as brighteners, are corrosive substances which attack both the caulking material and the timber, causing them to age rapidly.

We therefore recommend that teak decks be swabbed down with a mop and clean fresh water, to which a small quantity of normal soap may be added if desired. Heavy soiling may be removed by scrubbing with a hard sponge. The use of a power washer is not recommended. The *high-pressure water jet* will remove areas of sapwood and break the seal between the caulking material and the sides of the joint.

In extended periods of hot, dry weather teak decks should be watered at regular intervals to prevent the timber from drying out completely. Excessive loss of moisture will cause the timber to shrink, placing the joints under stress. Under unfavourable conditions this can lead to premature ageing or failure of the joint

seal.

Stainless steel

The firmness of corrosion from all fittings are based on that they will constitute a thin skin together with the air oxident, which will make a positive electrical potential. Specialists call it a CR-passive (CR is standing for chrome). But chrome is in the galvanic contact series negative and a bit less valuable than iron. If the thin protection skin will be damaged the stainless CR will be active and will be less good than pure chrome. The corrosion can start.

Who is not disappointed about little brown spots on the fittings? They are caused by flying rust or particles of iron, which are flying in the air and in all harbours placed near big towns. As soon as the flying rust will set down to the protective coat of the stainless steel, it destroys the CR-passivity, and this goes very aggressive and fast.

Stainless steel only stays good looking for a long time, if there's taken good care of it.

Take it to your habit, if you are washing your boat with clear water, clean also the rail stanchions, pulpits and push pits and all stainless fittings thoroughly too. Clear water will wash away the salt, rust and flying rust, the protective coat will be "ventilated" and it's function is guaranteed again.

If you have already brown spots, you can use most of all available metal cleanings to take care of the stainless steel fittings or you take normal polish like you use it for the hull.

Of course – all the best care can not help, if in the first place the fittings are not made out of the right material or the stainless steel has not been treated correct. Before you will buy the fitting, ask f.e. if the fitting has been polished electrical.

4.2 Wearing- and spare parts

As an experienced skipper you will not have difficulties in getting original spare parts. If you need any help, please contact the yard.

If you need any spare parts but cannot get the original ones you have to pay attention to the stability values to keep the yacht at the high technical standard it used to have at the time of delivery.

4.3 Repair work

In need of repair of the hull you may consult a reliable workshop. The interior construction was designed in such a way that a non-destructive elimination of defects can be realised.

In regard to the technical equipment you may contact a reliable work shop or the shipyard, too.

4.4 Winter storage

We have already given some well-directed advice on winter storage in different paragraphs of this manual. Generally speaking all firms offering winter storage should meet the latest technological standard as far as environmental conditions, storage blocks, fire protection and accessibility of your yacht is concerned. Moreover there should be fixed rules for work, done by the owner himself, to prevent any interference with other sportsmen.

If possible the following objects should be taken from board and stored in a dry and frost-free place:

- Ship's papers and other relevant documents
- Charts, books and instruments
- Mattresses, upholstery, blankets and sleeping bags
- Sails and lines/ropes
- Foodstuffs
- Gas cylinders
- Safety equipment
- Life raft and rubber dinghy
- Batteries

Advice:

Before wintering you should pay special attention to the following parts and protect them correspondingly:

- Rinse and clean the transmitters of the speedometer and echo sounder.
- Maintain the electrical systems and clean them with suitable materials.
- Water pipes can be successfully cleaned with soft acids, e.g. white vinegar.
- Water valves should be taken to pieces and greased
- The toilet and corresponding pipes are cleaned with fresh water.
- The rudder should be fixed that no movements are possible (e.g. by fixing the tiller or wheel).

Engine:

- Fill the fuel tank completely
- Exchange the propeller's sacrificial anode (if necessary).
- Empty all cooling-water of the engine and follow the instructions of the manufacturer.
- Slacken all belts (lighting engine and other engine driven devices).

Winter storage

Observe all notes in the engine manual.

- Store the fully charged batteries at a ventilated frost-free place.
- Grease the steering wire and components
- Remove all water out of the ship and protect it against rainwater entering it.
- Replace all components which seem not to be reliable any longer.

Mast and rigging

It may not always be possible, but it is recommendable:

- Unship the mast.
- Refit all standing and running rigging.
- Inspect the cables and other wires.
- Inspect bolts, spanners and other tie points for possible fatigue of material or cracks.
- Rinse all aluminium parts with fresh water
- Rinse all lines/topes with fresh water and store them in a dry place.
- Rinse and grease all guide rollers of the mast and the boom.

5. Final remarks and notes

This manual is in conformity with the directives of the harmonised European Norm EN 10240. Much of it might go without saying for you. Nevertheless we hope, that dealing with the different chapters of this manual will help you to understand the technical systems and the ideas behind them. As already mentioned in the introduction, the purpose of this manual is to contribute to an unspoilt use of the yacht.

Among the things that are not dealt with are e.g. the personal safety equipment. This solely belongs to the responsibilities of the skipper. It goes without saying that there have to be means of rescue for all persons on board. But this also includes the procurement and maintenance of a life raft, of signalling means, a first-aid- as well as a tool-kit.

Since the European Recreational Craft Directive pays special attention to fire protection it shall also be mentioned, that fire extinguishers have to be maintained in regular intervals and that it belongs to the duties of a skipper to introduce his crew into their operation.

Those being prepared for an emergency are normally never involved. But just in case: the yacht is properly equipped for those situations with suitable means.

We are constantly working on further developments of our sailing yachts. We hope you will understand that we have to reserve the right to carry out changes as far as form, equipment and technology is concerned. For these reasons you cannot lay claim to a complete correspondence of your yacht with the information, figures and descriptions in this manual.

If your yacht should be equipped with any details not being referred to in this manual or in the owner's file, your party to the contract will inform you about the correct operation and maintenance.

Since all yachts, manufactured by **BAVARIA Yachtbau GmbH**, are exclusively sold by official dealers there is no contractual relationship between the yard and the customer/owner.

Thus **BAVARIA Yachtbau GmbH** is not familiar with details of the contract between the dealer and the customer. That's why it is not urgently necessary that your party to the contract takes over the full extent of our warranty conditions.

So, if you have to make a claim it is unavoidable to contact your party to the contract.

6. List of manuals supplied

- manual with declaration of conformity
- engine assurance board with corresponding operating instruction
- gas test document with corresponding working instruction
- release checklist
- leaflets and description of production work
- working instructions:
 - hand operated bilge pump
 - compass
 - bilge pump
 - WC-instruction
 - elapsed-time indicator

Proof of identity

(to be completed by the dealer or party to the contract)

1. First launch :
2. Date of delivery to the owner:
3. Type of boat:
4. Hull identification number:
5. Commission number:
6. Name of the yacht:
7. Manufacture and type of engine:
8. Engine number.
9. Gear (manufacture, type, gear ratio):
10. Propeller (manufacture, type, dim.):
11. Dealer, representative (name/address):
-
-
-
12. Signature/stamp dealer:

Please return signed to:

(address of the dealer)

Acknowledgement of receipt	
Name:	
Address:	
Owner of the yacht	<i>BAVARIA 40</i> HIN DE-BAYR40 _____
Signature:	_____

