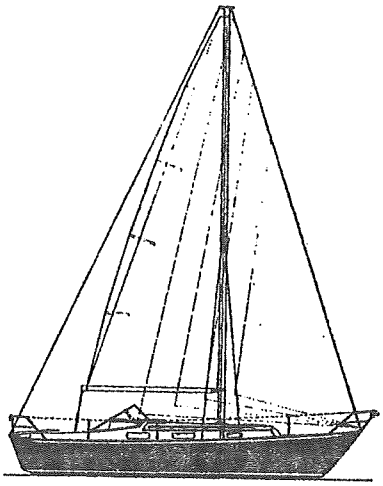
MONSUN 31



Hallberg Rassy
S-44080 Ellös, Sweden. Telephone 0304/50290

I N F O R M A T I O N S H E E T

Type of boat: MONSUN 31

Construction No: .....

Year of Manufacture: .....

Color of the Hull: Gelcoat No: ..... Syntes 1000

Superstructure Gelcoat No: ..... Norpol 332

Motor No: .....

HALLBERG-RASSY BOAT YARD

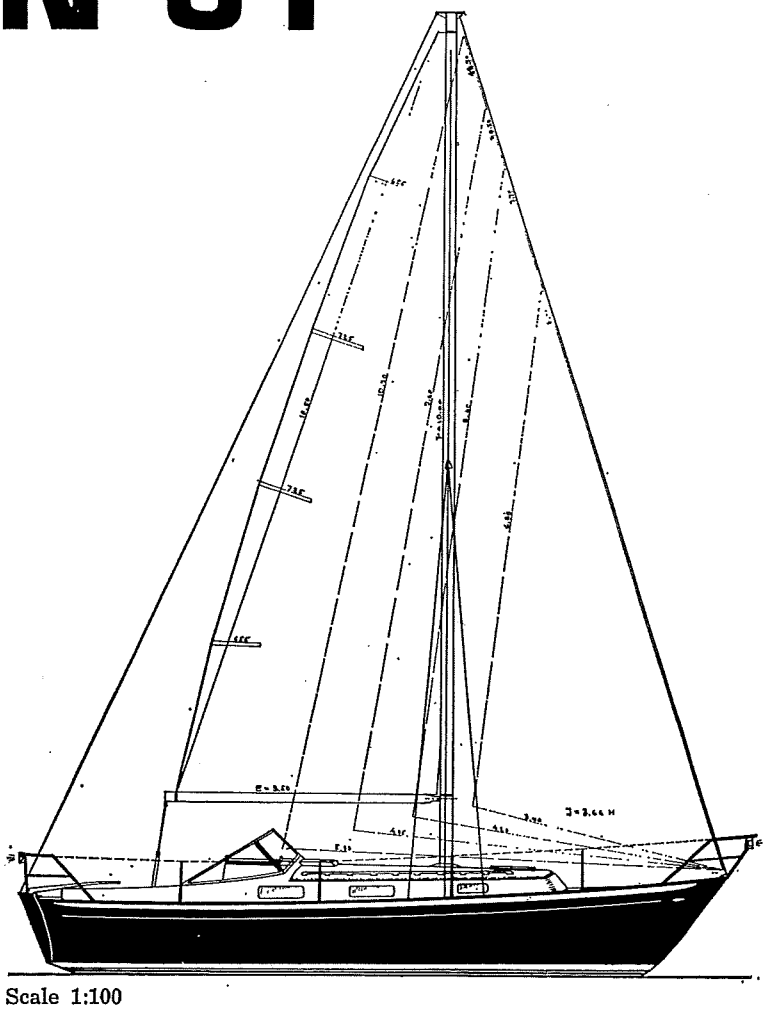
INSTRUCTIONS FOR BOAT OWNERS

This booklet is intended to give some hints and information regarding the best handling and maintenance of your boat. It does not, however, in any way claim to be complete, but deals with some of the questions, which have been previously answered upon delivery.
This Instruction is not intended as an "Operation Manuel", but deals primarily with details, which are specifically related to our boats.
As a rule, the new owner always has to dedicate sufficient time in order to get himself acquainted with his new boat and its construction.
The responsibility for the proper maintenance is up to the buyer.

We wish you GOOD LUCK and
many HAPPY NAUTICAL MILES!

MONSUN 31

SPECIFICATION
DEC. 1976



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MAIN DATAS:

Designer: Olle Enderlein

Length over all	9.36 m	30'—9"
Length in wl	7.50 m	24'—8"
Beam	2.87 m	9'—5"
Draft	1.40 m	4'—7"
Displacement	abt 4,2 tons	9250 lbs
Keelweight	1,9 tons	4200 lbs
Sail area	39 sqm	430 sqft
Height of mast above wl	abt 12.8 m	42'—0"
Number of berths	6	
Speed under power	7,2 knots	

HULL:

Glassfibre reinforced plastic (GRP)
Colour: White
Bottom treated with Antifouling
Hull thickness freeboard 10 mm
" " below wl 15 mm
" " keel 25 mm
Fuel tank and floor moulded in GRP
Ballast keel, iron, moulded in and compleatly protected in GRP
Main bulkheads laminated to the hull on both sides
Rudder blade in GRP
Rudder main Piece ϕ 35 mm bronze
Heavy cast rudder fittings in bronze
Hull and deck, with rudder and chainplates etc, are built under the supervision of Lloyd's for "Hull Moulding Certificate".

DECK AND SUPERSTRUCTURE:

GRP-sandwich construction with polyvinyl-cellular plastic as core material for strength and insulation
Coulour: Ivory white
Hull and deck compleatly joined by overlapping GRP laminate
Bulwark formed in the deck and hull mouldings and fitted with a solid capping in teak
Handrails, Cappings on cockpit coamings, Companionway, Hatchguides, Sole and Seats in cockpit are all in solid teak
All teak except Sole and Seats are warnished
The deck has a moulded in non-skid surface and is provided with four 1" scuppers draining below water line to avoid discoloured topsides
Two 1½" (38 mm) scuppers from the watertight and selfdraining cockpit

SPARS AND RIGGING:

Mast and Boom in anodized light alloy profiles 178/115 and 137/100.
The mast is stepped on the cabin top directly over strengthend bulkhead
Through mast Roller Reefing gear.
Boom vang
Internal halyards
Two Jib Halyard winches
Decklight in mast
Main sheet, 4 part with clamcleat
Roller car on X-track
Jib sheet, braided terylene
Two adjustable trac cars including Genua blocks
Headstay, top shrouds, double lower shrouds and aft stay in ϕ 6 mm 1×19 stainless steel rigging wire, pressed end terminals and 7/16" stainless turnbuckles.
Jib and main halyards ϕ 4 mm 133 tr stainless wire
Stainless chainplates.

SAILS:

First class workmanship in dacron or equivalent
Main sail: abt 19 sqm (210 sqft) 280 gr/m²
Working jib: abt 18 sqm (200 sqft) 280 gr/m²
On request is available
Genua jib: abt 31 sqm (340 sqft) 250 gr/m²
Storm jib: abt 12 sqm (130 sqft) 280 gr/m²
Heavy Genua: abt 24 sqm (260 sqft) 280 gr/m²
Spinnaker: abt 65 sqm (720 sqft) 50 gr/m²
All sails are delivered with bags and eventual battens.

EQUIPMENT:

Sheet winches, two Lewmar 40 or equivalent.
Winch handles, two 10"
Four 10" mooring cleats
Two 8" mooring cleats
Pulpits, bow and stern, in stainless steel.
Double lifelines with four pairs of tapered stanchions, height 610 mm.
Windscreens with heat treated glass in light alloy frames protect the forward part of the cockpit.
A canvas canopy with transparent sides covers the forward part of the cockpit.
Six windows of heat treated glass in light alloy frames, two of the windows are opening.

Hallberg-Rassy

HALLBERG-RASSY VARV AB
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AB ELLÖS TRYCKERI

Light alloy fore hatch with translucent acrylic glass panel and heavy framing, type Gebo or equal.
Compass: Sestrel Minor, Ritchie SF-60 or equivalent.
Permanent mounted bilge pump, type Whale Gusher 10.
Ancor of light weight type 12 kg (27 lbs).
One ancor line 30 m (100 ft).
Four mooring lines 10 m (30 ft)
Boat hook, flagstaff.
International navigation lights ϕ 100 mm.
Watertank abt 160 litres.
Four 6" fenders.
Cockpit table.

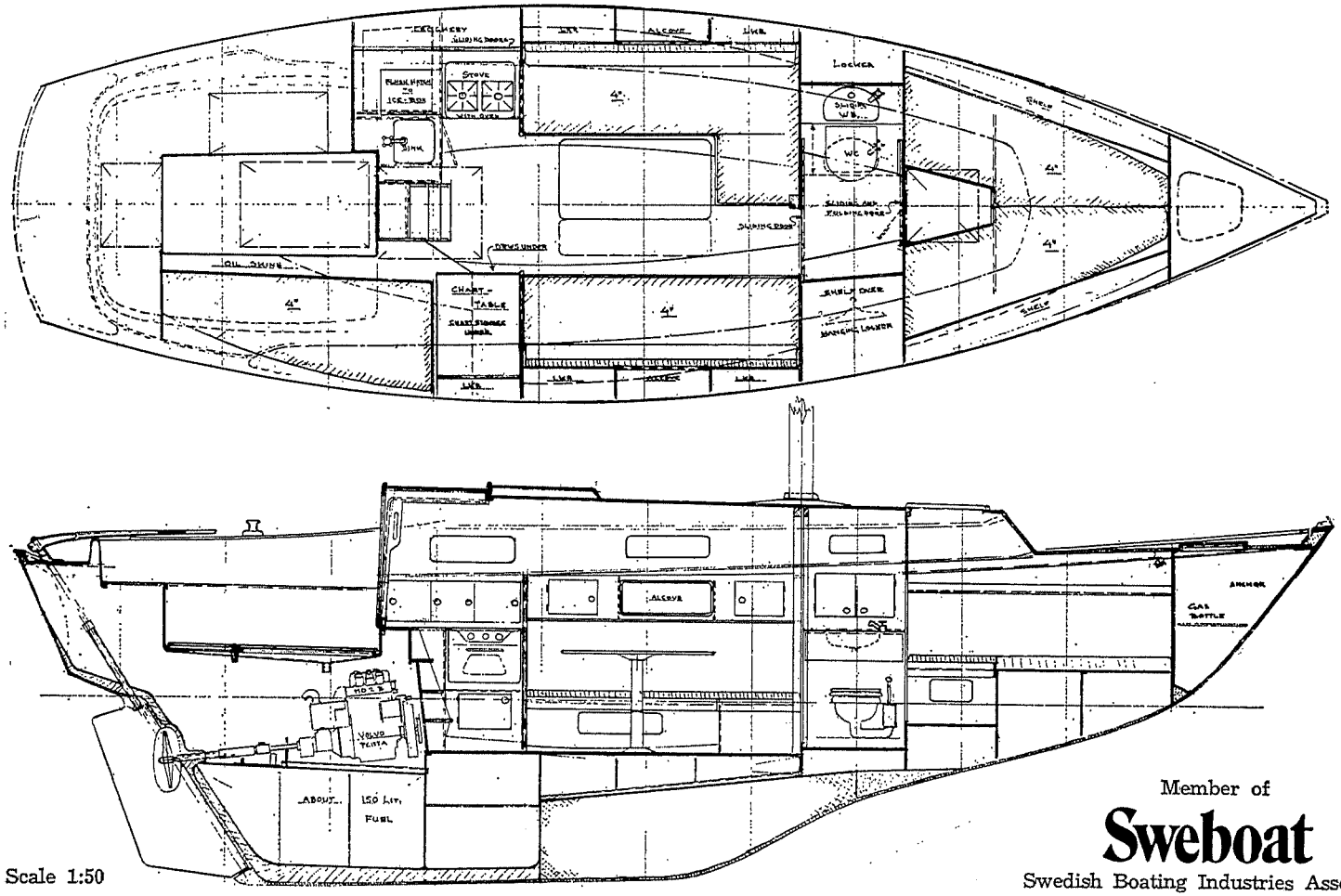
ENGINE:

Volvo Penta diesel MD 11 C, 17 kW (23 hp).

Reverse gear type Mono Shift with reduction 1,19:1. 12 V electrical system with 35 amp alternator.
Two batteries 60 Ah with separate circuits for engine starting and lighting etc.
Instruments comprise Revolution counter. Temp.-gauge and optic and acoustic warning.
Propeller 3-blade, diam 15", pitch 12" (two blade also available) left hand.
Propeller shaft ϕ 25 mm stainless steel.
Engine and shaft carefully aligned and rubber suspended. The engine foundation is made in GRP and forms a spilltray under the engine. The engine compartment is sound insulated for lowest possible sound level. Shaft bearing Cutless waterlubricated rubber bearing. "Wet" exhaust line in rubber with Volvo Special Muffler.
Built in fuel tank 150 litre (33 imp. gallon) with separate pump for draining of eventual water.

ACCOMODATION:

First class workmanship in selected mahogany, hand rubbed and treated to a silk smooth finish.
The accomodation consists from forward: Water and gastight stowage for ancor and lines and also for eventual liquid gas bottles accessible from deck. The space is drained overboard.
Forward stateroom with two comfortable berths. Length 2,0 m (6'—7"). Filler between berths gives 0.8 m width at shoulder. Below the berths watertank and stowage. The inside of the hull is lined with mahogany. Shelves at sides.
A folding door separates the forward stateroom from the toilet compartment. The toilet compartment is fitted with a reliable marine pump toilet and a sliding wash basin with freshwater from footpump. On SB-side is a good sized open hanging locker and space for eventual heater. The walls are covered with light colour linen texture vinyle. Teak grating on drained floor. Head room 1.75 m (5' 9").
Sliding door to main cabin.
The main cabin is built with fair sized sofa-berths P and SB. The port side sofa is made as a L-sofa. Behind the swing up backrests is stowage for bedding. Length of berths 2.0 m (6'—7"). Shelves and lockers outside the sofas. The lowering table together with the L-sofa forms a double berth. The inside of the hull above berths is paneled with mahogany. The ceiling is lined with Somvyl. The glassfibre floor is covered with wall to wall carpet. The cushions are all in heavy polyeter foam, 4" thickness. The upholstry in high quality furniture fabrics.
Aft in main cabin is on SB side Navigators table with chart locker, drawers and elpanel. A quarter berth is arranged aft of the navigators table and is used also as the navigators seat. A hanging space for oilskins is arranged against the engine bulkhead.
On the port sida is a L-shaped galley with stainless sink and foot operated Fw. pump. The galley is fitted with a stainless two-burner kerosene stove in gimbals. The boat is also available with a liquid gas stove with oven. Lockers for crockery etc. Insulated ice-box. Capacity abt 70 litres. Working surfaces on countertop and navigators table in teak texture plastic laminate.
Headroom in main cabin abt. 6'—0" (1.83 m).
The cockpit is selfdraining but with low sill height for easy access to the accomodation.
Seats and floor in cockpit are covered with teak gratings. Length of cockpit abt 6'—7".
Stowage in afterpeak and port quarter is accessable from cockpit.
Main sheet and compass on low beam.



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EXTRA EQUIPMENT:

Heating.
Instruments etc.

The right to changes in specification is reserved.

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Maintenance of the Gelcoat - Repair of Damages

The outer, colored coating of a fiberglass boat is called the Gelcoat. This is a plain coating, which protects the fiberglass hull and at the same tine gives the boat an elegant and easy-to-care exterior. The thickness of the Gelcoat is approximately 1/32 - 1/64 of an inch and thus considerably thicker than a normal color coat. It is completely homogenous and has the same hardness right through. This is why it is often possible to remove bad scatches through grinding or polishing without having to apply any new plastic. It is not difficult either to repair deeper scratches or damages. Any air bubbles, scratches or ruptures that may occur in this outer coating does not mean that water can penetrate the laminate.

1) Maintenance of plastic surfaces in good condition

The plastic surfaces of the boat should be kept clean and spotless for a nice appearance. Use regular detergents and water but avoid detergents which may cause scratches. Do not use detergents containing ammonia as they may damage fittings, plexiglass, etc. Detergents and solutions should be thoroughly rinsed off. Should the shiny surfaces get dull they can be polished either by hand, using a polishing agent, or by using a low revolution machine. There are several special polishing agents for fiberglass boats on the market.
Waxing is nor normally required, but can do no harm. When waxing notice that the wax has to be worked well. Do not wax any surfaces with pattern, which will make them slippery.

2) Repair of superficial scratches, etc.

Scratches in the gelcoating may often look deeper than they really are and as the scratched surface is different in color than the shiny one, you may think that the colored coating has been penetrated. For reasonably deep scratches use water sanding. Start with a coarse paper and little by little change down to a fine paper (No 800). Rub the surface after sanding, i.e. use polish and an abrasive on the surface as well as on the surrounding undamaged surfaces.

3) Repair of deep scratches and scaffings

If the gelcoating has been damaged and completely removed, the repair is done as follows. Get Gelcoat in the proper color (See Information Sheet) and a hardener from a fiberglass manufacturer or the yard. The damage is then cleaned with the edge of a knife and covered with masking tape very closely on both sides of the hole. Mix the Gelcoat and the hardener (approximately 2% of the hardener). The temperature in the working area should be between 60-80 F.

Use a generous amount of the Gelcoat to fill in the damaged spot and immediately place a piece of tape over the same to avoid the Gelcoat from running. After the plastic has hardened, grind off the surplus and polish the surface.
Scaffings under the waterline are filled with putty epoxy (Interpad) and then painted with a 2-component primer, e.g. International Poly Ground.
Larger scaffings, in case the boat hits bottom hard, have to be cleaned from crushed fiberglass through grinding and are then repaired with fiberglass mat and plastic before final putting (repair sets are available on the market).

Maintenance of Wood - Interior

The interior surfaces of mahogany are thoroughly treated with a synthetic laquer and even after many years of use do not normally need any other maintenance than a cleaning. Should a surface, however, be damaged to the extent that it would be necessary to re-varnish same, the whole damaged surface has to be sanded and then varnished with a mat laquer (International Lagolac or similar). Most of the minor damages are taken care of with a little bit of oil. Interior teak, mouldings, etc. can be oiled once in a while with teak oil.

Exterior Wood

The exterior wood is made of genuine teak and is not dependent on either laquer or oil for its protection. It is thus a matter of taste whether the teak should be varnished or be left untreated. It is our opinion that the varnished teak has a better appearance and that it sets off a better contrast against the other plastic surfaces. But of course a certain maintenance is required to keep it up from wear and tear. On varnished seats we strongly recommend the use of non-skidding and non-scratching footwear. When the teak is treated at the yard they use a synthetic varnish with a phenolic resin glue base. Varnish with an oil base is not suitable and a 2-component varnish should not be used on top of the old varnish. Untreated teak is scrubbed thoroughly at the same time as the cleaning of the fiberglass surfaces and will after some time take on a silvergrey shade.
In our experience, the use of teak oil on the exterior may cause bad looking surfaces, which are diffecult to maintain. Therefore we do not advise any oiling. It is most important that the maintenance treatment of varnished surfaces is made in time. When you can see that it is needed it is to late. It is a good piece of advice to re-varnish already after one or two months in the first season and than at least once every year. When you re-varnish, the surrounding fiberglass surfaces must be well protected from steaks or drips of varnish, which otherwise leaves spots which are difficult to remove. Should you happen to spill some varnish be careful to remove same immediately as, evan if it is practically translucent from the start, it will from the sun turn yellow very quickly on the fiberglass surfaces.

Mast and Rigging

If the boat is not commissioned at delivery and therefore the owner has to take care of the stepping of the mast and the rigging, the following procedure should be followed.
The halyards are checked and the shrouds and stays are attached to the mast. If the top navigation light is not yet mounted, it should be done before stepping the mast. The spreaders are mounted and locked on to the mast and top shrouds. In order to make it simple to obtain the correct angle of the spreaders, strech the top shrouds along the mast and make a mark at the position of the spreader bracket on the mast. This marking indicates the correct position for the outer end of the spreader. Any covers for the turnbuckles should be attached at this stage. When the mast has been stepped and the shrouds and stays have been fastened to their respective chain plates, the rigging is tightened by hand and the mast adjusted into a vertical position.

The Principal Adjustment of the Rigging is made so that the top shroud and the aft stay is tightened to correspond to approximately 10 % of the weight of the boat and the headstay somewhat more, which will give this stay quite a rigid feeling. Next in line come the forward undershrouds, which should make the mast bend slightly forward at the spreaders. Finally the aft undershrouds are not tightened more than is possible by hand.
As the varios items, such as wires and mast, settle, the rigging should be tightened, but not before some hours of sailing in fresh breeze.
First reset the rigging as done when you first step the mast. A correct stepped mast will assure you to get the best performance of your boat. An incorrectly adjusted mast may give excess weather helm or opposite effect.
To be sure that the mast, when under stress, does not form a S-curve. After final trimming make sure that the turnbuckles are locked with splitpins for protection. It is advisable to use tape over the same.
Inspect the rigging when the mast is taken down, either for winter storage or for other reasons. Special care should be given to halyards. Grease the top and bottom shives. Wash the mast and afterwards hose it thoroughly.
Before stepping, also control all wire connections for running lights and antennas.
The anodized surface can be protected by using a silicone-free wax. The luff of the sail would move easier if the slot is treated with paraffine.
The wind can cause vibrations in the mast and rigging. This happens most often when the boat is moored at the dock and is quite normal and natural. But sometimes you may find it somewhat disturbing. Vibrations seldom occur during sailing.

The most common cause is that the topping lift is too tight. Specially if the boat is moored and the wind is coming in from the side, the mast itself may vibrate alongship. This can be remedied by streching the spinnaker topping lift to some suitable place aft.
A small change in the tension of the rigging often eliminate the vibrations.

General Hints about Sailing, etc.

The Monsun's construction assures complete safety and she has been tested during severe conditions during ocean passages and numerous crossings of known rough water as the North Sea and the Baltic Sea.

The Largest Genua Jib (330 sq.f.t.) is used in winds up to about 10-12 knots. The sheets are always outside of the double lifelines and stays.

The Working Jib (200 sq.ft.) can be used in combination with an unreefed mainsail up to 20-25 knots. As Monsun is well balanced, even when heeling excessively, there is no need to reef the mainsail in order to ease pressure on the rudder. The sheets are either outside the double lifelines and stays or between the top stay and the lower stay and inside the lifelines.

The Storm Jib in combination with reefed mainsail is advisable in forces over 25 knots winds.

The setting, reefing and the taking in of the mainsail with a through mast roller reefing gear is different from the traditional way. The mainsail has no travellers and is normally stowed rolled on the main-boom with the battens in, ready to set. The reefing gear is direct geared and reversable ratchet. By setting the ratchet lock is released and the sail is allowed to roll up as it is hoised. If the strength of the wind calls for a reef the boom is locked when a suitable number of rolls are left on the boom. The tighting of the luff is made with the halyard winch not with the reefing gear. Before taking in the mainsail the boom vang is removed from its slot in the boom, a winch handle is placed and locked in the reefing gear. The halyard is let out as the sail is rolled up on the boom. The setting and taking in of the main is if possible made with the boat head to the wind. The boom lift can usually be adjusted so it can be left in the same position sail set or furled. It is the direct furling of the sail that is one of the big advantages with this type of gear.

The Sails are made of Dacron or Terelyne and do not need any special care during the first hours of sailing to obtain optimum shape. They are pretty well water resistant and in an emergency you may stowe them away even when moist.

The Main Sail is to a very large extent dependent on the right stretching along the foot and luff and the trimming can change its appareance completely. Wrinkles along the line of the battens pockets is most often caused by improper stretching of the luff. The clew must be securely fastened to the boom and the foot stretched firmly. Make sure that the rope goes around the boom and through the eye in the clew to prevent the sail to lift from the groove.

The Jib should be firmly stretched on to the headstay. Use the halyard winch on the mast.
There are always some wrinkles at the corners of the sails, but this does not influence the efficiency of the sail. The sails should be inspected thoroughly every year in regard to minor damages and worn out seams, which may have to be repaired.

Instruction regarding the Engine, Engine Installation, through-hull Fittings, Head, Electric System, etc.

Regarding the Engine itself we refer to Volvo's "Owner's Manual", which should be thoroughly studied before using the boat. This Manual does not comprise the actual installation.

The Propeller Shaft is accessible in the aft of the engine room. For lubrication there is a tube installed to a grease cup with screw top under the hatch to the storage space on the port side. During the first hours of operation the stuffing box should be greased by turning the handle half a turn every three hours. If, after some hours'use, the stuffing box has the tendency to more leakage than a few drops, it should be adjusted by loosening the locking nut and tightening the stuffing box nut approximately half a turn, but the box should still be dripping but not very much.

The Water Intake to the Engine is located forward of the engine accessible through a hatch in the floor just in the front of the galley.

The Fuel Oil Filter is of a combined water-separating and fine filter type and is mounted on port side in the engine room. This filter should be inspected regularly and after an hour's run with regard to the water collecting in the lawer glass part. The water cannot be drained off while running but it should not be allowed to rise up high in the filter, as this would ruin the paper filter in the upper part.

Drainage Pump for Fuel Oil Tank

If you suspect that the fuel tank contains water, this can be drained by using a special pump, which is installed under the hatch on port side of the cockpit. Plunge until you only get fuel. Check in a glass.

In an OPEN position the handle points away from the incoming pipe and the valve is open when the handle points along the pipe on either side. Normally the valve for incoming seawater has to be closed only when the boat is not in use for a long time. The valve is placed under the floor in the forepeak.
It is important that the flushing valve of the toilet is set completely in the position CLOSED. When in use, the bottom valve shall first be opened. The bowl is then flushed a couple of times. After use, the bowl is emptied through forceful pumping, at the same time as the small valve at the side of the bowl is open = FLUSH. When the water level has risen somewhat in the bowl the small valve at the side shall be closed and the pumping is continued until the bowl is emptied. Put flush valve back to OPEN position. Never put any foreign matter in the toilet, a match can easily clog the toilet. Close the bottom valve after use. As regards the winter maintenance, flush the toilet with detergent and water and drain through the bottom plug.
NOTE. In some areas the boats are fitted with optional sewage treatment devices or holding tanks to meet the anti pollution laws. For maintenance of optional equipment see manufacturer's hand book.

The Interior Light Bulbs are generally of a 5 W coil type.

The Light Bulbs in the Lanterns are of 25 W, except for the stern navigation light, which is 10 W, Hella, type 8 G A 002600-12 respectively 599-12 or similar.
Spare lamps can be purchased from your dealer or directly from the Hella representative in your area.

NOTE IMPORTANTE !
CHECKING UP ON HOSE CLAMPS

Hose clamps, specially those posioned below waterline where a leak means water entering the boat must be checked up some time after delivery and then annually. The clamps are where possible of stainless steel and will not corrode. The hose must be so firmly attached to the fitting that it can not be turned by hand and it must not leak. Extreme tighting should elsway be avoided as it may make the treads of the screws to override and the clamp to lose its grip.

Lifting, slipping and winter storage

The Monsun can easily be lifted using a crane with soft lifting strops. The center of gravity is positioned abt 1,5 m aft of the mast. Spreaders on the lifting stops should be used to avoid excessive pressure on the wooden rail cappings.

When lifted on a slipway or placed in winter storage, the weight of the vessel should be supported by woodfaced blocks. One should be placed as far forward as possible under the flat keel and one about 1 meter (3") forward of the rudder.

MONSUN 31

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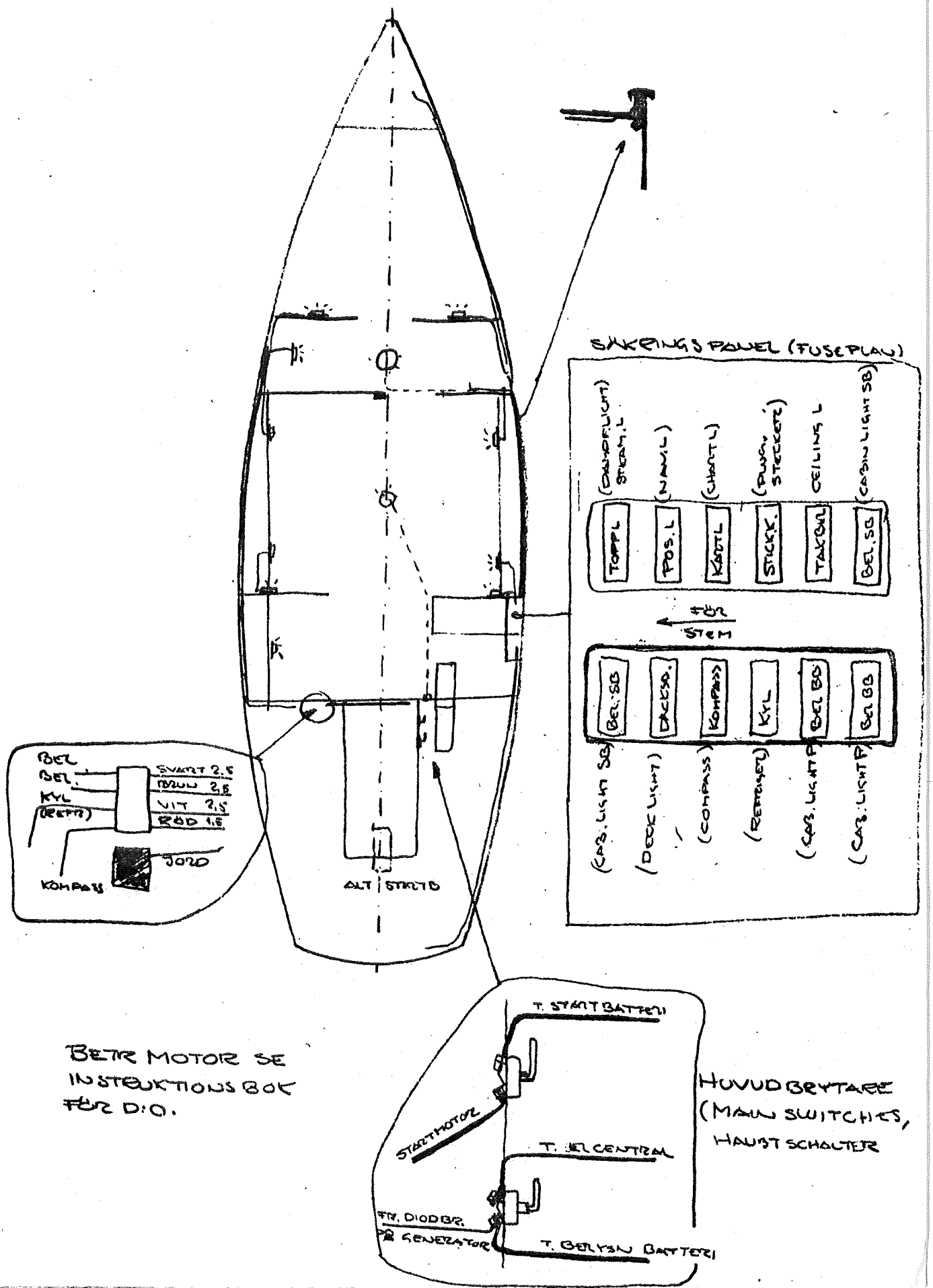

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