

Owner's Manual

# DEHLER 29

Owner

Yacht's name

Yard number

HIN (Hull Identification Number)

Design category

**B**



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Owner's Manual 05.12.05



Your Distributor's Stamp

<b>INTRODUCTION .....</b>	<b>5</b>
<b>DESIGN CATEGORY .....</b>	<b>6</b>
<b>CERTIFICATION .....</b>	<b>6</b>
<b>IDENTIFICATION .....</b>	<b>6</b>
<b>BUILDING PLAQUE .....</b>	<b>6</b>
<b>OVERVIEW OF THE MOST IMPORTANT INSTRUCTIONS DISPLAYED ON STICKERS: .....</b>	<b>7</b>
<b>WARNING NOTICES .....</b>	<b>9</b>
<b><u>DESCRIPTION OF THE BOAT.....</u></b>	<b><u>12</u></b>
<b>PRINCIPAL DATA .....</b>	<b>12</b>
PRINCIPAL DATA .....	12
SAIL AREA .....	12
DISPLACEMENT, WEIGHTS .....	12
ENGINE.....	12
ELECTRICAL SYSTEM .....	12
TANK CAPACITY .....	13
MAXIMUM NUMBER OF PERSONS, MAXIMUM LOAD .....	13
WHERE TO PLACE CRANING GIRTHS .....	13
WHERE TO SUPPORT THE HULL FOR TRANSPORTATION .....	13
PREFERRED PLACING OF CRANING GIRTHS .....	14
TRANSPORTATION / WINTER STORAGE SUPPORT POINTS .....	14
<b>GENERAL LAYOUT .....</b>	<b>15</b>
INTERIOR PLAN .....	15
DECK PLAN .....	16
SHORT BUILDING DESCRIPTION.....	17
SAIL PLAN .....	19
SAIL WARDROBE .....	20
RIG .....	20
MAST: .....	20
BOOM: .....	21
TIPS TO PREVENT BREAKDOWNS: .....	21
DECK ORGANISATION .....	22
<b><u>DESCRIPTION OF SHIP'S SYSTEMS.....</u></b>	<b><u>23</u></b>
<b>ENGINE ROOM LAYOUT .....</b>	<b>23</b>
<b>PROPELLER SHAFT, PROPELLER.....</b>	<b>23</b>
ENGINE PLAN .....	23
PROPELLER .....	23
<b>TANKS AND PIPES – WATER.....</b>	<b>24</b>
FRESH WATER, HOT.....	25
TOILET SYSTEM.....	25
WC SYSTEM, HOLDING TANK.....	26
<b>TANKS AND PIPES - FUEL .....</b>	<b>27</b>
FUEL ENGINE.....	27
FUEL HEATING .....	29
<b>RUDDER SYSTEM.....</b>	<b>29</b>
<b>BILGE PUMPS, TUBES .....</b>	<b>30</b>

PUMPING SYSTEM .....	30
<b>ELECTRICAL SYSTEM .....</b>	<b>30</b>
<b>ALTERNATING CURRENT SYSTEM.....</b>	<b>30</b>
DIRECT CURRENT MAINS.....	31
POWER SOURCE:.....	31
DISTRIBUTION BLOCKS .....	31
INSTRUMENT PANEL.....	32
INSTRUMENT PANEL (OPTIONAL) .....	32
OPERATION AND SYSTEM DETAILS .....	33
<b>CIRCUIT DIAGRAMS.....</b>	<b>34</b>
<b>GENERAL CIRCUIT DIAGRAM.....</b>	<b>34</b>
<b>CIRCUIT DIAGRAM ENGINE .....</b>	<b>34</b>
<b>LIQUID GAS SYSTEM (OPTIONAL) .....</b>	<b>34</b>
OPERATION .....	35
<b>FIRE PROTECTION.....</b>	<b>35</b>
FIRE PREVENTION .....	35
ACTIVE FIRE PREVENTION .....	36
LOCATION OF FIRE EXTINGUISHERS ON DECK .....	37
LOCATION OF FIRE EXTINGUISHERS BELOW DECK.....	38
FIRE FIGHTING.....	39
<b>IMPORTANT ADVICE:.....</b>	<b>39</b>
<b>ANCHOR, TOWING AND WARPING EQUIPMENT .....</b>	<b>39</b>
<b>ENGINE COOLING CIRCUIT.....</b>	<b>39</b>
<b>EXHAUST SYSTEM .....</b>	<b>40</b>
<b>VENTILATION.....</b>	<b>42</b>
<b>HEATING (OPTIONAL).....</b>	<b>42</b>
HEATING OUTLETS .....	42
<b>SKIN FITTINGS, SEACOCKS .....</b>	<b>44</b>
<b><u>CARE, MAINTENANCE .....</u></b>	<b><u>45</u></b>
CARE, CLEANING.....	45
<b><u>ENVIRONMENT PROTECTION .....</u></b>	<b><u>46</u></b>
FUEL AND OIL.....	46
GARBAGE .....	46
NOISE .....	46
WASH.....	46
EXHAUST.....	46
ANTIFOULING.....	46
PAINT REMOVER .....	47
WASTE WATER .....	48
NATURE CONSERVATION .....	48
<b>FINAL REMARKS AND TIPS. ....</b>	<b>49</b>
<b>SUPPLIER INFORMATION .....</b>	<b>50</b>

**Introduction**

*This manual was compiled and produced to enable you to sail your Dehler 29 with pleasure and in safety.*

*In addition to details about the yacht itself plus its supplied or built-in parts, and besides various illustrations, the manual contains information about operation and service. Please read it carefully and familiarise yourself with it, before you take the yacht out.*

*If this is your first sailing yacht or if you are not yet familiar with the characteristics of a Dehler 29, for your own safety and comfort, please ensure that you become knowledgeable about the handling and operation of the yacht before you become the acting skipper. Your agent or national sailing authority will be happy to inform you about sailing schools, if you should like to increase or update your knowledge that way.*

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

## Design category

It is a requirement of the EC-directive for pleasure craft that each boat should be categorised in terms of its design.

**The Dehler 29 belongs to design category B.**

In the directive design category B is characterised as follows:

**Design category B: beyond coastal waters**

*Constructed for sailing beyond coastal waters in which weather conditions may occur with wind strengths of up to and including 8 on the Beaufort scale and a typical wave height of up to and including 4 m*

## Certification

The EC-directive envisages only certification module Aa for a yacht of this size. This means that the builder himself certifies that the yacht has been built and equipped in accordance with the directive, but that the stability is tested by a recognised testing facility. Germanische Lloyd has been given the task of performing this test (see Conformity Declaration).

## Identification

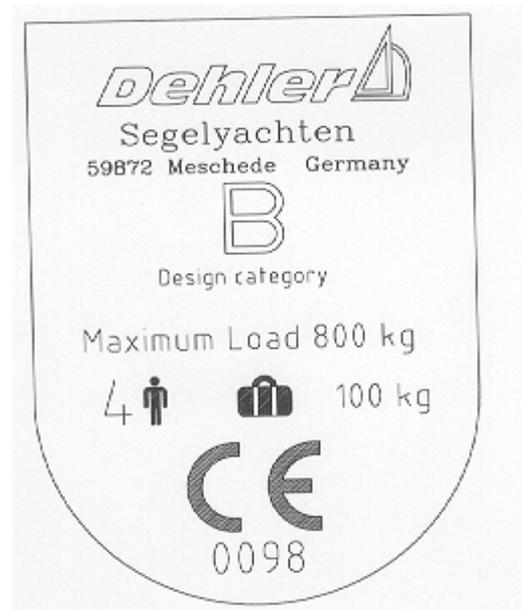
The hull identification number has been stamped into the stern on the starboard side. This is a unique sequence of numbers and letters. It reads:

**D E D E H 6 4 0 2 1 B 8 9 8**

This letter and number sequence represents the following information:

DE	Country of origin Germany
DEH	Unique builder's code (the Register is kept by the German Boat and Ship Builders Union)
64021	A unique building number chosen by the builder
B	Month in which construction commenced, February
8	Final digit of the year 1998, in which construction commenced
98	Final digits of the year 1998, in which the yacht was delivered

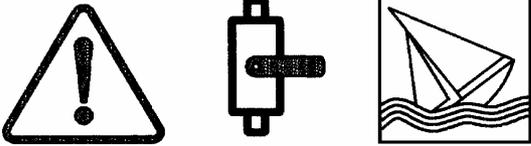
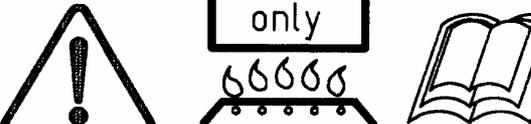
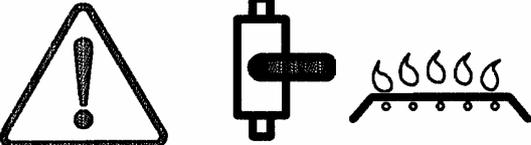
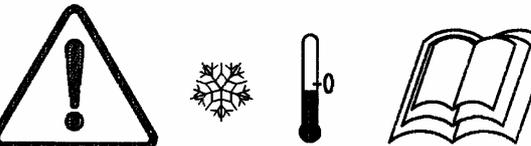
## Building plaque

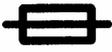
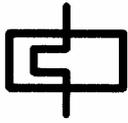


**Overview of the most important instructions displayed on stickers:**

It is essential for the boat and her crew that the instruction stickers are noted. If you fail to follow these instructions, this may lead to the boat becoming a total loss and to problems for the crew.

As the responsible skipper you make new crew members familiar with the stickers and their meaning.

	<p>Close seacock when sailing!</p>
	<p>Do not use stove for heating!</p>
	<p>Closing valve for gas oven</p>
	<p>Main switch engine</p>
	<p>Main switch user</p>
	<p>Emergency valve diesel fuel engine</p>
	<p>Use switch only when in neutral</p>
	<p>Follow builder's instructions re. winter preparation</p>

 	<p>Fuse 12 V A = see imprint</p>
 <p>110 V</p>	<p>Fuse switch 110 V or 230 V Be very careful!</p>
  <p>110 V 230 V</p>	<p>Automatic fuse switch 110 V or 230 V</p>
 	<p>Hot-water boiler electrical</p>
<div style="border: 2px solid black; padding: 10px;"> <p><b>ACHTUNG</b></p> <p><u>FLÜSSIGGASANLAGE</u></p> <p><b>Rauchen und offenes Feuer bei geöffnetem Flaschenbehälter verboten</b></p> </div>	<p>Warning notice gas system</p> <p>WARNING Liquid gas system <u>Smoking or open fire prohibited when the cylinder container is opened.</u></p>

## **Warning notices**

In many chapters of the manual you will find warning Attentions which aim to ensure trouble-free operation and maintenance, or to warn you against danger. In order to make them more conspicuous these are printed in boxes. We advise you to read these Attentions carefully. With many of them any knowledgeable skipper will be familiar, in the case of others we trust you will recognise why they are being emphasised.

The following chapters contain warning Attentions or important information concerning maintenance.

- Tips to prevent breakdowns
- Propeller
- Tanks and pipes - water
- Engine cooling
- Toilet
- Tanks and pipes - fuel
- Fuel heating
- Rudder
- Bilge pumps
- Electrical system
- Liquid gas system
- Fire prevention
- Anchor, towing and warping equipment
- Engine cooling circuit
- Heating
- Skin fittings, seacocks



Dehler Deutschland GmbH  
 Sailing yachts  
 Im Langel industrial estate  
 D-59872 Meschede-Freienohl

**EC-Conformity Declaration**  
**in accordance with EC-directive "Pleasure craft" 94/25 EG, Appendix XV**  
**amended by Directiv 2003/44/EC**

We herewith declare that the later described yacht has been designed and built and has been brought into the commercial traffic in accordance with the rules and regulations for safety and health of the EC directive Pleasure craft. Any changes made to this boat which would in any way alter these rules and regulations of the EC-directive will declare this declaration null and void.

Boat designation	Sailing yacht	
Boat type	<b>Dehler 29</b>	
Main dimensions	LOA 8.75 m, B <sub>max</sub> 3.0 m	
Hull serial number	see cover page	
Design category	B	
Certification module		
Design and Konstruktion	Aa	
Certification module		
Noise Emission	A (Directive 94/25/EC)	
Applicable directives	EG-RL Pleasure craft	(92/25/EG)
Harmonised norms applied	See attachment	
International norms applied	See attachment	
National norms applied	See attachment	
Other regulations applied	See attachment	
Institute as per Appendix XIV	Germanischer Lloyd	
Address	Vorsetzten 32, D-20416 Hamburg	

to be brought in for  
 - internal production control and tests (Module Aa) in accordance with Appendix VI,  
 paragraph 3.2 and 3.3.

Test conformity number: 88.01.0120

Date / Builder's signature ..... **Dehler Deutschland GmbH**

Position of the undersigned .....

## Enclosure to the Conformity Declaration or Builder's Declaration

### Norms and/or technical rules applied

listed in the order in which they appear in the Appendix

Appendix		
ICOMIA	Standard no. 7-88	Flotation, Seating and Load Capacity
ISO	3461-1	General principles for the creation of graphical symbols
ISO	4567	Waste water fittings
ISO	7840	Fire resistant hoses
ISO	8099	Waste water
ISO	8469	Non fire resistant hoses
ISO DIS	8666	Principal data
ISO	8846	Ignition protection
DIN EN ISO	28848	Steering system
DIN EN ISO	8849	Electrically driven bilge pumps
ISO	9093 (-1)	Seacocks (Metallic)
ISO DIS	9094 - 1.2	Fire protection L < 15 m
prEN ISO	9094 - 1.2	Fire protection L < 15 m
ISO	9775	Small craft - Remote steering systems
ISO / DIS	10087	Hull identification
DIN EN ISO	10087	Hull identification
ISO	10088	Permanently installed fuel systems
ISO	10133	Electrical system d.c.
ISO	10134	Lightning protection
prEN ISO	10239	Liquid gas system
ISO/FDIS	10239	Liquid gas systems
ISO	10240	Owner's manual
DIN EN ISO	10240	Owner's manual
EN ISO	10592	Hydraulic steering system
ISO	11105	Ventilation of petrol engine space
ISO/CD	11192	Symbols
DIN EN ISO	11547	Protection before starting under load
prEN ISO	11591	Field of vision from main steering position
ISO DIS	11591.2	Field of vision from taken position
ISO DIS	11592	Determination of maximum propulsion power
prEN ISO	11592	Determination of maximum propulsion power
ISO CD	11812	Cockpits and Cockpit drainage
DIN EN ISO	12216 (design)	Windows, portholes, hatches ...
ISO CD2	12217-1	Non-sailing boats over 6 metres length of hull
ISO CD1	12217-2	Sailing boats over 6 metres length of hull
ISO WD4	12217-3	Boats of up to and including 6 metres length of hull
ISO	13297	Electrical systems a.c.
ISO DIS	13591	Portable fuel system for outboard motors
ISO DIS	13929	Steering gear, rank and pinion direct link
prEN ISO	13929	Steering gear, rank and pinion direct link
ISO DIS	14895	Liquid fuelled galley stores
ISO WD	14945	Builder's plate
ISO WD	14946	Maximum load capacity
ISO WD	15083	Bilge pumping system

## DEHLER 29

ISO WD 15084  
ISO WD 15085

Anchor mooring and towing - showing points  
Man over board prevention and recovers

### Description of the boat

Total weight when fully loaded  
 $G_{\max}$  3500 kg

### Principal data

#### Principal data

Length over all	LOA	8.75 m
Length across deck	LD	8.75 m
Length waterline	LWL	7.85 m
Beam max.	$B_{\max}$	3.00 m
Hull width	$B_{\text{rumpf}}$	2.95 m
Draft hull	$T_{\text{rumpf}}$	0.37 m
Draft max. standard keel	$T_{\max}$	1.58 m
Draft max. shallow keel	$T_{\max}$	1.18 m
Draft max. racing keel	$T_{\max}$	1.80 m
Deck height amidships	H	1.05 m
Vertical clearance top of mast	$H_d$	13.40 m

\* The vertical clearance can be a critical dimension when passing bridges or power lines. It is the height from the waterline to the top of the mast. It is measured without aerial or radar reflector, but does include the masthead light. Please adapt this figure to include any items you may have mounted on the top of the mast and mark it in the owner's manual.

#### Sail area

Mainsail	26.0 m <sup>2</sup>
High aspect jib, roll reef 105%	19.0 m <sup>2</sup>
Spinnaker	59.0 m <sup>2</sup>
Self-tacking jib	16.0 m <sup>2</sup>
Rollström genoa 140%	23.0 m <sup>2</sup>
Gennaker	51.0 m <sup>2</sup>
Furllström gennaker	50.0 m <sup>2</sup>

#### Displacement, weights

Displacement when fully loaded and ready to sail  
 $V_{\max}$  3500 m<sup>3</sup>  
Weight when empty  
 $G_{\text{leer}}$  3000 kg

#### Engine

Diesel engine (standard)  
Builder Volvo  
Type D1-13  
No. of cylinders 2  
Cylinder capacity 510 cm<sup>3</sup>  
Capacity 9,0 kW at 3200 rev/min  
Cooling direct (see water)  
Saildrive 130S  
Ratio revolution reduction 2,19 : 1  
Weight approx. 126 kg  
Rotary current lighting 12 V

Diesel engine (optional)  
Builder Volvo  
Type D1-20  
No. of cylinders 3  
Cylinder capacity 760 cm<sup>3</sup>  
Capacity 13,8 kW at 3200 rev/min  
Cooling indirect ( fresh water)  
Saildrive 130S  
Ratio revolution reduction 2,19 : 1  
Weight approx. 144 kg  
Rotary current lighting 12 V

#### Electrical system

##### 230 V alternating current

The yacht is optionally equipped with shore power to enable recharging of the batteries and to ensure that there is warm water even when the yacht lies in the marina. Two power sockets are mounted to enable the use of domestic appliances and motor-driven tools.

##### 12 V direct current

The normal ship's power as well as the navigation lighting, pumps, appliances and interior lighting comes from the usual 12 V d.c. system.

### **Battery capacity**

The yacht is equipped with two batteries:

Starter battery 12 V, 55 Ah, maintenance-free, protected against run-down. This battery is located under the aft cabin on port.

User battery 12 V, 90, Ah, maintenance-free, protected against run-down. This battery is located under the round sofa on port in the saloon.

### **Tank capacity**

1 fresh-water tank 100 litres  
The tank is located under the forward cabin (bottom end).

1 fuel tank 60 litres  
The tank is located on the starboard side in the cockpit locker.

1 optional faeces tank 47 litres  
The tank is located in the wet cell cupboard.

### **Maximum number of persons, maximum load**

#### **Maximum number of persons**

The directive requires that for each boat a maximum number of persons on board is recommended, when the boat sails in its

envisaged range. The yacht is constructed for use outside coastal waters, including trips between harbours of more than one day. The following is recommended:

- In case of sea trips of more than one day the crew should not consist of more than 4 people, since there are 4 berths.

**Note:** There must be a lifejacket on board for each crew member.

- In case of day trips not more than 6 people should be on board if possible, since that is the maximum number that can be seated in the cockpit. For short trips this number may be higher.

**Note:** There must be a lifejacket on board for each crew member.

#### **Maximum load**

The directive requires that the maximum load is recommended by the builder. It includes people, personal equipment, fuel, water and provisions. It is indicated on the builder's plaque.

For the Dehler 29 this maximum load is 500 kg.

The stability of the yacht is based on this number.

#### **Where to place craning girths**

#### **Where to support the hull for transportation**

#### **Cranes**

In many marinas yachts are craned onto dry land. It is essential that the girths are placed so as to give maximum support and divide the hull weight in the best possible way.

The Dehler 29 has markings on the toe rail which indicate the preferred location of the girths.

These markings can also be found on the illustration below.

Preferred placing of craning girths  
Transportation / winter storage support  
points

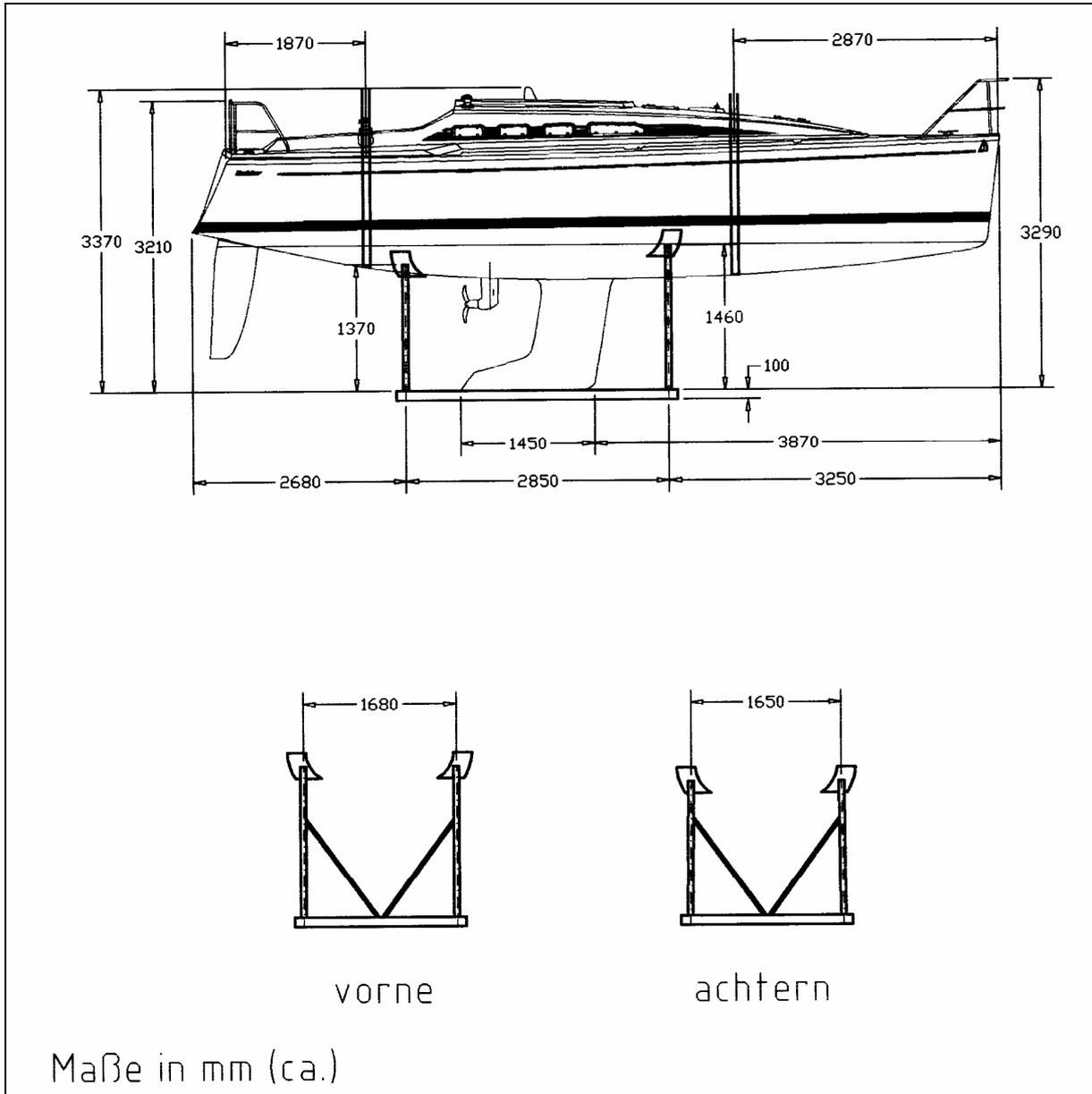


Illustration 1. Transportation measurements for the standard keel  
Measurements in mm (approx.) Front Back

General layout

Interior plan

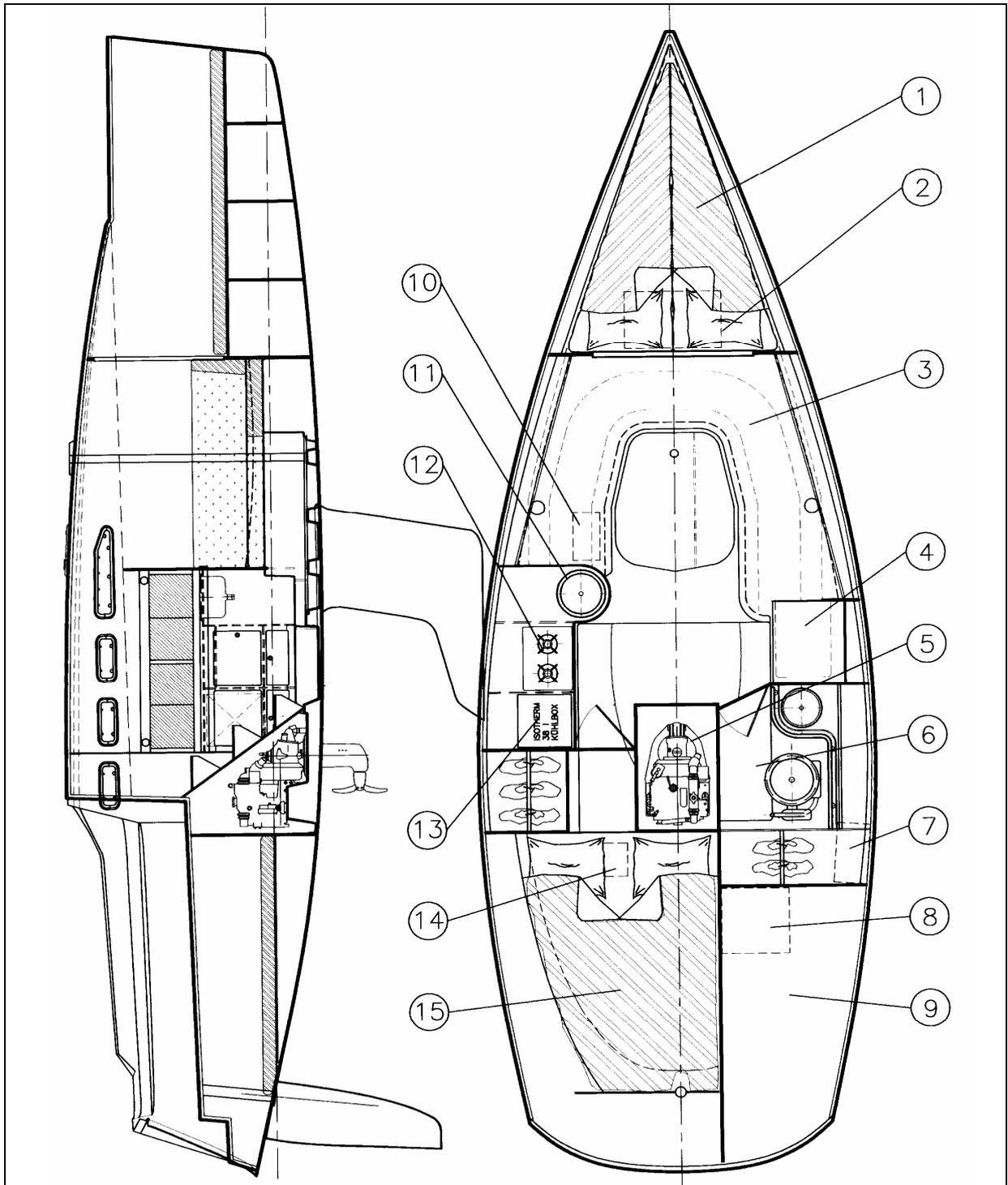


Illustration 2 Interior plan

- |                  |                   |                     |
|------------------|-------------------|---------------------|
| 1. Forward cabin | 6. Wet cell       | 11. Galley sink     |
| 2. Water tank    | 7. Faeces tank    | 12. Stove           |
| 3. Round sofa    | 8. Fuel tank      | 13. Cool box        |
| 4. Chart table   | 9. Cockpit locker | 14. Starter battery |
| 5. Engine room   | 10. User battery  | 15. Aft cabin       |

Deck plan

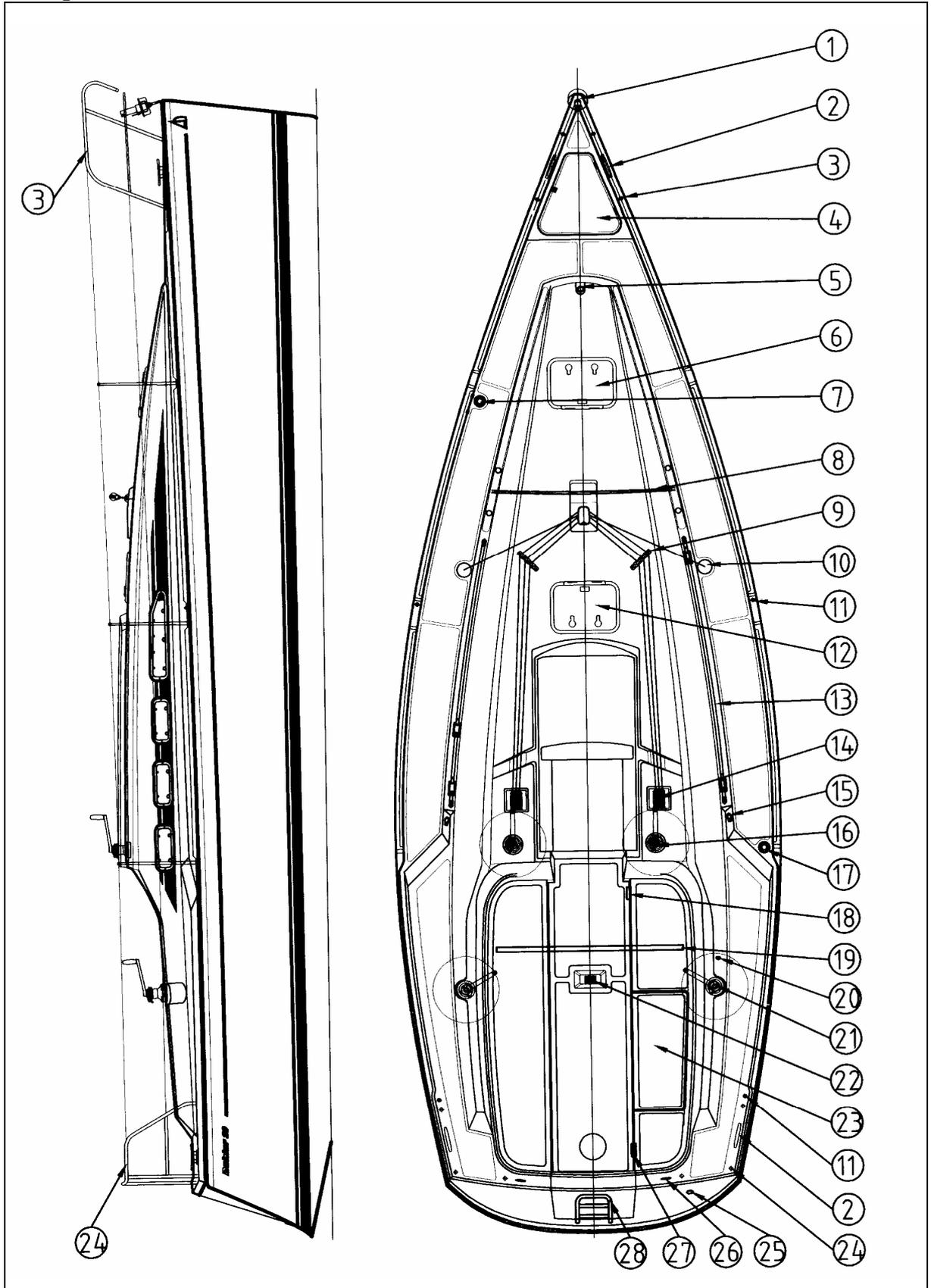


Illustration 3 Profile and deck plan

**Clarification of deck plan**

1. Forestay fitting
2. Belaying pin
3. Pulpit with opening
4. Anchor well
5. Cleat for spinnaker pole downhaul (optional)
6. Forward hatch
7. Deck fitting water
8. Rail for self-tacking jib (optional)
9. Deck organiser
10. Turnbuckle
11. Cleat
12. Cockpit hatch (optional)
13. Genoa rail with car
14. Halyard stoppers

15. Genoa sheet block with cleat
16. Halyard / sheet winch
17. Deck fitting diesel
18. Winch handle pocket
19. Traveller (optional)
20. Ventilation fuel tank
21. Genoa / spinnaker winch (optional)
22. Mainsheet block
23. Storage space for liferaft (bag) in cockpit locker
24. Two-part pushpit with flagstaff holder
25. Heating vent (optional)
26. Backstay fitting
27. Bilge pump
28. Swimming ladder

**Tapped in fittings**

All deck fittings that carry loads are tapped into aluminium plates laminated onto the deck.

**Windows, hatches:** Rinse with clean water and polish with a soft cloth.

**Deck fittings**

All walking areas on deck have anti-slip profile. Anti-slip floor or teak are optional.

**Teak:** regularly rinse with clean water. If you prefer a deeper colour, sand lightly and saturate with teak oil.

**Guardrail**

The deck is equipped with a stainless steel pulpit, pushpit and guardrail, height 610 mm. The stanchion feet are screwed through the deck.

The conically shaped stanchions support two stainless steel wire 7x19 lifelines.

**Short building description**

**Type:**

The Dehler 29 is a comfortable cruising yacht with a high speed potential. The Dehler 29's well-balanced hull lines, the long waterline and the lightly V-shaped bow frames ensure that the boat stays on course under sail and takes the waves easily.

**Maintenance tips**

**Stainless steel fittings:** polish any mat or dark spots, so that the stainless steel keeps its rustproof characteristics.

**Winches, blocks:** take apart at least for winter storage, clean and treat with appropriate lubricants.

Instead of the standard cast iron keel the yacht can also optionally be equipped with a lead shallow keel or a combined lead-cast iron racing keel. Because of their small wetted surface and a low centre of gravity, all keels deliver excellent sailing performance in their respective classes.

The free-standing balanced rudder has an optimal profile and is carried by two self-

righting bearings.

**Building method:**

Hull, deck, inner shell and all other plastic parts are made of glass-reinforced polyester (GRP) using the hand lay-up method: glass mats – weavings and unidirectional fibres saturated in resin - are placed into the production moulds by hand.

Large parts of the hull consist of solid laminate, while a sandwich construction with balsa core was selected to reinforce the bow section. A grid of longitudinal and athwartships reinforcements ensure a even spread of forces in the laminate construction. Hydrolysis-proof glass fibre resin guarantees perfect osmosis protection.

The deck is built using both solid and sandwich construction, and reinforcements are laminated underneath all fittings that carry loads.

In the production mould hull and deck are laminated together to become a homogeneous unit. All GRP surfaces are sealed with gelcoat or topcoat.

Sail plan

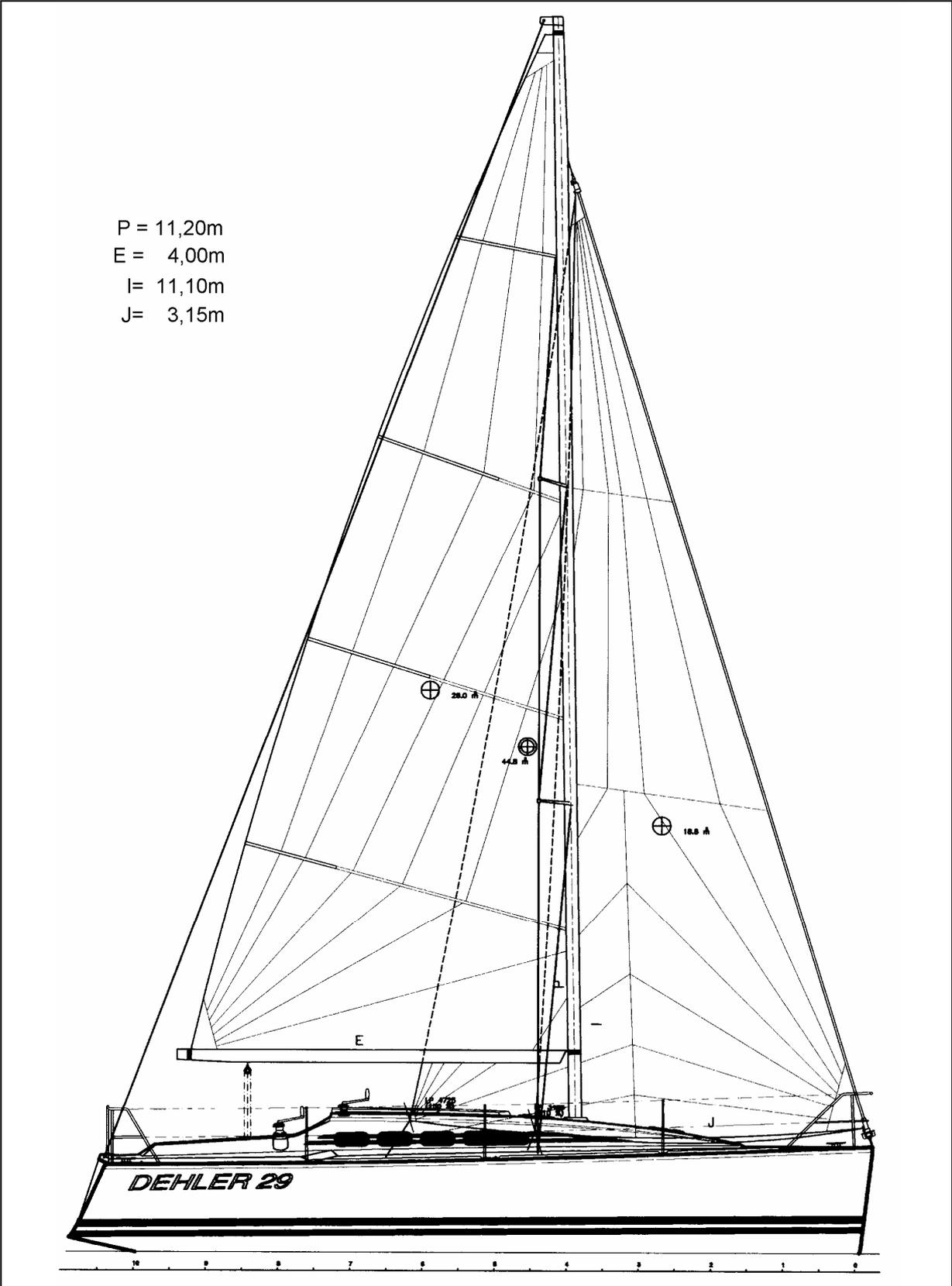


Illustration 4 Sail plan

**Sail wardrobe**

As a family cruising yacht the Dehler 29 has the following standard sailing wardrobe:

Mainsail	26.0 m <sup>2</sup>
High aspect jib, roll reef 105%	19.0 m <sup>2</sup>
The following sails are optional:	
Spinnaker	59.0 m <sup>2</sup>
Self-tacking jib	16.0 m <sup>2</sup>
Rollström genoa 140%	23.0 m <sup>2</sup>
Gennaker	51.0 m <sup>2</sup>
Furllström gennaker	50.0 m <sup>2</sup>

The cloth quality has been selected to fit the calculated wind forces.

The mainsail area can be reduced by means of two fast-slab reefs. The optional self-tacking jib runs on a car on a half-round ball-bearing rail.

**Rig**

The deck-stepped mast rests in a mast track.

Mast height:	12267 mm
Boom length:	4265 mm
Length spreaders:	650/950 mm

The profile dimensions are greater than the minimum inertia and resistance moments that the rig requires. These should be adhered to in case of replacement.

**Mastprofil:**

C156/87 Selden

**Boomprofil:**

120/62 Selden

**Standing rigging:**

- Forestay	6 mm, stainless steel 1x19	11410 mm
- Backstay	5 mm, stainless steel 1x19	11015 mm
- Briddel	5 mm, stainless steel 1x19	3800 mm
- V1	6 mm, stainless steel 1x19	3715 mm
- D1	6 mm, stainless steel 1x19	3780 mm
- V2/D3	6 mm, stainless steel 1x19	7005 mm
- D2	4 mm, stainless steel 1x19	3300 mm

**Running rigging**

- Jib halyard	8 mm
- Crane line	6 mm
- Main halyard	10 mm
- Reefing line	8 mm
- Masthead gennaker/spinnaker halyard	8 mm
- Topping lift	6 mm
- Backstay adjuster with blocks	
- Lazy jacks	5 mm
- Flag halyard	4 mm
- Outhaul	8 mm
- Reefing line 1	8 mm
- Reefing line 2	8 mm

**Tips to prevent breakdowns:****Rig:**

- Rinse the entire rig with plenty of fresh water before storing it for the winter.
- Check all standing and running rigging, halyard sheaves and turnbuckles before winter storage. If you find any grooves in a bolt, replace it immediately.
- Apply the appropriate lubricants to all moving parts. For turnbuckles graphite is particularly recommended. Spray the mainsail slides with a lubricant every now and then.
- If the mast or boom show chafing places, these should be cleaned and painted with a clear varnish appropriate for aluminium.
- Any tarnished or corroded parts of the stainless steel fittings should be polished, so that they remain operative.

**Sails:**

- Synthetic sails suffer from UV radiation. Any sail that stays on the boom should always be covered.
- Do not store wet sails for any lengthy period of time.
- Sails, too, should be rinsed with fresh water and properly dried before being stored for the winter, so that they do not become mouldy.
- Seams and eyelets should be thoroughly checked and repaired if necessary.

**Attention**

Before each sailing trip:

- Check wires, lines, turnbuckles and split pins
- Secure the split pins with tape or by bending them
- Replace deformed or damaged bolts

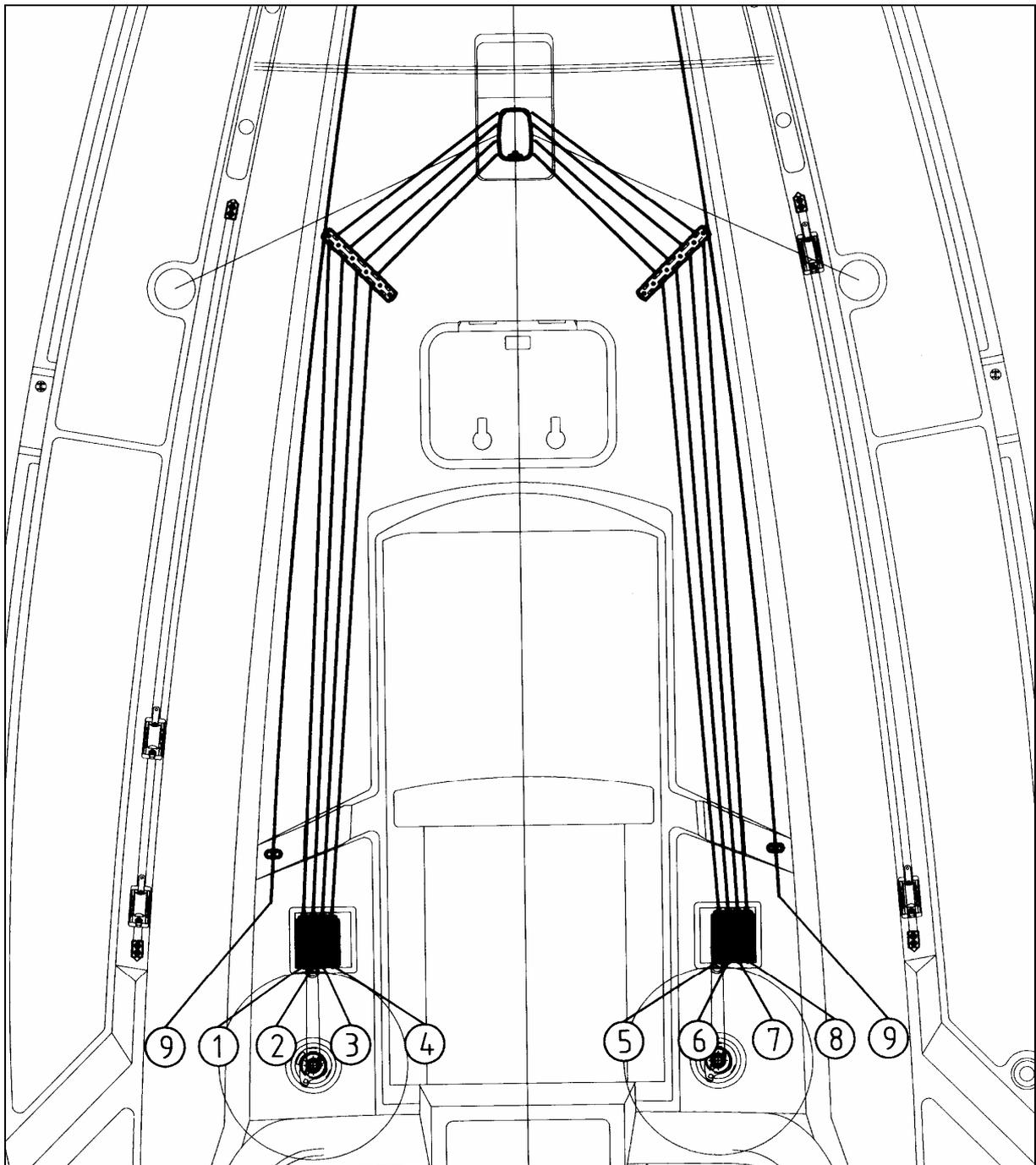
**Deck organisation**

Illustration 5 Halyard organisation

1. Genoa halyard
2. Outhaul
3. Reefing line 1
4. Boom vang (extra)
5. Reefing line 2
6. Mainsail halyard
7. Masthead halyard
8. Self-tacking jib sheet (extra)
9. Spinnaker downhaul

**Description of ship's systems**

**Engine room layout  
Propeller shaft, propeller**

The engine room is lined with insulating material. It is accessible via a hatch in the forward partition underneath the companionway and via the aft cabin, which is secured with fasteners to allow easy opening.

The fuel tank is located in the cockpit locker on starboard. There is adequate storage space next to the tank.

**Engine plan**

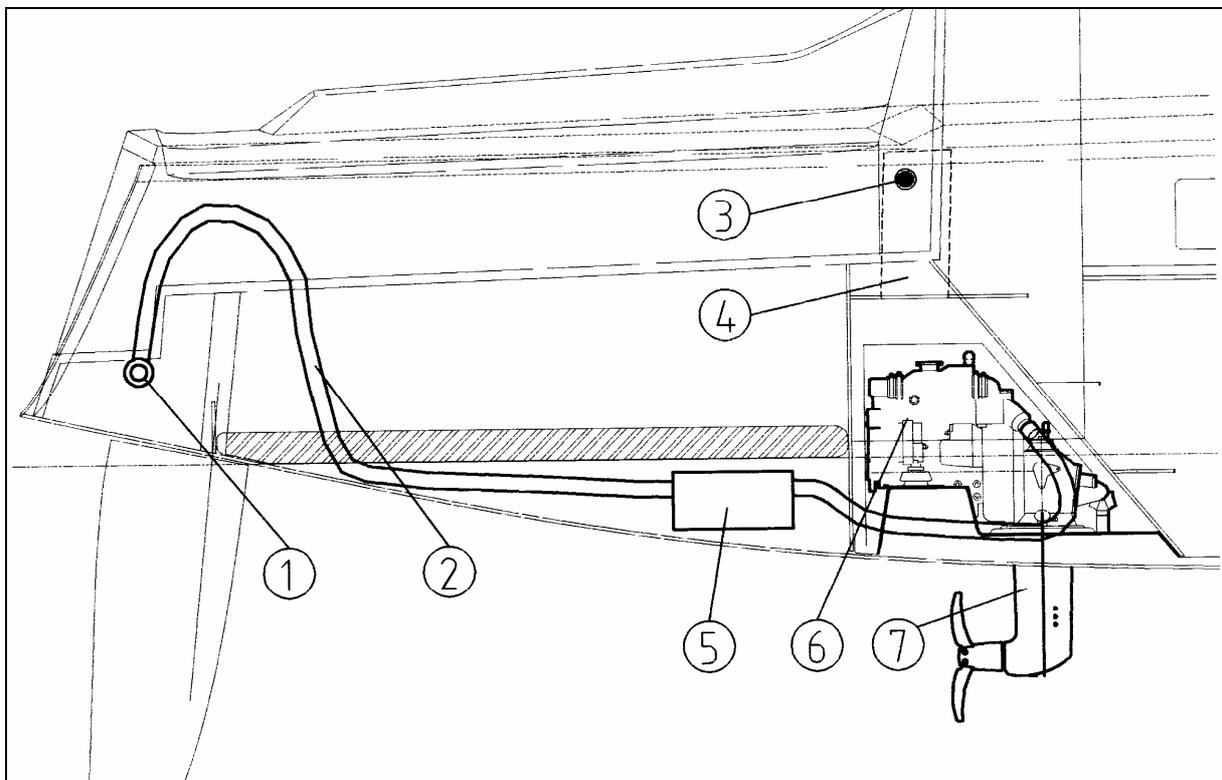


Illustration 6 Engine plan

- |   |                    |
|---|--------------------|
| 1. Exhaust                                | inner shell        |
| 2. Exhaust tube with U-trap               | 5. Water reservoir |
| 3. Ventilation to cockpit                 | 6. Engine          |
| 4. Ventilation shaft between bulkhead and | 7. Saildrive       |

**Propeller**

The appropriate propeller for engine and engine revolutions is fitted.

**Warning notice propeller**

Before winter storage the propeller should be cleared of any growth and inspected. In case of deformation, dents or nicks, these should be repaired. The propeller should

subsequently be properly balanced

skin fitting.

**Tanks and pipes – water**

**Fresh water. Drinking water, cold**

The Dehler 29 has a water tank with a capacity of approx. 100 litres. The deck fitting for filling the tank is situated on the port side. The ventilation tube leads to a

The pressure system ensures that the entire tube system has constant pressure. The pump is automatically activated as soon as one of the valves is opened.

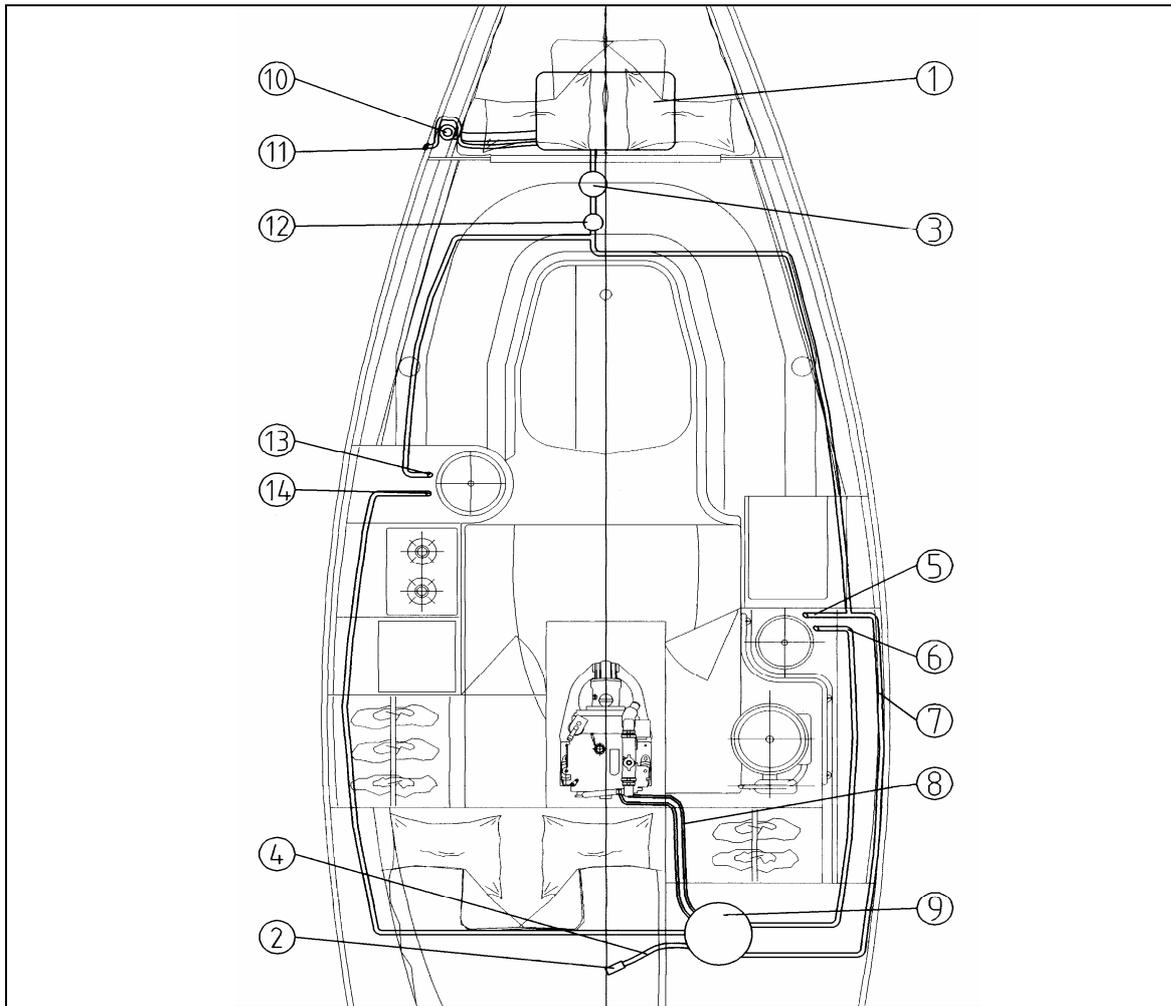


Illustration 7 Drinking water system

- |   |  |
|---|--|
| 1. Water tank                           | 9. Boiler (optional)                   |
| 2. Valve                                | 10. Fresh-water deck fitting           |
| 3. Water pump                           | 11. Tank ventilation                   |
| 4. Drain for boiler                     | 12. Pressure tank                      |
| 5. Cold-water outlet wet cell           | 13. Cold-water outlet galley           |
| 6. Hot-water outlet wet cell (optional) | 14. Hot-water outlet galley (optional) |
| 7. Feed pipe boiler (optional)          |  |
| 8. Heat exchanger engine (optional)     |  |

**Tip**

The tank has an inspection hatch for cleaning purposes.

Every now and then the water in the tank should be freshened. In addition, common water purification agents should be used.

**Fresh water, hot**

A heat exchanger is optionally installed for hot-water production. It is accessible via the cockpit locker on starboard. The engine cooling-water is used as the heat source. As the engine is only supposed to be used in case of no wind and for manoeuvring in the marina, the heat exchanger also has an electrical heating cartridge that is operated in the harbour using the 230 V alternating current circuit.

Cold fresh water is supplied via the pressure pump. The expansion tank in the cold-water circuit also reacts to the withdrawal of hot water. There are two tapping points.

**Attention**

The jubilee clips should be tightened annually

When there is a risk of frost the system should be drained via the bilge pump tubes while the cold-water supply is stopped.

**Engine cooling**

The engine is equipped with separated cooling systems. The raw-water cooling is drawn via the saildrive. Together with the exhaust fumes the cooling-water leaves the yacht via a silencer and then via the exhaust in the transom.

The second closed circuit is filled with antifreeze at the factory. It serves at the same time to heat up the heat exchanger (boiler).

**Attention**

Close seacocks when leaving the yacht

**Toilet system**

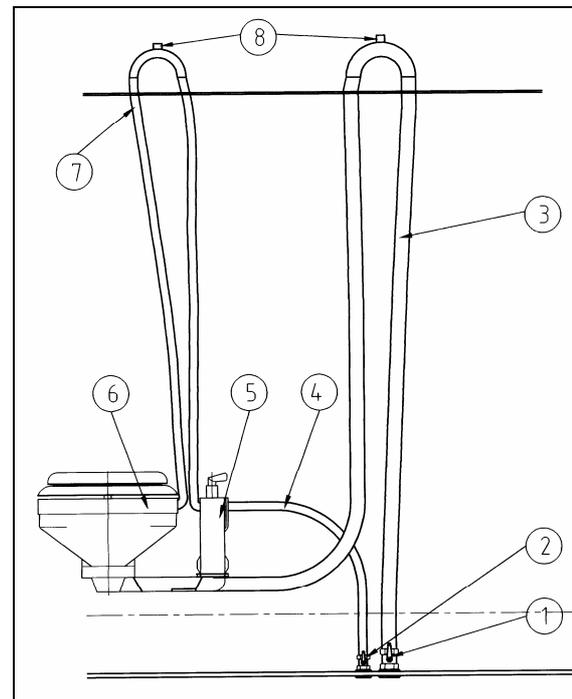


Illustration 8 Toilet system without faeces tank

- 1. Valve 1 1/4"
- 2. Valve 3/4"
- 3. U-trap
- 4. Tube that draws in water
- 5. Pump
- 6. Heads
- 7. U-trap
- 8. Bent tube with ventilation

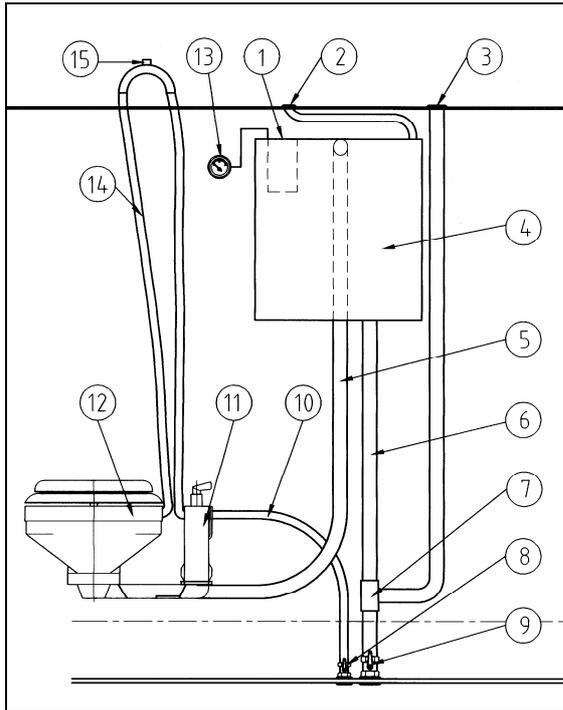


Illustration 9 Toilet system with faeces tank

1. Tank transducer (extra)
2. Ventilation (extra)
3. Tank suction (extra)
4. Faeces tank (extra)
5. Faeces tank feed pipe (extra)
6. Tank discharge (extra)
7. T-section (extra)
8. Valve 1 1/4"
9. Valve 3/4"
10. Water-feeding tube
11. Pump
12. Heads
13. Gauge "3/4 full" (extra)
14. U-trap
15. Bent tube with ventilation

**WC system, holding tank**

The ship's toilet is a common toilet with a pump. The valve is opened to flush the toilet and the contents of the bowl are subsequently pumped out.

**Faeces tank**

The tank consists of non-rusting steel (material number 1.4401) and is largely corrosion-resistant. The tank is bled via a smell-proof tube that ends below decks in a 3/4" skin fitting.

**Emptying the tanks**

The tank is emptied via a tube, with a normalised deck cap that carries the ISO symbol.

The contents can, however, also be pumped overboard using a globe valve. In protected waters it should be possible to seal the valve in the LOCK position.

**Attention**

Feeding tube of the heads should only be opened when in use (handle in line with the direction of the tube).

The normal position of the valve in the discharge tube of the tank is perpendicular to the direction of the tube (CLOSED). It should be possible to seal the handle in this position.

**Tank cleaning**

Do not add any chemicals to the water. Once a year the inside of the tank should be cleaned with water and environment-friendly domestic cleaning agents. Do not use an aggressive WC-cleaning agent. Agents that should not be used: see "Information on yacht toilets".

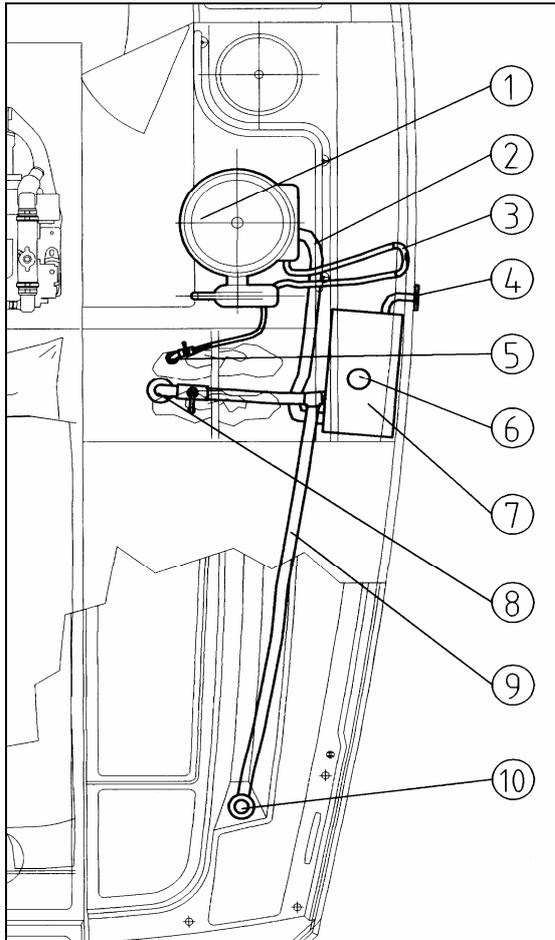


Illustration 10 Holding tank system

1. Toilet
2. Feeder pipe faeces tank
3. Tank ventilation
4. Bent tubes with ventilation
5. Feeder pipe raw water with globe valve
6. Gauge "3/4 full"
7. Faeces tank
8. Toilet discharge
9. Tube leading to deck exhaust
10. Exhaust on deck

## Tanks and pipes - fuel

### Fuel engine

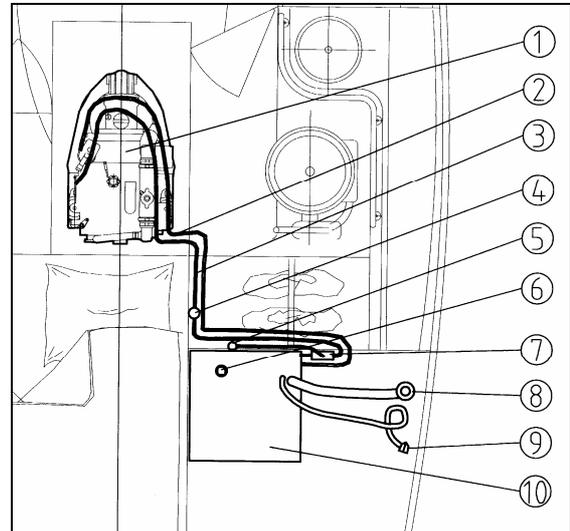


Illustration 11 Fuel system

1. Engine
2. Feeder pipe
3. Return pipe
4. Filter
5. Switch emergency stopcock
6. Tank transducer
7. Emergency stopcock
8. Fuel mouth
9. Fuel ventilation
10. Fuel tank

### Storing tank

On starboard a stainless steel diesel tank with a capacity of approx. 60 litres is installed. It can be filled through the deck (mouth marked "FUEL"). Feeder pipe: fire-proof fuel tube as per ISO 7840. Ventilation rises to below decks.

### Circuit engine

Outlet via suction tube on the top of the tank. Because of the short tubes: continuous fire-proof fuel tube, via rough filter/water divider, fuel pump, fine filter to engine, flow-back to tank. The tank has a

## **DEHLER 29**

spring-loaded fast-closing valve that can be operated by remote control.

**Fuel heating**

**Circuit heating**

Fire-proof fuel tube. Outlet via suction tube on the top of the tank. Via valve, filter and fuel pump to heating appliance.

**Attention**

Trouble-free operation of the engine and heating is only possible when the fuel is clean. It is therefore essential that filters/water dividers are regularly inspected and cleaned. Once a year the diesel tank should be emptied out completely.

**Warning**

Before filling up the tank  
 - switch off engine, heating and stove

When filling:  
 - never smoke  
 - never handle with open fire

**Attention**

In case of fire danger  
 - close spring-loaded safety valve by remote control

**Rudder system**

The Dehler 29 has tiller steering. The balanced rudder has a conical rudder shaft made of salt-waterproof solid aluminium. with welded on aluminium stabilisers  
 Top and bottom rudder bearings are self-aligning, which ensures easy steering even when the forces on the rudder increase.

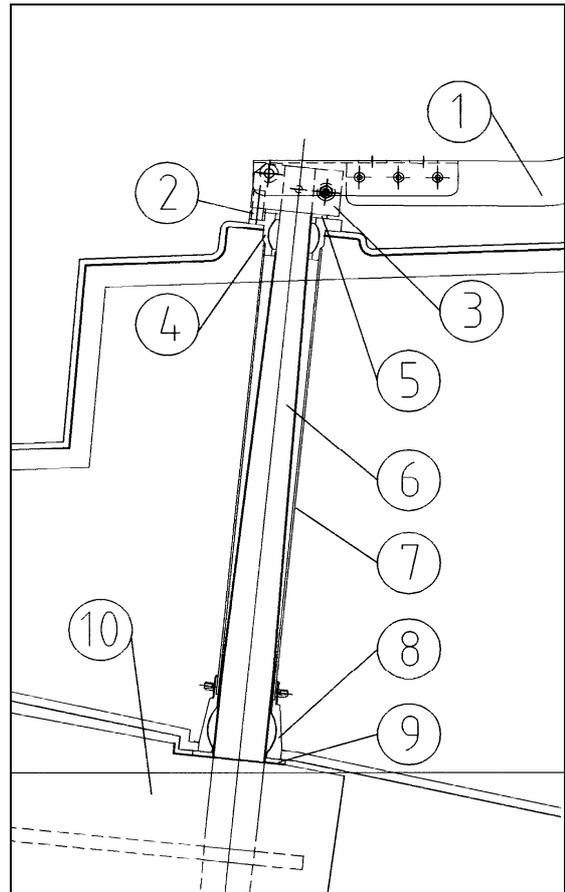


Illustration 12 Rudder shaft system

1. Tiller with fitting
2. Pin for rudder restriction
3. Rudder head with safety bolts
4. Self-aligning bearing
5. Distance ring
6. Rudder shaft
7. Rudder stock
8. Self-aligning bearing
9. Distance ring
10. Rudder blade

**Attention**

When the steering system fails, the yacht should be turned head to wind

**Bilge pumps, tubes**

The yacht has a manual bilge pump as per GL-prescription. Suction capacity: 5600 l/h.

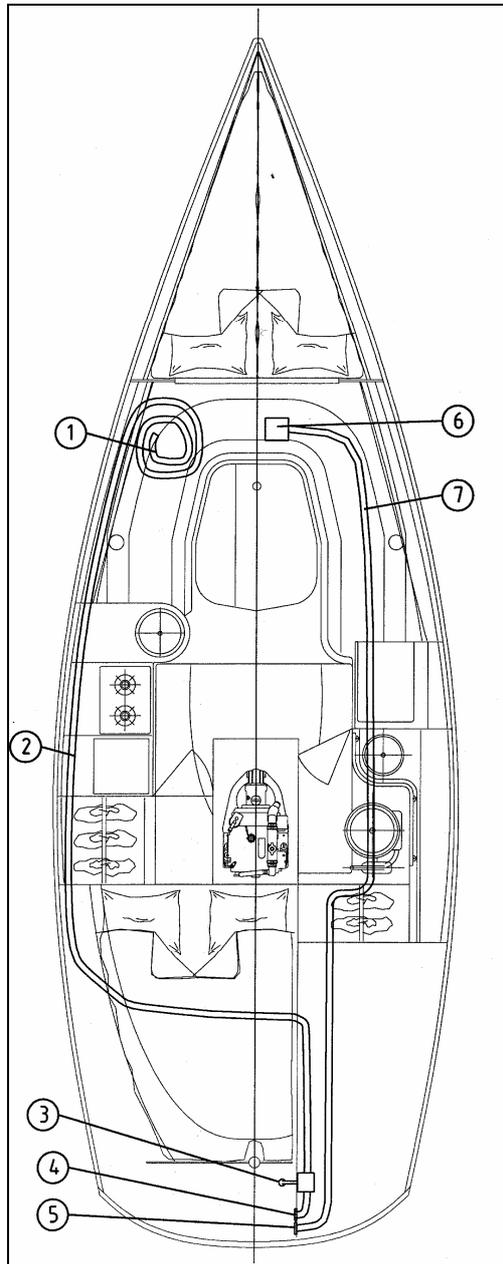
**Pumping system**

Illustration 13 Pumping system

1. Extra tube length
2. Tube
3. Manual bilge pump
4. Cockpit outlet
5. Cockpit outlet electric pump
6. electric bilge pump

**7. tube electric bilge pump****Manual pumping**

A tube of adequate length, which also reaches the bow and the aft cabin, lies in the saloon in the storage space on port. Via a fixed tube it leads to a manual bilge pump that is installed in the cockpit sunken into one of the sides of the cockpit locker. The water is drained via a cockpit outlet on starboard, which, as a U-trap, reaches under the aft deck.

**Tip for pumping**

A pail is an excellent pumping device. You should always have one ready to grab in the cockpit locker!

**Attention**

The total pumping capacity may not be sufficient when the yacht collides with floating objects. Take measures for such an exceptional situation by having materials available to stop leakages.

**Electrical system****Alternating current system**

The yacht is optionally equipped with shore power facilities, which enables you to draw power from the net while you are in the harbour. The socket is located on the starboard side near the pushpit opening. A 10 m shore power cable is supplied. The power enters the ship via a shore power unit on the side of the chart table, which consists of the following elements:

Shore power unit:

- Power failure safety switch
- Mains switch with signal lamp
- Outlets for appliances
- Voltmeter
- V socket
- Control button.

The socket is ready to use as soon as the shore power cable is plugged in. It should be used only for the operation of electrical appliances.

The outlet to the hot-water heating has a permanent cable system, which can be switched on/off and secured separately.

The battery charger is also connected with the instrument panel under the chart table. The specifications:

- Charger 230 V AV / 12 V DC
- A capacity
- IUoU-diagram
- Isolating diode for two batteries.

**Direct current mains**

The power demanded by all users runs via the 12 V direct current mains. It consists of the following main components:

**Power source:**

- Starter battery
- User battery
- Engine generator (lights)
- Charger

**Distribution blocks**

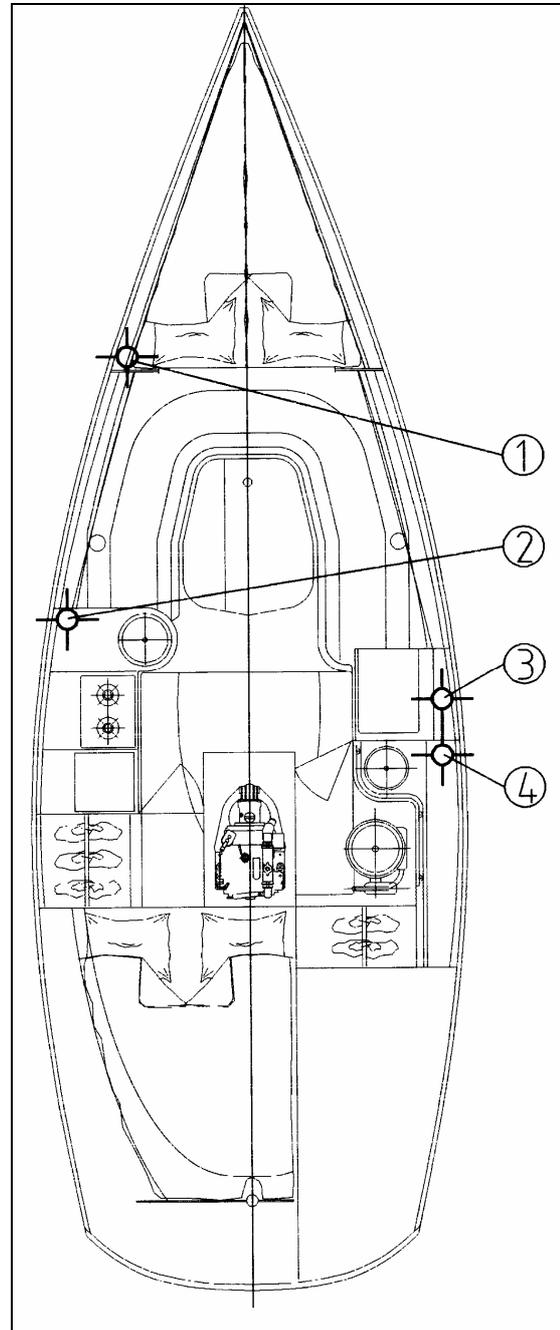


Illustration 14 Distribution of power points

1. three-way distribution block in the port bows
2. four-way distribution block under the galley
3. Main distributor navigator's seat
4. three-way distribution block in the wet cell

The distribution goes via the **circuit distributor** (instrument panel).

The specifications are:

- Made by Calira
- Type 328 Dehler
- circuits with thermal safety switches
- additional thermal safety switches
- Light diode indicator
- Flicking switch
- Bipolar security device for ultrashort waves/radio
- Voltmeter with changeover switch

The wording next to the switches indicates the respective users.

**Instrument panel**

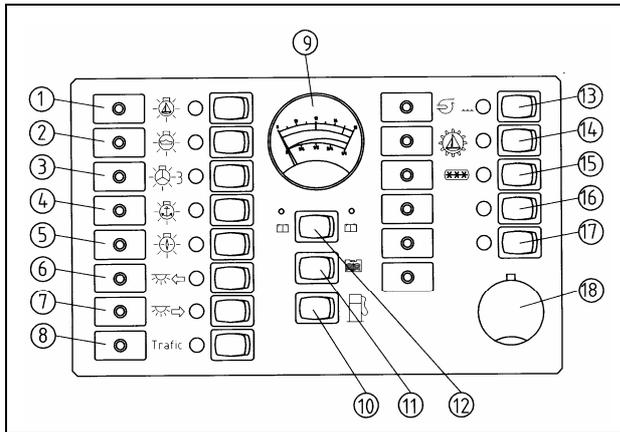


Illustration 15 Instrument panel

1. Bow light, stern light\*
2. Masthead light\*
3. Tri-colour light\*
4. Anchor light\*
5. Navigation instruments\*
6. Interior lighting port\*
7. Interior lighting starboard\*
8. Ultrashort waves\*
9. Multifunctional display
10. Switch for voltmeter
11. Switch for faeces tank gauge
12. Switch for fuel gauge
13. Water pump\*\*
14. Self-steering system\*\*
15. Refrigerator\*\*
16. Spare\*\*
17. Spare\*\*
18. Socket 12 V

\* Fuse, switch adjacent

\*\* Switch, fuse adjacent

**Instrument panel (optional)**

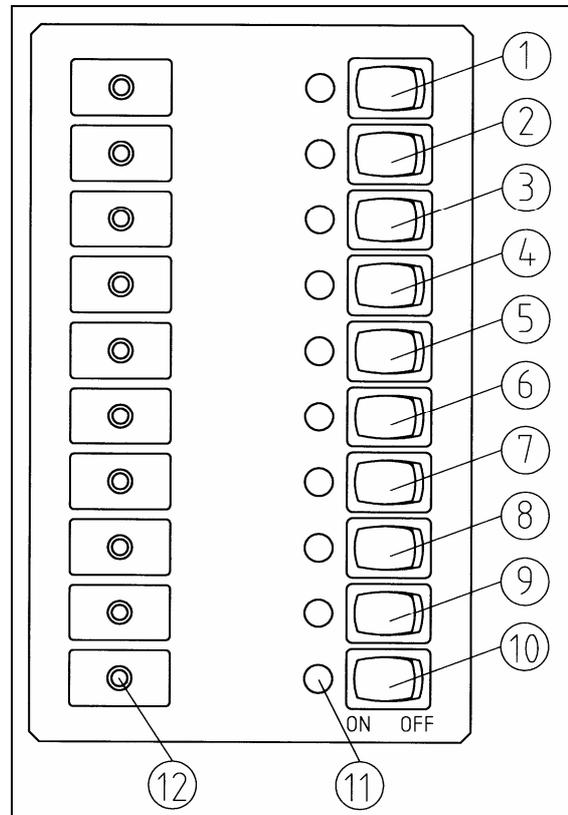
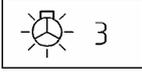
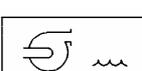
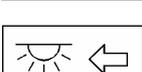
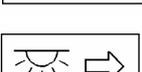


Illustration 16 Instrument panel

1. Bow light, stern light
2. Masthead light
3. Tri-colour light
4. Anchor light
5. Navigation instruments
6. Water pump
7. Interior lighting port
8. Interior lighting starboard
9. Ultrashort waves
10. Self-steering system
11. Switch control light
12. Fuse 8A for switch

**Legend for switch stickers**

	= Bow light, stern light
	= Masthead light
	= Tri-colour light
	= Anchor light
	= Navigation instruments
	= Water pump
	= Interior lighting port
	= Interior lighting starboard
Trafic	= Ultrashort wave radio
	= Self-steering system
free	= free

**Operation and system details**

The combination of an electrical ship's system (alternating and direct current) requires more knowledge but does offer considerably more comfort.

**Charging the batteries**

The yacht has two batteries  
 Starter battery, 12 V, 55 Ah  
 User batteries, 12 V, 90 Ah.

Both batteries are classified as maintenance-free. They are charged with the engine generator. To ensure that the

engine can always be started, the starter battery always comes first.

As soon as there is shore power, it takes over the charging of both batteries.

**Use of alternating current**

The only items which are permanently hooked up are the battery charger and the hot-water installation. The latter is protected by a separate fuse with a control light.

**Use of direct current**

The major circuits are:

- navigation lights
- engine instruments
- fuel gauge
- ultrashort-wave radio
- electrical appliances
- Comfort users/luxury goods

The navigation lights definitely come first. If because of a failure there is not sufficient capacity, all other users should be turned off at once. Running the engine, also while sailing, will recharge the batteries enough to allow the next major user to be switched on.

**Holding tank**

The holding tank has a gauge on the instrument panel that indicates when the tank is 3/4 full as per the ISO -norm.

**Comfort users**

This particularly covers the interior lighting with socket. All lamps have built-in switches so that each one can be used separately to conserve energy.

**Attention**

Before leaving the dock you should always  
 - check the battery tension

- check the working order of the navigation lights.

**Attention**

You should never

- work on electrical systems connected to the live mains.
- change or modify fuses and devices that protect against high voltages
- change any electrical installations and/or the connected plans. This should only be done by a qualified professional.
- install any electrical appliances or systems, or replacement parts which accept a higher voltage than that of the circuit.
- leave the boat unattended while the electrical system is running.

Look out

- The ship's electrical system and/or the drawings that represent it should not be changed.
- Service and maintenance work should be done by qualified professionals.

**Warning**

To avoid risk of electrical shock or fire:

- The shore power cable should never hang in the water.
- Always connect shore power to the boat first, then to the shore unit.
- Shore power plugs must not be changed. Only use plugs that fit.

To disconnect the shore power:

- First take out the plug connected to the shore power unit
- Immediately seal the socket on board with its cover.

**Circuit diagrams**

On the following pages you will find the following circuit diagrams:

**General circuit diagram**  
**Circuit diagram engine**

**Liquid gas system (optional)**

The gas installation for the stove has been installed in accordance with the German prescriptions, sketch G 608, and the European norm EN 10239. The test report is enclosed.

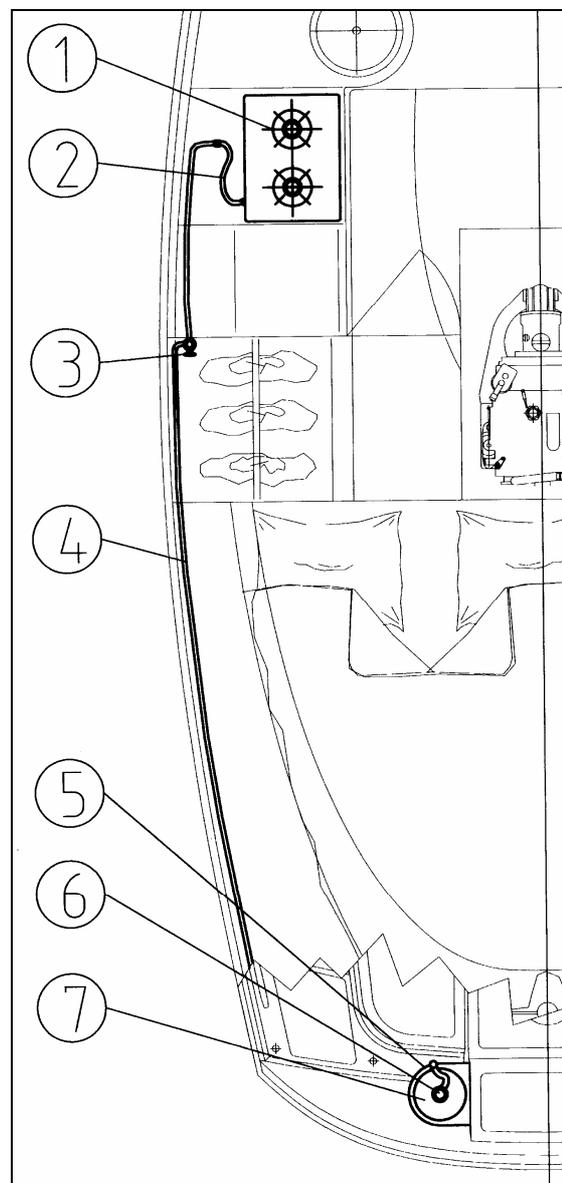


Illustration 17 Gas installation

1. Gas stove
2. Flexible tube

3. Stopcock gas stove
4. Fixed gas tube
5. Gas cylinder container
6. Gas pressure regulator
7. Gas cylinder 2 kg

**Operation**

Gas systems require accuracy. You should therefore stick to the following order:

- Open shutoff valve in gas cylinder locker
- Open the valve at the stove
- Press and turn one of the burner knobs and light the stove
- Keep pressing the knob until the ignition security device allows the gas to keep burning.

When switching the gas off, the order of operation is: turn off gas at stove - close valve in galley - close valve in gas cylinder locker.

**One more tip to help avoid problems with the gas system:****Warning**

When you are not using the stove, always close both the tube valve and the gas cylinder valve. In case of an emergency, shut the valves immediately.

- The valves of any appliances should be closed before the gas cylinder valve is opened.
- Regularly check your liquid gas installation for leaks. Test all the connections with soap water or cleaning agent solutions. (The valves of the appliances should then be closed and the gas cylinder and installation valves opened.)
- If you should find leaks, shut the gas cylinder valve and have the installation repaired by a professional before further use.

- Flames use oxygen, which makes good ventilation essential. Do not use the stove to heat the saloon.
- Do not block the access to any part of the liquid gas installation.
- Valves of empty gas cylinders should be closed and disconnected from the installation. Have the lid and the sealing caps ready.
- Do not use the gas cylinder locker for storing any other equipment.
- Do not leave your yacht unattended when the stove is on.
- Check the tubes of the liquid gas installation regularly, at least annually. Replace them in case of damage.
- When you replace the stove, ensure that the new stove has the same operating pressure.
- Check the exhaust pipe at least annually. Replace it when damaged.

**Look out**

For checking the tubes do not use any solutions that contain ammonia.

Never use an open flame to look for leaks.

Do not smoke and do not use an open flame when you connect or change the gas cylinders.

**Fire protection****Fire prevention**

During the construction of the yacht special attention was paid to fire prevention, including the choice of materials, the distance from the flames of the stove to any surrounding fixed items, and a free-standing engine in an engine room lined with self-extinguishing insulation material.

As owner of the yacht it is your duty to fit the appropriate fire extinguishers. (Also note the chapter Active Fire prevention)

As the yacht's owner you should maintain this situation and adhere to the following advice:

**Attention**

Keep the bilge clean and check at regular intervals if the yacht smells of fuel or gas.

Inflammable materials should not be stored in the engine room. When you store non-inflammable materials in the engine room, these should be secured in such a way that they cannot fall into the machinery or block access to the machine.

You and your crew can contribute to the fire prevention on board by adhering to the following advice:

**Never**

- block any exits and hatches.
- block access to any safety devices such as the fuel and gas valves or the switches of the electrical systems.
- make any changes to the ship's systems (particularly the electrical, fuel and gas systems).
- leave the boat unattended when any cooking or heating appliances are on.

In addition you should note the following:

**Never**

- Use gaslights in the yacht
- Fill the fuel tanks or change gas cylinders when the engine is running or when any cooking or heating appliances are being used.
- Smoke when handling fuel or gas.

**Active fire prevention**

Some of the most common sources of danger on board are

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

**Important notice**

**It is the duty of the owner of the yacht to make sure sufficient fire extinguisher are on board.**

If, despite all precaution measures, you should have fire on board, it can be fought with two fire extinguishers which are mounted in the following places:

**Nr. 1: CO<sub>2</sub>-Fire extinguisher**

At Nav-station  
Fire class A/B/C.  
For firefighting in engine room and pantry

**Nr. 2: Powder extinguisher**

in locker seat starboard  
Fire class 5 A/34 B  
For firefighting on deck

Location of fire extinguishers on deck

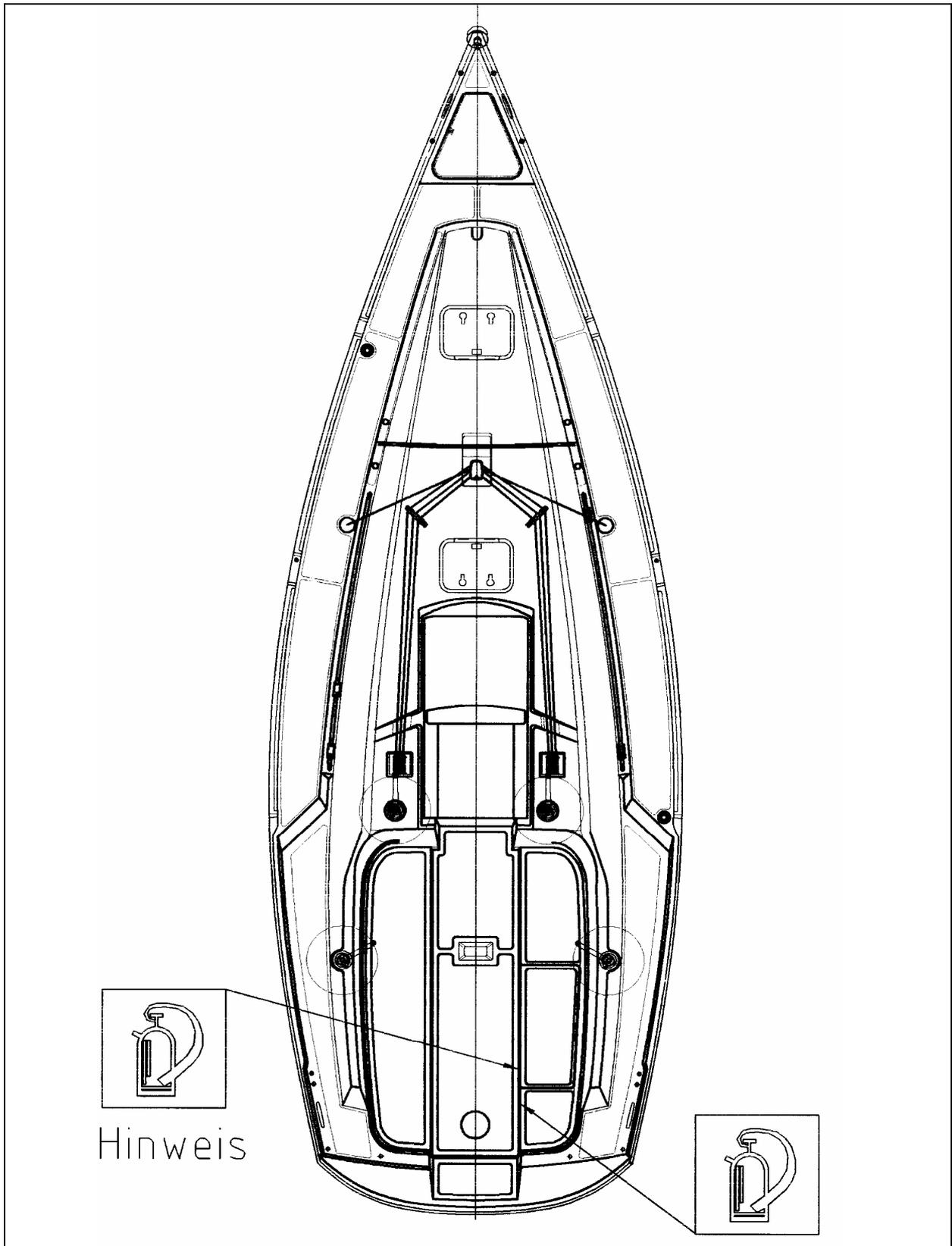


Illustration 18 Location of fire extinguishers on deck

Location of fire extinguishers below deck

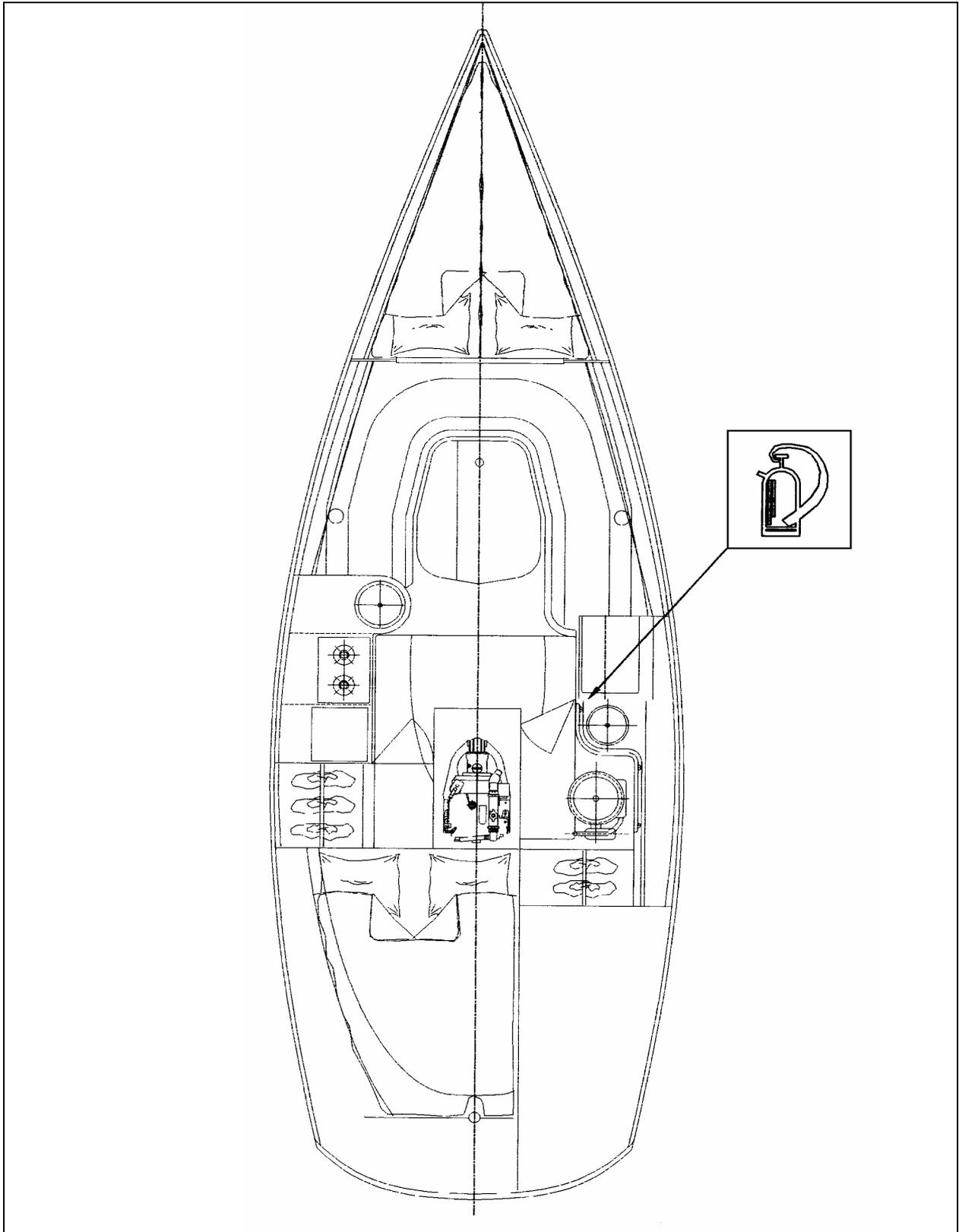


Illustration 19 Location of fire extinguishers below deck

**Fire fighting**

If, despite all precaution measures, you should have fire on board, you should act as follows:

All persons who can not actively fight the fire, should go on deck via the companionway.

**In case of fire in the galley**

Immediately shut the gas supply valve!  
If the fire has spread to parts of the interior, use the fire extinguisher.

**In case of fire in the living area**

There should be a pail ready in the cockpit locker, so that you will not have to use the powder extinguisher except in an emergency.

**Important advice:**

**It is the owner's duty to**

- have the fire extinguishers tested and serviced regularly;
- to ensure that fire extinguishers are replaced when they are past their expiry date. The same applies when they have been used. Any new fire extinguishers should have at least the same extinguishing capacity as the ones presently installed.

**It is the owner's or the skipper's duty to ensure that**

- the fire extinguishers are easily accessible
- all persons on board are informed about
- the location and use of the fire extinguishers and fire blanket;
- position and function of the engine room opening to be used for extinguishing any fire
- how to leave the boat through the forward hatch.

**Anchor, towing and warping equipment**

The anchor, towing and warping equipment was selected in accordance with the building prescriptions of the Germanische Lloyd.

**Mooring lines**

- 4 lines, 14 mm, 15 m long, PP-multifil

**Attention**

Before leaving the dock the skipper should be sure that

- the anchor chain is connected to the bow anchor
- the necessary mooring and towing lines are on board and ready for use

**Engine cooling circuit**

The yacht has separate cooling systems: an internal fresh-water circuit in the engine with additional cooling by raw water. On the one hand this ensures trouble-free engine operation, on the other it reduces the engine noise.

**Raw-water cooling circuit**

Enters the yacht through a skin fitting under the sink with seacock - bulkhead fitting - raw water filter located high - raw water pump on engine - underpressure valve located high - engine heat exchanger - injection into exhaust pipe - exhaust in the stern.

**Fresh-water circuit**

Internal fresh-water circuit in engine. Branching to hot-water installation with heat- and fireproof tube - flow back into engine circuit.

**Attention**

Check raw-water filter at regular intervals. Cleaning requirement depends on the water quality.

Before starting the engine:

- make sure that the cooling-water entrance is opened.
- look into the engine room to check for leakages.

When the engine is running:

- look to see if the cooling water leaves the yacht with the exhaust fumes.

If the raw-water cooling circuit should fail, the control light and audible alarm will switch on. Switch off the engine immediately and check the circuit.

**Maintenance advice**

For winter storage

- Fresh-water and raw-water circuits should be emptied in accordance with the detailed instructions in the engine maintenance manual, and all tubes ventilated.

**Exhaust system**

The yacht has a wet exhaust system, that is, the raw cooling water is injected into the exhaust pipe to ensure that the exhaust fumes are cooled down,

The mixture is led down into a silencer/water reservoir, flows back to the middle of the yacht, is led up towards the

transom and leaves the transom above the waterline. The exhaust tube consists of synthetic rubber with an integrated steel spiral.

The tube is heat-resistant, up to a certain point. The raw-water supply should not be discontinued. Make sure that the supply is not hindered in any way.

Inside the cabin the tube is covered so that no items that are stored there are in direct contact with it.

Regular inspection and testing whether the exhaust emits raw water are strongly recommended.

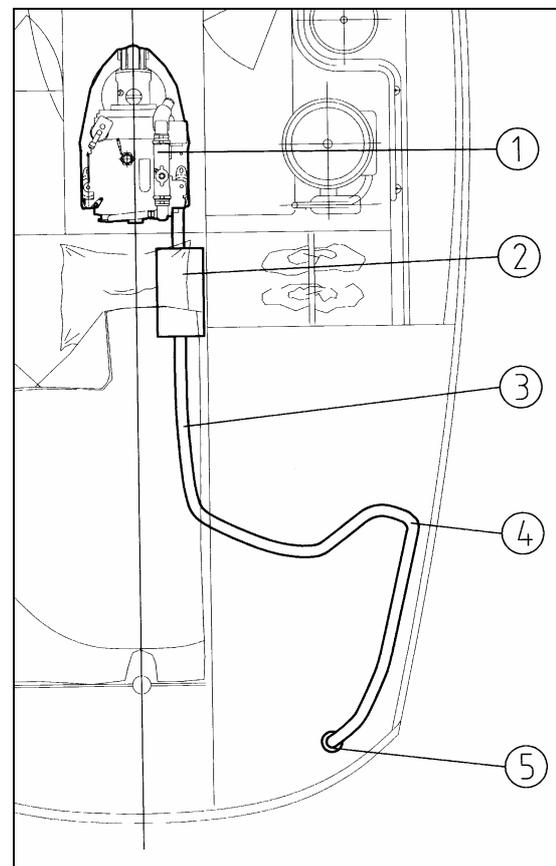


Illustration 20 - Exhaust system

1. Engine
2. Water reservoir
3. Exhaust tube
4. U-trap
5. Skin fitting exhaust



## Ventilation

Your yacht standard has 3 portholes that can be opened:

1. Porthole in the galley
2. Porthole in the heads
3. Porthole in the aft cabin

In addition 1 large hatch in the forward cabin

optional:

- 1 large hatch in saloon
- 4 additional portholes that can be opened in the saloon, heads, galley.

## Heating (optional)

In order to make the sailing season independent of weather influences and achieve a pleasant climate down below without building up too much condensation in the yacht a hot-air heating system with diesel burner has been installed. The heating is built in on the starboard side below deck and is accessible through the cockpit locker. The control panel is located on the partition over the chart table. The heating capacity can be continuously adjusted from 600 to 3000 Watt. The exhaust fumes leave the yacht via a spray-protected pipe on the stern.

### Warning

The exhaust outlet on deck is hot - burning danger

### Attention

- The hot-air tube in the cockpit locker should remain free of any stored equipment and supplies.
- The hot-air outlet should not be closed off. Minimal opening as per manual.

## Heating outlets

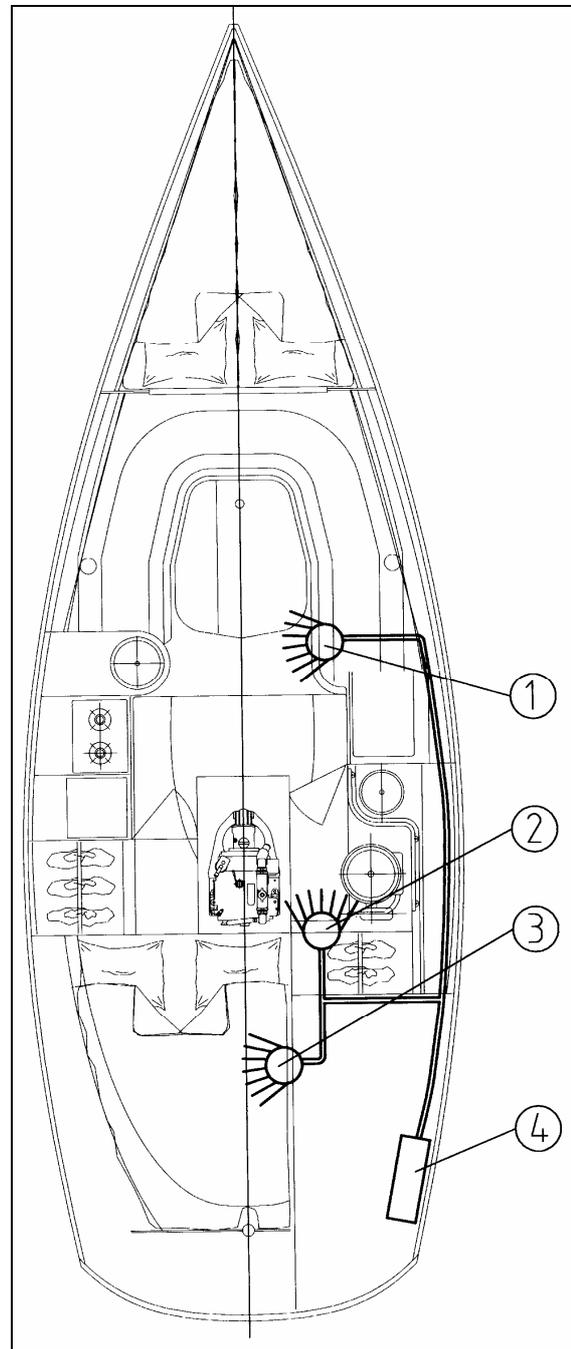


Illustration 21 - Heating outlets

1. Outlet saloon
2. Outlet wet cell
3. Outlet aft cabin
4. Diesel heating



## Skin fittings, seacocks

Openings below the waterline are potentially weak spots, which is why we draw our attention to them:

### List of skin fittings

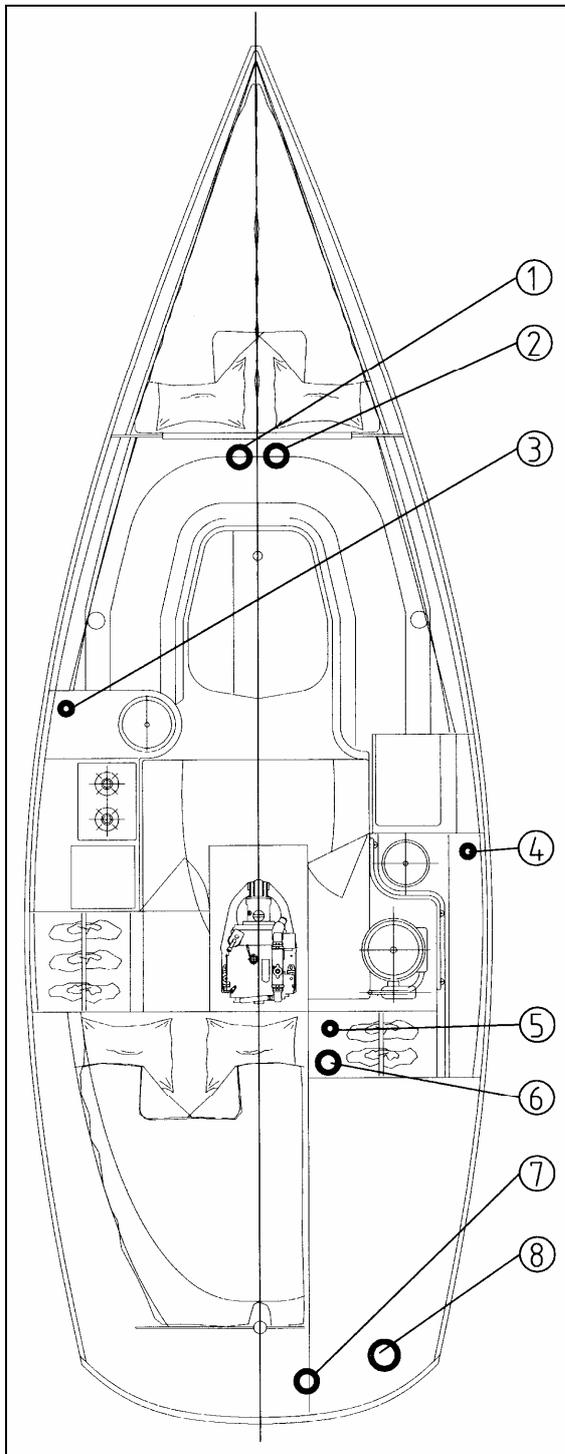


Illustration 20 Skin fitting

1. Skin fitting 1 ½" depth sounder (optional)
2. Skin fitting 1 ½" log
3. Skin fitting ¾", sink drain with fast-closing globe valve
4. Skin fitting ¾", washbasin drain with fast-closing valve
5. Skin fitting ¾" raw-water entry for heads with fast-closing globe valve
6. Skin fitting 1 ¼" heads or faeces tank outlet with fast-closing globe valve
7. Skin fitting 1 ¼", mechanical bilge pump (deck)
8. Skin fitting 1 ¾" exhaust outlet.

### Cockpit outlets

The cockpit is drained via the transom.

#### Attention

Close the sea taps when you leave the yacht. Seacocks in areas that are not in your field of vision (e.g. the heads) should only be opened when in use.

#### Warning notice

Skin fittings should be tested for leaks at regular intervals. Check the nuts of the valves and check whether the hoses are tight.

#### Tip

In the case of ball-taps it is easy to see whether they are open or closed.  
**CLOSED:** Handle stands perpendicular to tube or pipe  
**OPEN:** Handle stands in line with tube or pipe

## **Care, maintenance**

### **Care, cleaning**

#### **Hull, deck**

When your yacht goes into winter storage, that is the perfect time to subject the hull and all supporting construction parts to a detailed inspection. To this end you will receive documentation and specific advice from the shipyard.

With respect to the components of all technical equipment you will find tips regarding care and maintenance either in this manual under the relevant heading or they can be found in the installation and maintenance instructions as delivered by the suppliers, which are enclosed with this manual.

#### **Cleaning**

If possible, you should clean your yacht immediately after taking it out of the water. High-pressure cleaning appliances will remove all growth. It is then up to you to look after the gelcoat layer.

#### **Ventilation**

Whether your yacht is stored for winter outside or in a hall: good ventilation prevents corrosion, wet stains and moulding. The low humidity typical of clear winter weather will allow your yacht to dry out properly.

#### **Rig**

The rig, too, should be thoroughly checked before winter storage. In particular, the standing and running rigging should be looked at, but also the halyard sheaves and the mast and boom profiles themselves. When the rig is down any minor damage is easily repaired.

### **Electricity**

Contacts should always be free of corrosion and firmly connected. Once a year all connections should be tested.

The battery requires special care. And the designation „maintenance-free“ should not tempt you to leave the battery on board and connected when it is freezing. Only a fully charged battery that is disconnected from the mains will do its job for you without any problem in the season to come.

### **Tanks**

When the yacht is in winter storage the tanks should be either completely full or completely empty. Fuel tanks: When there is a little bit of diesel left in the tank, it should be emptied out and bled. Water tanks: Fresh-water tanks should be emptied out completely and opened. Clean the holding tank and tubes well (mild domestic cleaning agent) and leave it open. The openings of tanks, pipes and tubes should be filled up with gauze or cloth (air YES, dust NO).

### **Replacement parts**

As an experienced skipper you will not find it a problem to purchase original replacement parts. If you should need further information, this can be found in the chapter „Supplier information“. If you need replacement parts and the original parts are not available, the guiding principle is strength, so that the yacht remains in the same good technical condition that it had when it was delivered.

### **Repairs**

Repairs on the hull can be made by any professional company. The interior is constructed in such a way that almost all

areas can be reached without taking anything apart. For the technical equipment you also contact the relevant company. Here, too, the builder will help you.

### **Winter storage**

In various sections we have already paid attention to the measures to be taken when storing the boat for the winter. The guiding principle should be: winter storage businesses, too, should be up to date with recent technology. That applies not only to the environmental conditions of the storage location, but also the frames that the boat is placed on, fire prevention measures and the accessibility of your yacht. There should also be set rules regarding the jobs that the owner himself should carry out, so as not to hinder any other yachtsmen.

## **Environment protection**

### **Fuel and oil**

When filling up the yacht with fuel you should be very careful. A cloth around the fuel mouth can prevent that any fuel disappears into the water. A well serviced engine should never leak. To make sure that nevertheless no oil at all seeps into the bilge and subsequently disappears with the bilge water that is pumped overboard, the engine foundation has the shape of a closed tank. If this tank collects any water, possibly mixed with oil, this must be pumped into a separate can by means of a small bilge pump that hangs in the engine room and disposed of together with any old oil. Just in case there should be an oil binding agent on board.

### **Garbage**

Garbage does not belong in the water – that is obvious to any yachtsman. This also applies for biologically degradable garbage. You are advised to designate a fixed place in one of the cockpit lockers for garbage storage.

### **Noise**

The wet exhaust of a diesel engine with a silencer considerably reduces the amount of engine noise. Rubber bearings, elastic coupling and engine room insulation also help to reduce the noise. Nevertheless you should avoid accelerating too quickly and reduce the number of revolutions per minute in busy waters.

### **Wash**

Natural banks are easily damaged by wash. Keep a good distance to them. If you look at your wash, it is easy to see whether you should reduce speed in order to avoid unnecessary wash. You should also look out for relevant signposts in narrow waterways.

### **Exhaust**

The exhaust fumes emitted from the stern should be checked regularly. There should not be any black smoke, nor should it show any blue clouds. In such cases either the air filter of the engine needs cleaning – which you can do yourself – or you should have the engine tuned by a garage.

### **Antifouling**

A yacht's bottom should be protected by antifouling, as growth means that more energy is needed for propulsion. The choice of antifouling types is enormous with a wide range of effects.

The nature of the waters to be sailed should also be taken into account. Follow expert advice. Those antifoulings that remain operative without the need to sand the bottom are desirable. If the antifouling does need to be sanded down, you should discuss the job to be done with the people who store your yacht. The surface under the yacht should always be covered with

cloth or foil so that the sanding particles can be disposed of as chemical waste.

**Paint remover**

Most paint removers contain aggressive agents and should not be used if at all possible. Mechanical removal of the paint is preferred.

**Waste water**

The yacht is optionally equipped with a tank for the collection of toilet waste water. It should be noted that in those waters where pumping water overboard is prohibited, the seacock should be closed. A gauge indicates that the tank is full. In so far as possible, you should use the toilets in marinas or other places on land.

**Nature conservation**

Observe the written and also the unwritten rules of practical nature conservation.

## **Final remarks and tips.**

This manual is made in accordance with the harmonised European norm EN 10240. Much of what it contains will be obvious to you. We hope, however, that reading the various chapters has helped you to understand the technical systems and the ideas that have led to particular construction details. The aim of the manual, as laid down in the Introduction, is to allow you to enjoy your yacht without any problems.

Among the topics that have not been discussed are, for example, personal safety equipment. This is solely within the competence of the skipper. Naturally, personal floatation devices for all persons on board must be available. But the purchase and maintenance of a liferaft also comes under the skipper's responsibility, as do emergency signals, first-aid kit, repair tools, etc. As the directive gives special attention to fire prevention, it is noted that the fire extinguishers should be serviced at regular intervals and that it is the skipper's responsibility to instruct his crew as to their use. Those who are prepared for emergencies are usually not hit by them. If one should happen to you after all, your yacht is equipped with the right devices for all of them.

**Supplier information**

A listing of all those companies whose warranty conditions you will find in the enclosed papers and whose service network is at your disposal to observe the terms described there. We have worked with our partners for many years and know that any handling of claims will be properly dealt with. If you should nevertheless experience difficulty, please contact us immediately.

<b>EINBAUTEIL</b>	<b>TYP</b>	<b>INFORMATION</b>	<b>LIEFERFIRMA</b>
Ship's diesel	Volvo Penta	Operating instructions	Fa. Volvo Penta, 24159 Kiel
Saildrive	Volvo Penta	Installation information	Fa. Volvo Penta, 24159 Kiel
Folding propeller	Flex-O-Fold	Assembly instructions	Felx-O-Fold DK-6040 Egtved
Fuel filter	Volvo Penta	Building-in instructions	Fa. Volvo Penta, 24159 Kiel
Winches	Harken	Replacement parts list Maintenance information	Fa. Frisch, 80805 München
Ship's heating	Webasto	Technical description Building-in instructions Operating instructions	Fa. Webasto 82131 Stockdorf
Compressor refrigerator	Waeco	Operating information	Wähning, 48269 Emsdetten
Manual gear shift	Volvo Penta	Building-in instructions	Fa. Volvo Penta, 24159 Kiel
Mechanical bilge pump	Jabsco Amazon	Building-in information Operating information Replacement part listing	Fa. Jabsco 22844 Norderstedt
Heads	Brydon	Operating instructions	Fa. Jabsco 22844 Norderstedt
Fresh-water pressure pump	Wahle Evenflow	Assembly instructions	Lindemann, 20537 Hamburg
Compass	Suunto95	Operating instructions	Fa. Frisch, 80805 München
Gas stove	Eno 30m/bar	Installation, operation and maintenance information	Langhorst, 48411 Rheine
Methylated spirit burner	Origo 3000	Operating information	Cramer, 57074 Siegen
Navigation lights	Aquasignal	Fitting information Test declaration	Fa. Aquasignal, 28307 Bremen
Navigation instruments	Ratheon	Building-in and operating instructions	Eissing 27723 Emden
Self-steering system	Ratheon	Building-in and operating instructions	Eissing 27723 Emden
Power failure safety switch	Elva HD 82	Technical instructions	Fa. AEG, 31785 Hameln
Battery charger	Waeco 12 V / 25 AH	Installation and operating instructions	Fa. Waeco, 48282 Emstetten
Roller furling system	Furlex	Assembly instructions Operating information	Fa. H. Gotthard, 22761 Hamburg
Windows and hatches	Lewmar	Building-in information	Lewmar, NL 08042 PD Zwolle

Finally, a few useful addresses:

Tel. 0931 – 41 05-0, fax – 41 05 –380

**Boat builders' union**

If you require a yard for a refit, repairs, storage or other services, such as finding an expert, please contact:

Deutscher Boots- und Schiffbauer Verband

St. Petersburger Str. 1, 20355 Hamburg  
P.O. Box 30 12 27, 20305 Hamburg  
Tel. 040 – 35 28 17, fax – 34 42 27

With regard to shipping information and regulations, contact the water and shipping authorities. There you will also find the addresses of the regional water and shipping authorities, or any other ones that you require.

**Water and shipping authorities**

Water and shipping authority North  
Hindenburgufer 247, 24106 Kiel  
Tel. 0431 – 33 94-0, fax – 33 94-348

Water and shipping authority North West  
Schlossplatz 9, 26603 Aurich  
Tel. 04941 – 6 02-0, fax – 6 02 378

Water and shipping authority East  
Stresemannstr. 290, 10963 Berlin  
Tel. 030 – 26 99 0-20, fax – 36 99 0-270

Water and shipping authority Middle  
Am Waterlooplatz 5, 30169 Hannover  
Tel. 0511 – 9 1 15-0, fax – 91 15-400

Water and shipping authority West  
Cheruskerring 11, 48147 Münster  
Tel. 0251 – 27 08-0, fax – 27 08-115

Water and shipping authority South West  
Brucknerstr. 2, 55127 Mainz  
Tel. 06131 – 9 79-0, fax –9 79-155

Water and shipping authority South  
Wörthstr. 19. 97082 Würzburg

## **Warranty passport**

Dear Customer,

We are convinced of the quality of our sailing boats and therefore are able to offer you a special guarantee, in addition to legal warranty.

### **For a period of 5 years we guarantee the non-appearance of osmosis**

In the event of a warranty claim you are entitled to repair or replacement of defective parts. For repairs you should deliver the vessel to one of our service stations or the manufacturer's works.

In case faults occur in installed units which can be dismantled without considerable cost being incurred (e.g. navigation instruments, pumps etc.), such parts should be removed by the owner and sent to the respective manufacturer.

If in individual instances it should prove necessary following prior consultation with the Customer Service Department to have repairs carried out by third parties, you may claim reimbursement of the cost at the standard rates for the sector in the Federal Republic of Germany. If the work is carried out by our repair technicians, you are responsible for travelling expenses.

All other claims are excluded unless liability is compulsorily and statutorily ordered.

No warranty obligation is activated by manifestations which may be caused by improper care or excessive demands. This includes discolouration and hairline cracks in the gelcoat. Nor are small inclusions of air in the gelcoat layer covered by this warranty.

We would like to draw particular attention to the fact that any technical modifications or the use of materials not detailed in our documentation require our consent. No liability will be accepted for unauthorized work.

We wish you bon voyage in your new yacht!

The above is deemed to have been agreed as binding on both parties when signed by the customer.