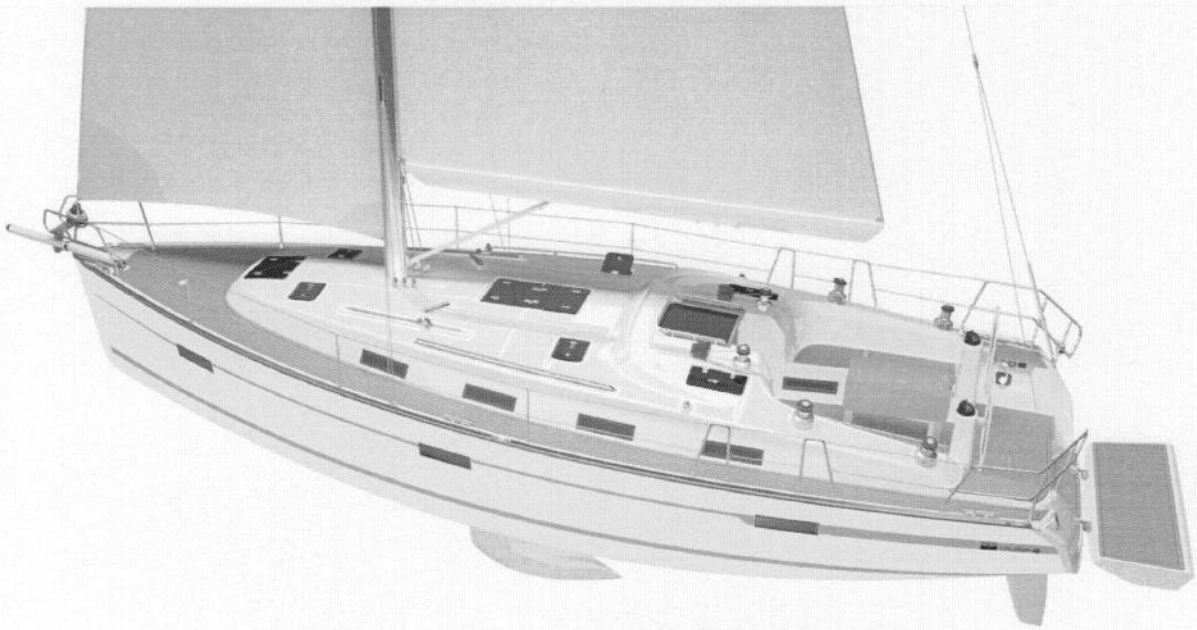
Manual for owners and skippers



Sailing yacht „BAVARIA Cruiser 40“

BAVARIA

Bavaria Yachtbau GmbH • Bavariastr. 1 • D – 97232 Giebelstadt
Tel.: +49 (0) 9334 942 – 0; Fax: +49 (0)9334 942 – 1160
email : info@bavaria-yachtbau.com

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Introduction

This manual will help you to handle your yacht safely and with joy. Apart from information on the boat itself and supplied equipment or installed accessories the manual also contains information on operation and maintenance. Please familiarise yourself with everything before going on your first voyage.

If this is your first sailing yacht, or if you are not really familiar with the special characteristics of a keel yacht, for your own safety and comfort, please make sure to get proper training before putting it into operation. Do not hesitate to contact your dealer for information on further training possibilities.

As the scope of delivery may vary depending on the order the equipment of your yacht may deviate from some descriptions and illustrations. To be able to constantly upgrade our yachts to state-of-the-art status we reserve the right to changes in form, equipment and technology. For that reason no claims can be derived from data, illustrations and descriptions contained 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.

We do wish you a safe journey at all times and may there always be enough water beneath your keel.

BAVARIA Yachtbau GmbH
Management

J. Ludmann

Category of design

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

Your sailing yacht "Cruiser 40 " has been assigned the Design Category A / B:

'A' OCEAN: Designed for extended voyages where conditions may exceed wind force 8 (Beaufort scale) and significant wave heights of 4 m and above but excluding abnormal conditions, and vessels largely self-sufficient.

'B' OFFSHORE: Designed for offshore voyages where conditions of up to, and including, wind force 8 (Beaufort scale) and significant wave heights up to, and including, 4 m may be experienced.

Certification

For yachts with a length of less than 12m hull length the EC-Directive intends the certification module **Aa.**

For yachts with a length of more than 12m hull length the EC-Directive intends the certification module B+C.

Germanischer Lloyd, headquartered in Hamburg, was authorised to do the necessary certification 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.

Builder's plate

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

Explanations

Category of design A / B : Ocean/ Offshore

Max. =8 / 14 : Maximum number of persons recommended by the manufacturer for which the boat was designed to carry when under way.

Max + = 1000 kg / 1408 kg : Maximum additional loading including 8/14 persons, stores, provisions and personal equipment (excluding tank capacities).

CE : CE marking which indicates the conformity of the yacht with all provisions of the Directive.

Warnings

Many chapters of this manual will inform on trouble free operation, maintenance or draw your attention to signs of dangers. To find them more easily they are specially 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.

Always observe seaman's duty of care!

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 a reminder of safety measures or draws the attention to procedures, which might be not safe or lead to personal injuries or damage of the vessel or its components.

Security Advice

Attention!
From wind force 6 the hatch in the cab entrance is to be closed.

Attention!
Starting from wind force 6 the cab windows in the cockpit are to be closed.

Attention!
Make yourself and your crew familiar with the bath platform. It makes the re-entrance possible! Danger of pinching!
Maximum capacity 150 kg

Attention!
Turn off the engine before using the bathing ladder!

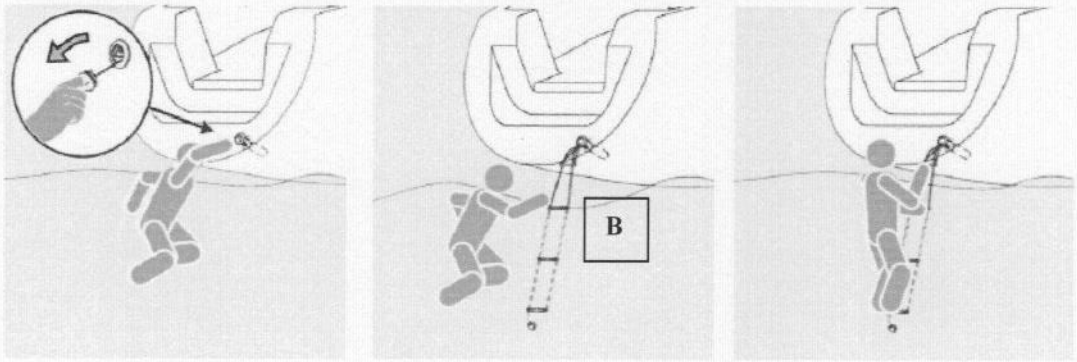
Attention!
When loading of the vessel you must never exceed the maximum recommended load. Always load with the weight distributed appropriately to the designed trim. Heavy loads must be placed as low as possible.

Attention!
The maximum recommended number of passenger must not be exceeded. Regardless of the number of persons on board the total weight of people and equipment shall never exceed the recommended maximum load capacity.

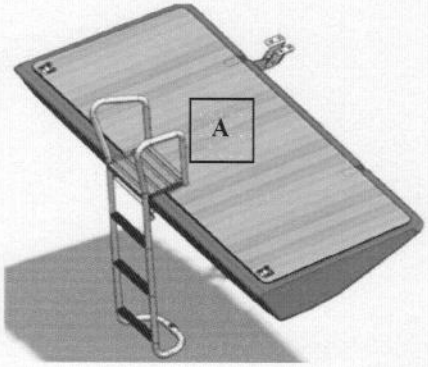
Attention!
Loose equipment (e.g. fender, mooring lines, etc.)should be stowed away securely before departure.

Attention!
Any change in the distribution of the mass on Board (such as attaching a fishing mast, a radar or davits) can affect the stability, the trim and the characteristics of the vessel significantly.
The transverse stability is reduced by any elevated weight.
The transverse stability can be reduced by pulling or lifting heavy loads with the davit.
Breaking waves represent a significant threat to stability.

Attention!
The swim ladder **A** or emergency ladder **B** is intended as a means of rescue for man over Board accidents.



Warning!
The re-boarding device cannot be deployed from the water.
It should be deployed whenever the craft is used singlehanded-whether anchored, moored or under way.



Declaration of Conformity of Recreational Craft with the Design, Construction and Noise Emission requirements of Directive 94/25/EC as amended by Directive 2003/44/EC

(To be completed by boat builder)

Name of craft manufacturer: Bavaria Yachtbau GmbH
Address: Bavariastr. 1
Town: Giebelstadt **Post Code:** 97232 **Country:** DE

Name of Authorised Representative (if applicable): _____
Address: _____
Town: _____ **Post Code:** _____ **Country:** _____

Name of Notified Body for design and construction assessment (if applicable): Germanischer Lloyd SE
Address: Brooktorkai 18
Town: Hamburg **Post Code:** 20457 **Country:** DE **ID Number:** 0098
ECtype-examination Certificate number: 88011236-1+88011236/2-1 **Date:** (yr/month/day) 2011 / 04 / 08

Name of Notified Body for noise emission assessment (if applicable): TÜV SÜD Product Service GmbH
Address: Ridlerstrasse 65
Town: München **Post Code:** 80339 **Country:** DE **ID Number:** 0123

Module used for construction assessment: ☐A ☒Aa ☐B+C ☐B+D ☐B+E ☐B+F ☐G ☐H
Module used for noise emission assessment: ☐A ☐Aa ☐G ☒H
Other Community Directives applied: _____

DESCRIPTION OF CRAFT

Craft Identification Number | D | E | B | A | V | B | 4 | 0 | H | 9 | B | 3 | 1 | 3 |

Brand name of the craft: Bavaria **Type or number:** Cruiser 40

Type of craft:
☒sailboat ☐motorboat
☐inflatable
☐other (specify): _____

Type of hull:
☒monohull ☐multihull
☐other (specify): _____

Construction material:
☐aluminium, aluminium alloys ☒plastic, fiber reinforced plastic
☐steel, steel alloys ☐wood
☐other (specify): _____

Maximum Design Category: A☒ B☒ C☐ D☐
Engine power: Max. Recommended: 41 kW, Installed: 29 kW (if applicable)
Length of hull L_h: 11,99m **Beam of hull B_h:** 3,96m
Draught T: Cat A 1,65 / 2,05 m, **Cat B** Kat B: 1,712 / 2,106 m

Type of main Propulsion:
☒sails ☐petrol engine
☒diesel engine ☐electric motor
☐oars
☐other (specify): _____

Type of engine:
☐outboard ☒inboard
☐z or sterndrive without integral exhaust
☐z or sterndrive with integral exhaust
☐other (specify): _____

Deck
☒fully decked ☐partly decked
☐open
☐other (specify): _____

This declaration of conformity is issued under the sole responsibility of the manufacturer. I declare on behalf of the craft manufacturer that the craft mentioned above complies with all applicable essential requirements in the way specified (and is in conformity with the type for which above mentioned EC type examination certificate has been issued) – delete text between brackets if no EC type examination certificate has been issued.

Name and function: J. Ludmann (Manager)
(identification of the person empowered to sign on behalf of the manufacturer or his authorised representative)

Signature and title: _____
(or an equivalent marking)

Giebelstadt, 2013/01/09

Essential requirements (reference to relevant articles in Annex IA & IC of the Directive)	Standards	Other normative document/ methods	Technical file	
General requirements (2)				
Hull Identification Number – HIN (2.1)	☒			EN ISO 10087:2006
Builder's Plate (2.2)	☒	☐	☐	EN ISO 14945:2004/AC:2005
Protection from falling overboard and means of reboarding (2.3)	☒	☐	☐	EN ISO 15085:2003/AC:2009
Owner's manual (2.5)	☒	☐	☐	EN ISO 10240:2004
Integrity and stuctural requirements (3)				
Structure (3.1)	☒	☐	☐	EN ISO 12215-1:2000 EN ISO 12215 Teil 2-4:2002 EN ISO 12215 Teil 5+6:2008 EN ISO 12215 Teil8:2009/AC:2010
Stability and freeboard (3.2)	☒	☐	☐	EN ISO 12217 – 2:2002
Buoyancy and floatation (3.3)	☒	☐	☐	EN ISO 12217 – 2:2002
Openings in hull, deck and superstructure (3.4)	☒	☐	☐	EN ISO 12216:2002 EN ISO 9093 – 1:1997
Flooding (3.5)	☒	☐	☐	EN ISO 11812:2001 EN ISO 8849:2003 EN ISO15083:2003
Manufacturer's maximum recommended load (3.6)	☒	☐	☐	EN ISO 14946:2001/AC:2005
Liferaft stowage (3.7)	☐	☒	☐	Annex I 94/25EG-2003/44EG
Anchoring, mooring and towing (3.9)	☒	☐	☐	EN ISO 15084:2003
Handling characteristics (4)	☐	☐	☐	
Engines and engine spaces (5.1)	☒			EN ISO 16147:2002
Inboard engine (5.1.1)	☒	☐	☐	EN ISO 9094-1:2003 EN ISO 7840:2004 EN ISO 10088:2001 EN ISO 10133:2000
Ventilation (5.1.2)	☒	☐	☐	EN ISO 11105: 1997
Fuel system (5.2)				
General – fuel system (5.2.1)	☒	☐	☐	EN ISO 10088:2001 EN ISO 7840:2004 EN ISO 9094-1:2003
Fuel tanks (5.2.2)	☒	☐	☐	EN ISO 10088:2001 EN ISO 7840:2004 EN ISO 9094-1:2003
Electrical systems (5.3)	☒	☐	☐	EN ISO 10133:2000 EN ISO 13297:2000
Steering systems (5.4)				
General – steering system (5.4.1)	☒	☐	☐	EN ISO 13929:2001 EN ISO 8847:2004/AC:2005
Emergency arrangements (5.4.2)	☐	☐	☒	
Gas systems (5.5)	☒	☐	☐	EN ISO 10239:2008
Fire protection (5.6)				
General – fire protection (5.6.1)	☒	☐	☐	EN ISO 9094-1:2003 EN ISO 12216:2002
Fire-fighting equipment (5.6.2)	☒	☐	☐	EN ISO 9094-1:2003
Navigation lights (5.7)	☐	☐	☒	COLREG/CEVNI
Discharge prevention (5.8)	☒	☐	☐	EN ISO 8099:2000
Annex I.B – Exhaust Emissions	see the Declaration of Conformity of the engine manufacturer			
Annex I.C – Noise Emissions	see the Declaration of Conformity			

Examination Report

on examination subject to the Directive for Recreational Craft (94/25/EC), amended by 2003/44/EC, as per June 2003

Record-No.:	**88011236-1**
Manufacturer:	Bavaria Yachtbau GmbH Bavariastraße 1 97232 Giebelstadt
Manufacturer's marking:	Bavaria Cruiser 40
Description:	Sailing Yacht, L_H = 11,99 m, B_H = 3,96 m, $T_{Deep\ Draft}$ = 2,05 m, $T_{Shallow\ Draft}$ = 1,65 m
Boat design category:	A - "Ocean"
Module:	Aa - „Internal production control plus tests", Annex VI of the Directive
CE Marking:	CE marking
Basis of examination:	EN ISO 12217-2
Number of persons recommended:	8
Loaded displacement mass (mLDC), kg:	11227 (Deep keel), 11404 (Shallow keel)
Maximum load (mMTL), kg:	2409
Maximum rated engine power, kW:	41

Results of examination:

The product described above meets the essential safety requirements of Directive 94/25/EC, amended by 2003/44/EC, Annex I

A.3.2 Stability and freeboard
A.3.3 Buoyancy and floatability.

Other documentation:

Examination reports Nos. 7/29 and 8/29 dated 28.06.2010 Ref. No. 10-068238/Tbo including pertinent design documents.

Hamburg, 2011-04-08

Germanischer Lloyd
EU-Certification for Recreational Craft
Code-No. 0098
Head of Certification Body

(Dirk Brügge)

Examination Report

on examination subject to the Directive for Recreational Craft (94/25/EC), amended by 2003/44/EC, as per June 2003

Record-No.:	**88011236/2-1**
Manufacturer:	Bavaria Yachtbau GmbH Bavariastraße 1 97232 Giebelstadt
Manufacturer's marking:	Bavaria Cruiser 40
Description:	Sailing Yacht, L_H = 11,99 m, B_H = 3,96 m $T_{deep\ keel}$ = 2,106 m $T_{shallow\ keel}$ = 1,712 m
Boat design category:	B - "Offshore"
Module:	Aa - „Internal production control plus tests", Annex VI of the Directive
CE Marking:	CE marking
Basis of examination:	EN ISO 12217-2
Number of persons recommended:	14
Loaded displacement mass (mLDC), kg:	11635 (Deep keel), 11812 (Shallow keel)
Maximum load (mMTL), kg:	2817
Maximum rated engine power, kW:	41

Results of examination:

The product described above meets the essential safety requirements of Directive 94/25/EC, amended by 2003/44/EC, Annex I

A.3.2 Stability and freeboard
A.3.3 Buoyancy and floatability.

Other documentation:

Examination reports Nos. 7/29 and 8/29 dated 2011-03-02 Ref. No. 11-025523/Tbo including pertinent design documents.

Hamburg, 2011-04-08

Germanischer Lloyd
EU-Certification for Recreational Craft
Code-No. 0098
Head of Certification Body

(Dirk Brügge)

VOLVO PENTA

Declaration of Conformity for Recreational Craft Propulsion Engines with the exhaust emission requirements of Directive 94/25/EC as amended by 2003/44/EC

D1, D2

Engine manufacturer:

AB Volvo Penta
Gropegårdsgatan
405 08 Göteborg
Sweden

Body for exhaust emission assessment:

TÜV SÜD Product Service Gmbh
Ridlerstrasse 65
80339 München
Germany
ID Number: 0123

Modules used for exhaust emission assessment ..... B + C
Other Community Directives applied ..... EMC 89/336/EEC

Description of engine(s) and essential requirements

Engine Type ..... 4 stroke diesel engine

Engine model(s) covered by this declaration	**EC Type certificate number**
D1-13	SB5 08 07 66019 005
D1-20	SB5 08 07 66019 005
D1-30	SB5 08 07 66019 006
D2-40	SB5 08 07 66019 006

Essential requirements	**Standards Used**	**Other normative document used**
Annex I.B – Exhaust Emissions		
Engine identification	Volvo Penta std	Annex 1.B.1
Exhaust emission requirements	EN ISO 8178	Annex 1.B.2
Durability	Volvo Penta std	Annex 1.B.3
Operator's manual	ISO 10240:2004	Annex 1.B.4
EMC Directive	EN 61000-3-2, EN 61000-3-3, CISPR 25	

This declaration of conformity is issued under the sole responsibility of the manufacturer. I declare on behalf of the engine manufacturer that the engine(s) will meet the requirements of above mentioned directives when installed in a recreational craft, in accordance with the engine manufacturer's supplied instructions and that this (these) engine(s) must not be put into service until the recreational craft into which it is (they are) to be installed has been declared in conformity with the relevant provisions of the above mentioned Directives.

Name and function: Tom Tveitan Product Liability
(identification of the person empowered to sign on behalf of the engine manufacturer or his authorised representative)

Signature and title:
(or an equivalent marking)

Date and place of issue: (yr/month/day) 2008/08/29 Göteborg

PL-103/08, issue 01

VOLVO PENTA

Declaration of Conformity for Recreational Craft Propulsion Engines with the exhaust emission requirements of Directive 94/25/EC as amended by 2003/44/EC

D2

Engine manufacturer:
AB Volvo Penta
Gropegårdsgatan
405 08 Göteborg
Sweden

Body for exhaust emission assessment:
TÜV SÜD Product Service Gmbh
Ridlerstrasse 65
80339 München
Germany
ID Number: 0123

Module used for exhaust emission assessment ..... B + C
Other Community Directives applied ..... EMC 89/336/EEC

Description of engine(s) and essential requirements

Engine Type ..... 4 stroke diesel engine

Engine model(s) covered by this declaration	**EC Type certificate number**
D2-55	SB5 08 07 66019 007
D2-75	SB5 08 07 66019 008

Essential requirements	**Standards Used**	**Other normative document used**
Annex I.B – Exhaust Emissions		
Engine identification	Volvo Penta std	Annex 1.B.1
Exhaust emission requirements	EN ISO 8178	Annex 1.B.2
Durability	Volvo Penta std	Annex 1.B.3
Operator's manual	ISO 10240:2004	Annex 1.B.4
EMC Directive	EN 61000-3-2, EN 61000-3-3, CISPR 25	

This declaration of conformity is issued under the sole responsibility of the manufacturer. I declare on behalf of the engine manufacturer that the engine(s) will meet the requirements of above mentioned directives when installed in a recreational craft, in accordance with the engine manufacturer's supplied instructions and that this (these) engine(s) must not be put into service until the recreational craft into which it is (they are) to be installed has been declared in conformity with the relevant provisions of the above mentioned Directives.

Name and function: Tom Tveitan, Product Liability
(identification of the person empowered to sign on behalf of the engine manufacturer or his authorised representative)

Signature and title:
(or an equivalent marking)

Date and place of issue: (yr/month/day) 2008/08/29 Göteborg

PL-104/08, issue 01

1. Description of the yacht

1.1 Main particulars

1.1.1 Principal dimensions

Length overall	L_{OA}	12.35 m	Length of hull	L_H	11.99 m
Length on waterline	L_W	10.75 m	Breadth max.	B_{max}	3.99 m
Draught - normal keel	D_{max}	abt 1.65 m	Draught - leadkeel	D_{max}	abt 2.05 m
Headroom (without antenna and similar things) *				H_D	abt. 18.67 m
Headroom (for transport)				H_T	abt. 4.00 m

*The air draft may well be the critical dimension if we look at passing under bridges or high voltage electrical lines or other items. This dimension denoted the distance between the water surface and the top of the boat and its superstructures. Please note that this is give without optional equipment such as radar antennas or navigation lights or wind indicators. Please do correct the dimension given in this manual if you change anything that reflects on that dimension. Please note this change in this owner's manual and make sure this note is also transferred into any other copy of this manual together with the date.

1.1.2 Displacement and weights

Weight of the empty yacht -incl. safety equipment, normal keel		M_{LCC}	8.995 kg
Weight of the empty yacht -incl. safety equipment, deep keel		M_{LCC}	8.818 kg
Weight of the fully equipped yacht- ready for sailing with crew, normal keel	(Cat A)	M_{LDM}	11.404 kg
Weight of the fully equipped yacht- ready for sailing with crew, normal keel	(Cat B)	M_{LDM}	11. 812 kg
Weight of the fully equipped yacht- ready for sailing with crew, deep keel	(Cat A)	M_{LDM}	11.227 kg
Weight of the fully equipped yacht- ready for sailing with crew, deep keel	(Cat B)	M_{LDM}	11. 635 kg
Ballast, normal keel (Including pins)		$M_{Ballast}$	2.736 kg
Ballast, deep keel (Including pins)		$M_{Ballast}$	2.557 kg

1.1.3 Motorisation

Diesel engine:	Volvo; Type: D1-30, 20.9 kW; D2-40, 29.1 kW; D2-55, 41 kW
Cooling:	indirect (sea-/fresh-water)
Reverse-reduction gear:	Saildrive 130 S reduction ratio 2.19 : 1
Propeller:	3-bladed fixed propeller, aluminium alloy (option: folded propeller)

1.1.4 Electrical installation

220/110 V (option) AC-installation

Shore connection	socket CEE-plug	current operated 230 V earthed socket
Battery charger	115V/ 230 V AC / 12 V DC with 25 A max. current (option)	

12 V DC-system

1 x engine battery 12 V 55 Ah	1 x bord battery (option 2 x) 12 V 135 Ah
Motor generator (alternator)	battery charger

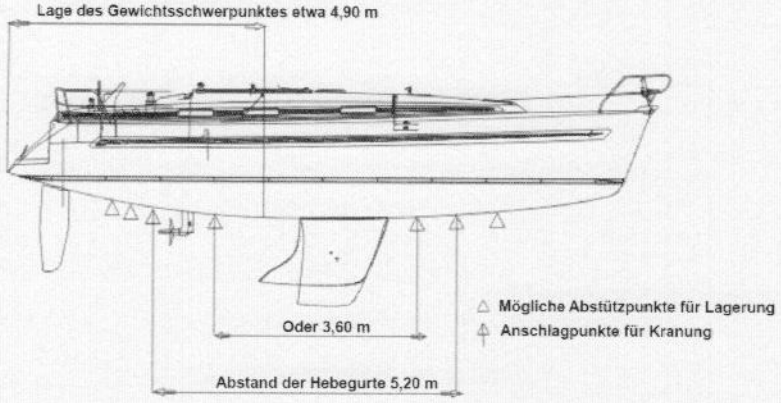
The distribution is effected via switchboard, electric circuits with electronic protective switches and LED.

1.1.5 Tank capacities

1 fresh water tank	abt 210 l	on port side below the aftcabin berth.
1 fuel	abt 210 l	on starboard side below the aftcabin berth.
1 fresh water	abt 150 l	into the bow (option)
1 holding tank I	abt 75 l	in the foredeck toilet
1 holding tank II	abt 75 l	in the aft toilet
1 gas cylinder (option)	abt 3 kg (Butane)	in cockpit

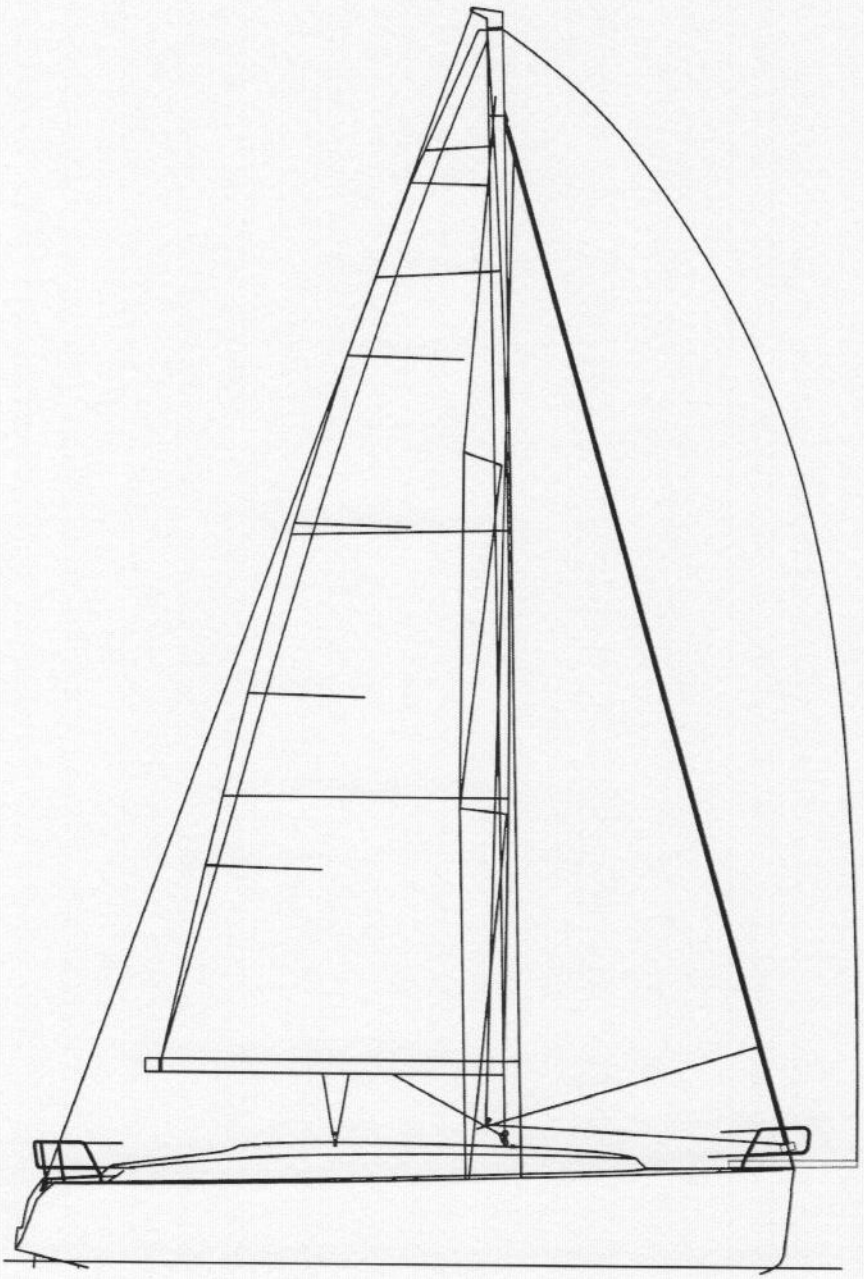
1.1.6 Fixing points for cranes, resting-points for slipping and transport

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



1.2 General arrangement plan

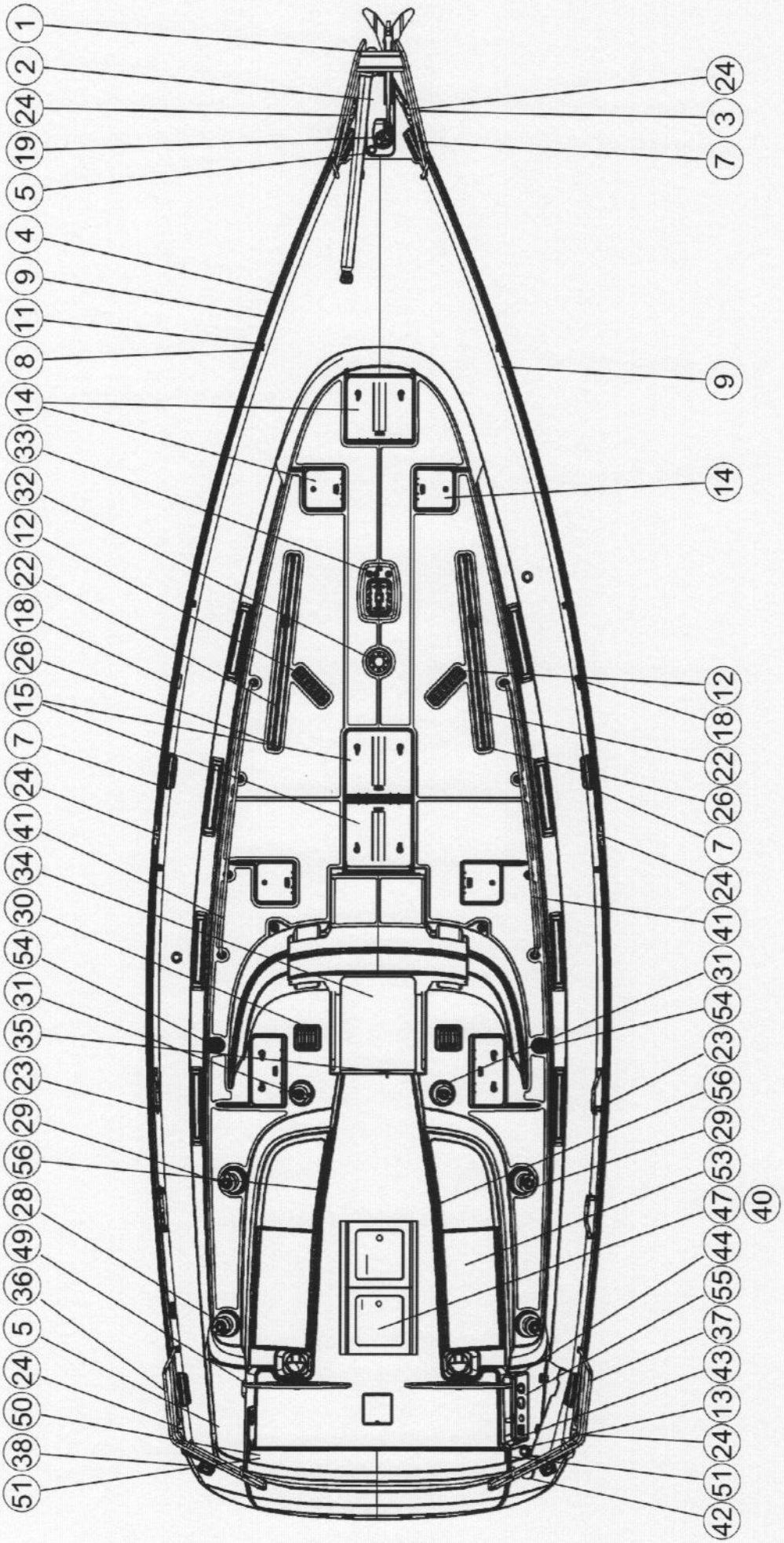
1.2.1 Rigging plan



Note
The valid measurement of the foresail reefing gear is on the instruction leaflet at the carton of the Furlex-foresail reefing gear.

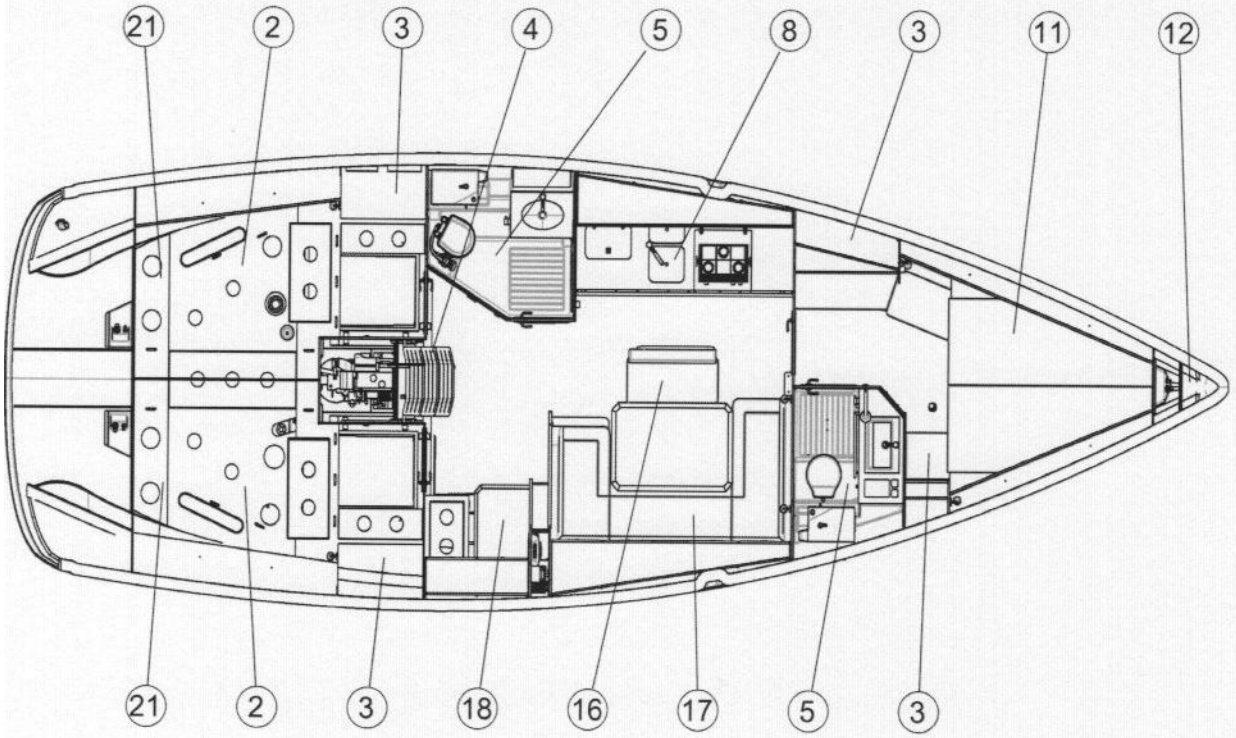
	Minimum operating condition (m_{MOC}) Flatkeel / Deepkeel	**Loaded displacement condition (m_{LDM})** Flatkeel / Deepkeel
STIX	34,42 / 35,26	34,06 / 34,87
Angle of vanishing (degree)	117° / 118°	115° / 116 °

1.2.2 Deck arrangement



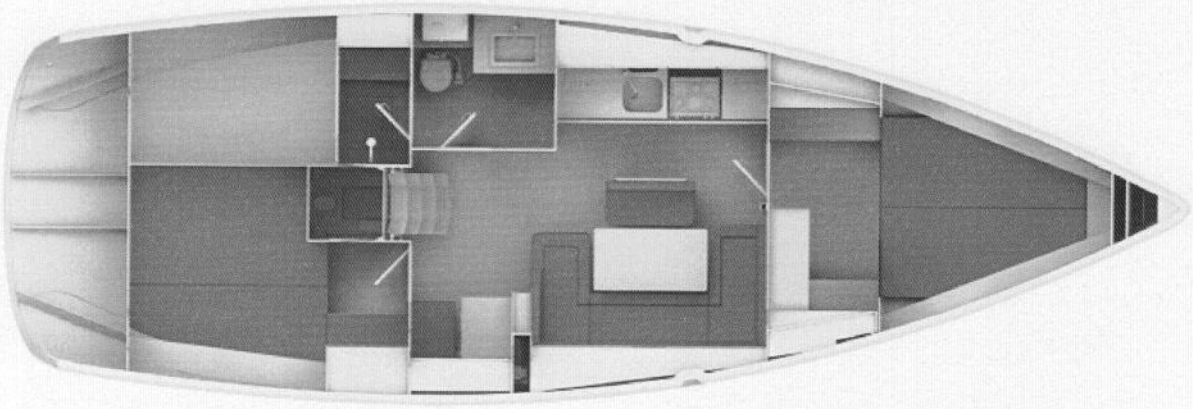
1	Bow navigation light	Zweifarbenleuchte
2	Bow fitting	Bugbeschlag
3	Bow pulpit	Bugkorb
4	Life lines	Relingsdurchzüge
5	Water inlet	Wasser Einfüllstutzen
7	Mooring cleats	Belegklampe
8	Stanchion	Relingstütze
9	Foot stop	Fussstopleiste
11	Stanchion base	Relingfuss
12	Decksorganizer	Decksorganizer
13	Fuel inlet	Diesel Einfüllstutzen
14	Op. hatch	Vorschiffsluke
15	Op. hatch	Luke Messbereich
18	Main shrouds	Wantenpütting
19	Electric windlass	Elektrische Ankerwinde
22	Genoa track	Genuaschiene
23	Rail passage	Relingdurchstieg
24	Duct foot railing	Durchführung Fußreling
26	Front end stop (g. track)	Schienenendstück
28	Multi-Purpose-Spinnaker winch	Gennakerwinde
29	Genoa winch	Genuawinde
30	Stopper	Stopper
31	Winch	Fallwinde
32	Ventilator	Decklüfter
33	Cable penetration	Kabeldurchführung
34	Sliding hatch	Schiebeluke
35	Companion way	Niedergangstür
36	Aft port pushpit	Heckkorb bb.
37	Aft starboard pushpit	Heckkorb stb.
38	Backstay chain plate	Achterstagpütting
40	Cockpit table	Cockpittisch
41	Hand hold	Handreling
42	Stern light	Hecklaterne
43	Hand operated bilge pump	Handlenzpumpe
44	Shore socket 230 V	Landanschlusssteckdose 230 V
47	Chartplotter	Kartenplotter
49	Steering wheel	Steuerrad
50	Shower	Cockpitdusche
51	Tank venting	Tankentlüfter
53	Crate back	Backskiste
54	Foot block -port/starbord	Liegender Block Back/Steuerbordseite
55	Steering pedestal with engine panel	Steuersäule m. Motorinstrumententafel
56	Cockpit portlight	Cockpitfenster

1.2.3. Accommodation plan

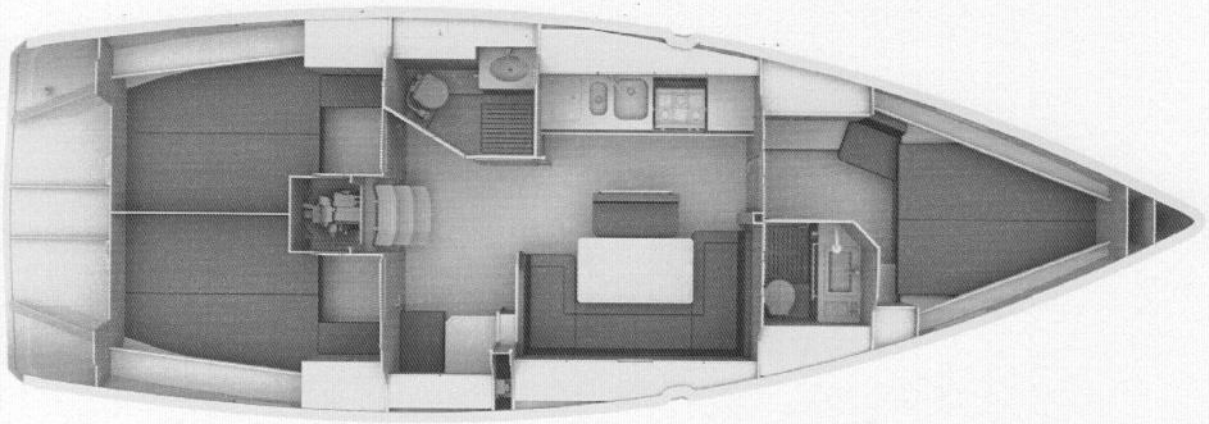


2	Double berth	Doppelbett
3	Wardrobe	Kleiderschrank
4	Companion way / engine room	Niedergang / Motorraum
5	Toilet/ shower room	Toiletten-/ Duschraum
8	Kitchen with Gas cooker with oven, cooling, sink	Küche mit Gasbackofen, Kühlbox, Spüle
11	Double berth	Doppelbett
12	Chain locker	Ankerkasten
16	Seat	Sitzbank
17	Seating with saloon table	Sitzgruppe mit Tisch
18	Chart table	Kartentisch
21	Crate Back	Backskiste

Cruiser 40 Kabinen Version 2-1



Cruiser 40 Kabinen Version 3-2



1.3 Drive systems

1.3.1 Sails

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

Main sail - fully-battened	abt 42 sqm
Main sail " - mast reefing gear	abt 41 sqm
Furling Genoa	abt 35 sqm

1.3.2 Rigging

Mast: LM- Profile, without taper; – 25 deg. double spreaders , angular; - 2 halyards, topping- and boom lifts, tripping line and fittings.
Boom: LM-Profile; - clew outhaul; - 2 reefing lines; - eye for mainsheet; - eye for tripping line.
Standing rigging (made of 1x19–lace, material 4401), consisting of:

Forestay with overlength (headsail reef system)	1x	Intermediate shroud	2x
Backstay	1x	Lower shroud	2x
Permanent backstay tackle + crow's foot	1x	Upper shroud	2x

Running Rigging
Inside the mast:
- Main halyard
- Genoa halyard
- Boom lift

Option:
- Gennaker (attached)
- Gennaker boom (attached)

In boom drawn in: 2 reefing lines and 1 clew outhaul

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.

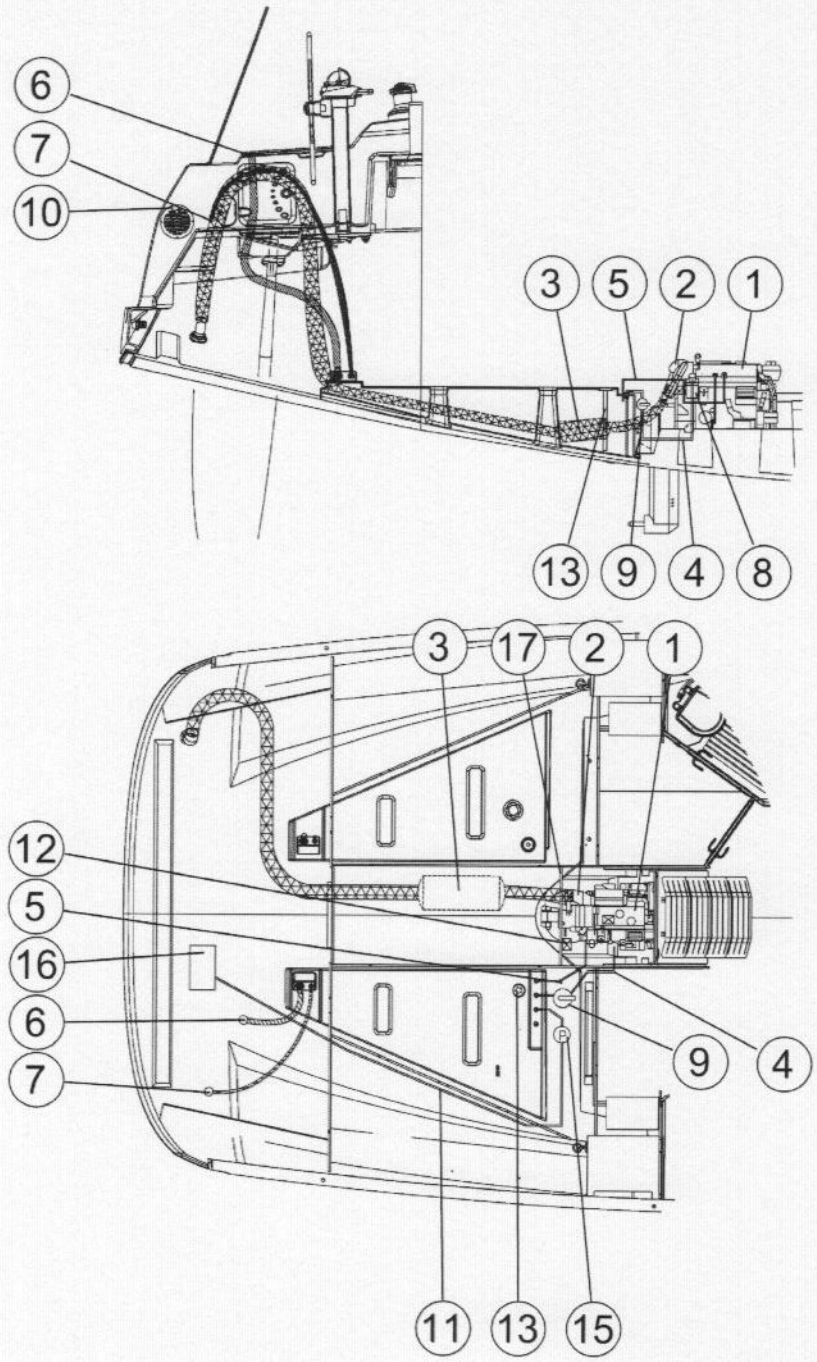
1.3.3 Motorising, engine room, gear, and propeller

This yacht is equipped with an 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 aft cabin beside the engine room

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

Engine plant



1	Engine Volvo	Motor Volvo
2	Engine exhaust system	Motorabgassystem
3	Exhaust water lock	Abgaswassersammler
4	Engine fuel intake	Kraftstoffzuleitung
5	Feed back fuel	Kraftstoffrückführleitung
6	Fuel tank filling hose	Kraftstoffeinfüllschlauch
7	Fuel tank ventilator	Tankentlüftung
8	Fuel filter	Kraftstofffilter
9	Fuel cock	Kraftstoffabsperrhahn
10	Ventilation Grill	Belüftungsrost
11	Heating fuel intake	Zulauf Heizung
12	Water filter	Wasserfilter
13	Fuel Gauge	Tankanzeige
14	Vacuum vent	Vakuumventil Motor
15	Heating pump	Heizungspumpe
16	Heating system	Heizung
17	Ventilator engine room	Lüfter Motorraum

2. Installations and circuits

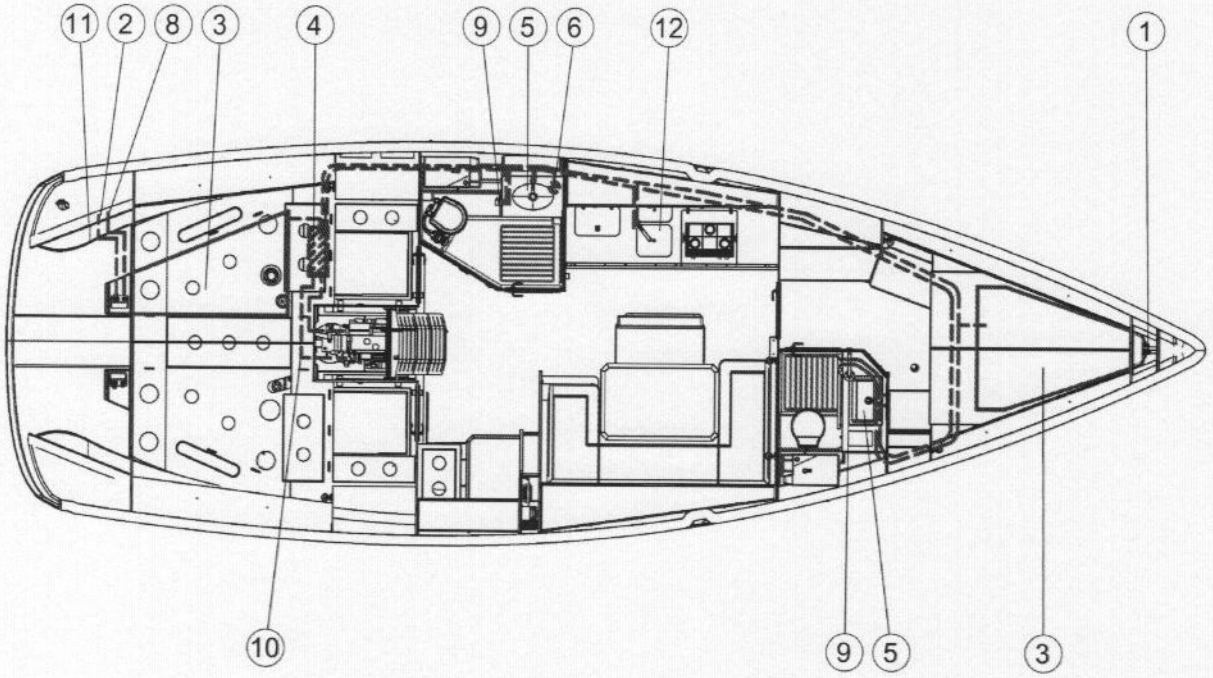
2.1 Tanks and piping - water

2.1.1 Fresh water, drinking water –cold

The yacht has a water tank with a capacity of about 210 l and an additional water tank with a capacity of 150 l in the bow area. Fresh water is supplied under cockpit floor plate on the port side and on the foredeck sail storage space. The deck plate is provided with a cap. Water is supplied via 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 continues working after all ducts were cut off properly.
The pump is protected by a filter which should be regularly checked and cleaned if necessary.

Components:



1	Tank venting	Tankentlüftung
2	Deck plate	Einfüllstutzen
3	Freshwater tank	Frischwassertank
4	Water heater	Boiler
5	Basin	Waschbecken
6	Fresh water Pump	Frischwasserpumpe
8	Tank venting	Tankentlüftung
9	Shower	Dusche
10	Engine connection	Motoranschluss
11	Shower (cockpit)	Cockpitdusche
12	Sink	Spüle

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 manual

Each toilet of the yacht possesses of a built-in holding tank with a capacity of about 70 litres. The tanks are in the toilet rooms with fitted and have a sea cocks to empty the tank on the open sea and a nozzle to the pump in the harbour.

Attention
If you are not aboard you should close all sea-valves.

Regard!

- Do not empty toilets or holding tanks near the coast or in any protected area
- Use pump down mechanism in ports and marinas
- Follow the local regulations.
- Follow the instructions for use of the toilet.
- Close sea cocks after use.
- open sea cocks before emptying the holding tanks
- Close WC and discharge valves after use.

Note!

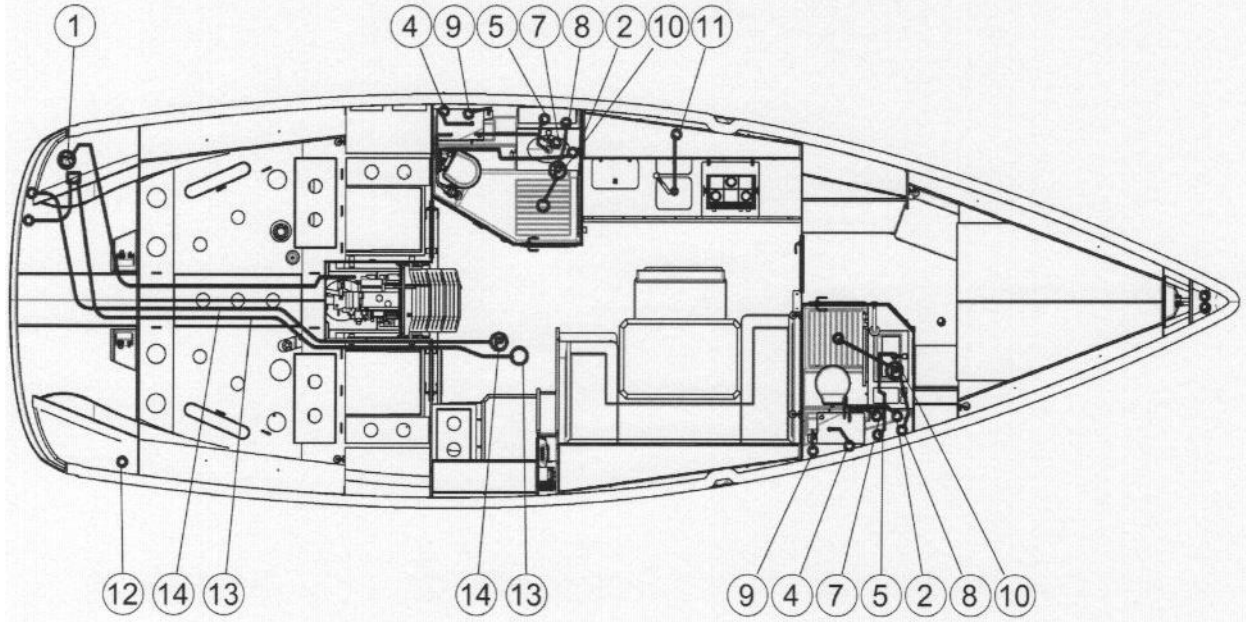
In areas where it is prescribed that no faeces may reach into the water, the skipper has the possibility to close the valve with simple clips which cannot be opened by hand. He must brief all crew members that the valve must be closed.
Familiarize yourself with the operation and maintenance of the system familiar.
The system is not resistant to aggressive acids and alkalis.

Please refer the position of the sea cocks to the system drawing (2.12) in this manual.

Suction of the tanks: First open ports on deck and then mount suction on the landside

Regard: Check the vent pipe before vacuuming the sewage tanks.

Components: waste-water system



1	Engine drain	Auslass Motor
2	Suction toilet flushing	Ansaugung Toilettenspülung
3	Toilet drain	Ausgang WC
4	Waste water tank venting	Fäkalientankentlüftung
5	Basin drain	Auslass Waschbecken
6	Bailing chain locker	Lenzung Ankerkasten
7	Waste water drain	Auslass Fäkalientank
8	El. shower drain	Auslass El. Duschpumpe
9	Deck suction waste water tank	Decksabsaugung Fäkalientank
10	Shower drain pump	Duschpumpe
11	Sink drain	Auslass Spüle
12	Exhaust heating (option)	Auslass Heizung (Option)
13	Hand operated bilge pump	Handlenzpumpe
14	Electric bilge pump	El. Lenzpumpe

2.2 Tanks and pipes - fuel

Storage tank

A 210 l plastic diesel tank is installed below the aft berths on starboard-side. It is filled via a fuel inlet with a chrome cover (marked with DIESEL) under the cockpit floor plate on the port side of the yacht. Supply line: fire-proof fuel hose according to ISO 7840. The vent line is led to above deck.

Supply of the engine

The engine is supplied via a suction pipe from the upper edge of the tank. Due to the short distance a fire proof fuel pipe is used throughout. This is led via a wide-meshed filter/ water separator, fuel pump and fine filter to the engine and then back to the tank.

Attention
A trouble free operation of the engine and heating is only possible, if the fuel is clean. That's why a regular inspection and cleaning of filter/water separator is unavoidable.
The fuel tank should be completely emptied and cleaned once a year.

Warning
When refilling the tank:
Switch off the engine, heating and stove!
Do not smoke or use open lights!

2.3 Steering gear

2.3.1 Description of the system

The rudder is a suspended, balanced mid ship rudder (profiled rudder). It is operated by hand from the steering wheel at the steering position in the cockpit. Transmission of power is realised by means of chain control to the rudder quadrant. With the autopilot (option) there is an electric motor installed.

2.3.2 Rudder blade and rudder bearings

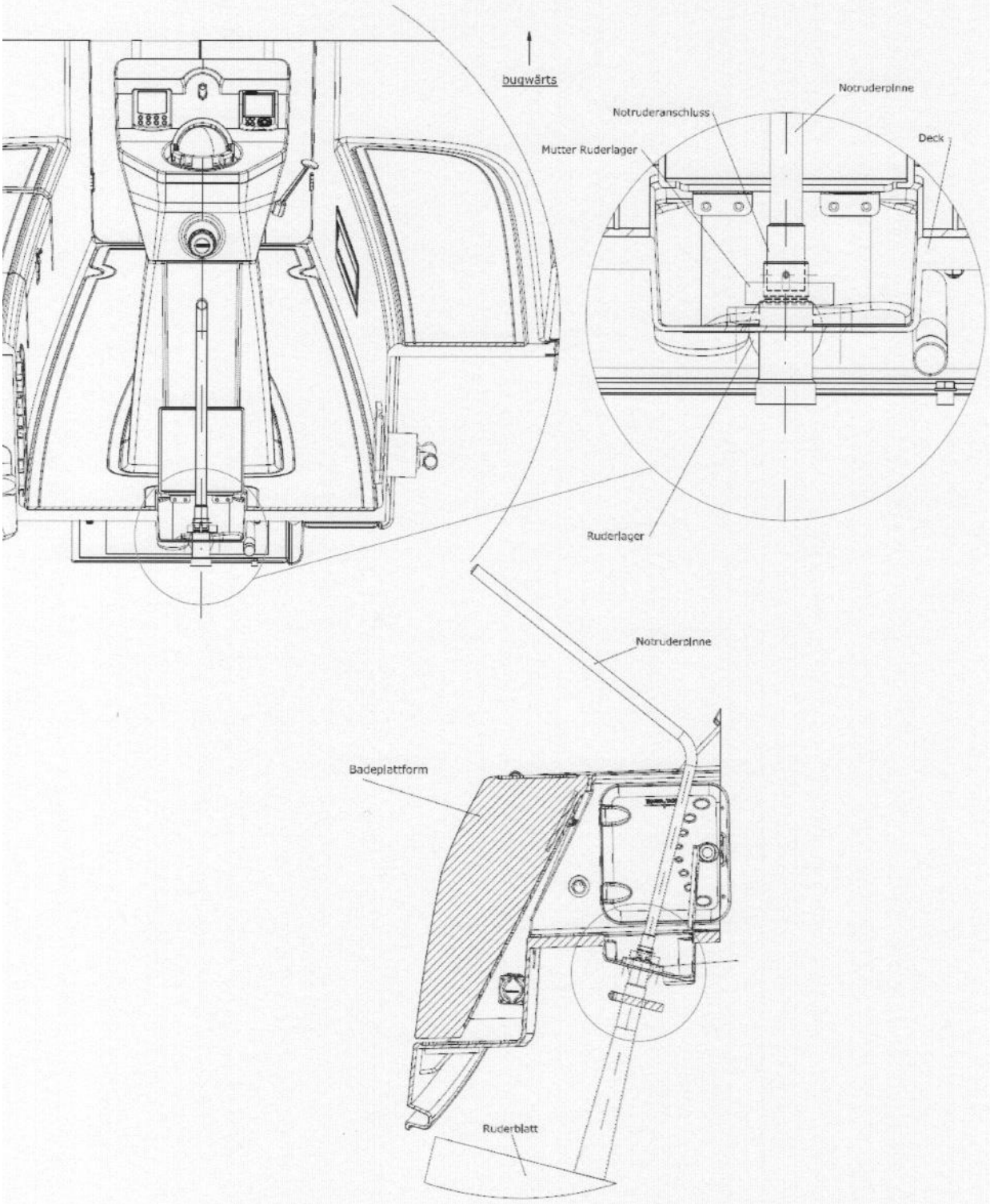
The rudder blade is a profiled one. It consists of a FRP-body. The rudder post is made of sea-water resistant stainless steel (V4A) and is laminated into the blade. The post runs in two easy-going special rudder bearings. The rudder is fixed by a clamping nut at the upper end of the post. The emergency tiller is placed on top of the square-end of the post

Attention
Check regularly and repair if necessary:
Tight hold of the clamping nut 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.

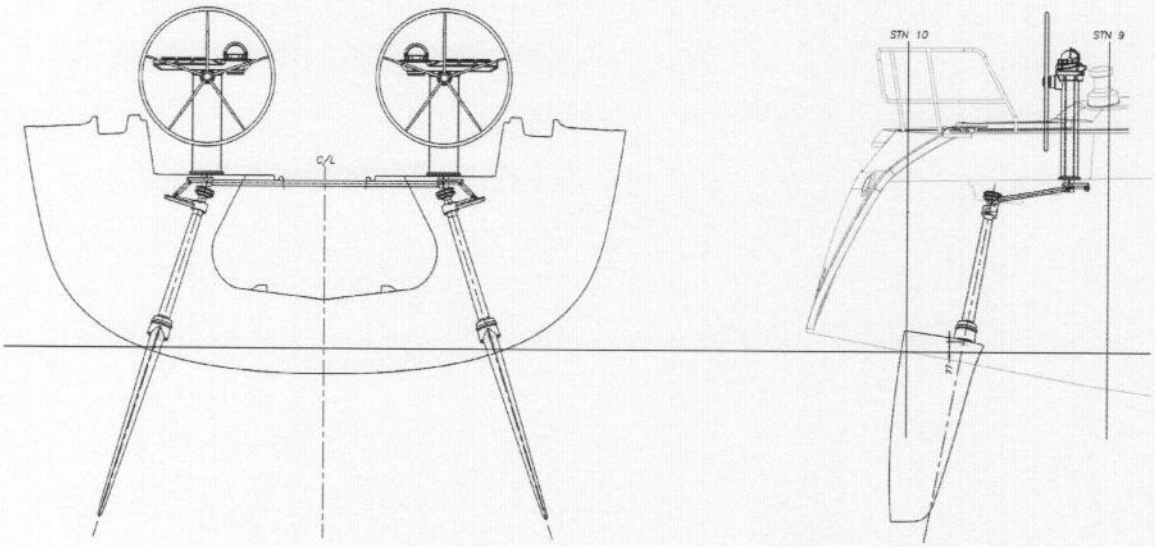
Emergency tiller

The emergency tiller is stored in the starboard locker seat.
In case of failure of the steering gear remove the steering wheel, the rudder quadrant for rudder bar and/or 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.


bugwärts
Notruderpinne
Notruderanschluss
Mutter Ruderlager
Deck
Ruderlager
Notruderpinne
Badeplattform
Ruderblatt

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.

The brake at the steering wheel can be drawn 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.



2.4. Bilge pumps, bilge pipes lines
The chain locker is made watertight**.** It is self-bailing through two holes in the skin.
All **BAVARIA** yachts have got a self-bailing cockpit, too. Water in the cockpit is led outboard through the aft trim to the outlet in the transom.

2.4.1 Description of the pumping arrangement

At BAVARIA Yachts the cockpit is self bailing. Furthermore there is the possibility of bailing water from the yacht's interior. Both strainers are in the Bilge in the deepest place in the saloon. Floor timbers in the saloon are connected by drillings, so that in case of possible ingress of water both pumps can be used. The bail lines are shifted by means of hose aft to the transom (outlet).

The water outlet for the self-bailing cockpit is in the transom.

The anchor box has bilge openings on both sides, covered with a screen. In addition your yacht is equipped with a manual bilge pump as well as an electrical bilge pump (capacity 33 l/min.).

When using the manual bilge pump the pump lever is to be pulled out. Bailing is effected by pumping movements.

The electrical bilge pump is started by pressing the symbolically marked switch at the panel. – Before doing so turn on the main switch in any case –

We recommend using the electrical bilge pump only with the machine running; the full capacity of the electrical bilge pump will be reached then.

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. Valves being not clearly visible, like e.g. in the toilet room, should only be opened before use and closed afterwards.

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:
Bilge Pumps & Strainers have to be serviced and cleaned regularly.
Bilge water should be kept to a minimum.

Note
How to determine whether ball valves are closed or open:
CLOSED: Lever in transverse direction to hose or pipe.
OPEN: Lever in line with hose or pipe.
Maintenance Note
The tightness of board ducts is to be inspected regularly. Check and retighten all hose clips and gland nuts of valves if necessary.

Leakage-pot
For the case of a damage of a seacock or an on-board passage we recommend to carry on the yacht leakage potting from soft wood, whose diameter is co-ordinated with the different sizes of the on-board passages and can with those each opening be locked surely

Note
How to determine whether ball valves are closed or open:
CLOSED: Lever in transverse direction to hose or pipe.
OPEN: Lever in line with hose or pipe.
Maintenance Note
The tightness of board ducts is to be inspected regularly. Check and retighten all hose clips and gland nuts of valves if necessary.

Components of the bilge pumping installation: **see drawing 2.1.3**

2.5 The electric installation

2.5.1 The AC-installation (230 Volt / 115 Volt) (option)

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 close to the engine control panel at the starboard locker seat of the yacht. The power is supplied into a shore connection unit, placed under the chart table.

2.5.2 The DC–board net (12 Volt)

All electric devices aboard are supplied with the 12 V DC. A main-switch is installed in the electric panel under 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-group.

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. The motor vehicle flatconnectors are arranged on the back of the panel.

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.

- Make sure that your standardized CEE plug is compatible with the phases of the land plug socket.
- Control and renew regularly the wear condition of the underwater anode of the potential equalization.

Charging the batteries

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

AC–consumers

The earthed safety socket at the electric panel (option) is designed for electric tools to be used for small repair work ashore. Further power sockets (option) are in the toilet areas, the pantry and at the water heater.

DC–consumers

The essential consumers are:

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

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 (12 Volt)

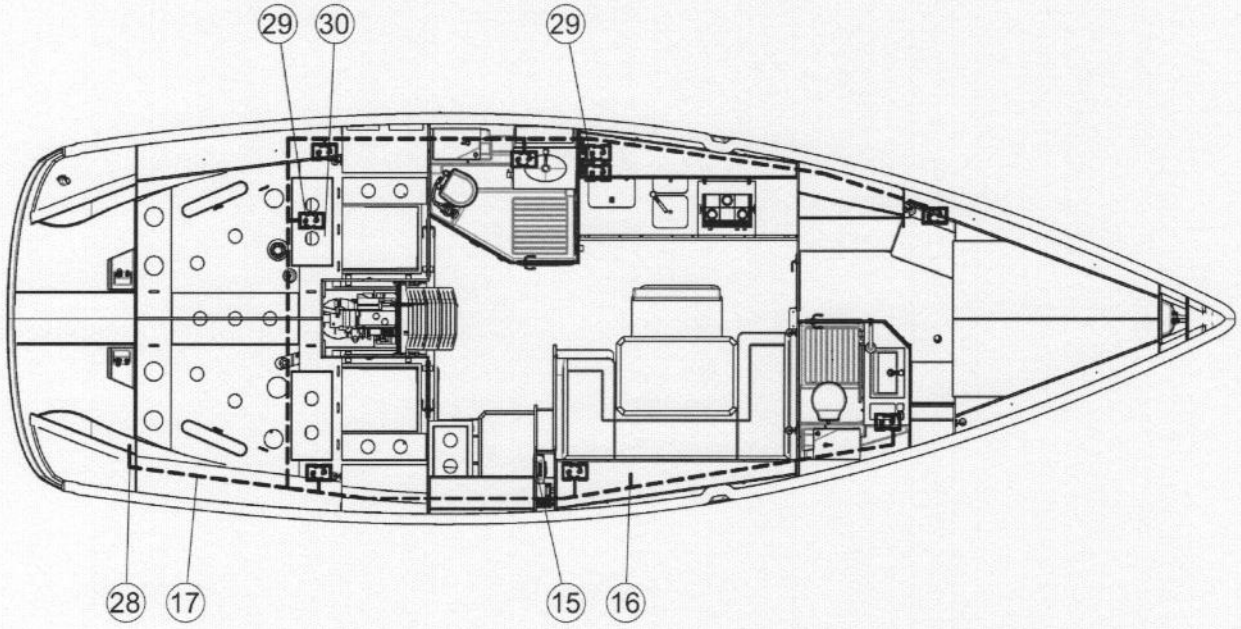
Never

a) work on electric installation while the system is energized
b) modify the craft's electrical system or relevant drawings: installation, alterations and maintenance should be performed by a competent marine electrical technician.
c) alter or modify the rated current amperage of overcurrent protective devices;
d) install or replace electrical appliances or devices with components exceeding the rated current amperage of the circuit;
e) leave the craft unattended with the electrical system energized, except automatic bilge-pump, fire protection and alarm circuits.

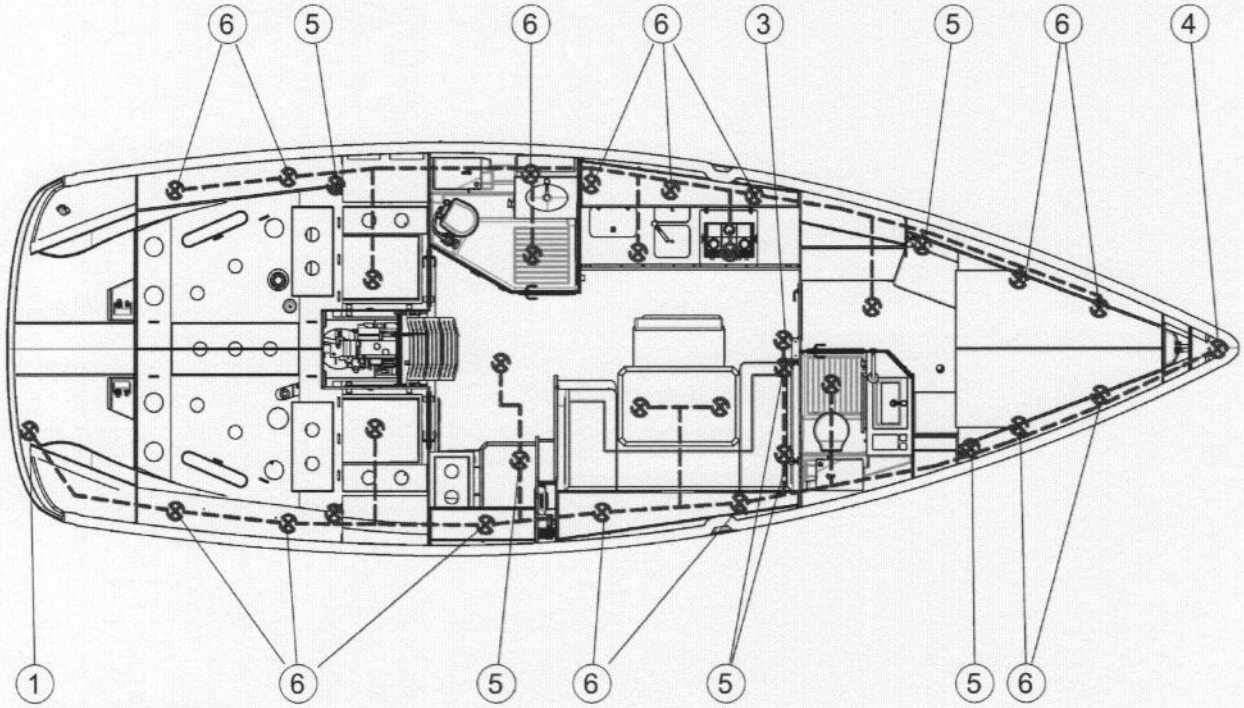
2.5.5 Important warnings on the AC-installation (230 Volt / 115 Volt) (option)

a) Never work on electric installation while the system is energized
b) Do not modify the craft's electrical systems or relevant drawings. Installation, alterations and maintenance should be performed by a competent marine electrical technician. Inspect the system at least biennially.
c) Disconnect shore-power connections when the system is not in use and while working at the electrical system.
d) Connect metallic housings or enclosures of installed electrical appliances to the protective conductor system in the craft (green or green with a yellow stripe conductor).
e) Use double insulated or grounded (earthed) electrical appliances.
f) WARNING: Do not allow the shore-power cable end to hang in the water. An electrical field can be caused which can cause injury or death to nearby swimmers.
g) WARNING: To minimize shock and fire hazards:
   - Turn off craft's shore-power connection switch before connecting or disconnecting shore-power cable.
   - Connect shore-power cable to craft's inlet before connecting to shore-power source.
   - Close shore-power inlet cover tightly.
   - Do not alter shore-power cable connectors, use only compatible connectors.

2.5.6 Distribution of electric devices:
230 Volt / 115 Volt Option:



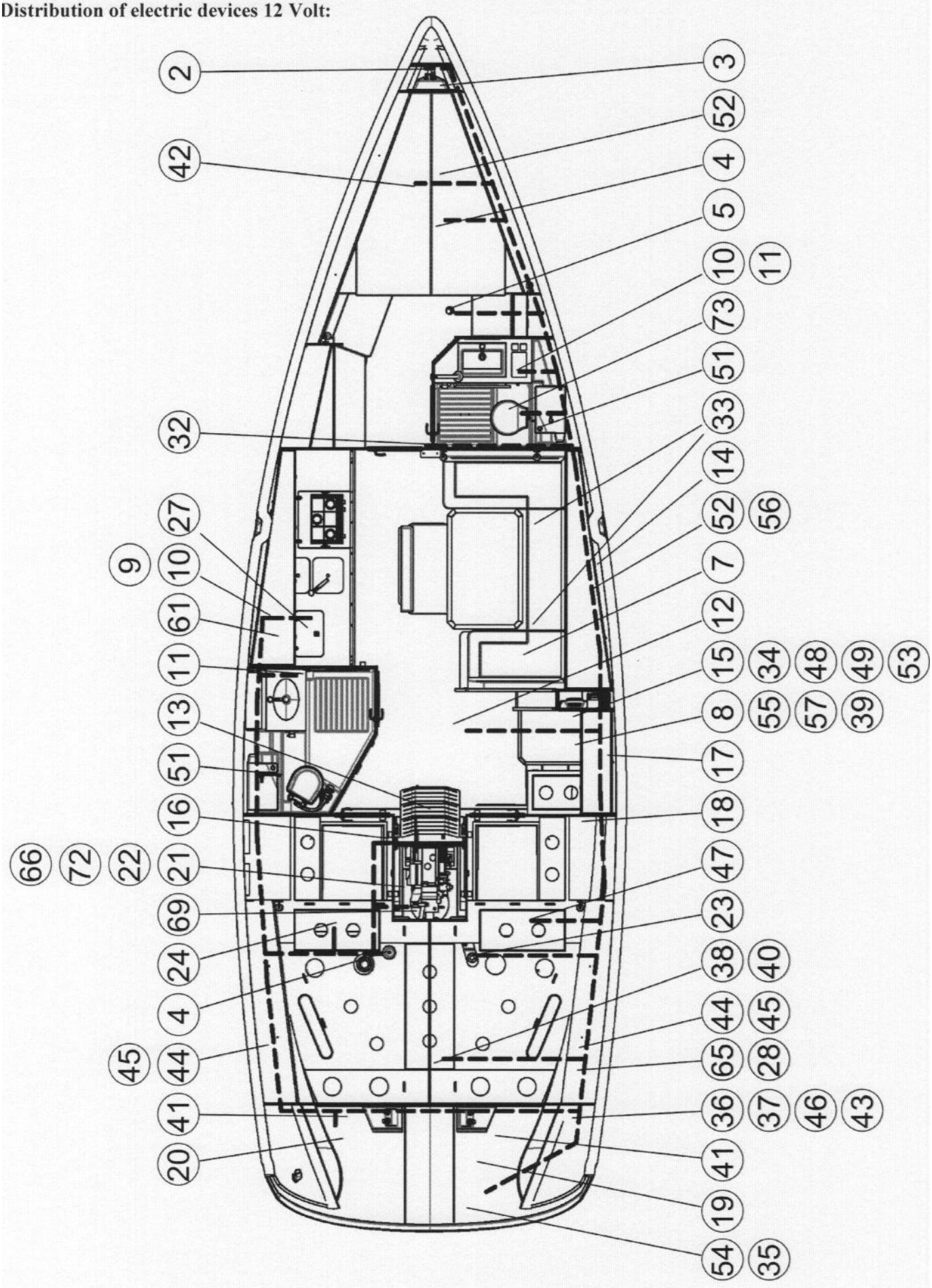
15	Electric panel	Elektropanel
16	Charger	Ladegerät
17	Fuse	FI-Schutzschalter
28	Shore socket 230/115 V	Landanschluss 230/115 V
29	Socket 230/115 V	Steckdose 230/115 V
30	Hot water tank	Boiler



Light / navigation lights:

1	Stern light	Hecklaterne
3	Top light (mast)	Topplicht (Mast)
4	Bow light	Buglaterne
5	Halogen lamp	Halogenleuchte
6	LED	LED

Distribution of electric devices 12 Volt:



Distribution of electric devices 12 Volt:

2	Windlass	Elektr. Ankerwinde
3	Windlass switch / connection	Bedienteil Ankerwinde / Steckdose
4	Fresh water gauge	Frischwassertankgeber
5	Through-hull depth sounder/ Speedometer	Echolot/Sumlog Geber
7	Board battery	Verbraucherbatterie
8	Main switch board/ bow thruster (option)	Hauptschalter Verbraucher/ Bugstrahlruder (Option)
9	Fresh water pump	Wasserpumpe
10	Shower drain pump	Duschpumpe
11	Shower pump switch	Duschschalter
12	Bilge pump	Elektr. Lenzpumpe
13	Batteries group (engine battery 88 Ah)	Batterien (Motor 88 Ah;)
14	Battery charger (option)	Batterieladegerät (Option)
15	Electric panel 301/ 302	Elektropaneel 301/ 302
16	Main switch (engine; generator)	Hauptschalter (Motor, Generator)
17	Computer autopilot (option)	Kurscomputer Autopilot (Option)
18	Compass autopilot (option)	Kompass Autopilot (Option)
19	Sensor autopilot (option)	Rückholgeber Autopilot (Option)
20	Motor autopilot (option)	Motor Autopilot (Option)
21	Engine starter	Anlasser Motor
22	Rectifier	Gleichrichter
23	Fuel gauge	Dieseltankgeber
24	Water heater	Boiler
27	Ice box	Kühlaggregat
28	Shore pickup 230/115 Volt	Landanschlusssteckdose 230/115 Volt
32	Cable penetration	Kabeldurchführung
33	Speaker (option)	Lautsprecher (Option)
34	Radio (option)	Radio (Option)
35	Radio antenna (option)	Antennenkabel Radio (Option)
36	Motor panel	Motorpanel
37	Fuel gauge	Tankuhr
38	Tridata panel	Tridata Bedienteil
39	Wind panel	Wind Bedienteil
40	Autopilot (option)	Autopilot (Option)
41	Compass	Kompass
42	Bow thruster motor (option)	Bugstrahlrudermotor (Option)
43	Control bow thruster motor (option)	Steuerung Bedienteil Bugstrahlruder (Option)
44	Genoa winch control panel (option)	Elektr. Genuawinsch Bedienteil (Option)
45	Genoa winch motor (option)	Elektr. Genuawinsch Motor (Option)
46	Heating system (option)	Heizung (Option)
47	Air heater- diesel pump (option)	Dieselpumpe Heizung (Option)
48	Air heater thermostat (option)	Thermostat Heizung (Option)
49	Air heater (option)	Fühler Heizung (Option)
51	Waste water gauge	Fäkalientankgeber
52	Board fuse	Sicherung
53	Chart plotter (option)	Kartenplotter (Option)
54	GPS antenna (option)	GPS Antenne (Option)
55	Relay autopilot (option)	Relais Autopilot (Option)
56	Charger fuse (option)	Sicherung Ladegerät (Option)
57	Relay windlass (option)	Relais Ankerwinde (Option)
61	Microwave oven (option)	Mikrowelle (Option)
65	Circuit breaker (ELCB)	FI-Schutzschalter
66	Engine vent	Lüfter Motor
69	Anode	Erdungsanode
72	Earth engine	Masse Motorblock
73	WC electric (option)	WC elektrisch (Option)

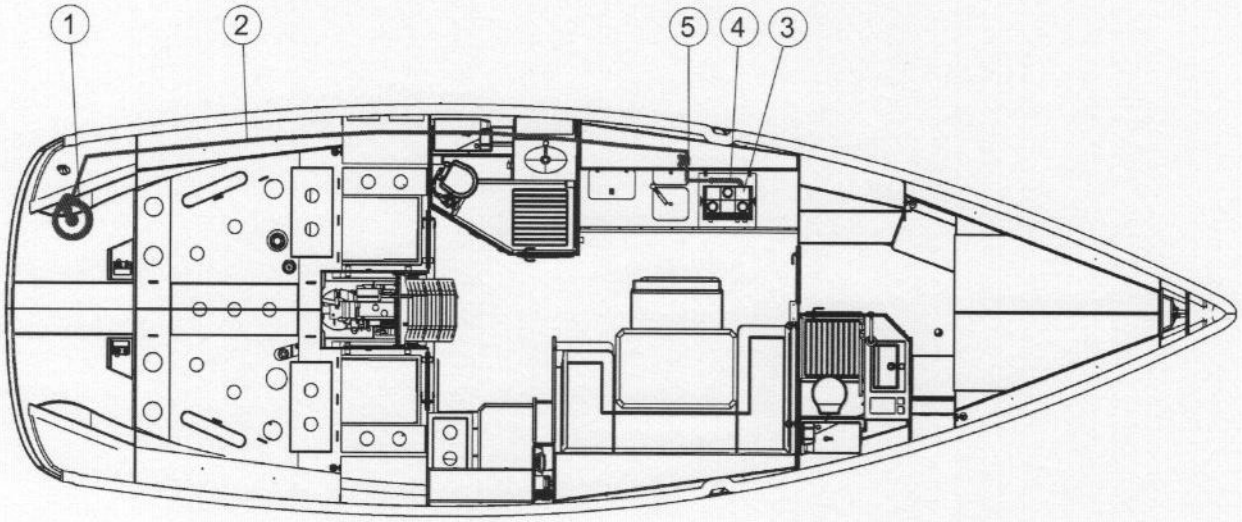
2.6 L.P.G. installation

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



1	Gas tank	Gasflasche
2	Copper tube	Kupferrohr
3	Gas stove with oven	Gaskocher mit Backofen
4	Rubber hose	Gummischlauch
5	Gas stop valve	Gaskugelhahn

Leakage Test of LPG System

- **With appliance valves closed!**
  - **Open the cylinder valve, close the cylinder valve.**
  - **Allow indicated gauge pressure to stabilize.**
  - **Observe pressure on gauge for 3 min.**
  - **If pressure remains constant, no leak is present.**
  - **If pressure falls, a leak exists.**
- **Do not use LPG system until leak is repaired!**

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 in front of 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 de-aeration 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. Let these replace periodically.
- If you install a new stove make sure that is has got the same working pressure.
- Check the elements at least once a year. Let these periodically replace.

Open exhausts and hatches while using the stove.
The stove must not be used as heating.

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.

Follow the national equipment requirements for fire-fighting equipment.

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.

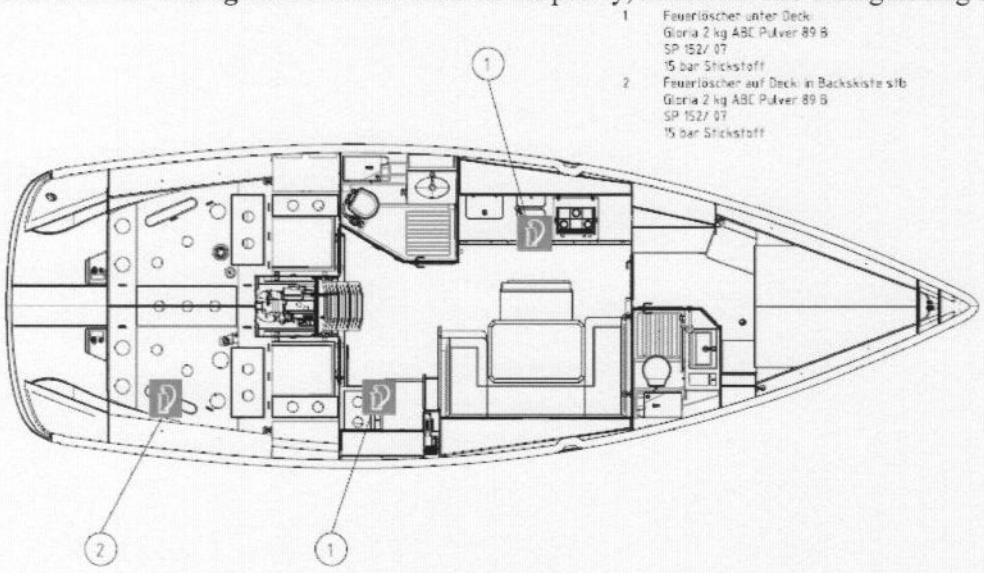
Never

- 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 (3 x Powder extinguisher á 2kg):

Nr. 1: **Powder extinguisher** in the cockpit stowage space, minimum fire extinguishing capacity 10A/65B
Nr. 2: **Powder extinguisher** under the chart table, minimum fire extinguishing capacity 10A/65B
Nr. 3: **Powder extinguisher** in the locker in the pantry, minimum fire extinguishing capacity 10A/65B



Additionally a light **fire retarding cloth** is provided, which is made of glass cloth and is very useful in the case of fire caused by overheated fat.

It is the yacht owner's duty

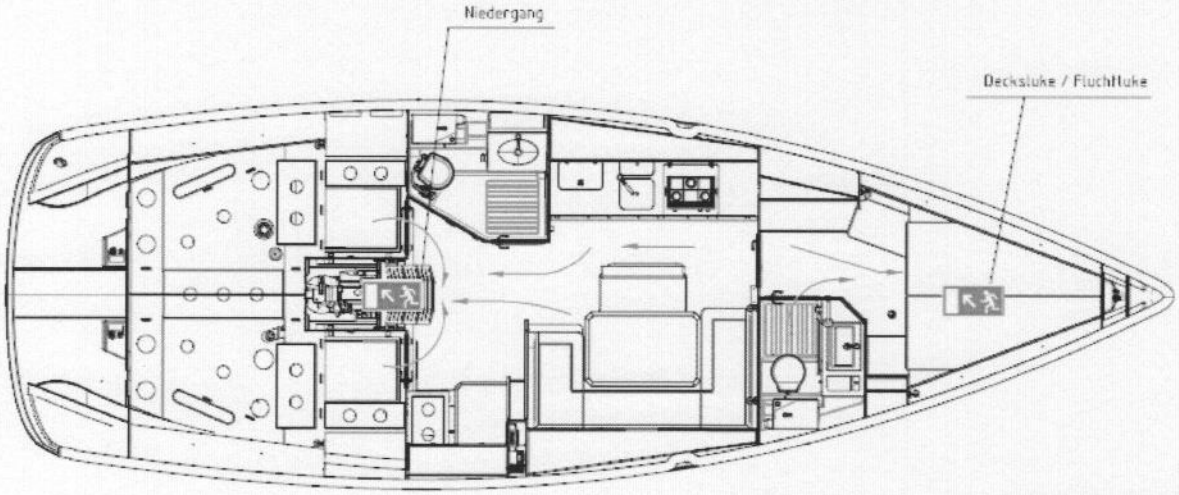
- to have all fire extinguishers regularly checked and maintained.
- to have fire extinguishers replaced after the expiry date. They also have to be replaced once they have been used. The new fire extinguishers must have at least the same extinguishing capacity as the replaced ones.

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-berths.

Caution
Regularly check the fire extinguishers!
Train yourself in fire fighting!
Always observe seaman's duty of care!



emergency exit

2.8 Anchor-, towing- and warping facilities

The bower anchor (plough anchor), about 15 kg, hot-galvanised, (is known for its high holding power). It lays ready-to-fall in the bow fitting. The chain has a length of 50 m and a nominal thickness of 8 mm. It is run out by an electric anchor windlass operated with a remote control. The remote control is placed in the sail storage space locker before use and its function is activated at the switch board.
You should always use a claw or anchor chain hook to relieve the anchor winch, which is then placed on the cleat. Furthermore it is recommendable to have a stern anchor (possibly swivel armature) as well as sufficient mooring- and towing lines with the necessary strength on board:

1 stern folding anchor (4-fluke grapnel anchor), 12 kg, hot-galvanised, fixed at the aft guard-rail. 6 m chain forerunner, thickness 7 mm, 34 m polyamide anchor rope, 18 mm, 3-strand hawser laid. It should be stored in the port transom seat.

The rope is cleated aft.

Warning!
Always tow or be towed at a slow speed. Never exceed the hull speed of a displacement craft when being towed.

Warning!
A tow line shall always be made fast in such a way that it can be released when under load. Attach the tow line to two pairs of bollards on the bow.

Warning!
It is the owner's/operators responsibility to ensure that mooring lines, towing lines, anchor chain(s), anchor lines and anchor(s) are adequate for the vessel's intended use, i.e. the lines or chains do not exceed 80 % of the breaking strength of the respective strong point.
Owners should also consider what action will be necessary when securing a tow line on board.

2.9 Engine cooling system

Engine cooling

The engine has got a two-circuit cooling system. Water enters through the sail drive, 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 a 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 port 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 steal 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 optical 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 seawater comes out of the exhaust is urgently advisable.

2.11 Ventilation/Airing

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

Chain locker:	Certain ventilation is achieved through the hawser port in the cover of the chain locker and through its bilge holes.
Bow:	2 deck hatches, 1 porthole to open, 2 fixed portholes
Bow toilet room:	1 deck hatch
Salon:	3 deck hatches, 5 portholes (open), 3 portholes (closed)
Aft toilet room:	1 deck hatch
Aft cabins:	each 1 deck hatch, 1 porthole (closed) and 1 cockpitwindow (open)

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 screwed joints with spherical sea valves and hose nipples. All hose connections are secured with two clips each.

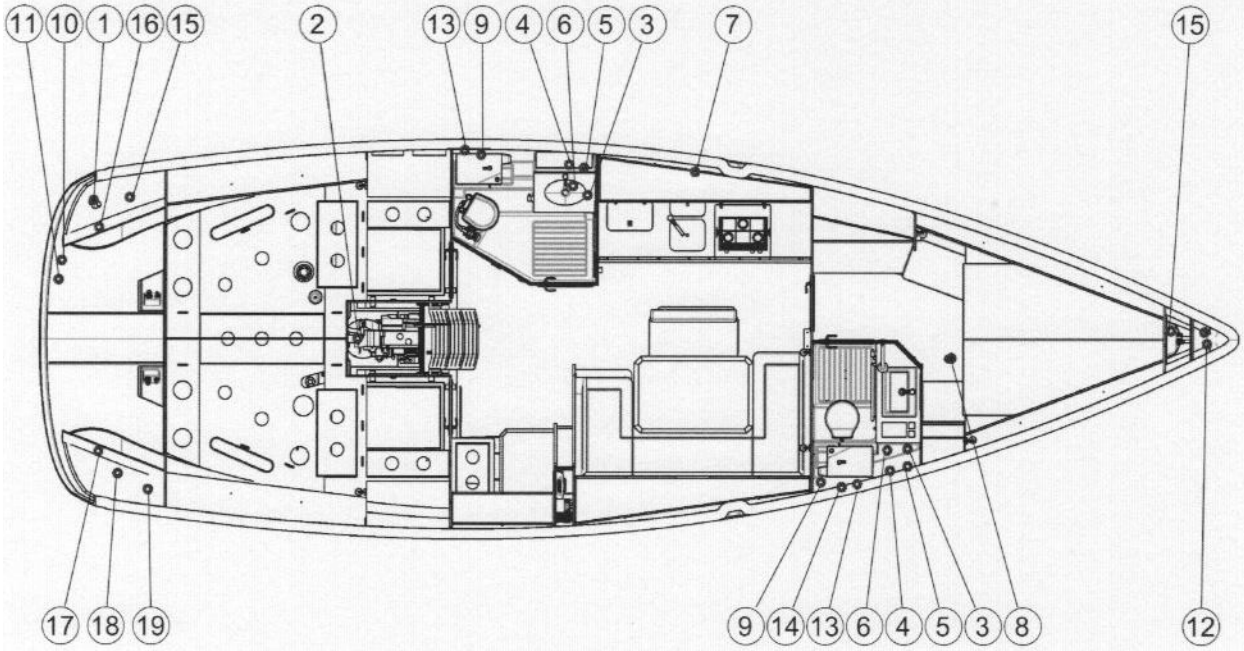
Attention
Close all sea valves if you leave the yacht for a longer time. Valves being not clearly visible, like e.g. in the toilet room, should only be opened for use.

Maintenance note
The tightness of board ducts should be inspected regularly.
Check and retighten all hose clips and gland nuts of valves if necessary.

Note
How to determine whether ball valves are closed or open:
CLOSED: Lever in transverse direction to hose or pipe.
OPEN: Lever in line with hose or pipe.

Attention
At Grounding:
Immediately check watertight integrity of the entire hull, first of all the areas of the ballast keel attachment and the rudders!
If you have a two-piece keel have the screw connection between the top and bottom keel checked immediately.
If wing keels experience one-sided load (through grounding or while parking ashore) also check all bolts!
Also check the condition of the fasteners and joints of the rig!
Check everything again after having returned to port.
When returning to port drive at reduced speed only and take the boat ashore to inspect the underwater area!

Board ducts



1	Exhaust drain	Ausgang Auspuff
2	Cooling water strainer	Kühlwasserfilter
3	Suction toilet flushing	Ansaugung Toilettenspülung
4	Wash basin drain	Ausgang Waschbecken
5	El. Shower drain pump	Ausgang Duschpumpe
6	Waste water drain	Ausgang Fäkalientank
7	Sink drain	Ausgang Spüle
8	Echo sounder/ log	Echolot/ Sumlog
9	Deck suction waste water tank	Decksabsaugung Fäkalientank
10	Hull opening electric bilge pump	Borddurchlass elektrische Lenzpumpe
11	Hull opening manual bilge pump	Borddurchlass Handlenzpumpe
12	Bailing	Lenzung
13	Waste water tank venting	Fäkalientankentlüftung
14	Battery vent	Batterieentlüfung
15	Filling fresh water tank	Befüllung Frischwassertank
16	Fresh water tank venting	Entlüftung Frischwassertank
17	Filling Fuel Tank	Befüllung Dieseltank
18	Fuel tank venting	Entlüftung Dieseltank
19	Heating system drain (option)	Auslass Heizung (option)

2.13 Generator (Option)

Attention
For maintenance and care on a regularly basis of e.g. oil level, filter, etc. see manual.

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 upon request.

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 readjust 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 standardsails 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 (optional) 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 sail maker.
- Never remove track cars with ball bearings from the tracks carelessly. Always use sheet tracks with end stops.

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 up keeping 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 decks

Untreated wood weathers to a natural silver-grey colour, with no detriment to the timber's strength or other mechanical/physical properties. Because of wood's inherent durability and weather-resistant properties, the use of protective paints or coatings is partly necessary.

Practical tips on care and maintenance:

Protective wood care 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 wooden 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 wooden 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 wooden 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 wooden decks should be watered at regular intervals to prevent the timber from during 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.

If these simple rules are strictly followed the durability of your wooden deck will increase significantly.

Stainless steel

The corrosion resistance of all fittings is based on their ability to constitute a thin skin together with the air occident, which makes 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 is damaged the stainless CR will be active and 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 in the air and in all harbours placed near big towns. As soon as the flying rust settles onto the protective coat of the stainless steel, it destroys the CR-passivity aggressively and fast.

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

Make it your habit, if you are washing your boat with clear water, to also clean 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 its 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 cannot 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 for example if the fitting has been polished electrically.

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

Repairs at the hull (polyester full laminate and polyester sandwich laminate) can be carried out by a certified specialist considering the general rules for the processing of polyester resin. 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 do not hesitate to contact a certified specialist or your dealer.

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/ romps 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/ropes with fresh water and store them in a dry place,
- Rinse and grease all guide rollers of the mast and the boom (Lubricate with a suitable fat).

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 is 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.

Advice:

We are constantly working on further developments of our sailing yachts. We hope you will understand that we have to reserve the right to changes in form, equipment and technology. For that reason no claims can be derived from data, illustrations and descriptions contained 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 warranty card with corresponding instruction
- gas test document with corresponding working instruction
- release checklist
- leaflets and description of production work

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 *BAVARIA Cruiser 40*
HIN DE-BAVB40H9B313

Signature: _____

7. Warranty

See warranty conditions of the dealer

Dealer:

Name:
Address:

is the representative of our firm who will offer you the necessary help should any problems arise. As soon as you are the owner, please fill in the following acknowledgement of receipt and give (or send) it back to the dealer with your signature, so you are able to claim your warranty.

Warranty conditions

see contract