

## Owner's Handbook

# DEHLER 35 cws

L.O.A.	10.50 m
L.W.L	9.20 m
Beam max.	3.30 m
Superstructure Height above WL	1.70 m
Draft, upside-down keel.	1.90 m
Draft, wing keel.	1.50 m
Displacement.	5,100 kg
Ballast.	2,200 kg
Mainsail.	37 sq. m
No. 1 jib	24 sq. m
High-aspect jib	24 sq. m
Masthead Genaker	70 sq. m
Storm jib	8 sq. m
Mast Height above WL	16.20 m
Water Tank.	100 litre/ 2x 100 litre
Diesel Tank.	65 litre
Holding Tank.	50 litre

Battery	1x 90 / 110 Amp Hr.
Or	2x 115 / 135 Amp Hr.
Gas Bottle, Camping Gaz	1 x 3 kg

### Yanmar inboard diesel engine

Standard specification	2 GM 18HP
Additional specification	3 GM 27HP

F= Dual circuit cooling system

Owner

**A**

Boat Name

**L**

Build Number

**5 - 1**



## Contents

<b>Preface .....</b>	<b>5</b>
<b>Rigging .....</b>	<b>6</b>
Craning .....	6
Shaft Seal.....	6
Your First Task.....	6
Preparing to step the mast.....	7
Rigging the mast.....	8
Fitting the masthead attachments.....	8
Stepping the mast.....	9
Tuning the mast.....	11
<b>DEHLER Main-Drop-System.....</b>	<b>12</b>
Attaching the boom / Fitting Main-Drop canvas.....	13
<b>Bending on the Mainsail.....</b>	<b>14</b>
Patches.....	15
Inserting & tensioning the sail battens.....	15
<b>Routing Control Lines to the Central Winches.....</b>	<b>16</b>
<b>Headsail.....</b>	<b>17</b>
<b>Topp-Reff</b> roller headsail system.....	17
Winch system.....	18
<b>DEHLER quick-reefing System.....</b>	<b>19</b>
Masthead Genoa.....	20
Storm Jib.....	21
Sail handling.....	21
<b>Basic Rules for trimming 7/8 rig.....</b>	<b>22</b>
Headsail Trim.....	24
Mainsail Trim.....	24

<b>Rudder System.....</b>	<b>25</b>
Wheel Steering.....	25
<b>SOLIMAR</b> Wheel Steering system.....	25
Steering Pedestal.....	25
Compass.....	27
Rudder Bearings.....	27
Emergency Tiller.....	27
<b>Anchor.....</b>	<b>28</b>
Bow Anchor with Electric Windlass.....	28
Stern Anchor Arrangements.....	29
<b>Engine Installation.....</b>	<b>30</b>
Servicing.....	30
Winterizing.....	30
Engine Controls – starting the engine.....	30
<b>Centraflex</b> shaft coupling.....	31
Fuel Supply.....	31
Warranty.....	31
Shaft arrangement.....	32
Folding Propeller.....	32
Drinking Water System.....	32
<b>Skin Fittings &amp; Stopcocks.....</b>	<b>33</b>
<b>Electrical System.....</b>	<b>34</b>
Battery Capacity.....	34
Instrument & Switch Panel.....	35
Switch Panel.....	35
Shore Power Supply Terminal.....	36
Navigation Lights/ Mast lights.....	37
Switch Boxes for Electric Winches.....	37
Circuit Diagram.....	37
Maintenance of Electrical System.....	37
Circuit Diagram.....	38
Engine Circuit Diagram.....	39

Switches & Fuses.....	40
Main & Secondary Electrical Distribution Connectors.....	40
Tracking Down Faults in the Electrical System.....	41
<b>Servicing the Winches.....</b>	<b>42</b>
<b>Autopilot.....</b>	<b>42</b>
Maintenance.....	43
<b>Central Heating System.....</b>	<b>43</b>
Operating the heating system on board.....	43
Malfunctions.....	43
<b>Interior Fittings/ Deck.....</b>	<b>44</b>
Refrigerator/Cool Box.....	44
Drinking Water System.....	44
Dirty Water Tank.....	44
Cockpit Shower.....	45
Hot Water.....	45
Marine Toilet.....	45
Shower.....	46
Bilge Pump.....	46
Gas System.....	47
Anti-slip Deck Covering.....	48

## Dear Sailing Friend

Your DEHLER 35CWS has been built and fitted out with the utmost care. We wish you many relaxing and enjoyable hours of sailing in her.

Naturally, to get the most out of your boat, proper handling and a little care and attention are called for. In short, observe the age-old principles of good seamanship, the first requirement of which is that one should know how to help oneself in any situation. This is a principle with which any experienced yachtsman will be familiar.

It is often the case with a brand-new boat that minor finishing touches will be required. Experience dictates that it takes a little time to become fully acquainted with a new vessel, and to further fit it out to one's requirements.

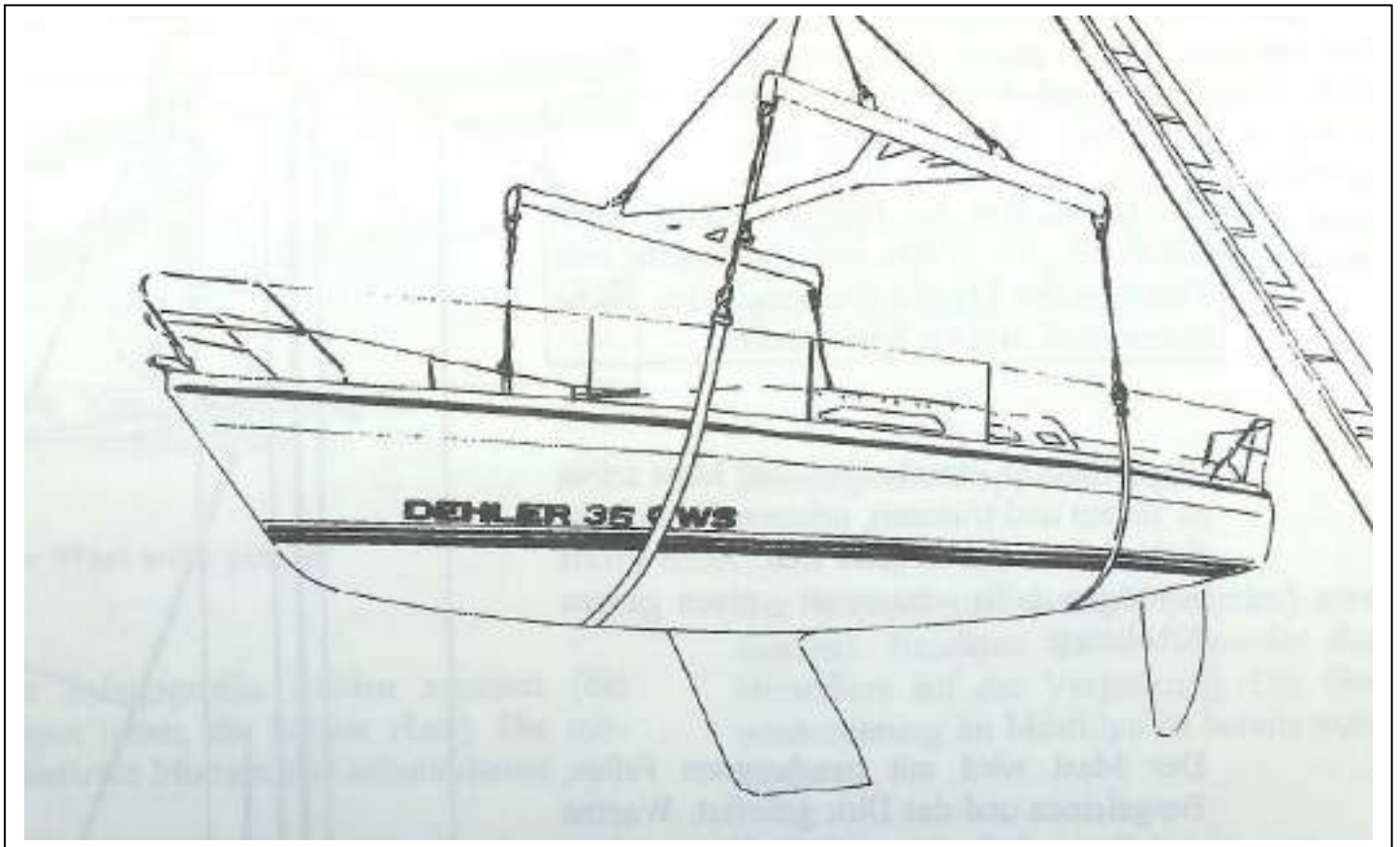
We will of course be happy to offer any advice or assistance you need in this respect. It is generally assumed that a yachtsman of average practical inclination will sort out minor problems himself. It is on this basis that we deploy our experts effectively in genuinely serious cases.

Drawing on our accumulated expertise and knowledge, we have come up with some tips that you should note.

It may be that certain minor modifications introduced during series production of these boats cannot be immediately incorporated into the descriptions given here. Please ask us if something is not entirely clear to you.

One more thing: the DEHLER 35CWS is designed and built to cover an unlimited cruising range if it is fitted out appropriately. You can make long passages and withstand a fair amount of rough weather without undue concern, provided you have adequate sailing experience to cope with any problems you may encounter. If this is not the case, we advise you to first familiarise yourself thoroughly with the boat's capabilities so as to avoid getting into difficulty due to ignorance or foolhardiness. As the saying goes: "God comes to the aid of sailors in distress, but the sailor must do the steering himself".

Happy sailing on your new DEHLER 35CWS – and good luck.



## Rigging Up

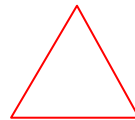
### Make sure that

- The crane & slings have a safe lifting capacity of at least 6 tons.
- The slings are of adequate width and will not scratch the gelcoat.
- The slings will not push in the guardrails (loosen the guardwires)
- The propeller, shaft and log impellor remain clear of the slings (if necessary retract the log impellor)
- All seacocks are closed

If necessary, use a sufficiently wide crossframe (see illustration)

### Your first task

Before the propeller turns for the first time, the shaft seal needs to be vented. Squeeze the seal with two fingers until a small amount of water emerges at the front.



## ATTENTION !

Venting should be repeated each time the boat is hauled out of the water. (Venting must also be carried out after drying out.)

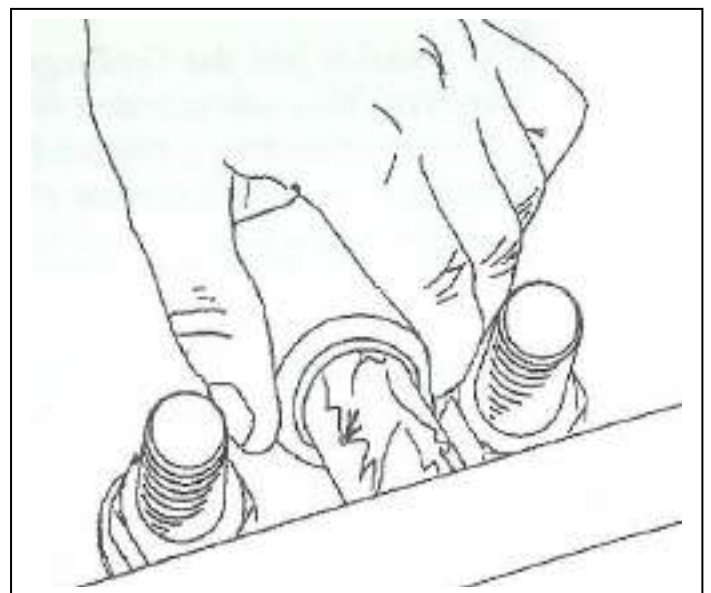


Fig 2. Venting the shaft seal.

## Preparation for Mast Stepping

### TIP

Why not leave commissioning of your new DEHLER 35CWS, including rigging & tuning the mast, to trained experts at one of our service centres?

If you decide to step and tune the mast yourself, allow sufficient time. Even professional yachtsmen, working in tandem, need an entire day for this operation.

The mast comes supplied with fitted halyards, lazy jacks and topping lift. Shrouds and stays are fitted, together with their rigging screws. On boats with fittings above the standard specification, the masthead halyard, spinnaker halyard, and pole topping lift are also fitted.

Lay the mast on two supports. Lay out the shrouds, stays and halyards clearly.

If possible, choose a windless day to step the mast.

### TIP

The Gennaker and mainsail are particularly at risk from chafe, caused by prolonged contact with the spreader end fittings. Protect this area using tape or spreader boots

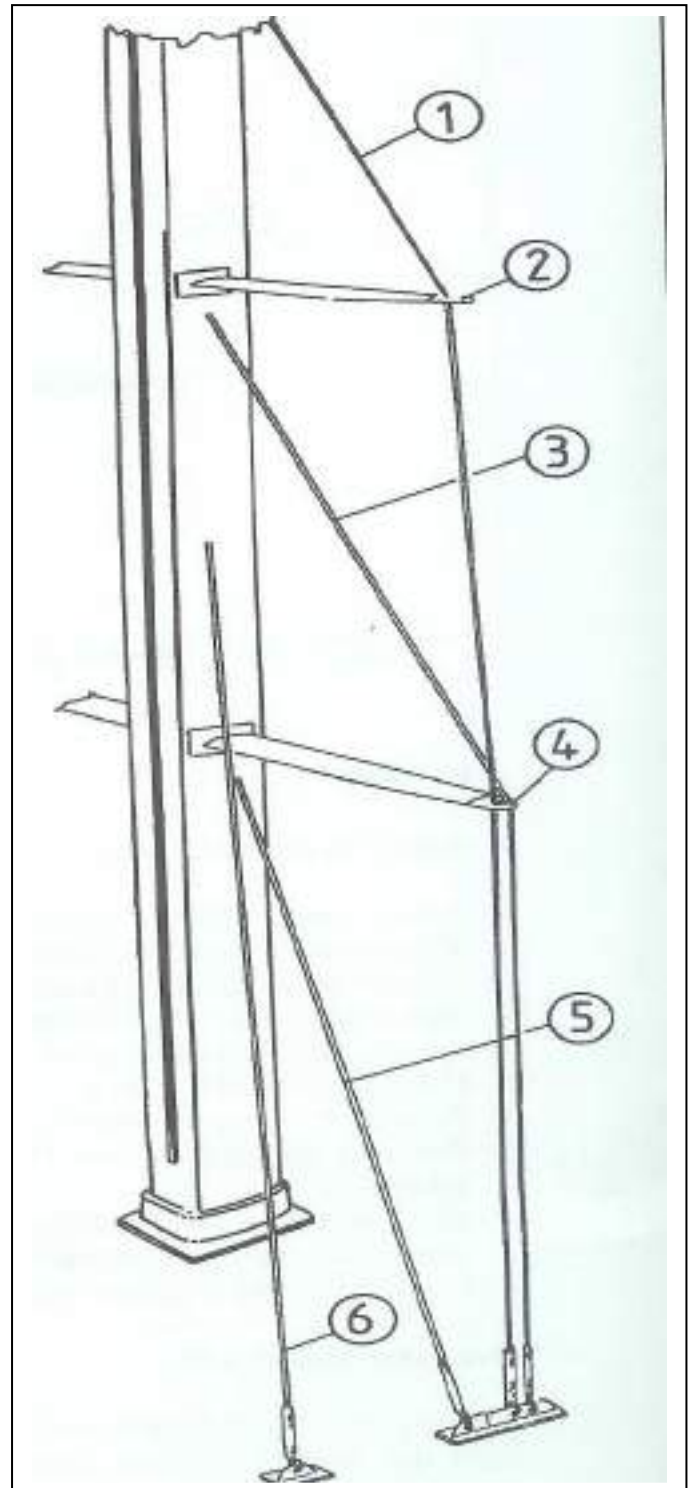


Fig 3. Arrangement of the shrouds.

1. Upper shrouds
2. Upper spreaders
3. Middle shrouds
4. Lower spreaders
5. Lower shrouds
6. Auxiliary shrouds



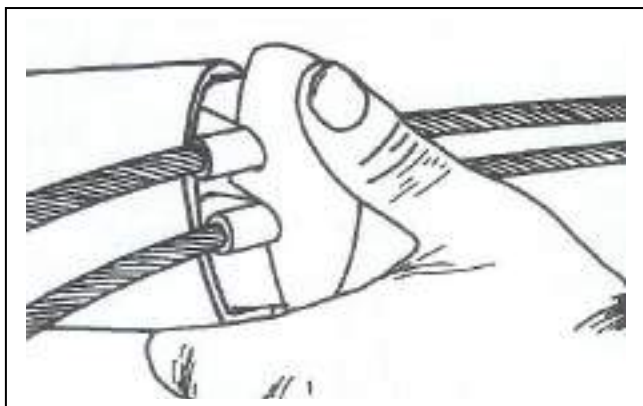


Fig. 4 Spreader end fitting, with stopper tubes.

### Rigging the mast

Fit the spreader sections (long ones at the bottom, short ones at the top). Self-locking nuts are also provided.

The roller furling system, which forms part of the cruising package, is supplied with the boat as a complete kit with forestay. Assemble the system and secure it to the mast mounting-plate provided, as shown in the detailed instructions.

Fix the upper and middle shrouds into the spreader end-fittings, so that the stopper ferrules pressed onto the shrouds lie below the spreaders (see Fig. 4). The end-fittings are fastened to the spreader sections by a screw. Watch out for sharp edges (see Tip, Page 11).

Once the spreaders have been fitted, lay out the lines clearly: Main Halyard & Topping Lift aft of the mast, Jib, Spinnaker and/or masthead Gennaker Halyards forward of the mast.

Signal Halyards (port & starboard) are attached to the lower spreaders with a small block. Belay the lines to cleats below on the mast.

The Main-Drop lines emerge from the mast beneath the top pair of spreaders, and are first led through small blocks under the spreaders, then downwards. Lead the other lazy jack lines through the eyes at the lower ends (see diagram, Page 13) and secure them to the foot of the mast for the time being.

### Attaching Masthead fittings

Fit the Windex wind indicator, following the manufacturer's instructions on the packaging. A threaded hole is provided in the masthead for this purpose.

Fit the white all-round light (anchor light):

Remove the protective cap for both Tri-colour and all-round lights (special accessory) and fit the light onto the base.

To fit an electronic Wind Transducer:

The bracket is fitted to the masthead. Place the arm of the wind transducer into it and tighten the lock nut.

To fit a VHF aerial on the special brackets already fitted on the masthead, follow the manufacturer's instructions.

If further cables are required for electronic equipment, this can be drawn through with the aid of the guide lanyard, which emerges at the foot and head of the mast.



**TIP**

Lengthen the guide lanyard by as much again when using it. When inserting a cable or line, the extended lanyard will be drawn through the mast with it and is then ready for feeding further cables/lines.

A strip of blue decorative tape is glued to the sides of the mast, which can be used to monitor mast trim. The tape is vulnerable to chafing. Watch out for this when stepping the mast, or when the boat is laid up for winter.

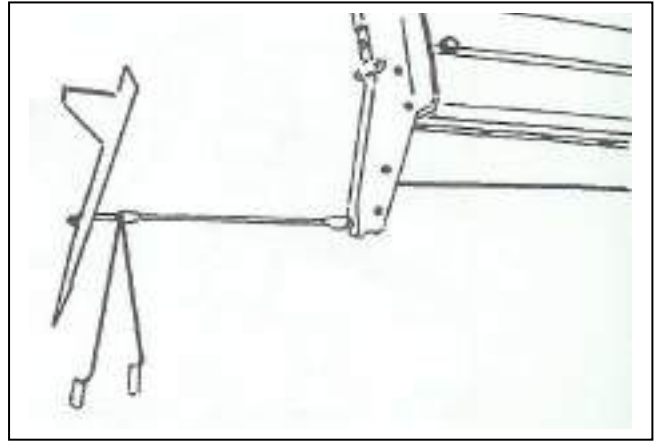


Fig. 7 Masthead with Windex fitted.

**Stepping the mast****TIP**

You will save time by having all the rigging screws unscrewed to the same length. Remove the lower split pins and clevis pins from the rigging screw forks.

Prepare the Backstay tackle, as shown in the diagram on Page 10.

Place a hoisting loop with two eyes around the mast, equally spaced between the two pairs of spreaders. Attach the two eyes to the crane hook. The loop encircles all the lines, and should be secured to prevent it riding up the mast, by a line that is belayed to the foot of the mast.

**TIP**

Use a hoisting loop long enough to drop back down with the hook, once the mast is stepped, so that it lies within easy reach and can be released.

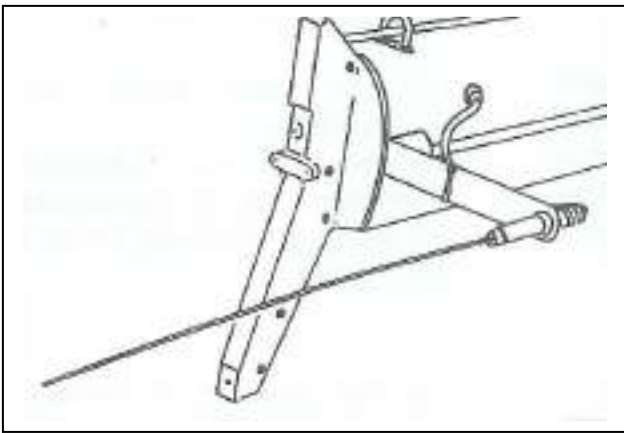


Fig. 5 Preparing the masthead for fitting the wind transducer, aerial and tri-colour light

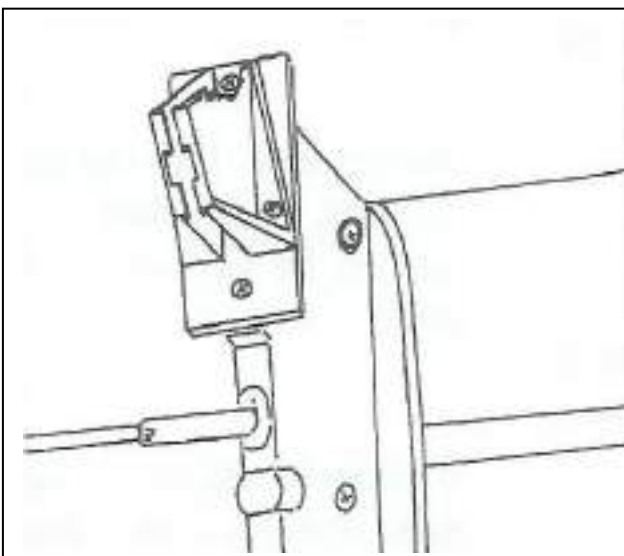


Fig. 6 Fitting the Wind Transducer

An experienced crewmember is now required to take hold of the foot of the mast while it is being raised upright by the crane, and guide it to the leadthrough in the deck. The mast foot and tabernacle are designed so that they seat automatically below deck, and no further adjustment is needed.

As soon as the mast has been stepped, it should be secured to prevent it from falling over. The roller furling system, shrouds and stays can now be attached in the usual sequence.

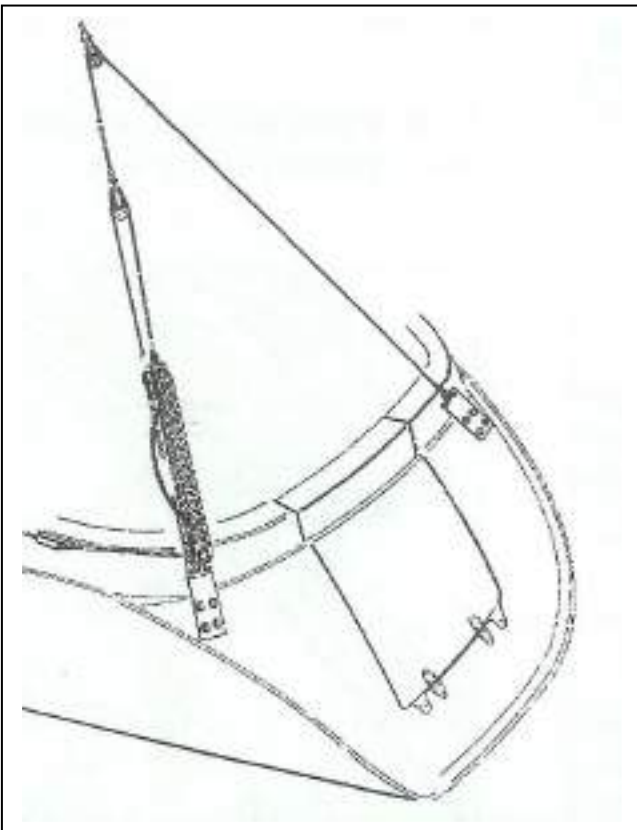


Fig. 8

1. Upper single blocks
2. Triple block
3. Triple block with becket
4. Lever clutch
5. Securing strop

### Mast collar for deck leadthrough

Care is required when fitting the mast collar each time the mast is stepped, as any mistake will result in leaks around the mast. Fig. 9 illustrates the arrangement. The mast is sealed off inside (8), and any water that penetrates the mast drains off through the drain hole (2). A sealing strip seals the mast between the section and the collar. A supporting rubber gasket seals the mast between the section and the collar.

Before the collar is fastened to the deck yoke, a supporting rubber gasket can be inserted into the gap and secured with a band clamp. If the mast is not watertight, water will collect in the inner cover (6) or run down into the boat between the mast section and the inner mast casing (7).

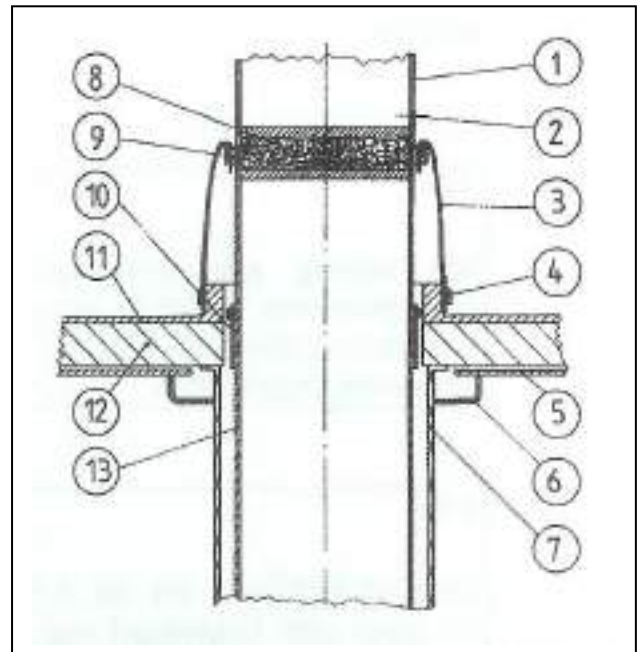


Fig 9 Mast leadthrough

1. Mast
2. Drain hole
3. Mast collar
4. Hose clip
5. Inner skin
6. Plastic cover
7. Mast casing
8. Seal inside mast
9. Sealing strip
10. Supporting rubber gasket
11. Deck
12. Deck reinforcement
13. Mast section

## Tuning the mast

Fasten the shrouds to the eyes of the chainplates, as shown in the diagram on Page 7.

The forestay/roller furling system is of fixed length and has no rigging screw. Tighten the standing backstay tackle so that the mast bends aft.

Tension the upper and middle shrouds equally, so that the section flexes forward by roughly 2 mast widths. Then draw the mast back by one mast width using the lower and auxiliary shrouds. To do this, measure the distance between the threaded rods in the rigging screws.

### TIP

A permanently attached and taut Main halyard secured to the gooseneck can be used to monitor the success of the tuning operation

### TIP

A 21mm open-jaw spanner (or mole grips) and a spanner of sufficient size are suitable tools for tensioning the shrouds.

Now tension the remaining shrouds in pairs, one after the other.

A glance up the mast track will reveal whether the shrouds have been tensioned equally: the mast track must be straight and there should be no S-bend in the mast.

### TIP

The clevis pins in the rigging screws should run through the chainplate eyes from outboard to inboard. Wrap tape round the rigging screws to prevent the sharp ends of the split pins, used for securing, from causing injury.

The standing backstay must **always** be under tension when sailing. The limit stop prevents the line from running out.

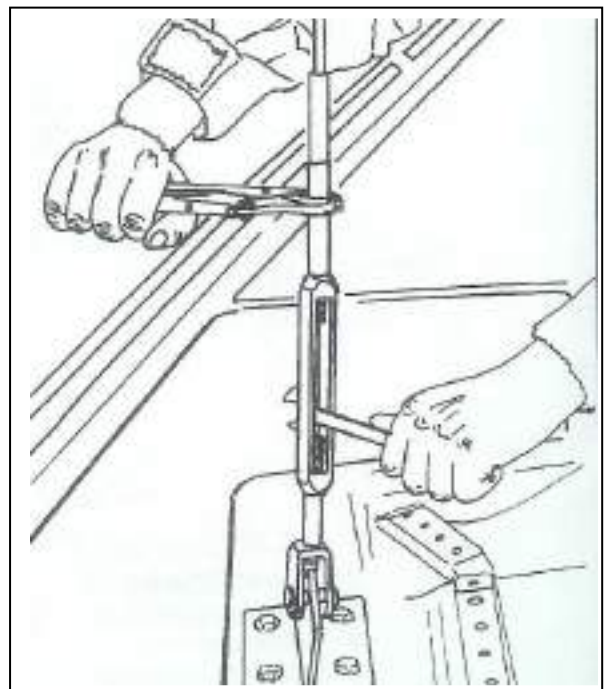


Fig. 10 Shrouds can be tensioned more easily with a mole wrench & spanner.

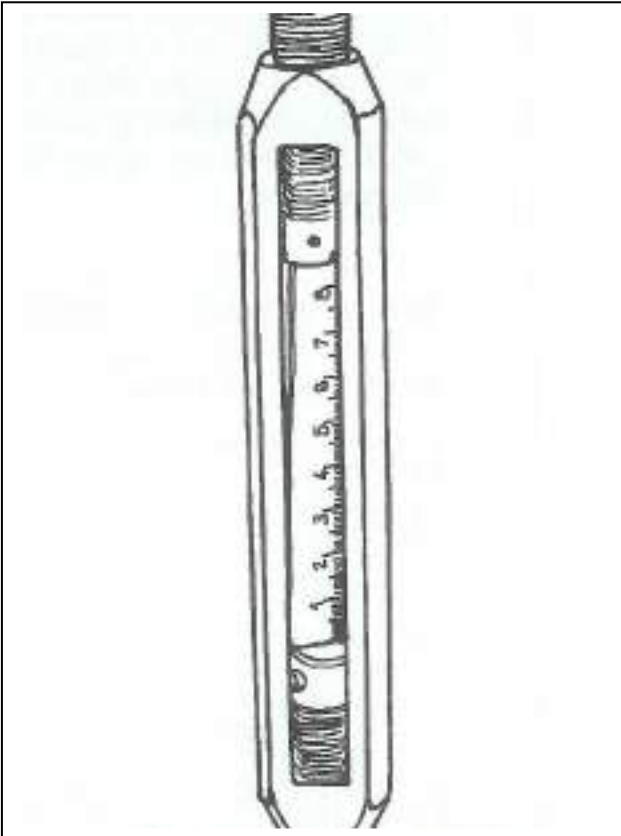


Fig 11. When the distance between the threaded rods in the rigging screws is the same, then the respective pair of shrouds is trimmed correctly.

## The DEHLER Main-Drop-System

Battened Mainsail with integral canvas sleeve and furling lines (lazy-jacks) for the 7/8<sup>th</sup> rig of the DEHLER 35 CWS.

Fully battened sails were first used successfully on yachts many years ago, and have now been revived thanks to the development of new types of sailcloth.

The new cut of the battened Mainsail offers the perfect combination of Mainsail trimability and ultimate ease of handling. The full-length battens maintain the efficient shape of the Mainsail and prolong its life, preventing the sail from flogging noisily when it is being set, stowed or reefed, and thereby reducing strain on the material.

The sail battens ideally complement the main-drop system with integral canvas boom cover and lazy-jacks. Fixed to each side of the boom is a strip of tough, durable Vinyl fabric, which protects the stowed Mainsail.

Once the zip has been unfastened, the mainsail can be set. The strips on both sides are held up by the lazy-jacks. When the sail is being stowed, it drops down onto the boom into the cover, guided by the lazy-jacks. A quick straightening of the sail, then close the zip and the sail is stowed.

### TIP

When lowering or hoisting the Mainsail, make sure that the boat is lying exactly head to wind.

If the Mainsail is to be out of use for any length of time, cover it at the mast with the extra canvas cover.

When moored up, ensure that the boom slopes downward sufficiently aft enough to allow rainwater to drain easily.

### TIP

Spray the mainsail slides occasionally with a lubricant. This will make it considerably easier to hoist the mainsail.

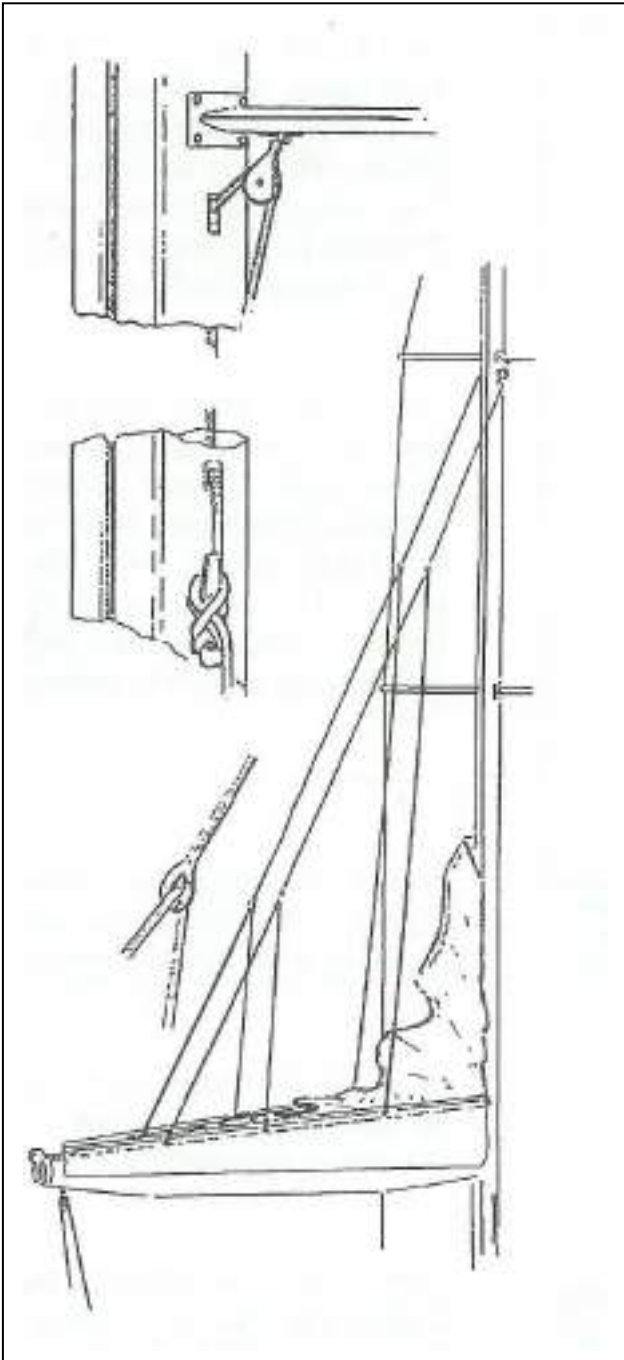


Fig. 12 Attaching the furling lines (lazy-jacks)

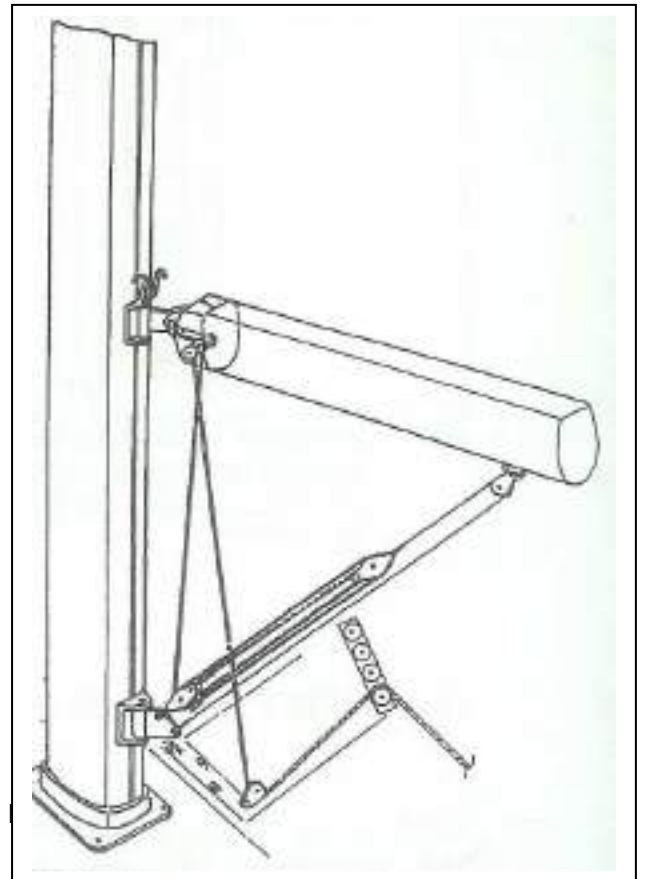
### Attaching the boom

#### Fitting the main-drop sailcover

Fit the boom on the gooseneck with the aid of a crewmember and secure it with the bolt. The topping lift is fastened to the eye on end of the boom by a knot and the boom is hauled into a horizontal by tensioning the topping lift at the mast.

The mainsheet is routed partly through the boom, and for this reason is secured on the boom. The diagram on Page 14 shows how the mainsheet line is routed. The Halyard routing diagram on Page 16 shows the routing of the mainsheet to the starboard coaming winch.

Fig. 13 shows how the kicking strap is attached, and the diagram on Page 16 shows how it is routed back to the cockpit.



Insert the boom cover for the main-drop system into the grooves on the boom, from fore to aft. The wide end of the cover should be at the mast end, with the zip on the inside.

Insert the stiffening battens into the batten pockets in the cover, from fore to aft.

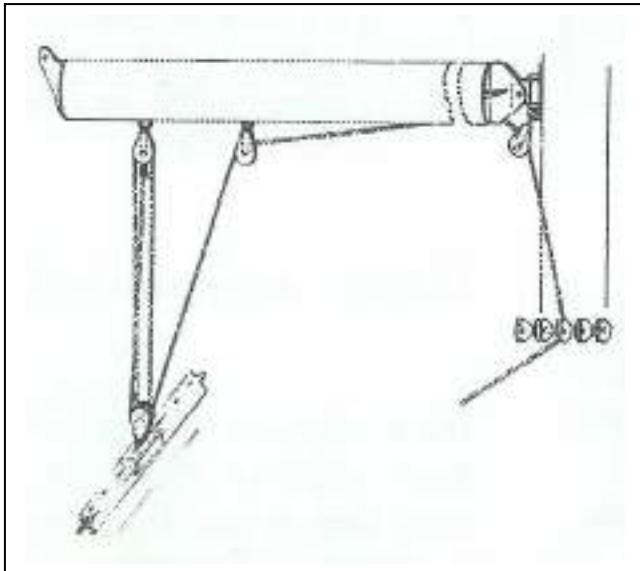


**TIP**

Ensure that the batten ends are protected by tape or a thin plastic cap.

Attach the lazy-jack lines (furling lines) to the cover sections, as shown in Fig. 14. Belay the lines on their mast cleats.

Make sure that the topping lift is always under greater tension than the lazy-jack lines, otherwise these could be torn out of the boom cover.



Mainsheet routing

**Bending on the Mainsail****TIP**

Before bending on the mainsail, haul up one side of the main-drop cover a little way by its lazy-jacks, and let the other side hang down. This makes it easier to control the sailcloth.

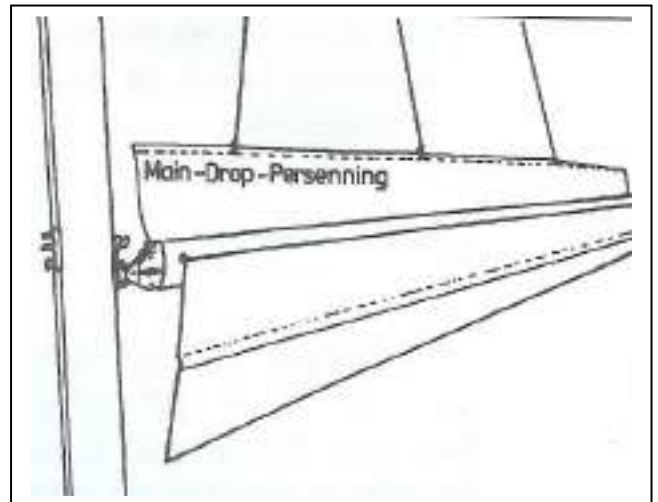


Fig. 14 Before bending on the mainsail, haul up one side of the main-drop cover.

Make sure that the deck has been washed before unpacking the mainsail.

- Guide the foot of the mainsail into the boom groove, from fore to aft.
- Fasten the tack of the sail to the forward boom fitting.
- Shackle the clew outhaul to the clew.
- Lift the slide stopper clear of the mast track, feed the mainsail slides into the mast track then close the slide stopper.
- Insert the sail battens into their pockets, from luff to leech (see description on Page 15).
- Shackle Main halyard to headboard. Make sure that the halyard shackle pin is properly engaged.
- Shackle the guide blocks for Reef 1 & Reef 2 pendant lines to their leech webbing stops.

- Fasten the forward end of the reef pendant lines to the luff webbing/rings with bowlines or patent hook.

**TIP**

It takes two people to bend on the heavy sail. Make sure that the sail slides are inserted into the mast track in the correct order, and that they are not upside down.

**TIP**

Put a figure-of-eight knot in the forward reef pendant lines before unbending the sail, to prevent them from disappearing into the boom.

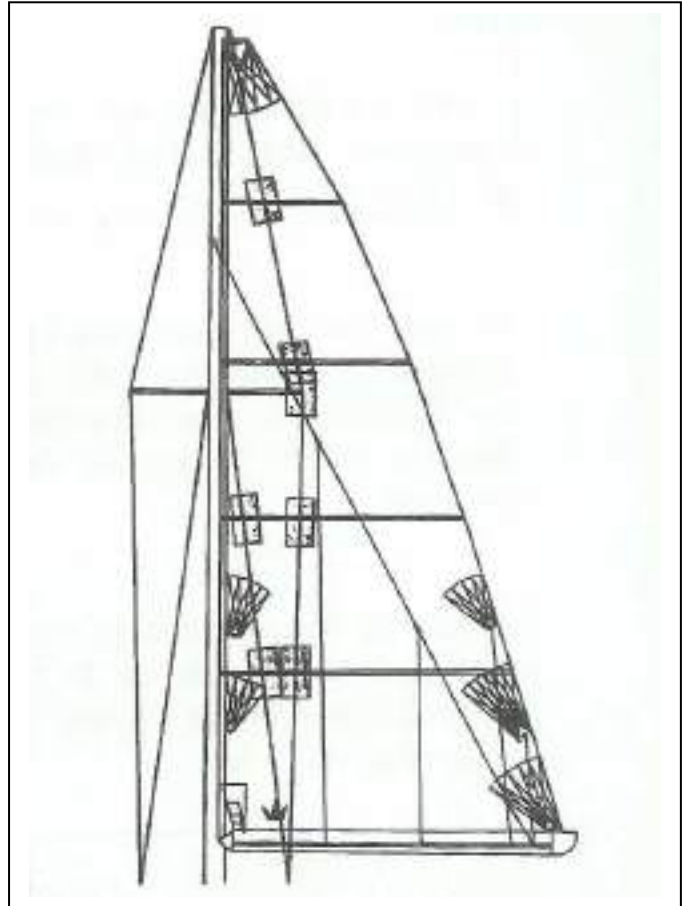
**Patches**

When a boat is running with the mainsail eased off, the sailcloth comes into contact with the spreaders and shrouds. This increased mechanical load can lead to chafe, damaging the material and seams.

A battened mainsail is particularly prone to chafe; therefore 14 patches are supplied with the mainsail. These should be affixed at precisely the points where the sail and shrouds or spreaders come into contact.

Wait until the mainsail shows the first signs of light soiling at the points where the patches should be stuck on.

The area to be protected from the vertical sections of the upper shrouds can be measured, and patches can be affixed here before the boat is taken out for the first time. Patches are stuck to both sides of the sail at all points.



The sail battens are supplied bent into a circle, and so are under tension. Caution is advised when unpacking them.

Ensure that the ends of the battens are always protected by plastic caps that are glued in place.

First lead the fabric tongue on the tensioning sleeve back through the tensioner.

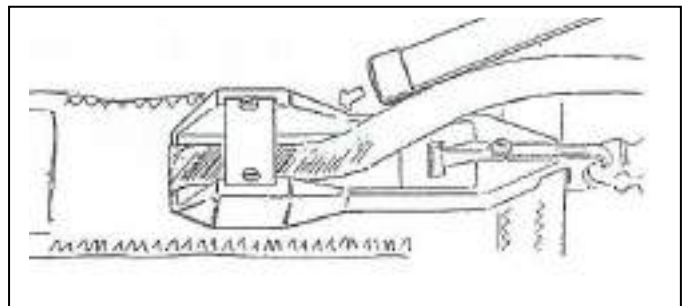


Fig. 16a



Feed each batten according to length under the metal bridge of the tensioning device, and into its relevant batten pocket, working from fore to aft. Some adjustment of the batten length may be required.

Guide the webbing tongue around the forward end of the batten and back aft under the metal bridge.

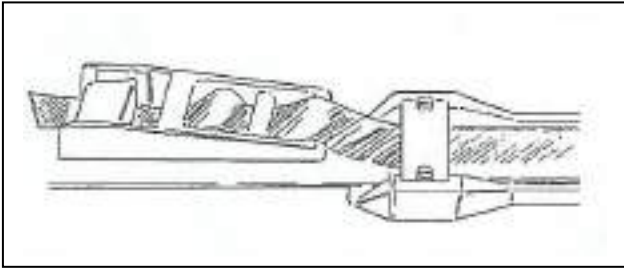


Fig. 16b

Thread the tongue into the clamping wedge.

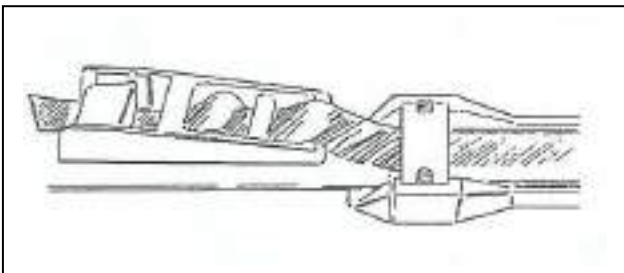


Fig. 16c

Press the clamping wedge forward under the metal bridge on the tensioning sleeve, at the same time pulling on the tongue, and then secure it with the lock tab.

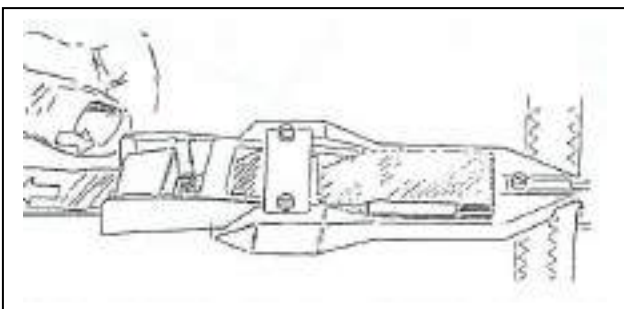


Fig. 16d

## Routing control lines to the Central Winches

All halyards and reefing lines, together with Jib Sheet and Kicking Strap, are routed via deck sheaves and partly-concealed conduits, to the coachroof winches or the two coaming winches. The diagram in Fig. 17 suggests one way of leading the halyards and lines aft.

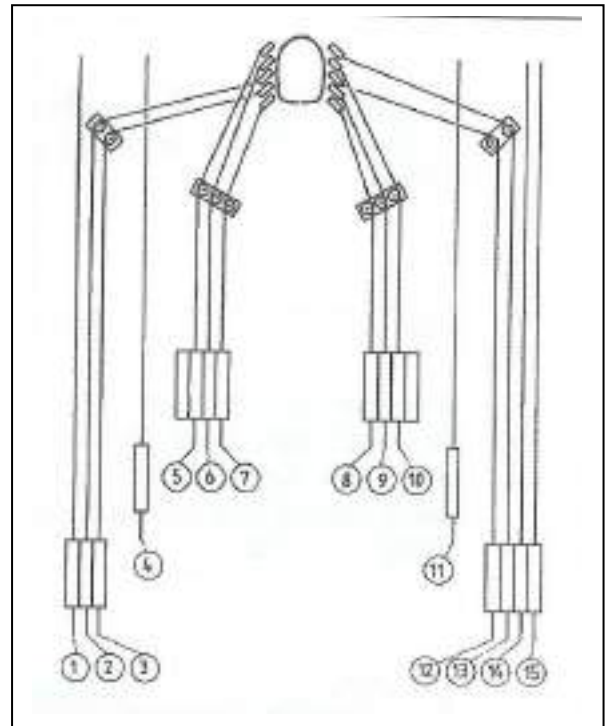


Fig. 17 1. Port Jib Sheet

2. Reef 2/ Pole downhaul
3. Reef 1.
4. Port Jib car adjustment
5. Spinnaker halyard
6. Pole uphaul
7. Masthead fore halyard
8. Cunningham
9. Kicking strap
10. Jib halyard
11. Starboard Jib car adjustment
12. Mainsheet
13. Main Halyard
14. Starboard Jib sheet
15. Roller Reef line

The number of lines led aft will vary according to specification.

If the boat's specification includes a spinnaker and the pole downhaul is to be led aft, we recommend replacing Reef 2, which is then taken forward and belayed on the mast.

If possible, tie control lines together into a bundle, which is fed aft using a length of stiff wire.

When unrigging, don't forget to pull messenger lines through the outer halyard conduits.

#### TIP

It is difficult to pull lines with frayed ends through the narrow duct. Check the ends at the close of each season.

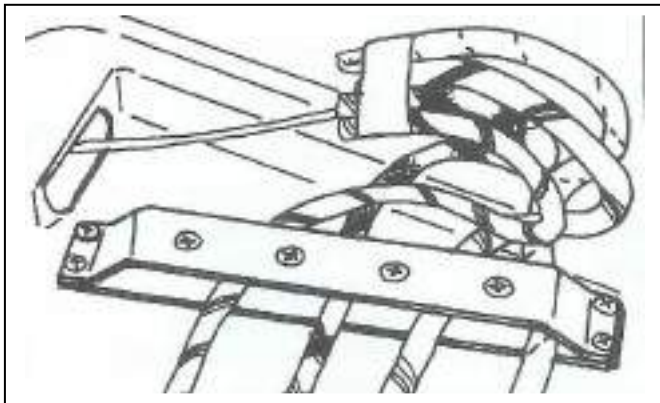


Fig. 18

Control lines, and a stiff **wire**, are bound with tape side-to-side in a flat bundle, and are pulled aft through the conduit below deck.

## Headsail

### Topp Reff 2090 below-deck roller headsail system

The **Topp Reff** roller furling system has been tried and tested on many boats. When it is combined with the cruising jib and the Dehler quick reefing mechanism, a wide range of wind strengths can be covered without having to change sail. Please refer to Page 20. The system can be fitted and dismantled easily on the specially extended forestay. See the instructions on fitting included among the documents accompanying your boat.

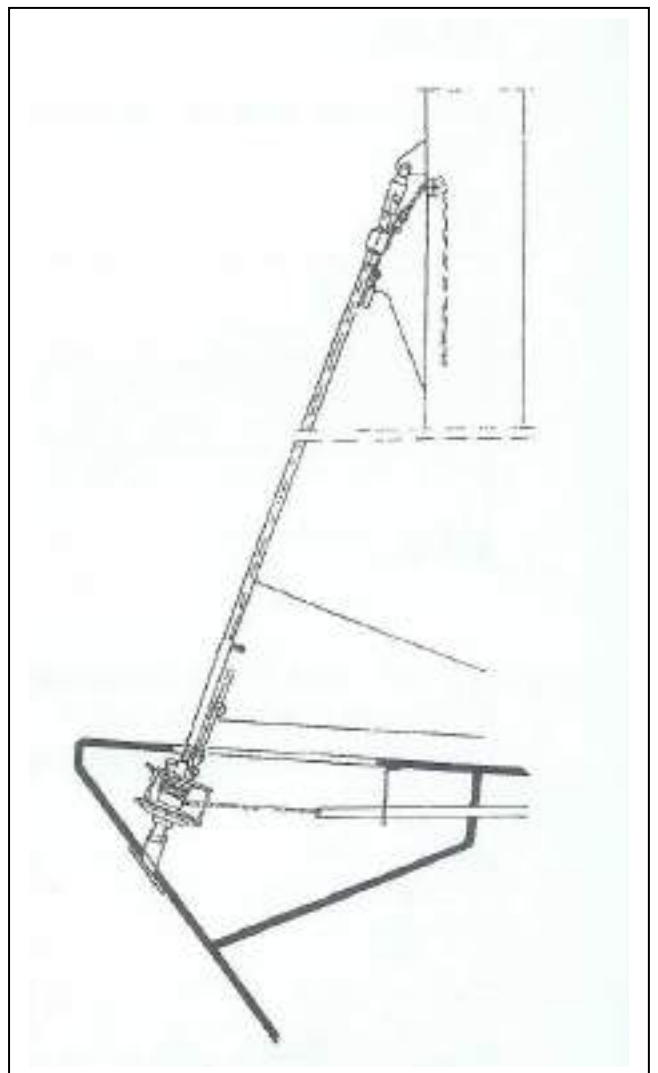


Fig. 19 Roller furling system

The forestay acts as the load-bearing element in the roller system, with the tube section foil being used only to furl the sail evenly and cleanly. The system is attached to the mast using the T-terminal toggle supplied. When stepping the rig, the complete system is raised up with the mast and the foot of roller system is taken forward. The drum is guided into the anchor locker at the same time as the mast foot is lowered through the deck aperture.

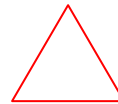
The control line runs under the deck and is belayed on a clutch aft in the cockpit coaming.

- Functioning of the system is guaranteed only if the halyard swivel/slide is at the end of the section tube when the sail is bent on.
- Bear in mind that the control line, due to the right-hand twist of the forestay wire, must be reeled in counter-clockwise, so that when the sail is being furled the system rotates in a clockwise direction.
- Haul in the spinnaker halyard tight when not in use, to prevent it being rolled up in the Furler.
- When the boat is not in use for long periods, furl the sail tightly and secure it with a strop at the clew, or unbend it.
- A canvas headsail cover (with a tensioning line at the back) will protect the sail against ultra-violet radiation and keep it clean.

## DEHLER 35 CWS winch system

This system can only be fully exploited if the cockpit coaming winch has an electric winch motor. The electric switches for first and second speeds are located in four easily-accessible positions. Pressing a switch sets the relevant coaming winch in motion.

Stow lines that are not in use in the line bags. Mark all clutch levers to indicate which are for sheets and which are for halyards. Instructions on servicing the electric winches are included in the information supplied by **Harken**.



### ATTENTION !

The electric winch drive is very powerful, and the winch should be used with care. Halyards and reefing lines under extreme load **must** be hauled in on the winch before the clutch lever is released, otherwise the lever mechanism will be damaged. If the clutch lever is pointing aft horizontally, the line is free to run.

#### TIP

The clutch lever for the leeward jib sheet should always be pointing aft horizontally,

## DEHLER quick-reefing system

The DEHLER quick-reefing system, in conjunction with the Main-drop system facilitates swift and easy reefing of the mainsail from the cockpit by a single crew member. This applies to both the first and second reefs.

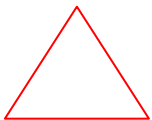
Both luff and leech are hauled down onto the boom at the same time, using the reefing line.

Attach the two reefing lines as shown in the diagram in Fig. 20.

### TIP

Before commencing reefing, slacken off the mainsheet, Cunningham and kicking strap.

Once the mainsail halyard has been slackened off, haul Reef 1 or Reef 2 line in tightly, using the electric winch.



### ATTENTION !

If the forward reef cringle does not fall onto the boom parallel to the aft cringle, you must pull the rear reefing line. Failure to do this will result in the cloth around the reef cringle being torn.

The sail drops onto the boom between the Main-drop cover sections. It is not covered. The clutch is then closed on the reefing line.

### TIP

Mark the clutch levers by the central winch, to show which control the main halyard and reefing lines.

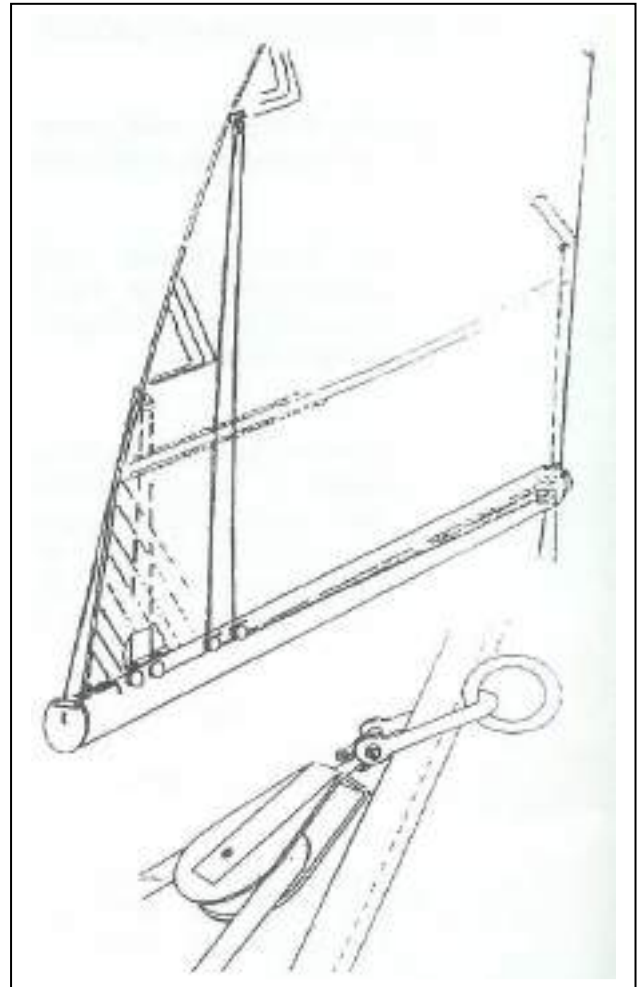


Fig. 20 Guide block at the leech reef cringle.

The luff of the reefed mainsail is then re-tensioned with the halyard.

The mainsheet, kicking strap and standing backstay are then re-trimmed.

## Masthead Genaker

In light winds, a masthead Genaker of approximately 70 square meters can be carried instead of the normal jib or cruising jib. With the Genaker, the DEHLER 35CWS quickly reaches its best speed on any course.

The masthead Genaker is set flying between the spinnaker pole, which is extended as a bowsprit, and the masthead. Pull the tack of the sail to the eye of the spinnaker pole, using a tack line that is then belayed on a bow deck cleat. Haul the luff tight using the masthead Genaker halyard.

The Genaker is controlled by sheets led through blocks attached (with stand-up springs) to toe rail plates, and the coaming winch which can be operated either manually or electrically.

### TIP

Hoist the sail in its sleeve (snuffer) with the jib still up. Then ease the snuffer sleeve up to the masthead and belay the endless line to a mast cleat. Only then should the jib be furled.

## Roller-furled high aspect jib

The biradial-cut sail is manufactured from differing cloth strengths. A continuous fibreglass sail batten running parallel to the forestay ensures that the sail is furled cleanly.

The leech is cut concave and has no further battens. The sail is also equipped with trimming lines in the foot and leech.

### TIP

To achieve optimum sail shape after the first reef stage, the sail batten must be rolled up fully. When the sail is re-trimmed, the upper and lower batten ends should no longer be visible.

The headsail sliding cars are infinitely adjustable on their own tracks, and adjustments are made by control lines led to clutches on the coachroof to port and starboard.

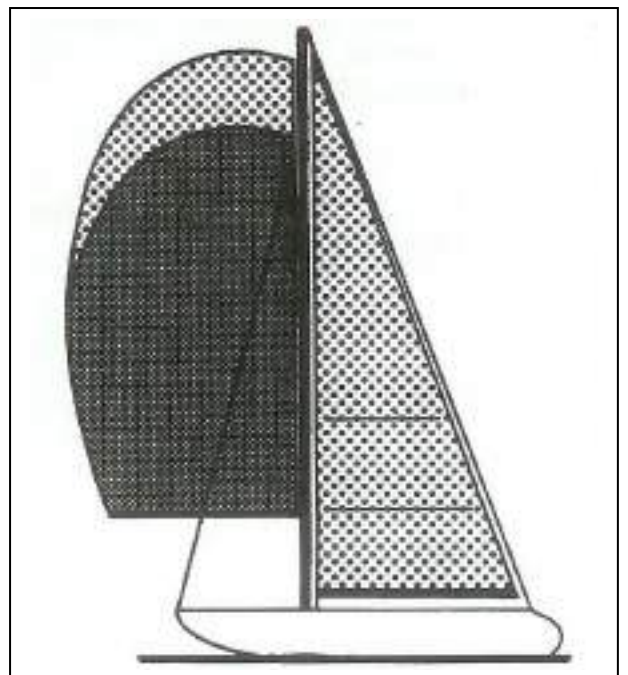


Fig. 22 DEHLER 35 CWS with masthead spinnaker and normal spinnaker.

**Storm Jib**

A storm jib (8 sq. m.) is required only at wind strengths in excess of Force 8.

The sheet is routed through the cars on the short tracks between the shrouds and the mast, and then to the side winches in the cockpit.

**Sail handling**

The sail area of the DEHLER 35 CWS can be adapted extremely efficiently to different wind conditions. The roller furling system for the headsail and Dehler quick-reef system for the mainsail facilitate easy adjustment of the sail area. Use the table as a guide only – it may be possible or necessary to deviate from this, depending on sea state and wind.

With one reef, the area of the mainsail is reduced to 26.9 sq. m, and to 15.3 sq. m. with two reefs. Rolled up to the batten, the high-aspect jib is only 13.9 sq. m. in area.

In light winds you can use the Genaker.



Main/Genaker



Main/Jib



Main/ Jib Reef 1



Main Reef 2/Jib



Main Reef 2/ Jib Reef 1



No Main/Jib Reef 1

Sail Handling	Beaufort	Sq. m.
Genaker	Up to	
Mainsail	Force 3	107
High-aspect jib	Up to	
Mainsail	Force 4-5	62
Jib 1 <sup>st</sup> Reef	Up to	
Mainsail	Force 5	50.9
Jib	Up to	
Mainsail Reef 1	Force 5	49.9.
Jib	Up to	
Mainsail Reef 2	Force 6	40.3
Jib 1 <sup>st</sup> Reef	Up to	
Mainsail Ref 1	Force 6	40.8
Jib 1 <sup>st</sup> Reef	Up to	
Mainsail Reef 2	Force 7	29.2
Jib 1 <sup>st</sup> Reef	Up to	
No Mainsail	Force 8	13.9
Jib ever smaller	Force 8 +	
Or Storm Jib	Force 8 +	



## Nine basic rules for trimming 7/8<sup>th</sup> rig:

A summary by **Peter Schweer** of the editorial staff of **YACHT** magazine.

“1. Greater drive can be gained from a rounded sail profile than from a flat profile. This is illustrated by the following comparison: Transport planes have a deep wing profile – they need maximum lift to transport heavy payloads. Jet planes, gliders, catamarans, ice yachts etc, by contrast, have flat profiles. These are designed for high speed and low shape or friction resistance.

2. More power is required to drive a boat through a choppy sea than a calm sea.

- **Full sail in a swell**
- **Flat sail in flat water**

3. Provided the boat can still be sailed upright, the mainsail leech should be closed, providing maximum drive. As the wind continues to strengthen, a closed leech increases heeling moment and, in most instances, weather helm.

4. Above all, the mainsail leech should not block airflow when close-hauled. The leech should therefore be adjusted to suit the sea state.

- **Open leech in a swell**
- **Closed leech in flat water**

Optimum setting of the sail is achieved when all the telltales on the leech are streaming horizontally aft.

5. The headsail car positioning is adjusted correctly when the leech and foot are under roughly equal tension when sheeted in. The mainsail camber and the aft part of the headsail must be roughly parallel to one another.

6. Wool telltales on both sides of the headsail in the area of the luff are an ideal way of monitoring the optimum sail setting. Three pairs of telltales, on above the other, are sufficient.

- **If the windward telltales begin the flutter, bear away**
- **If the leeward telltales turn forward, point higher**

7. To attain the greatest possible height when close-hauled, the headsail sheeting point should be brought as far inboard as possible. When reaching, the sheeting point is moved further outboard and forward, opening the so-called “slot” between the mainsail and the headsail, and closing its open leech.

8. Optimum close-hauled sail characteristics are only achieved – especially in medium wind strengths upwards – if the headsail luff sags as little as possible to leeward. This calls for high rig tension in the upper shrouds.

9. When close-hauled or reaching in heavy weather, never release the headsail sheet while the mainsail is still sheeted in tightly. The boat will immediately luff up in a strong squall. “



(The sail trimming table goes in here)

## Trimming the headsail

The sheeting angle of the jib or cruising jib is normally correct if the sheet car is slightly forward of either a line bisecting the clew extended downwards, or of an imaginary centre seam (see Fig. 24 below). The sheet tension must be distributed equally between the leech and the foot.

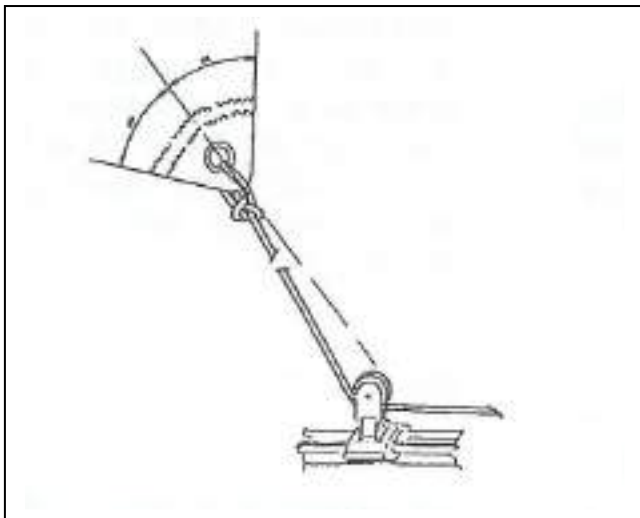


Fig. 24 The correct sheeting angle: the car is forward of an extended imaginary line bisecting the clew.

If the sheeting car is too far forward, there is a risk of the leech being stretched. The sail can then no longer be trimmed.

A slight shivering of the leech in certain sail trim positions is unavoidable, and is of no significance.

The leeches of the jib and cruising jib are fitted with a trimming line. Use these lines only sparingly: if the line is over-tensioned, the leech will “hook” and the sail will lose drive.

### TIP

The trimming lines are made from perlon and change their stretch with loading. Re-trimming is therefore essential.

When close-hauled, sheet in just enough for the sail to always have a slight twist in the leech.

### TIP

You should check for correct sail shape by glancing repeatedly at the headsail leech. There is nothing worse than an over or under-sheeted sail!

## Trimming the Mainsail

The critical advantage of a 7/8<sup>th</sup> rig over a masthead rig is the fact that the mainsail can be more efficiently matched to different wind conditions.

The mainsail is trimmed for various wind conditions by hardening or easing halyard, Cunningham, kicking strap, clew outhaul and standing backstay. Refer to the basic trimming rules of trimming on Page 22.

You will therefore need to “work” further with the sail, as this is the only way to find out the speed potential of your boat.

### TIP

Telltails on the edge of the leech will make it easier to adjust the mainsail to suit various points of sailing.

## Rudder Assembly

### Wheel steering

Integrated into the control pedestal is a low-profile **Solimar** wheel steering system.

The system damps rudder pressure, especially when under load, e.g. in rough sea. The feel of the rudder remains very direct.

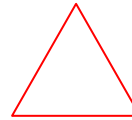
A bevel gear in the steering head transmits the power of the steering wheel to a three-quarter ring gear. Bolted to this is the transmission axle, to the bottom of which a rudder lever is welded. See Page 26.

Pressure on the rudder quadrants is transmitted to the rudder stock via a con-rod.

### SOLIMAR wheel steering assembly

The wheel steering system is virtually maintenance-free. Once a season, the complete steering column should be rinsed carefully with fresh water, and polished with car wax. Touch up any damage to paintwork immediately. Check the screws that hold the foot of the steering column in place annually. Also check all power transmission components and their fastenings to ensure that they are fixed firmly in place – see Fig. 26.

Any play detected between the drive pinion and bevel gear can be eliminated easily, using a 6mm Allen key. The adjusting screw is located in the steering wheel axle extension pointing forward. Only a fraction of a turn is necessary to eliminate any play that has developed.



### ATTENTION !

Although there is a large enough rudder lever limit stop, errors in handling will damage the transmission unit. When going astern, please remember not to go too fast, and under **no** circumstances let go of the steering wheel. An uncontrolled rudder blade will cause the steering wheel to spin such that the gearing cannot withstand the resulting acceleration without incurring damage.

### Steering pedestal

The steering pedestal, with its forward curving spokes, large instrument panel and engine control lever, make handling of the boat significantly easier, and improve the clarity of the fitted instrument displays. Depending specification, instrument displays are arranged from port to starboard as follows: GPS Waypoint display, with the important M.O.B. button; Wind Speed/Direction display; Wind Magnified display; and Compass, on which we offer the following advice:

Virtually no Compass Deviation will occur on your yacht. All parts that can exert magnetic influence, such as keel, engine and Maritime Radio receiver, are installed a suitable distance from the Compass.

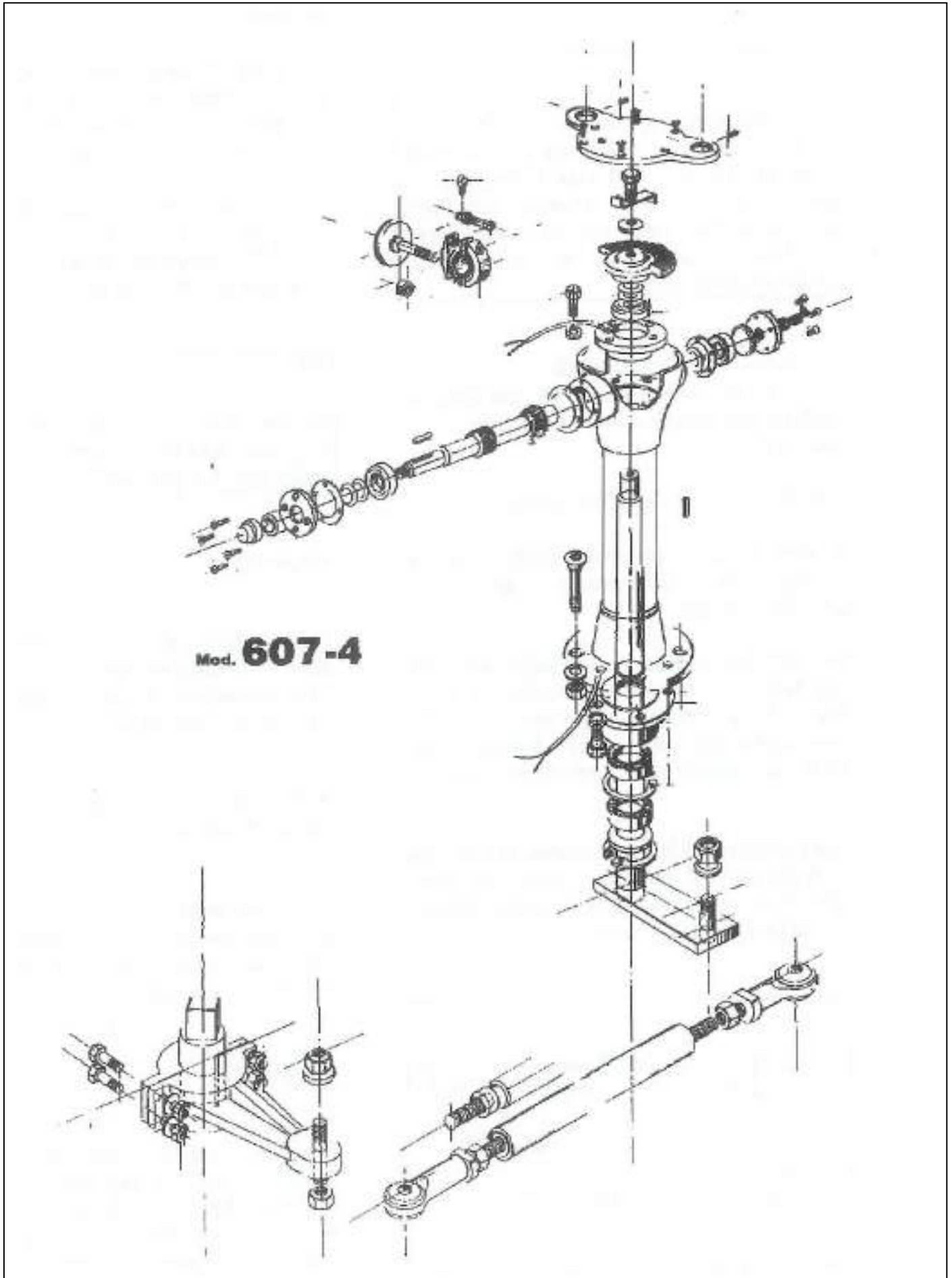


Fig 26. SOLIMAR wheel steering system

**TIP**

Check periodically whether your compass is being affected by Deviation. Check regularly that no crewmember on the helm is wearing a belt buckle or carry a knife, keys or other magnetic metals, or has stowed any such items near the compass.

Arranged to starboard of the Compass are: Speed/Depth Combination display, **Autohelm 6000 ST**.

Engine combined throttle/gear control lever.

You will find extensive information on the individual instruments in the documentation packs that accompany the boat. We would mention here, however, that the **Stowe** instruments have condensation desiccant sachets, which should be removed and dried out if the display glass mists over.

The back half of the pedestal casing is easily removed by loosening a few screws, enabling additional instruments to be fitted or to allow access to cabling.

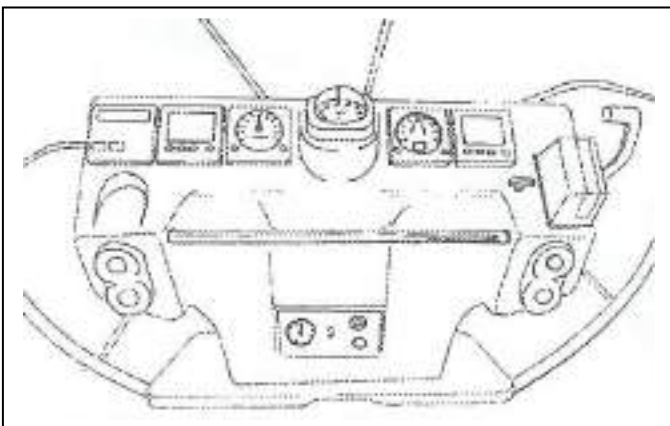


Fig. 27 Instruments on steering pedestal

**Compass**

The documents supplied with the boat include detailed instructions on the use of the compass. We repeat just one sentence here:

“Please do not forget that the compass can only be used as an exact measuring instrument if a Deviation Table is prepared and used. “

**TIP**

Use leading lights on the chart to check the compass display and compass course.

**Rudder bearings**

The modern-shaped rudder blade, with its generously dimensioned stainless steel rudder stock and welded-on rudder blade frame, requires little attention.

The POM-plastic rudder bearings (10) and stainless steel stock (9) are wear-free.

The rudder blade is manufactured using closed-cell foam sandwich. The free-standing rudder blade should be checked for damage, when the opportunity arises.

**Emergency tiller**

The integrated wheel steering system is technically mature and has been proven on thousands of yachts. Nevertheless, we also supply an emergency tiller. First remove the helmsman's seat, and then the aluminium cover plate, using a crosshead screwdriver. The emergency tiller can then be attached to the rudder head with the aid of a wing nut.

**TIP**

Attach a crosshead screwdriver to the emergency tiller with adhesive tape, to enable the changeover to be made quickly, and to avoid unnecessary problems in a serious situation.

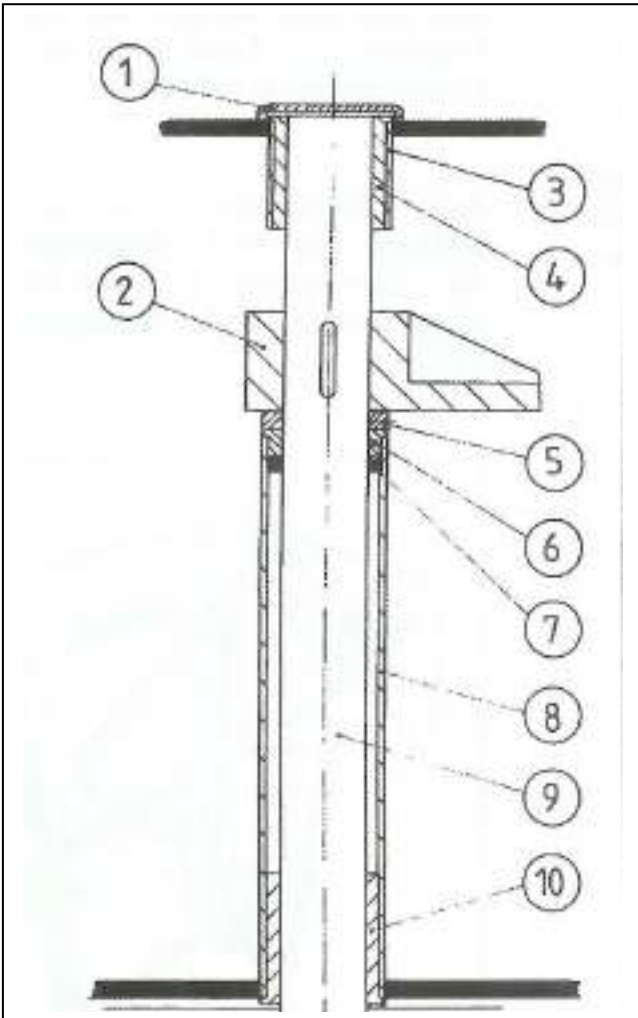


Fig. 28 Rudder stock bearings

1. Covering cap
2. Rudder Quadrant
3. Rudder trunk, top
4. Top rudder bearing
5. Thrust bearing
6. Middle rudder bearing
7. Double-lipped sealing ring
8. Rudder trunk tube, bottom
9. Rudder stock
10. Bottom rudder bearing

**Anchor**

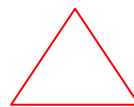
Knowing what is a sufficiently heavy anchor, the correct anchor type for the holding ground, the scope of anchor chain or even the length of anchor line is a matter of seamanship and cannot be covered in this manual. We supply various types and sizes of anchor, according to specification.

When fitted out, the DEHLER 35 CWS weighs roughly 5 tons. We recommend a 15kg plough or Bruce anchor and a chain forerunner of adequate length. The anchor has to be stowed in the cockpit locker, so we therefore recommend:

**Bow-stowed anchor with an electric anchor windlass.**

Only this combination ensures that a sufficiently heavy anchor is permanently on standby, which can be deployed and raised without much effort.

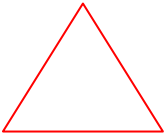
We supply an electric anchor windlass, with a **Delta** anchor and 30m of chain as an extra fitting. An anchor bow roller and sturdy stainless steel cathead, plus a stainless steel bow topside protector complete the package.

**ATTENTION !**

Let the anchor chain go, attach a winch handle in the middle and release the brake with a half-turn.

Secure the brake clamp and capstan head carefully when the anchor is raised.





## ATTENTION !

### KEEP HANDS AND FEET CLEAR OF RUNNING CHAIN !!!

Stop the chain using the brake and not your hand or foot !

### Emergency hoisting instructions

Release the screw in the centre using a screwdriver (half-turn). Turn the drum clockwise with a winch handle.

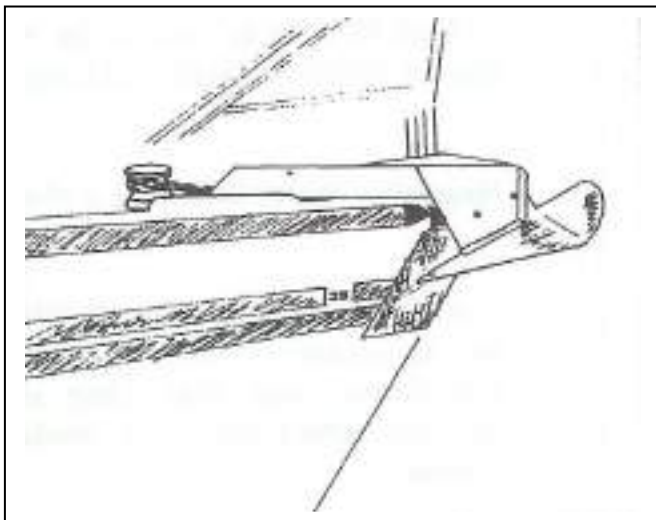


Fig. 29 Anchor windlass

#### TIP

When raising the anchor, it may be necessary to “scoop” the chain free in the chain locker, so that it can be flaked in easily. Keep gloves handy.

Among the documents supplied, you will find important safety advice, together with a parts list and operating instructions. Checking the main components over annually will ensure they function smoothly during the season.

### Stern anchor mechanism

If the boat is not being used in the Mediterranean, then the stern anchor arrangement with a Bruce anchor (10kg) and an electric deck winch is a low cost secondary system. The anchor can be lowered and raised at the stern, and can be made fast on a bow cleat also when lying at anchor.

To anchor, attach an anchor line, then remove the two bolts securing the anchor, fold down the anchor davit and lower the anchor (see diagram).

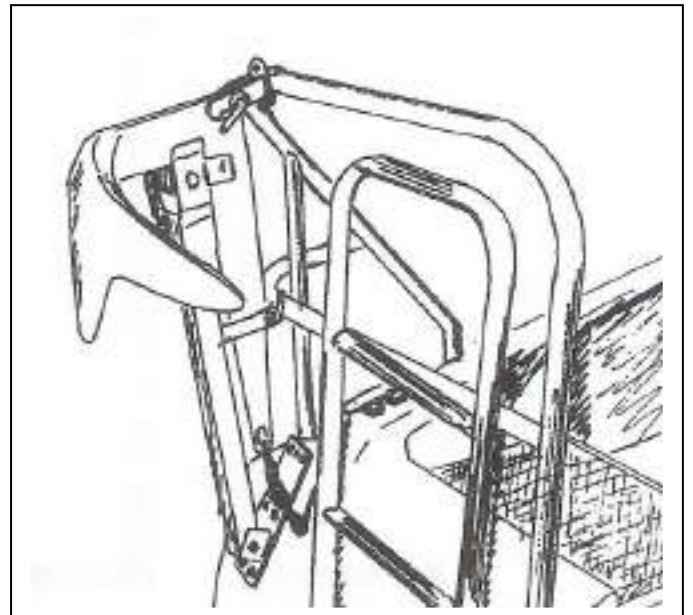


Fig. 30 Stern anchor, secured ready for sea, in its bracket on the pushpit...

Hauling in the anchor line is easier if the portside electric winch is used.

Ensure, however, that the chain forerunner is not drawn into the electric winch. If you are not using a chain forerunner, you should lower a riding weight on the anchor line.



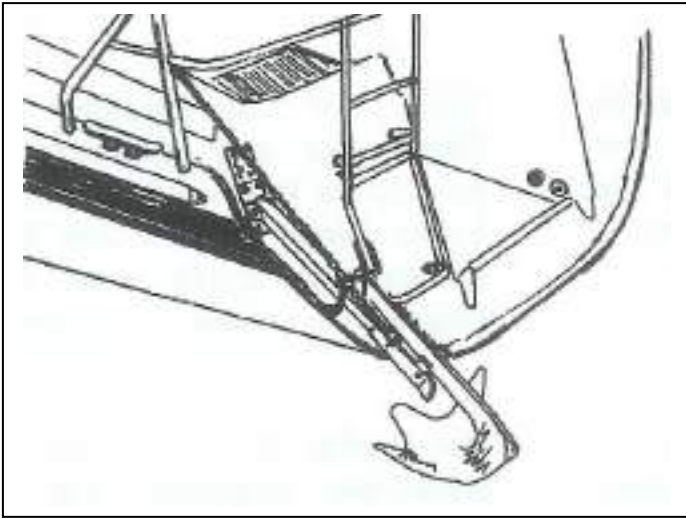


Fig. 31 ...and ready to be lowered

## Inboard engine, and servicing

The DEHLER 35 CWS can be fitted with one of two options, a **YANMAR 2 GM 20** or **YANMAR 3 GM 30F** engine.

Detailed operating and servicing instructions are provided in the manufacturer's manual. The service intervals specified are only a rough guide.

Supplementary housing in the engine compartment substantially reduces engine-running noise. To reach the oil dipstick, the hatch in the toilet/washroom compartment and the inspection cover must be removed. To carry out any other checks, remove the second companionway step, and then withdraw the bottom step with its bulkhead, upwards out of its guide rails. The soundproof engine housing can then be removed by drawing it forwards.

The 40mm hole above the bottom step is a requirement under **German Lloyds** regulations. In the event of an engine fire, the flames in the engine compartment should be extinguished through this opening. The nozzle of the fire extinguisher should be pushed through the insulating material and the extinguishing agent released.

Many yachtsmen only complete the specified number of engine hours after two sailing seasons, but it is short duty cycles that cause particularly heavy wear.

Shorter service intervals should therefore be adopted. For this reason, servicing work should be carried out at least once a year.

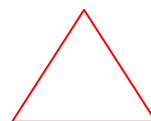
## Engine winterizing

Before laying up for the winter, we recommend the following minimum precautions in addition to those stipulated in the manual:

1. Change the oil
2. Add a protective oil (e.g. Desolit TK)
3. Run engine for approx. 15 mins, until the additive is well dispersed and reaches the injector pump and injectors.
4. Prepare approx. 3 litres of antifreeze at a concentration ratio of 1:1, and let this be drawn through the seawater intake hose of the engine.
5. Top up the diesel tank to prevent condensation from forming.
6. Remove the air filter and spray engine oil directly into the combustion chamber through the air intake manifold. To do this, open the decompression levers and turn the engine over, with the stop-lever pulled out.

## Engine control – starting the engine.

Fitted to the steering pedestal is a single-lever engine control of proven design. To engage idling mode before starting, the red lockout button should be depressed, with the lever in the 'neutral' position. Then, while the red button is depressed, move the lever to either 'ahead' or 'astern' position.



**ATTENTION !**

**Never change from full-ahead to full-astern.**

Pause the lever in the idling position for a few seconds between the two manoeuvres and change gear at low engine speeds only.

### Centraflex shaft coupling

We have been amazed to find that even experts do not recognize the method of connecting the **Centraflex** shaft coupling to the propeller shaft. A clamping flange is used.

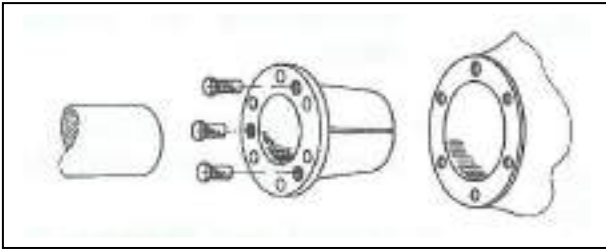


Fig. 32 Clamping flange

The split cone is compressed around the propeller shaft by tightening 6 machine screws equally. To release the tension on the cone, release the screws fastening it in place.

Insert three M6 x 30 screws into the empty holes. Tighten the three screws **equally**, thus forcing the clamping flange out of the shaft coupling. The clamping piece detaches itself and the shaft can be taken out.

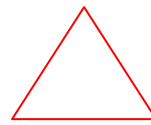
#### TIP

Lightly grease the cone prior to reassembly.

### Fuel supply

Despite the presence of primary and fine filters, the diesel engine is very sensitive to dirty fuel. Do not put diesel fuel directly into the tank, but use a funnel with a clean linen cloth inside.

The fuel tank is fitted in the cockpit starboard seat locker. An additional quick-acting gate valve is fitted to the tank fuel outlet.



### ATTENTION !

With the locker lid open, the ring on the forward bulkhead can be pulled to stop the flow of fuel. Stow items carefully to avoid triggering the valve by mistake.

The removable filter housing and filter should be inspected and cleaned regularly. The coarse filter is located under the cockpit locker floor, next to the fuel tank.

### Warranty

Repairs under warranty should only be undertaken by authorized YANMAR workshops. Should you have a problem, please inform either the importer or us promptly so that we can provide assistance.

## Shaft assembly

The Shaft arrangement is largely maintenance-free. Even the external rubber cutlass bearing is water-lubricated. Running it dry will quickly destroy it. See the **VOLVO** service sheet for instructions on how to vent and lubricate the shaft seal (see also Page 6 of this manual).

In addition to the servicing instructions given in the **YANMAR** manual, the shaft arrangement must also be re-aligned after 20 hours' operation. Chapter 3, "Installation of the engine" describes how this is done.

The last section in the **YANMAR** operating instructions, deals with the centring of the propeller shaft after 50 hours. This point is often forgotten. The procedure for checking this is simple: undo the coupling flange and check the clearance with a feeler gauge.

The flange should not be more than 3/10 out of alignment. The heavy **Centraflex** shaft coupling is not held by the **VOLVO** shaft seal and must be supported accordingly. Take up sufficient thread on the stay bolts of the rear engine bearers to raise the rear of the engine, which usually sags, back up again. (see diagram in Fig. 33)

Careful alignment of the engine installation will keep noise level to a minimum.

The zinc anode on the propeller shaft is a wasting component and should be replaced once a year. It should be fitted so as to ensure good electrical connection between the shaft and the inside surface of the anode.

### TIP

The zinc anode should be sanded back to bright metal or replaced, if ever the boat is hauled out for repairs

In the Mediterranean, it has proved expedient to paint the propeller shaft and folding propeller with toxic paint. Under no circumstances paint the zinc anode, as this will impair its effectiveness.

## Folding Propeller

Folding Propellers have to be serviced annually, the double socket head cap screws inspected to ensure they are secure, and the propeller greased. This job is best done during winter lay up.

Included in the technical documentation supplied with the boat is an illustrated servicing sheet provided by the manufacturer.

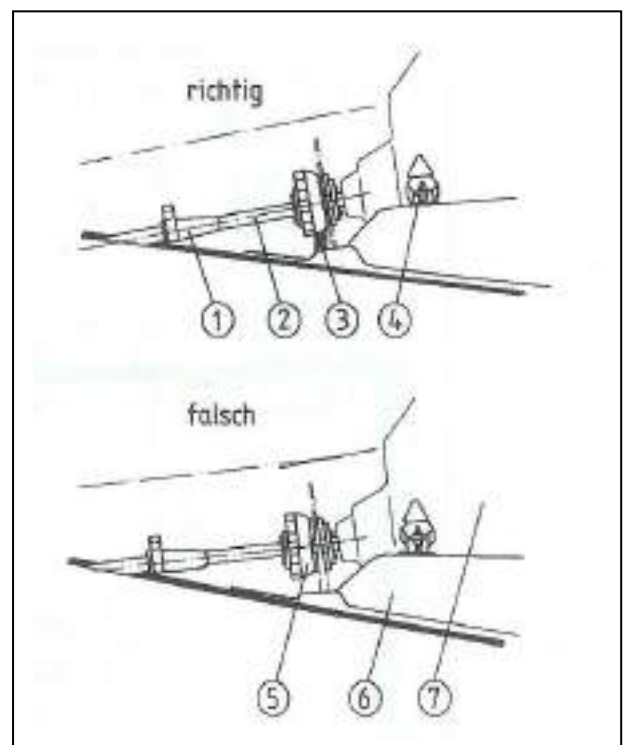


Fig. 33 Centring of the propeller shaft

1. VOLVO shaft seal
2. Propeller shaft
3. Chock
4. Engine Bearer with adjusting bolt
5. Shaft coupling
6. Engine Bed
7. Engine

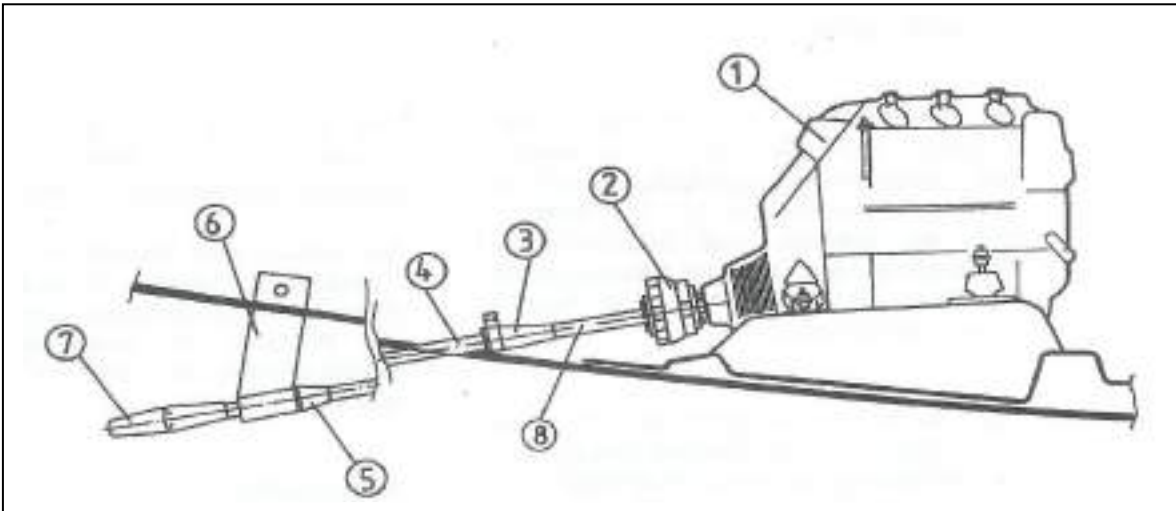


Fig. 34 Diagram of shaft arrangement

1. Engine
2. Centraflex shaft coupling
3. VOLVO shaft seal
4. Stern Tube
5. Zinc anode
6. Propeller with cutlass bearing
7. Folding propeller
8. Propeller shaft

### Drinking water system

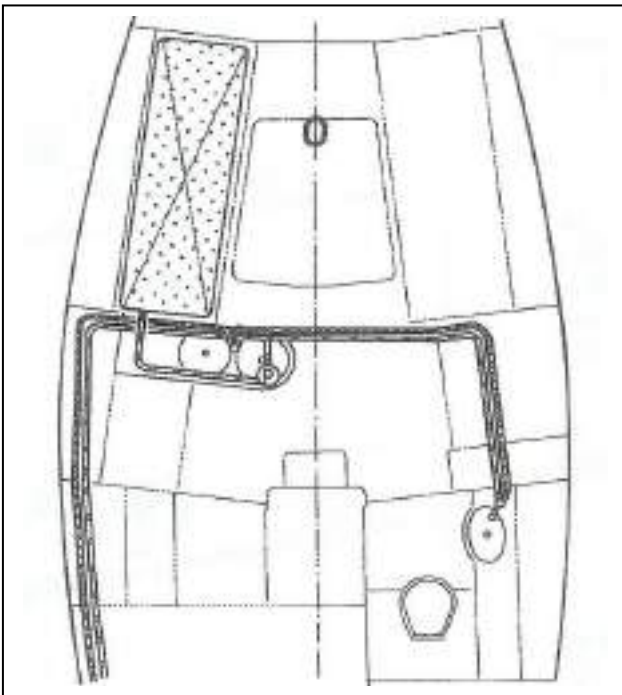


Fig. 36 Drinking water system

The water tank has a capacity of 100 litres and is located under the portside saloon bunk. A tank vent pipe is fitted. The water level can be monitored through a transparent cover.

### Skin fittings and Stopcocks

All skin fittings need to be checked occasionally: hose clips should be tightened at least annually and swivel nuts for the skin fittings checked and tightened every two years. The quick-acting ball valves have a gland beneath the operating lever, which can be tightened if small quantities of water emerge.

- |       |                                                                                                                                                      |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| No. 1 | Skin fitting 1½", <b>Stowe</b> echo sounder.                                                                                                         |
| No. 2 | Skin fitting 1½", <b>Stowe</b> log                                                                                                                   |
| No. 3 | Skin fitting ¾", sink outlet with quick-acting ball valve. The Skin fitting is located in the locker next to hob/oven                                |
| No. 4 | Skin fitting ¾", washbasin outlet with quick-acting ball valve. To gain access to the Skin fitting, open the cupboard door underneath the washbasin. |

- No. 5 Skin fitting  $\frac{3}{4}$ " , cooling water intake for engine with quick-acting ball valve. To gain access to the Skin fitting, pull out and lift the soundproof engine casing.
- No. 6 Skin fitting  $\frac{3}{4}$ " , seawater intake for toilet with quick-acting ball valve.
- No. 7 Skin fitting 1  $\frac{1}{4}$ " , toilet or effluent tank outlet with quick-acting ball valve.
- No. 8 Skin fitting  $\frac{3}{4}$ " , effluent tank vent.
- No. 9 Skin fitting  $\frac{3}{4}$ " , electric bilge pump
- No. 10. Skin fitting  $\frac{3}{4}$ " , manual bilge pump.
- No. 11 Skin fitting 2" , exhaust outlet.
- No. 12 Skin fitting  $\frac{3}{4}$ " , cockpit drain outlet for steering wheel well.

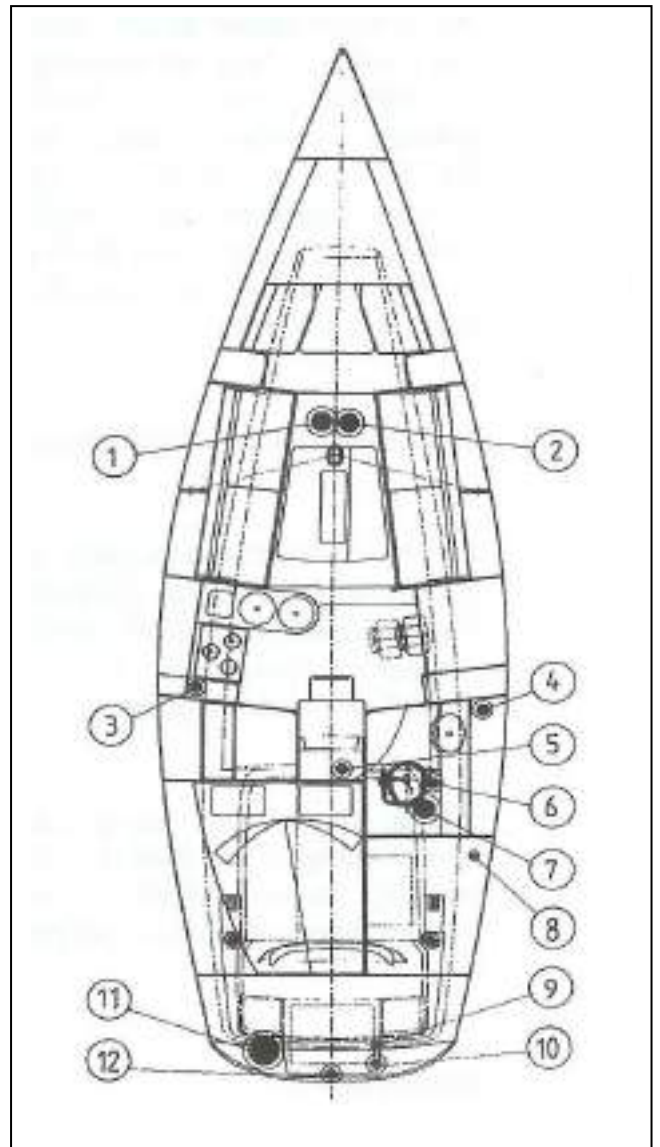


Fig. 35. Valves

**TIP**

Always close valves 3, 4, 5, 6 and 7 located below the waterline, if leaving the boat for any length of time. Don't forget to re-open the engine cooling water valve (No. 5) before starting the engine to move the boat.

**Electrical System****Battery capacity**

Battery capacity varies according to specification of fit-out.

We have provided separate starter battery and domestic batteries. Please carefully read the battery manufacturer's instructions on handling.



Even if it is stated that the batteries are “completely maintenance-free”, discharged batteries should be re-charged so that they do not freeze during winter. If no load is connected a battery will retain 80% of its charge, even during the cold winter months.

### Instrument dashboard/ switch panel

Depending on the level of fit-out, the instrument dashboard/switch panel above the chart table contains the VHF radiotelephone set, the navigation computer, the marine radio receiver and FM radio.

To gain access to the switches, which contain thermal trips, and replace them if necessary, fold down the instrument dashboard.

### Switch panel

The switch panel may have been fitted on the side of the navigator’s locker. Here, if you wish to replace switches, it is easier to unscrew the panel from the locker side, and then re-fit it after switch replacement.

The instrument dashboard is hinged at its foot. It is easy to gain access to the back of the instruments by removing the crosshead screws and folding the instrument dashboard down.

Sticking descriptive labels on the switch panel will make matters easier.

The switch panel is completed with an on-board plug socket. You may connect 12v appliances up to a maximum of 10AH to this, if they are fitted with a DIN universal car-adaptor plug.

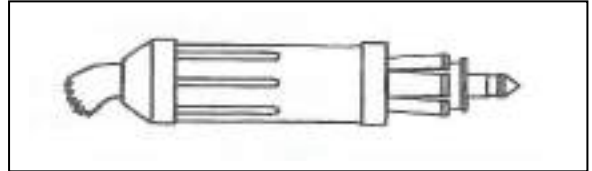


Fig. 37 BOSCH No. 986352000 on board plug

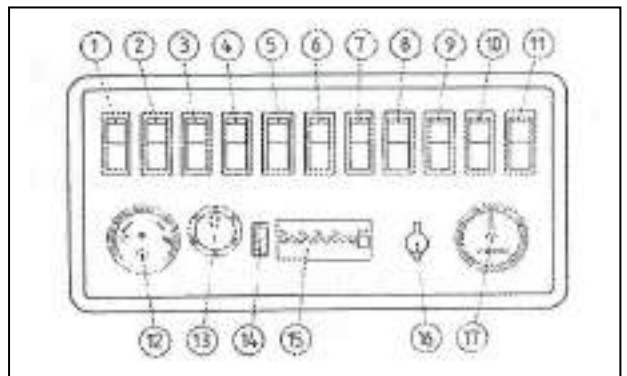


Fig. 38 Switch Panel

1. Interior lighting, port
2. Interior lighting, starboard
3. Bow & Stern lights
4. Masthead light
5. Anchor light
6. Tricolour light
7. Water pump
8. Bilge pump
9. Navigation Instruments
10. Autopilot
11. Electric hot water boiler
12. Fuel Gauge
13. Heating control
14. Thermostat
15. Battery capacity
16. 12v plug socket
17. Engine hour meter

## Onshore power supply terminal

Depending on battery capacity, charging sets of appropriate capacity are fitted, otherwise the scope of supply is identical:

1. 10 metre long shore power cable with EEC plug and Philippi coupling
2. Panel with current-operated e.l.c.b, automatic circuit breaker 220v socket and white pilot light below in the navigation station.
3. Self-regulating 12AH charging set with CVCC curve and green function pilot light, fitted either behind the navigation panel or in the cockpit locker. If electric winches are fitted, a 14AH charging set with CVCC curve and temperature control is fitted in the cockpit locker. Charging levels of the LED can be read off on the front of the set.  
Green = L = charging  
Yellow = LE = charging complete  
Red = malfunction
4. A thermal sensor in the domestic battery compartment completes the package
5. A shore power cable terminal socket in the anchor locker

According to the regulations, shore power socket outlets have to be fitted with EEC socket outlets and a current-operated e.l.c.b. If the marina has shore power facilities fitted with these EEC blue plugs, you can assume that these have been professionally installed.

### TIP

You will also need a selection of made-up adaptors to connect to other types of plug

The 110/220 V socket is operational once the shore power cable has been plugged in. The batteries are automatically charged at the same time.

It is impossible to overcharge the batteries. Nevertheless, when leaving the boat for a period of several days, the shore power supply should be disconnected.

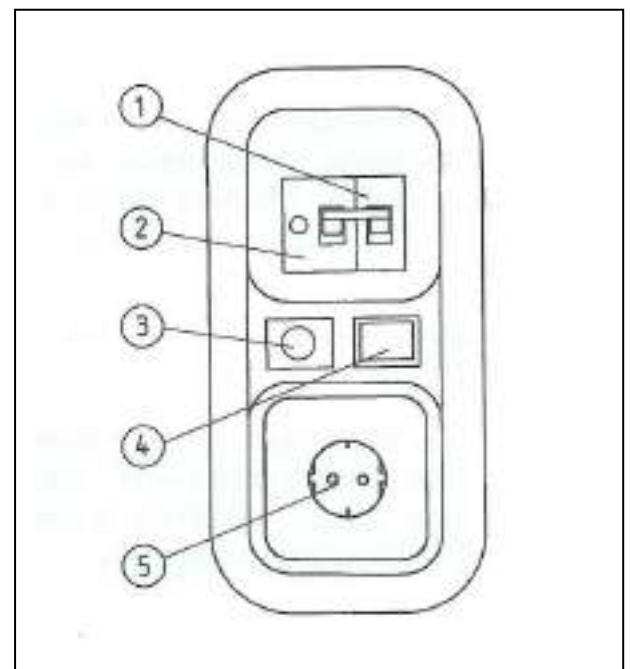


Fig. 39 Shore power supply terminal

1. Automatic circuit breaker
2. Current-operated e.l.c.b.
3. Hot water switch/Pilot light
4. Shore power supply pilot light (white)
5. 110/220 V socket



## Navigation lights/mast lights

The prescribed navigation lights are factory fitted, and are tested by the Federal Maritime and Hydrographic Agency.

### - Two-coloured bow light

12V/25W bulb, socket B15

### - Stern light

12V/10W bulb, socket B15

### - Masthead light (steaming light)

12V/10W bulb, socket B15

### - All-round light (anchor light)

12V/10W bulb, socket B15

### - Tricolour light

12V/25W bulb, socket B15

## Control boxes for electric winches

The Control boxes for electric winches are clearly visible, fitted to the hull outer wall on the cockpit locker.

### TIP

Ensure good ventilation during winter storage by putting the locker seat lids underneath. Spray all contact points annually with marine spray.

## Circuit diagram

The wiring can be traced back from the circuit diagrams on Pages 39/40.

Brown	2.5	Interior lights, port side
Br/white	2.5	Interior lights, stbd side
Orange	2.5	Bow & Stern lights
Beige	2.5	Masthead light
Yellow	2.5	Anchor light
Green	2.5	Tricolour light
Grey	2.5	Water Pump
White	2.5	Bilge Pump
Red	2.5	Navigation Instruments
Red/black	2.5	VHF
Red	6.0	Autopilot
Violet		Fuel Gauge +
Pink		G tank indicator
Blue/white		Earth tank indicator
Dark Blue		D –

## Maintenance of the electrical system

The high salt and moisture content of sea air can cause cable connections, plug & socket connections and terminal strips to corrode, even when they have been fitted with utmost care. Check these components at least once a year. A visual inspection and subsequent spraying with an anti-corrosion agent will usually suffice.

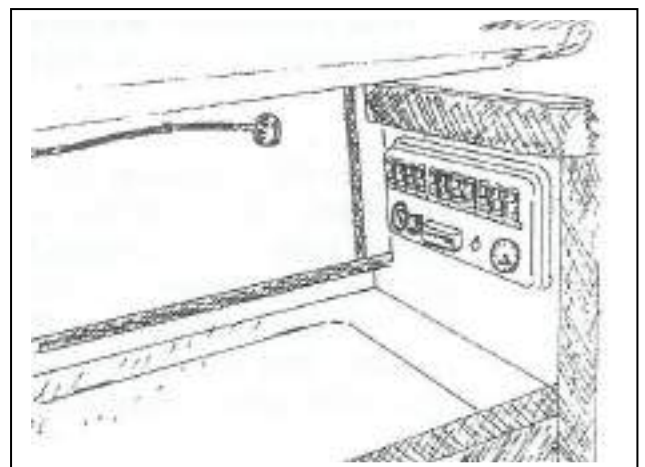
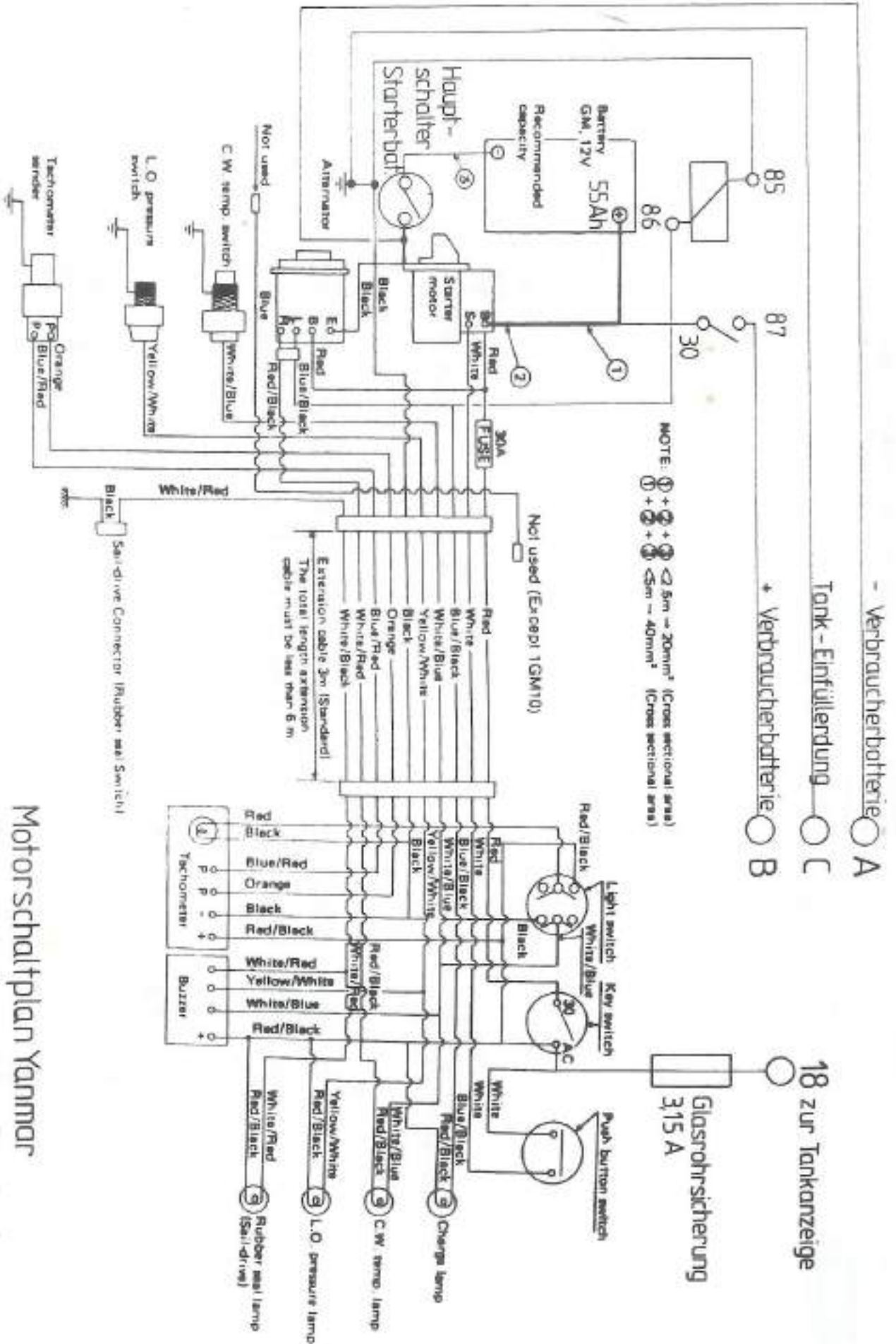
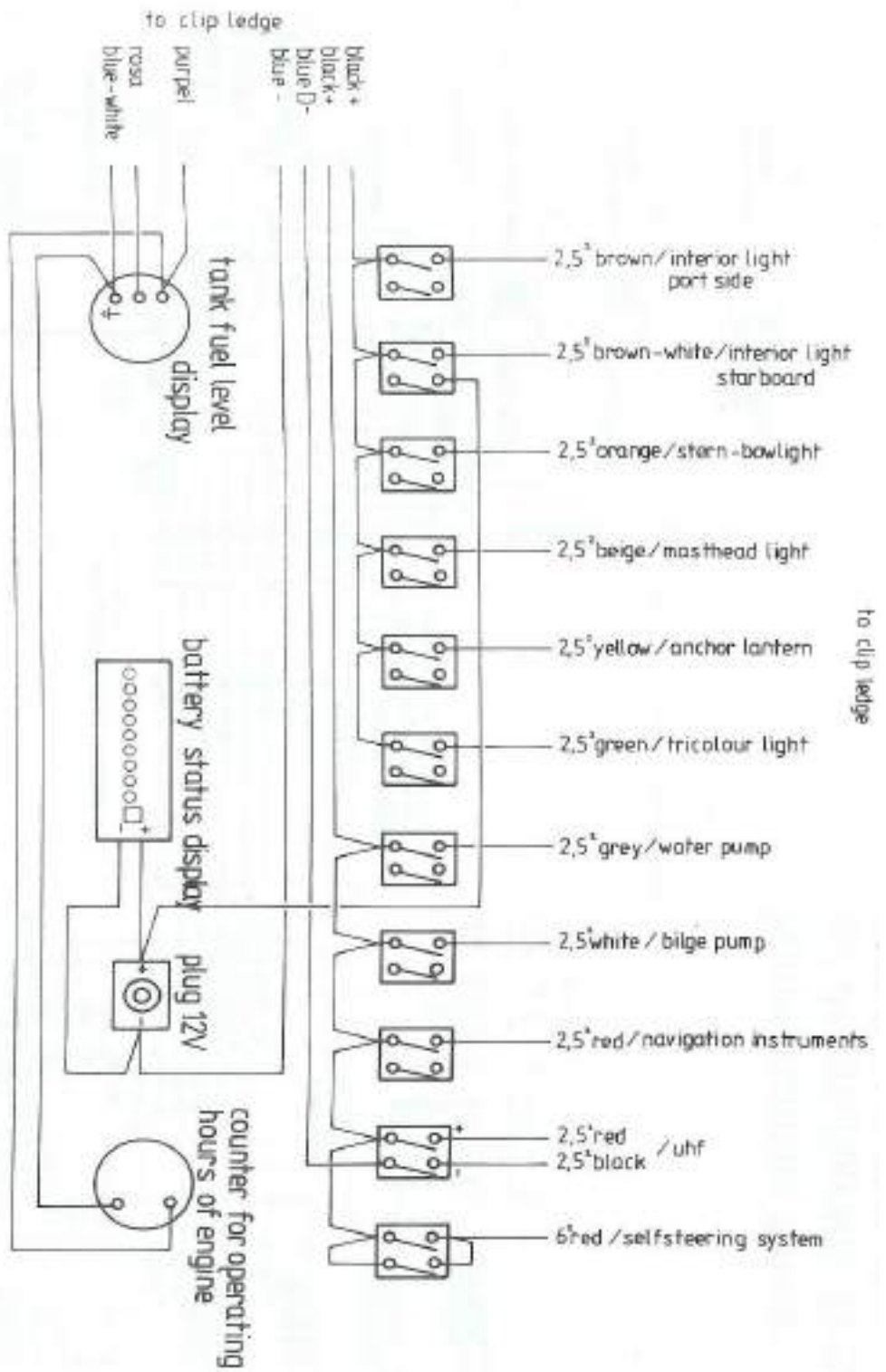


Fig. 40 Navigation station, with instruments. Space is available for further instruments

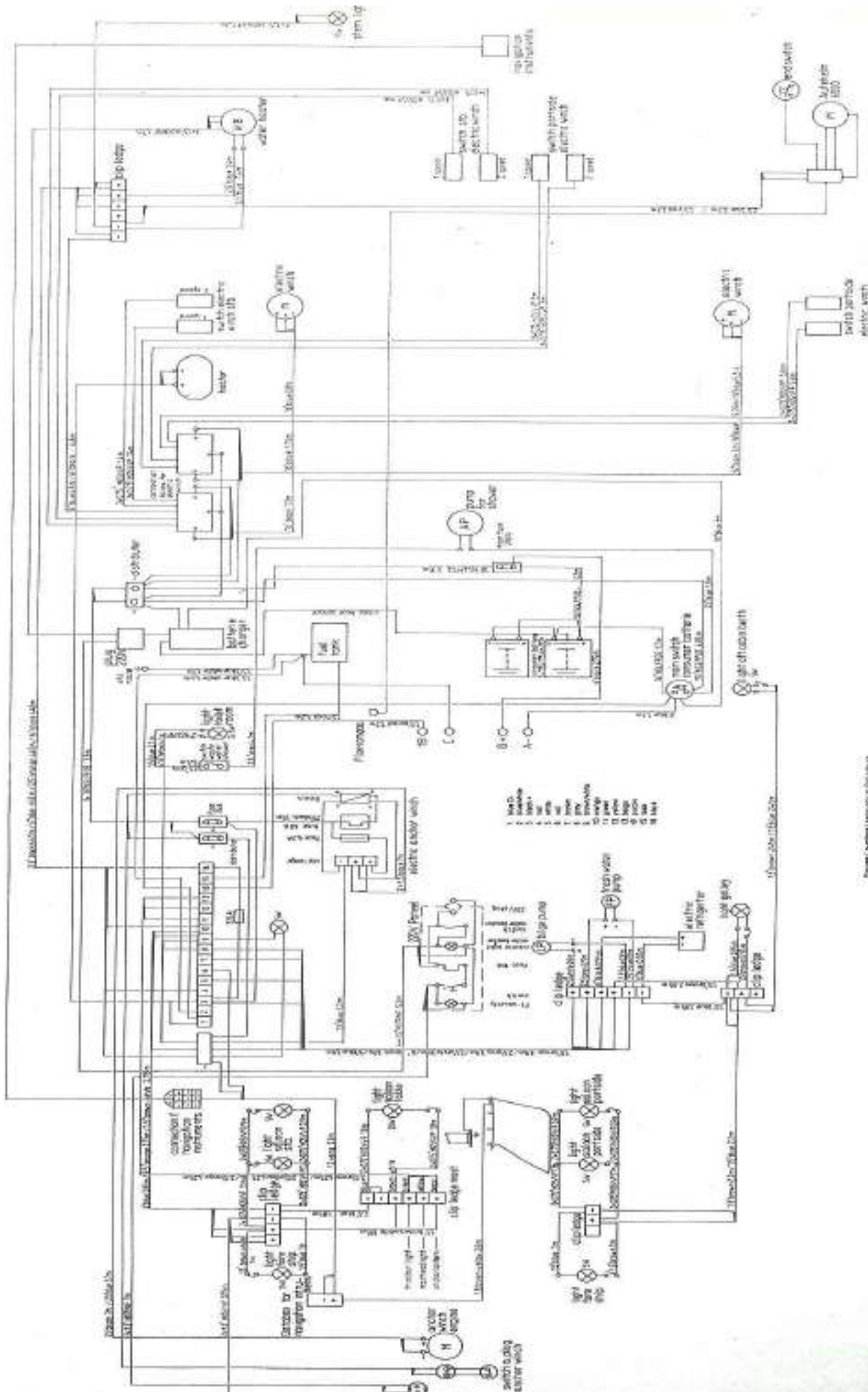


Motorschaltplan Yanmar  
 mit Anschlußpunkte Bordnetz  
 D-36,D-34,D-31,D-35  
 Zeichn.Nr. A.6.4.103b



Figures (numbers) serve only to find colours:  
Colours of the cables must be in agreement  
on clip ledge

Für diese Zeichnung sind alle Angaben erforderlich, die aus der Zeichnung nicht eindeutig heraus zu ersehen sind.		Für diese Zeichnung sind alle Angaben erforderlich, die aus der Zeichnung nicht eindeutig heraus zu ersehen sind.	
Art. Nr.	232	Art. Nr.	232
Werkstoff	SS 904	Werkstoff	SS 904
Schaltergruppe	1	Schaltergruppe	1
D-35 CWS		D-35 CWS	
Zeichn. Nr.		Zeichn. Nr.	
55.6.5428		55.6.5428	



Item	Quantity	Notes
1. Red wire	100 ft.	
2. Blue wire	100 ft.	
3. White wire	100 ft.	
4. Yellow wire	100 ft.	
5. Green wire	100 ft.	
6. Orange wire	100 ft.	
7. Purple wire	100 ft.	
8. Black wire	100 ft.	
9. Grey wire	100 ft.	
10. Silver wire	100 ft.	

Please refer to the notes on the back of this page for more information.

# Owners Notes





## Switches & fuses

The main battery switches are located in the aft cabin on the port side. The outer switch controls the domestic battery and the inner switch controls the engine starter battery.

As already described elsewhere, the toggle switches on the instrument panel incorporate thermal trips. The fuse protection is 10 AH.

Other fuses are fitted by the yard or fitted with instruments by the supplier:

### Heating:

**Eberspacher D3LC** boat heating system is additionally fused by a fitted EFEN 35A fuse. The fuse is fitted behind the instrument panel.

The electric cable upstream of the heating system can also be protected by a 25amp plug-in fuse.

### Refrigerator:

A plug-in fuse is factory fitted in the control section of the refrigerator compressor.

### Stowe Instruments:

The Data-box (fitted under the forecastle bunk) is factory fitted with an extra glass fuse.

### Electric winches:

The electric winches are fused by a fitted EFEN 200A strip fuse, which is fitted aft of the battery stowage compartment, on the transverse bulkhead.

### Electric winch switches:

The electric switches for the winches are fused in the control box with an extra miniature fuse at the factory. You will find the control box in the cockpit locker.

### Hot water Boiler:

The control for the pilot light is fused using a miniature fuse. A floating fuse is located behind the instrument panel.

### Electric anchor windlass:

The automatic circuit breaker for the windlass can be fitted in a variety of places. It can be mounted behind the locker below the chart table, in the locker seat or in the fore cabin. A miniature fuse is located in the relay box at the same point

#### TIP

Familiarise yourself with the position of the various fuses. Always keep replacement fuses of various types on board.

## Main & secondary electrical distribution blocks

### 1. Connector block in starboard saloon locker:

Connected to this are the bi-colour bow light, forecabin interior lighting, and starboard side interior lighting forward of the mast.

2. Mast Connector block: Saloon lighting above table, masthead light, anchor light and tri-colour light are connected to this block fitted under the ABS cover at the top of the mast stanchion.

### 3. Connector block in locker under galley sinks:

The refrigerator, water pump, electric bilge pump and supply lead for port side interior lighting are connected to this block.

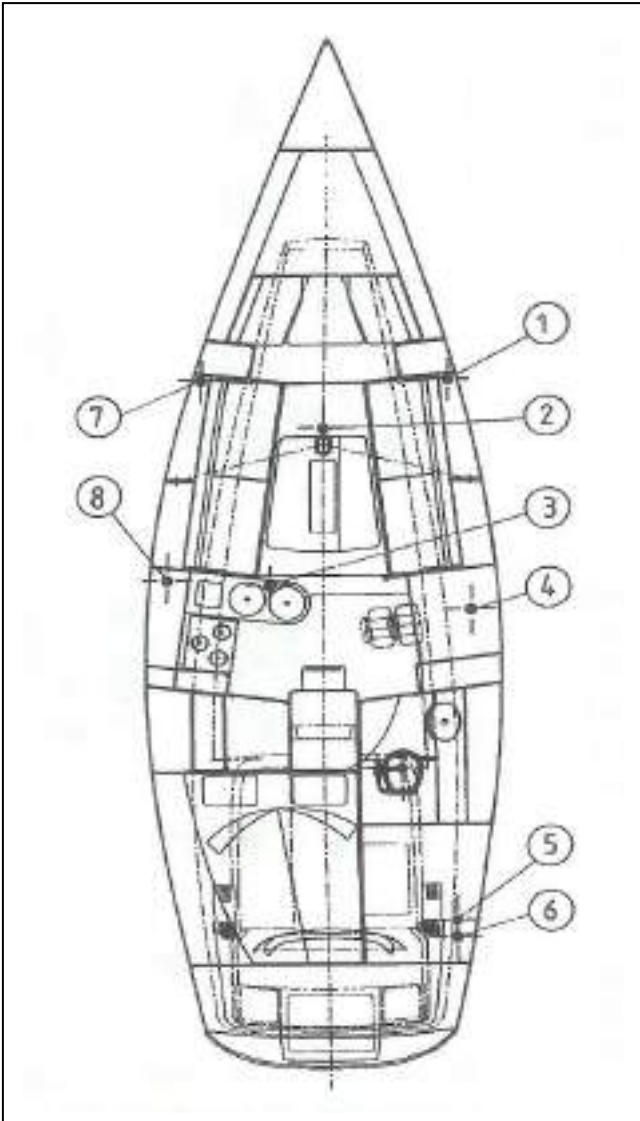


Fig. 41 Connector blocks/distribution strips

4. Connector block behind navigation station:

The main distribution panel is situated behind the navigation panel. Almost all the loads in the interior of the boat are connected to this.

5. Connector block cockpit locker: Connected to this block, mounted in the aft upper part of the locker, is the supply for the autopilot, stern light, hot water boiler and shower drain pump.

6. Connector block cockpit locker: Windlass connection

7. Connector block saloon port side locker: The port side saloon and forecabin interior lighting are connected to this block.

8. Connector block, galley stowage area: The supply to block No. 2 and the aft cabin lighting are connected here.

### Tracking down faults in the electrical system

If any malfunction of the electrical systems or appliances occurs, first check whether the appliance itself is faulty or if the supply lead to it has any voltage.

It is rare that a faulty appliance can be repaired on board. Remove the appliance and send it either to us or to a designated service centre.

When removing appliances, take care not to damage the casing or to nip off the cable connectors. Read the operating instructions provided with the appliance, which should always be kept on board. If necessary get professional help.

If the appliance is intact, check whether the thermal trip, built into the switch, has released, as follows:

If an appliance has failed, identify - by referring to the circuit diagram on Page 38 onwards - which other loads are also fused with this appliance on the same switch. If this item does not function either, change the fuse or the switch.

Follow the lead from the appliance end back to the fuse with the aid of a voltage tester, to establish which distribution block or plug-in connector the required power feed reaches.

The circuit diagram shows the distribution bridges and electrical junctions that have to be checked first. The cable ends are different colours (see circuit diagram on Pages 38-39). When disconnecting a load, unclamp the battery negative pole. Some switches and cables are left exposed.

## Servicing the winches

The modern **HARKEN** winches are of a simple, robust design. Nevertheless, the bearings will need to be re-greased at least once a year. Grease that has turned to resin can only have an adverse effect on the functioning of the winch. Disassembly and reassembly of the winches is as follows:

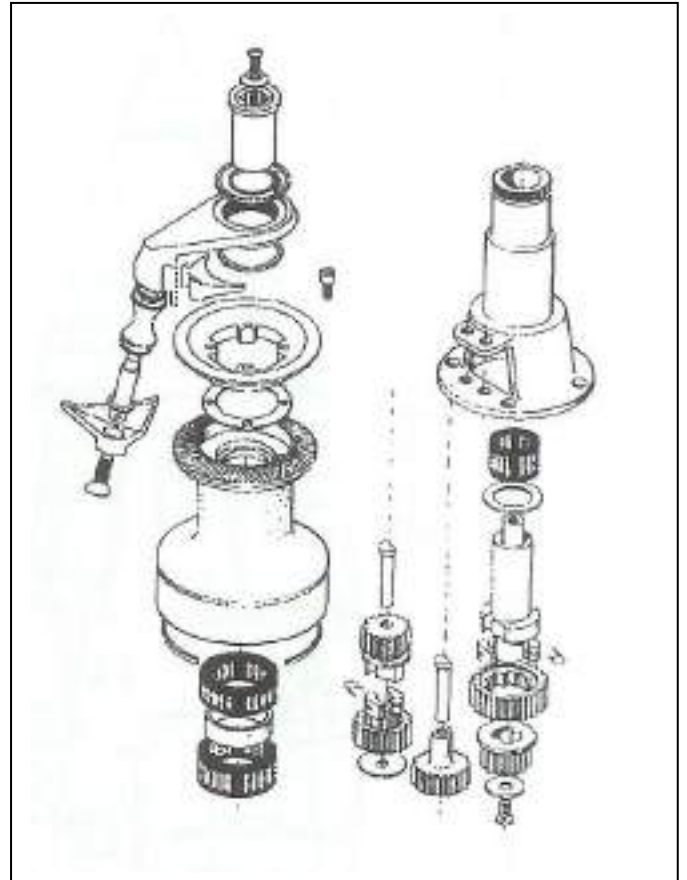
Remove the securing screw with a large screwdriver and then remove the entire head and self-tailing mechanism from the winch base.

Make sure that the detent pawls do not spring out, and that the pawl springs are correctly seated on reassembly.

### TIP

A small paintbrush dipped in petroleum or benzene will make the job of cleaning the winch components easier.

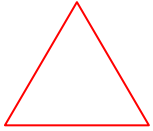
The documentation supplied should include two A4 sheets in English, containing an exploded drawing of the winch construction. The method of cleaning the winch is described in the diagrams on the back.



## Autopilot

If the boat is equipped with an autopilot, then it is soon given a name and regarded as an extra member of the crew. The autopilot is unbeatable, in terms of stamina and concentration.

Please familiarize yourself thoroughly with the operating instructions. Apart from the control panel, virtually all the components of the **AUTOHELM ST 6000** have been fitted with the computer in the space below the steering pedestal, comprising the Linear Drive, Repeater, Gyro-plus Sensor and Computer. Access to these components can be gained by opening the hatch at the foot of the after cabin. The Fluxgate Compass is mounted on the bulkhead in the washroom/toilet compartment.



## ATTENTION !

Familiarize yourself with Chapter 5, "Trial Run", which contains important information, while still in the marina.

### Servicing

Once a year, the main connections should be checked to ensure that there is no play, and the cable terminals sprayed with an anti-corrosion agent.

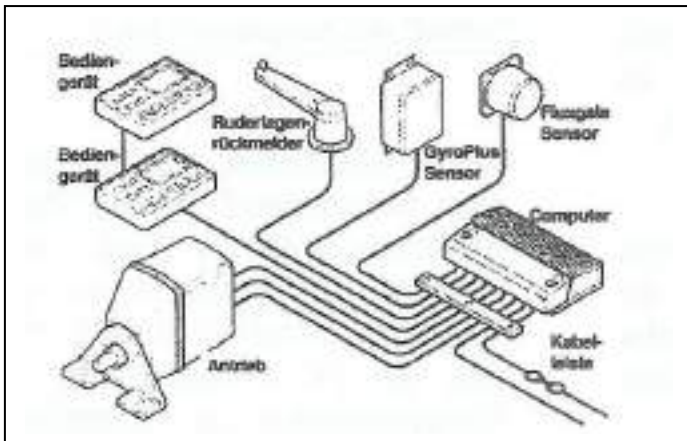


Fig. 43 Autopilot equipment distribution

Bediengerat	= Control Panel
Ruderlangenrueckmelder	= Rudder Angle Repeater
Gyro-Plus Sensor	= Gyro-Plus Sensor
Fluxgate Sensor	= Fluxgate Sensor
Antrieb	= Drive Unit
Computer	= Computer
Kabelleiste	= Cable strip

## Central Heating System

The design layout of the **Eberspacher** Diesel Central Heating System **D3LC** has been tailored specifically for the **DEHLER 35CWS** and approved by the manufacturer's specialist personnel.

Not all of the fittings described in the technical specification and installation instructions were supplied by us. Some of the fittings are not within our supply scope.

Please acquaint yourself in particular with the chapter "Functional Description"

You should also be aware of the important advice offered in the Chapter on Malfunctions.

The boat central heating system is fitted in the cockpit locker, on the outer hull wall.

The temperature control is integrated into the main switch panel in the navigation area, as is the temperature gauge.

The heating system operates on the circulating air principle, and is therefore extremely efficient. The four warm air outlets are situated in the forecabin, the saloon next to the navigation station foot well, the washroom/toilet compartment, and the aft cabin.

### Operating the heating when on board

The installation of a central heating system, cool box, radio and basic electrical fittings significantly increases power consumption. Please bear in mind that your maximum battery capacity is either 90AH or 230AH, and is therefore limited without a shore power connection. Under-voltage protection of 10.5 volts will prevent a renewed startup of the central heating system.

### Malfunctions

We request that you follow the notes supplied by **Eberspacher**. Remember also that the warm air outlets must not be obstructed.

To reach the overheat switch, you will need to empty the cockpit locker and climb in.

**TIP**

Before operating the central heating system fit the flue, complete with its cowl, onto the deck screw fitting on the starboard after coaming, or on the transom. After operation, screw the closure down tight, as any water that enters will destroy the combustion chamber.

**Interior fittings****Refrigerator compartment**

If the cool box is fitted out as a refrigerated compartment, this is insulated and equipped with a **Waeco-Coolmatic** compressor unit. A rotary knob fitted in the crockery cupboard above the galley controls the level of cooling.

If a problem should arise, first look through the fault-finding table before informing us or the **Waeco** customer service department.

**Drinking water system**

The drinking water tank, which holds approximately 100 Litres, is located under the port side saloon bunk. It is filled through the blue deck filler directly above the tank on the port side-deck. The level can be monitored through the transparent inspection cover using a torch. Water for the galley sinks, washbasin or cockpit shower is drawn off via an electric pressure water pump.

**TIP**

To clean the tank, two inspection covers are fitted. The cover is also sealed with jointing compound. The cover may only be unscrewed intact with the aid of a long-handled auxiliary tool.

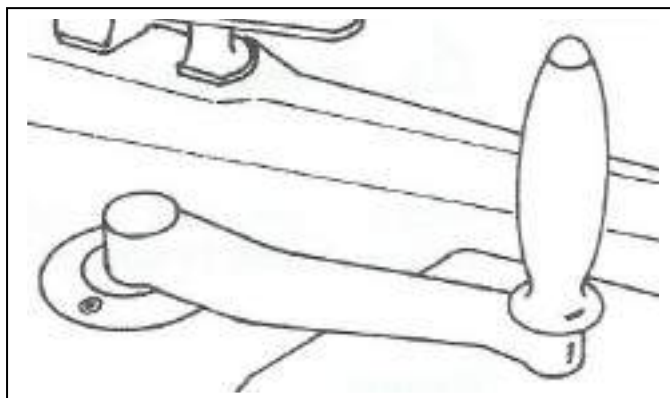


Fig. 44 Winch handle

**TIP**

If water has been left standing in the tank for long periods, replace it with fresh water, adding standard water purification agents. e.g. **Micorpur**

Once the toggle switch on the main switch panel has been turned on, the pump is ready to deliver. If the tank is empty a rasping noise will be heard from the pump. Switch the pump off immediately, to avoid running it dry and causing damage to the pump. Check all the hose-clips of the freshwater supply from time to time.

**Dirty Water tank**

The moulded-in stowage space beneath the starboard side saloon bunk can be converted by special request into a dirty water tank. Dirty water from the sink and washbasin are piped into the tank. A drain hose to the edge of the deck with a special closure facilitates pumping out ashore.



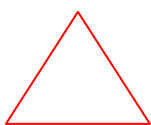
## Cockpit shower

Depending on the level of fitting out, the Cockpit shower may be a cold or hot water shower. The installation is linked to the rest of the pressure water system. Pressing the manual shower button will start the pressure water pump running. The hot water temperature can be controlled using the mixer button next to the socket. The coupling should be lightly greased once a year.

## Hot Water

With **Truma** gas boiler you are independent of the engine or shore power, and hot water is available after just a few minutes. 10 litres of water can be heated to almost 70 degrees in approximately 10 minutes – enough even for a large crew. With a shore power supply, the hot water can be heated electrically. Depending on the level of fitting out, the hot water can be controlled and drawn off:

- At the galley sink
- At the washbasin and shower in the washroom compartment
- At the cockpit shower



## ATTENTION !

Remove the white covering cap beneath the helmsman's seat on the starboard side, before turning on.

Please familiarize yourself thoroughly with the most important operating instructions supplied by **Trumatic**.

Remember that gas installations must be tested and approved every two years by an expert, in accordance with the test certificate of the DVGW, Worksheet G 608.

To prevent frost damage in winter, drain the boiler carefully.

You can only be completely certain that this has been done by removing the top water hose from its connector and setting the yellow drain lever to vertical for draining. Approx. 13.5 litres of water should then collect in the shower tray.

After annual commissioning, leave a water tap open in the "Hot" position until the water begins to flow.

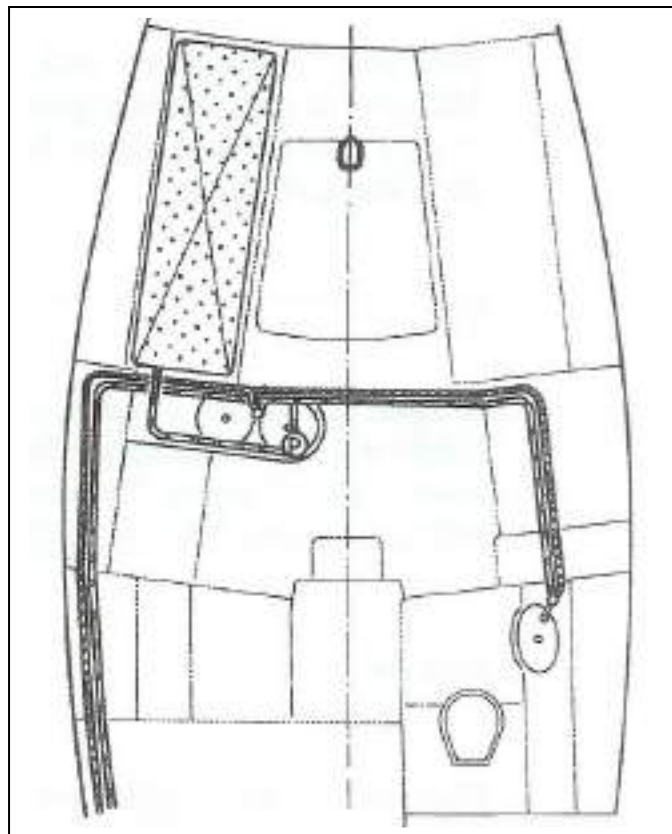


Fig. 45 Hot Water system

## Pump toilet

Your boat is fitted as standard with a **Brydon** marine toilet. Please read the operating instructions. The **Brydon** toilet is of a proven design, and any malfunctions are likely to be the result of operating errors or improper usage, in the first place.

An effluent tank can be fitted as a special accessory, giving you the option of using the toilet when in the marina or in a bathing area. As the diagram on Page 46 shows, a holding tank is fitted downstream of the pump, permitting interim storage.



The toilet can be used in this way up to six times. The sequence of operating the pump handle is no different except that the thick 1 ¼" sea-cock fitting No. 7 remains closed. At sea, this seacock is opened, and the effluent tank flushed with seawater. Repeat the flushing operation after a short period of time.

Repairs are an unpleasant task, so familiarize yourself thoroughly with the system and then give your crew the necessary instruction.

#### TIP

Affix a conspicuous notice giving the basic operating instructions for the toilet. Degrease the tank using a spray flushing agent.

#### Shower

We supply a shower support head and shower-drain suction system, as special accessories.

The shower-drain suction pump is switched on via a toggle switch above the washbasin, and the water is discharged via skin fitting No. 4.

A small filter upstream of the aperture in the shower tray needs regular cleaning.

#### Bilge Pump

The manual Bilge Pump is located in the aft-end of the cockpit locker and is operated with a lever in the cockpit. The intake and exit hoses are permanently fitted. You will find the bilge pump outlet at the aft end of the cockpit to starboard.

The extraction pipe is fitted with a strum box, and a filter that should be cleaned from time to time. The filter is fitted upstream of the electric bilge pump below the sink locker, and can be found in the cockpit locker next to the manual bilge pump.

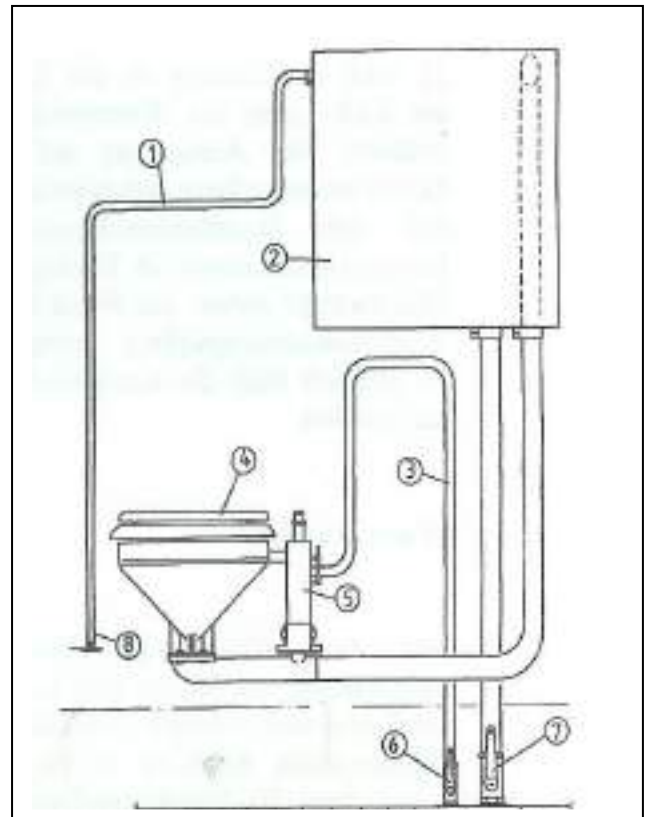


Fig. 46 Toilet System

1. Breather Vent
2. Holding Tank
3. Seawater inlet pipe
4. Toilet
5. Toilet Pump
6. Quick-acting Gate Valve IN
7. Quick-acting Gate Valve OUT
8. Breather Vent skin fitting

In the 'Topp-Paket' kit, the DEHLER 35CWS is fitted with both manual and electric bilge pumps.

The suction point is located under the saloon table between two keel floor joists and is fitted with a filter and a non-return valve.

The electric switch is mounted on the main switch panel in the navigation station, while the outlet is at the end of the cockpit to starboard. The underwater hull of the DEHLER 35CWS is of a very modern design, and there is no classic bilge; the pumps work only if the intake is completely submerged. Small quantities of water will have to be removed using a sponge and bucket.

## Gas System

Blue 3-litre **Camping Gaz** bottles are used to supply the semi-gimbaled gas hob and oven installed in the galley. These bottles have a non-return valve and safety extraction valve. The gas bottles are stowed to port and starboard in the stern locker under the helmsman's seat. The port-hand bottle is connected, while on the starboard side there is storage for the reserve bottle.

### TIP

If the standing ring welded to the bottom of the gas bottle is rusty, coat it with a good anti-rust paint to prevent rust-contaminated water leaking over the transom later.

Caution is essential when using gas. Always adhere to the following routine:

- Open the shut-off valve on the gas bottle in the cockpit
- Open the shut-off valve upstream of the cooker
- Press in and turn one of the burner control knobs and ignite the gas.
- Hold the control knob in for approximately 10 seconds until the 'flame-out' safety probe is heated enough and permits continued burning.

When turning off the cooker, first close the burner controls, then the shut-off valve for the cooker, and then close the shut-off valve on the bottle. When next using the cooker, if a burner control is opened first, and you hear a small quantity of gas emerge when the safety knob is pressed in, the installation is intact and absolutely gas-tight. This gas can be ignited for testing purposes.

### TIP

At temperatures below 10 degrees Centigrade, gas is volatilized more slowly, and a somewhat smaller flame than usual burns at first. Consider this possibility before assuming that the gas bottle is empty.



Fig. 47 Gas Bottle below helmsman's seat. Reserve bottle is opposite

### Anti-slip deck covering

The TBS deck covering is made of polyurethane material containing granulates. The covering offers a non-slip surface both in wet and dry conditions and is comfortable to walk or sit on, as well as providing sound insulation and thermal insulation.

The inlaid deck covering is resistant to oil, grease and diesel fuel, and can be scrubbed lightly using any household cleaner or soapy water. These agents should also be used if dry crusts of brine form.

#### TIP

The granular material mixed into the covering also sits on the surface and is not bonded in. If a stiff brush is used on it straight away, the deck panels will retain their uniform appearance.