



640 DC



V. 3.0

Dear Owner of the boat!

The intention of this handbook is to help you to operate your craft with safety and pleasure. It contains details of the craft and of the equipment and systems supplied with it or fitted in it and information on its operation, care and maintenance. Please read it carefully, and familiarise yourself with the craft before using it.

Naturally, the owner's handbook is not a course on boating safety or seamanship. If this is your first craft or you have changed to a type of craft you are not familiar with, please ensure for your own comfort and safety that you obtain handling and operating experience before "assuming command" of the craft. Your dealer, boating clubs or national boating federation will be pleased to advise you of local sea schools, or competent instructors.

Ensure that the anticipated wind and sea conditions correspond to the design category of your craft, and that you and your crew are able to handle the craft in these conditions.

The sea and wind conditions corresponding to design categories A, B, and C range from severe storm conditions to strong wind with hazards of exceptionally high waves or exceptionally strong gusts. Whatever the category of your boat, these are dangerous conditions, where only a competent, fit and trained crew using a well maintained craft can operate satisfactorily.

This owner's handbook is not a detailed maintenance or troubleshooting guide. In case of difficulty, please contact the dealer. Only trained and skilled people should work on maintenance, repairs or modifications. Modifications that may affect the safety features of the craft should be assessed, carried out and documented by skilled personnel. The manufacturer is not liable for any unapproved modifications.

In some countries a driving licence or authorisation is required to pilot a vessel. Familiarize yourself with the special provisions of your own area.

Always maintain your craft in good condition and make allowances for wear and tear over time and as a result of heavy duty usage or misuse of the craft. Any craft no matter how strong, can be severely damaged if not used properly. This is incompatible with safe boating. Always adjust the speed and direction of the craft to sea conditions.

The craft should always carry the appropriate safety equipment (lifejackets, harness, etc.) according to the type of craft, weather conditions, etc. This equipment is mandatory in some countries. The crew should be familiar with the use of all safety equipment and emergency manoeuvring (rescuing a person overboard, towing, etc). Boating schools and clubs regularly organise drill sessions. All persons should wear a suitable buoyancy aid or life jacket when on deck. Note that in some countries it is obligatory to wear always a buoyancy aid / life jacket complying with national regulations.

PLEASE KEEP THIS HANDBOOK IN A SAFE PLACE, AND HAND IT OVER TO THE NEW OWNER IF YOU SELL THE CRAFT.

Thank you for choosing Bella. We trust you will get a great deal of pleasure out of the boat.

Bella-Veneet Oy

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1. General information

This owner's handbook will help you to familiarise yourself with the properties and features of your new boat, as well as with its care and maintenance. Separate handbooks for the equipment installed are attached and are referred to in many sections. You may of course complement this owner's handbook with the handbooks of the devices that are bought and installed afterwards. There is also space for your own notes at the end of this handbook.

1.2 Definitions

The warnings and cautions in this handbook are defined as following:

DANGER!

Denotes an extreme hazard that would result in high probability of death or permanent invalidity if proper precautions are not taken.

WARNING!

Denotes a hazard exists which can result in injury or death if proper precautions are not taken.

CAUTION!

Is a reminder of safe practices or calls attention to unsafe practices which could result in personal injury or damage to the craft or its components.

The units in this handbook comply with the SI-system. In some cases other units have been added in brackets. An exception is wind speed, where the Beaufort scale is used in the recreational craft directive.

1.3 Guarantee

The boat and equipment installed at the boatyard are guaranteed according to the enclosed guarantee terms. Separate letters of guarantee and contact information for the suppliers are attached.

For other guarantee issues, please contact your nearest Aquador dealer. See www.aquadorboats.fi for a list of dealers.

2. Before use

2.1 Registering

In Finland, according to Boating regulations, a boat equipped with an outboard or inboard motor or a stern drive engine of over 15 kW, or a watercraft which has a hull length of at least 5,5 m according to the manufacturer and is equipped with a motor or a sail, must be registered. Please, refer to local authorities for more information about registering.

2.2 Insurance

Boat insurance may be used to recover damages following accidents on the water or during transport or docking. Ensure separately that the insurance also covers damages resulting from hoisting the boat. Specific information about insurance conditions can be obtained from insurance companies.

3. Before leaving shore

Familiarise yourself with this owner's handbook.

Always check at least the following items before leaving shore:

Weather and forecast

Consider the wind, waves and visibility. Is the design category, size and equipment of your boat, as well as the skills of the skipper and crew sufficient for the waters you are going to? In strong winds and rough seas portholes, doors, hatches and vents must be closed to prevent water from getting into/onto the boat.

Loading

Do not overload the craft, distribute loads suitably. For stability, do not place heavy loads high up. You can check the maximum allowed loading from the technical part of this book or from the CE-plate.

Passengers

Ensure that there are life jackets for everybody on board. Make sure all members of the crew understand their specific tasks, before leaving shore.

Fuel

Check that there is enough fuel, plus a reserve tank for bad weather etc.

Engine and equipment

Check the functioning and condition of steering, electrical equipment and batteries, and carry out the routine checks specified in the engine instructions handbook. Check for seaworthiness elsewhere: no leaks of fuel or water, safety equipment on board etc. Check that bilge water is at a minimum.

Ventilation (only in gasoline-driven stern drive engine boats)

Run the engine compartment fan for at least 4 minutes before starting the engine. Start the engine following the instructions of the engine manufacturer. Ensure the ventilation of the fuel compartments to reduce the risk of fire.

Fastening down objects

Make sure everything on board is properly secured even in the event of high winds and rough seas.

Nautical charts

If you are not navigating on totally familiar waters, ensure that you have nautical charts covering a sufficiently large area. Even if you are having a chart plotter, you should carry regular charts onboard. There is always a risk for technical malfunction, therefore regular charts are important.

Leaving the berth

The crew releases each mooring rope etc. as per your instructions. Make sure mooring ropes or other ropes do not tangle with the propeller.

Every now and then, check the condition of seals of hatches and port lights. Most of the hatches are supposed to be watertight and therefore seals must be in good condition. Due to time and salt water, the seals may become brittle and start leaking. Brittle seals must be renewed immediately.

4. Transporting the boat

4.1 Lifting the boat

When lifting the boat we recommend to use a proper frame. Lifting without frame will cause considerable large compressive force to the hull of the boat and may cause damage to it. If not using a frame, make sure that the hoisting belts are long enough. Hoists are long enough when the angle between them is about 20 degrees. During the lift, be careful with the rails and other equipment. Make sure that the boat is well balanced.

Cover the hoists with soft material to prevent scratches. Do not stand under the boat as it is lifted.

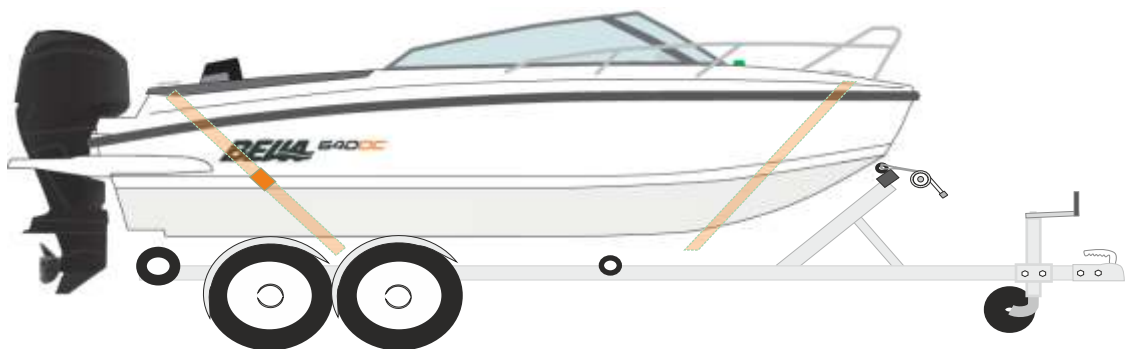
! CAUTION!

Never attach hoists to bollards, railings or other detachable parts of the boat.



4.2 Transportation

If you transport the boat by trailer, check with the dealer that it is suitable for the model in question. Ensure that the keel is positioned straight on the middle rolls and that the side supports prevent the boat from moving back and forth. It is meant that the keel takes all the weight and the side supports keep the boat in correct position. Attach the transportation ropes. Do not leave any loose objects on board during transportation. The boat should be transported unloaded.



ATTENTION! Boats trailer weight is 1465 kg. Make sure your trailer has enough capacity to carry the weight.

4.3 Before launching the boat

Check the following items with the naked eye before launching the boat:

- fastenings (make sure they are tight)
- hoses, tanks, valves, outlets/inlets and rainwater drainage
- electrical wiring
- any damage

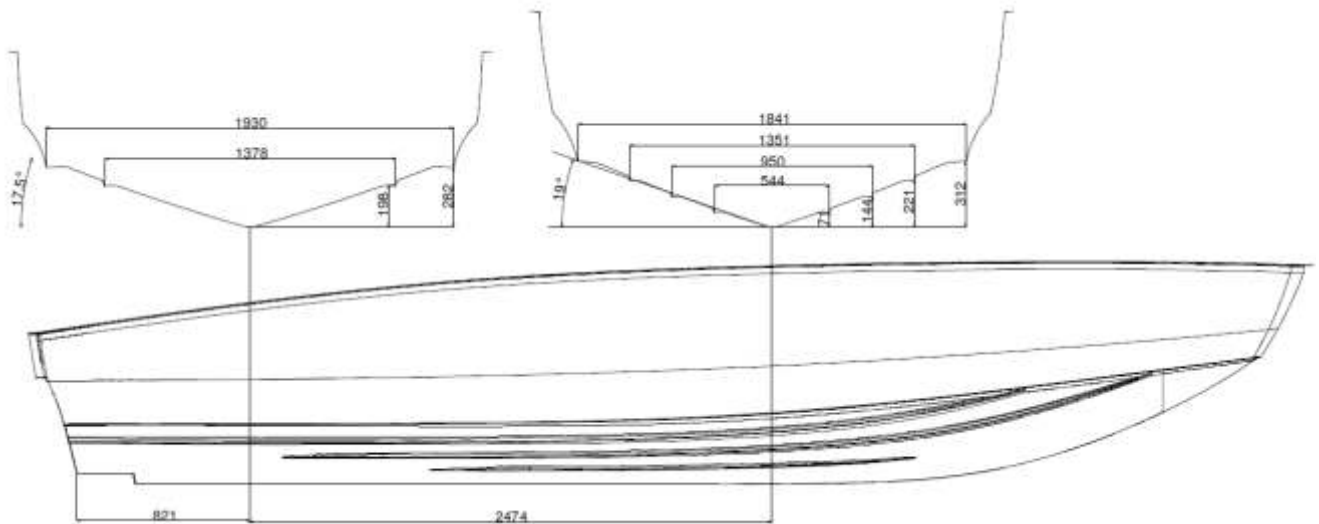
Check these regularly throughout the season.

4. Veneen siirto

4.4 Gradle

In the picture there is the boat gradle and dimensions for it. It is important that the gradle is made sturdy enough, so it can withstand the weight of boat securely. Make sure that there is no visible nails or screws that could scratch the gelcoat surface.

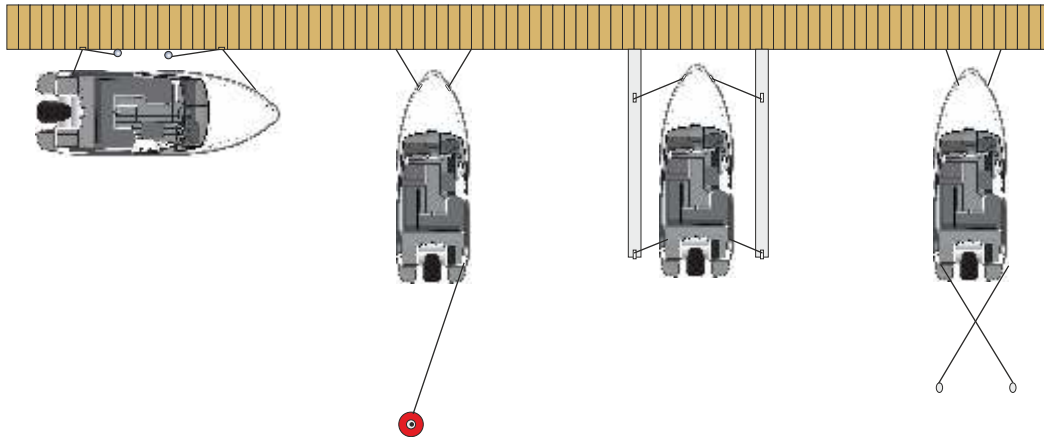
Before using the boat gradle make sure that it is in good condition and it withstands the weight of the boat.



Building of boat gradle is a responsible of customer.

5. Mooring the boat to the quay

Examples of different types of mooring



When coming ashore or mooring to a quay the boat has to be secured properly. The basic rule is that the boat, when moored, should withstand high winds and rough seas. The boat should not be moored with temporary fastenings if the crew is not nearby. Make sure other boats cannot be damaged by the vessel and consider the effect of the wake of passing vessels on the mooring. The boat should not be lashed to the quay so it cannot move. Ropes should be long enough and as horizontal as possible. The boat should be able to rise and sway without moving sideways. You need two mooring ropes for both bow and stern. The ropes for the bow should be equipped with elastic shock absorbers and the ropes for the stern should be about the length of the boat. To fasten the rope use a suitable knot, but nowadays many ropes come with a fastening clasp. The points of contact between the rope and the clasps should be checked regularly for wear and tear.

6. Towing the boat

If you tow another boat, use strong, floating towing rope. Begin by towing very carefully, avoiding twitches, and do not overload the engine. Adjust the length of the rope so that the boat can be steered in all situations. Boat's stability may be reduced when towing. Owners / operators should also consider what action will be necessary when securing a tow line on board.

⚠ WARNING!

The towing rope is taught. If it breaks, the end of the rope may recoil dangerously. Do not stand in the way of the rope extension.

⚠ CAUTION!

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

⚠ CAUTION!

A tow line shall always be made fast in such a way that it can be released when under load (fastening to a bollard without knots or lock).



7. Anchoring and mooring

Moor your boat carefully, even in sheltered places, because weather conditions can change rapidly. Do not moor the boat with the stern facing the open sea, because high waves could wash onto the boat. Mooring ropes should be equipped with elastic shock absorbers to slacken the tension. To prevent abrasion, use suitable fenders.

It is the owner's / operator's responsibility to ensure that mooring, towing and anchor ropes, anchor chains and anchors are appropriate for the vessel's intended use, i.e. the ropes or chains do not exceed 80% of the breaking strength of respective fixing points. The wear of the ropes and weakening caused by the knots should be taken into account.

! WARNING!

Do not try to stop the boat by hand and do not put your hand or foot between the boat and the quay, bank, or other boat. Practice landing in good conditions, use engine power moderately but not tentatively.

! CAUTION!

When mooring the boat, take possible changes in wind direction and the rise and fall of the water level, as well as the wake of other boats, into proper account.

When you land in a natural harbour, ensure sufficient water depth. **DROP ANCHOR AT A SUFFICIENT DISTANCE FROM SHORE.** The anchor rope length should be 4-5 times the water depth. In the picture are shown the strong points to be used when anchoring, mooring or towing.



BREAKING STRENGTH OF THE STRONG POINTS		640 DC
Bow	forward directed anchoring or towing strength kN	16,8
	forward directed fastening strength kN	13,7
Stern	stern directed fastening strength kN	11,7

! CAUTION!

Breaking strength of ropes and chains must not exceed the breaking strength of the strong point in question.

8. Leaving the shore

8.1 Safety instructions

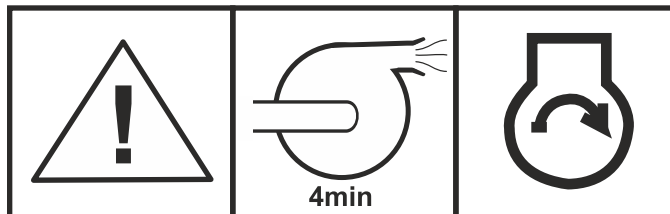
1. Fasten down all loose objects.
2. All passengers must wear a life jacket.
3. All passengers must remain seated when the boat is in motion.
4. At least two persons must be capable of operating the boat.
5. Special care should be taken when filling the fuel tank.
6. Listen to the weather forecast before departure.
7. Inform someone of your route plan.

8.2 Starting the engine

1. Read the engine manufacturer's instructions handbook.
2. Ensure that there are no fuel or oil leaks in the engine.
3. Ensure that there is enough fuel in the tank.
4. Do not use the boat if its engine power exceeds the maximum allowed engine power marked on the manufacturer's plate.
- 5.

! WARNING!

Run the engine compartment fan for at least 4 minutes before starting the engine. Ventilation removes gasoline fumes from the engine compartment, reducing the risk of fire.



6.

! CAUTION!

Check the engine for an extra water intake tap. The tap should be open before start up.

7. Start the engine according to the manufacturer's instructions.

If the engine does not start, consult the instructions in the manufacturer's handbook. If the engine functions poorly, turn the engine off and check for appropriate instructions in the manufacturer's handbook. If necessary, contact your dealer.

8.3 After starting the engine

1. Ensure that the cooling system is working properly. (See the engine instructions handbook.)
 2. Ensure that the engine is running properly.
- If the engine warning lights or buzzers come on, turn the engine off immediately.

The emergency switch

Attach the string of the emergency switch to your hand or foot, immediately after loosening the mooring ropes. More specific instructions can be found in the engine handbook. Especially when you are driving the boat alone it is crucial that the boat stop if you fall overboard or stumble on board. Remember to unfasten the string from your hand before coming ashore.

! WARNING!

1. Do not use the swimming area while the engine is running.
2. Turn the engine off before opening the engine hood.
3. Turn the engine off before looking at the propeller.
4. Do not turn off the main power switch while the engine is running.
5. Ensure that no exhaust fumes get inside the boat or endanger others.

9. Controls

9.1 Indicators

Speedometer

Indicates the speed of the boat in km/h or knots



Engine oil pressure gauge

Indicates the pressure of the engine oil. Check the normal pressure range in the engine instructions handbook.



Tachometer

Indicates the revolutions of the engine per minute (RPM).

CAUTION!
Check the engine manufacturer's handbook for the proper rpm range.



Fuel gauge

Indicates the amount of fuel (approx.) in the tank. Check that you have enough fuel before you leave shore.



ATTENTION!

Fuel gauge is accurate only when the boat is floating on horizontal plane.

Engine cooling thermometer

Indicates the engine coolant temperature. See the engine instructions handbook for the normal temperature range.



Indicators vary from one engine manufacturer to another.

Check out the use and adjustments of the different indicators in the manufacturer's handbook.

Trim

Indicates the position of the stern drive and shows the position of the bow on the horizontal level.



Voltmeter

Measures the condition of the battery in volts (DC).



Ammeter





















Measures the current in the electrical system. Check the engine manufacturer's handbook for the normal current range.



9. Controls

9.2 Switches

With these switches you can control the functions of the boat. Depending on the boat model and accessories, you can find these switches from your boat. Learn the function of each switch before going out with your boat.

	Navigation lights		Bilge pump
	Anchor light		* Engine room fan. Only in gasoline engines
	Cabin light		Deck light
	Compass light		Signalhorn
	Defroster		Windshield wiper
	Pentry pump		Trim
	Remote controlled search light		Switchpanel light
	Lifting / folding down the pentry		Opening / closing of sunroof
	Windlass		Navigation light / anchor light
	Refrigerator		Empty / extra

9. Controls

9.3 Steering

Depending on the manufacturer of the engine the steering system may have different operating principles, for example cable or hydraulic steering. Some models may have power steering. All equipment needs regular maintenance to function properly.

! WARNING!

Inadequate maintenance of controls may lead to loss of control over the boat.

Remote control equipment

Example of the different positions of the handle

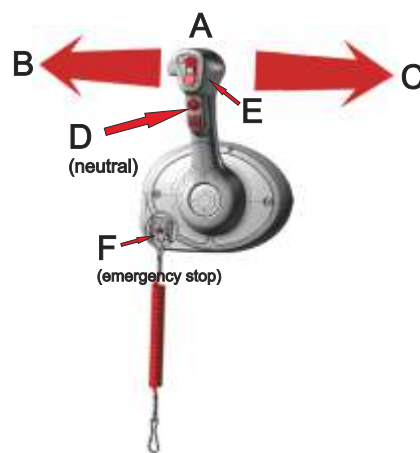
A Neutral position - the engine will start only in this position.

B Forward - push the release button B2 to engage forward gear.

C Reverse - do not engage reverse gear directly.

D Neutral - gear neutral position button for warming up the engine.

E Trim - adjustment of the trim angle upwards or downwards.



! CAUTION!

The picture of the handle may not be exactly as on your boat. Check the engine manufacturer's handbook for the operating principle of the handle installed in your boat.

9.4 Emergency switch

An emergency switch is connected to the controls. The emergency switch (F) turns the engine off should you stumble or fall overboard (for models with outboard engine). Always use an emergency switch if one is available.

! WARNING!

The rotating propeller endangers the life of anyone who falls overboard.

9.5 Trim (adjusting trim angle)

When you lift the boat to planing, the engine has to be set completely down. When the boat is planing the drive can be lifted up so that the running attitude fits the weather conditions. Excessive cavitation should be avoided. In head sea lower bow down to soften the motions. In following sea raise bow up to prevent nose-diving. Note that running in the wrong trim angle loads the engine unnecessarily.

10. Stability

Bella boats are designed for good stability by placing heavy loads low down and by keeping the open deck space and other recesses on deck to a minimum. However, large breaking waves are always a serious danger to stability.

Please note that stability is reduced by any weight high up. Any change in the lay-out aboard (for example the addition of radar equipment, change of engine, etc.) may significantly affect the stability, trim and carry out of your craft. Please contact your dealer if you plan any alterations of this kind.

Bilge water should be kept to a minimum. In rough weather, hatches, lockers, portholes and doorways should be closed to minimise the risk of flooding.

Stability may be reduced when towing or lifting heavy weights using a davit or boom.

11. Risk of fire or explosion

11.1 Engines

WARNING!

Run engine compartment fan at least four minutes before starting the engine. By ventilating the fuel vapours will be removed and a possible risk of fire avoided.

Ensure that the engine compartment ventilation ducts are open and free of any debris etc. After starting the engine make sure cooling water is flowing properly.

Before topping up the fuel tank, turn off the engine. Top up in the absence of naked flames, cigarettes, etc. Do not operate switches or appliances that may cause sparks.

When filling the fuel tank at a gas station, do not use a plastic funnel, which prevents the static tension between the filler pistol and the filler mounting from releasing. After filling make sure that no fuel has leaked into the bilge or the engine compartment. Remove any possible overflowed fuel and clean the compartment of all fuel residues.

Do not stow any reserve canisters in non-ventilated spaces. Make sure they are secured. Do not use equipment designed for other uses for fuel storage.

The engine compartment should not have any loose items which could move and come into contact with hot engine parts or cause damage to fuel pipes or hoses. Each year, check that fuel hoses are not worn at the inlets.

11.2 Other fuel-consuming appliances

Familiarise yourself carefully with all the appliances in the boat. The manuals of the appliances are packed together with the owner's manual.

Ensure sufficient ventilation to avoid the risk of suffocation.

12. Fire protection

Ensure that any load in the boat does not interfere with access to fire-fighting equipment. Inform all members of the crew about the location and operation of fire-fighting equipment, the location of discharge openings into the engine space, and the location of emergency routes and exits.

Keep the bilges clean and regularly check for fuel and gas vapours or fuel leaks.

Do not fit free-hanging curtains or other fabrics in the vicinity of, or above, the stove. Do not stow inflammable material in the engine compartment. If materials are stowed in the engine compartment, they must be secured to prevent them from falling into machinery. They should not obstruct access into or from the compartment.

Exits other than the main companionway doors or hatches with permanently fixed ladders are identified by a symbol.

Never:

- obstruct passageways to exits and hatches,
- obstruct access to safety devices, e.g. fuel valves, electrical switches,
- leave the craft unattended when cooking and/or heating appliances are in use,
- modify any craft system (especially the electrical or fuel system) or allow unqualified personnel to modify any craft system,
- fill any fuel tank or replace gas bottles when machinery is running, or when cooking or heating appliances are in use,
- smoke while handling fuel,
- obstruct access to the portable fire extinguisher located in the locker.

12.1 Fire extinguishers

Your boat is equipped with 2 kg extinguisher. Learn how to use this device, so when needed you are able to use it without hesitation.

Portable fire extinguishers should be serviced annually. After ten years the original extinguishers are out of date, unless pressure tested. Replace portable fire extinguishers only with extinguishers of identical fire-fighting capacity. Make sure that fixed systems are refilled or replaced when they expire or are used. When replacing parts of the fire-fighting installation, use only matching components with equivalent technical features and fire-fighting capability.

When in service, this boat shall be equipped with portable extinguishers, the effects and locations of which are shown in sections 19. Technical specifications, 21. Equipment and 22. Location of the equipment.

A warning plate attached near to the release device of the fixed extinguishing system:



Figure 4. A warning plate about shutting down engine and blowers before discharging the fixed extinguishing system.

13. Proper use - other recommendations and guidelines

13.1 Ventilation

In unfavourable circumstances (following wind) and slow speed exhaust gases may get into the cabin through an open door. Keep the door shut if you smell exhaust gases inside the boat, and ventilate through deck hatches.

Make sure ventilation is adequate in sleeping cabins and when using the stove.

WARNING!

Fuel burning open flame appliances consume cabin oxygen and release products of combustion into the craft. Ventilation is required when appliances are in use. Open designated vent openings while appliances are in use. Never obstruct ventilation openings and always ensure that appliances are working correctly.

Ensure sufficient ventilation when using combustion devices which are not isolated from the boat's interior and ensure that flued appliances work properly.

13.2 Securing loose equipment

Safely secure all heavy equipment, like anchors, before leaving shore.

Objects that roll freely in the boat during manoeuvring can damage the structures of boat and distract the driver.

13.3 Respect for the environment

All seas, lakes, archipelagos and so on are unique. Preserving their natural resources is important and the responsibility of every boatman.

Do not:

- spill fuel or oil
- discharge sewage into the water
- leave debris or waste on islands or dump them into the water
- discharge detergents or solvents into the water
- make excessive noise on the water or in harbours
- cause a disturbing wake, especially in narrow channels and shallow water

In the Baltic Sea, sewage may not be disposed of close to shore. Use pump-out stations to empty the holding tank.

Comply with any other local environmental laws and guidelines. Familiarise yourself with International regulations against marine pollution (MARPOL) and ensure compliance.

Maintain the exhaust fume system and make no alterations that might increase noise levels.

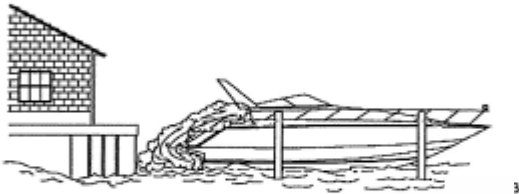
13. Proper use - other recommendations and guidelines

13.4 Carbon monoxide hazard

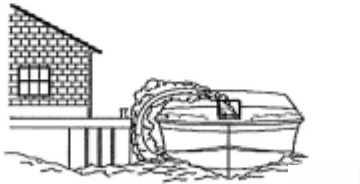
! DANGER!**EXTREME HAZARD**

Carbon monoxide gas (CO) is colorless, odorless and extremely dangerous. All engines and fuel burning appliances produce CO as exhaust. Direct and prolonged exposure to CO will cause **BRAIN DAMAGE** or **DEATH**. Signs of exposure to CO include nausea, dizziness and drowsiness. Sources of CO include:

- ❶ Blockage of boat exhausts by obstruction.



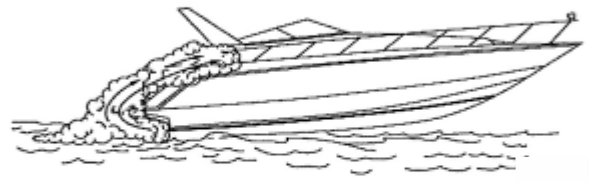
- ❷ Exhausts traveling along obstruction.



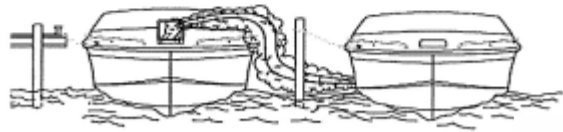
- ❸ Operating at slow speed or while dead in the water.



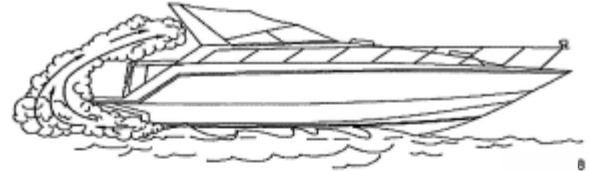
- ❹ Operating with high bow angle.



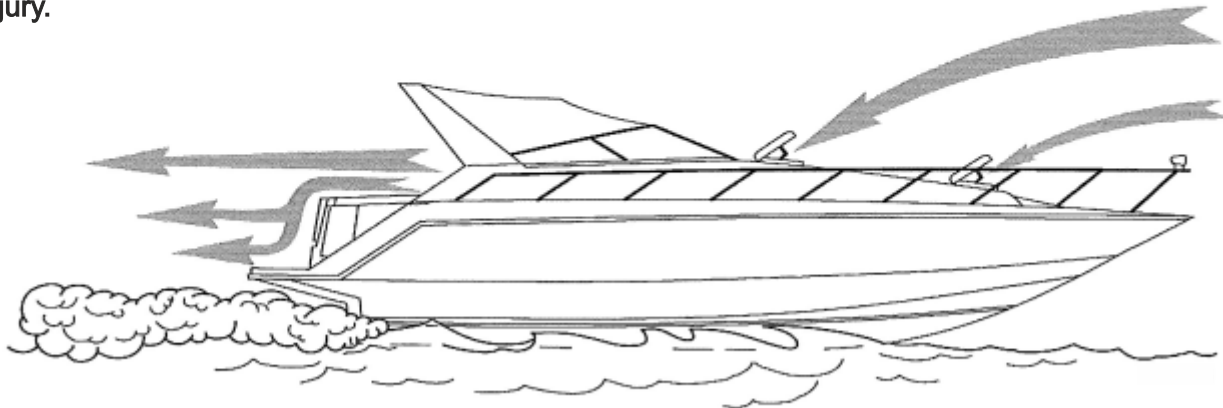
- ❺ Exhausts from other vessels in confined areas.



- ❻ Operating with canvas tops and side curtains in place without ventilation.



To reduce CO accumulation, ventilate the boat interior by opening the windows and/or canvas to provide adequate ventilation. Deck hatches can be opened at slow speed or while dead in the water, but must be closed at or above planing speeds to prevent damage and possible personal injury.



ENSURE ADEQUATE VENTILATION FOR CORRECT AIR MOVEMENT THROUGH BOAT!

14. Steering features

14.1 Trim adjustments

You can adjust the running attitude of the boat versatile by using trim tabs. The basic directions are as follows:

- at half-planing speeds "bow down" position
- when the boat is planing and the waves are small, lift the bow up slowly and follow the log to notice for how long the speed is increasing
- in head sea lower bow down to soften the motions. In following sea raise bow up to prevent nose-diving. In side winds adjust the trim tabs to get the boat direction exactly straight.

WARNING!

Adjust the trim tabs with care - at high speed they radically change the behaviour of the craft. Make sure the bow is not too low, to reduce the risk of capsizing.

WARNING!

Waves impair handling. Reduce the speed in rough seas.

WARNING!

Do not operate this craft at negative propulsion unit trim settings (bow down) at high speed. Craft may lean over on side. Instability in turns may result. Use negative trim to accelerate to planing speed from displacement speed and at lower planing speeds in choppy water (applicable to craft equipped with propulsion unit power trim).

WARNING!

Do not operate at maximum speed while in congested high traffic waterways or in weather and sea conditions of reduced visibility, high winds or large waves. Observe and obey speed limit and no wake zones.

WARNING!

Avoid sudden manoeuvres at speed.

Learn boating Rules and Regulations and comply with them at all times. Also comply with the requirements of COLREG (International regulations for preventing collisions at sea). Navigate with care and use new or updated nautical charts.

Always adjust your speed to the conditions and environment. Take into account:

- waves (ask the opinion of others on board for a comfortable speed),
- your own wake (largest when lifting the boat to planing, smallest at displacement speed, i.e. below 6 knots),
- visibility (islands, fog, rain, glare),
- familiarity of your route (time needed for navigation),
- congested routes (other boats, noise and wake on shore),
- room needed to stop or avoid obstacles.

Obey no wake zones and decrease your speed and wake for the sake of politeness and safety.

14. Steering features

14.2 Engine start-up

Before starting the engine, ensure that the gear is in neutral, as shown on the warning plate attached at the front of the helm station (Fig. 7). Sudden starting may endanger persons on board.

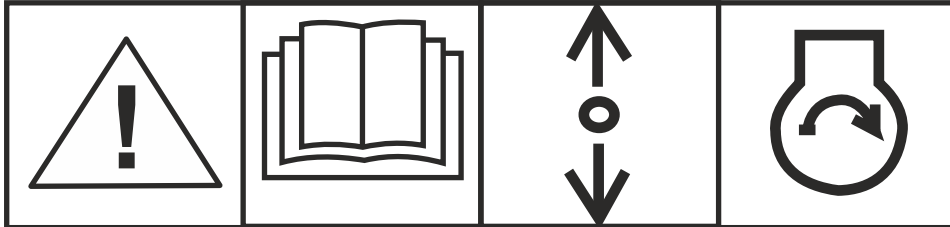


Figure 7. Warning plate about starting the engine with the gear in neutral.

When driving the boat, the main power switch should always be in the position ON (= power on). If your boat has a double battery system, make sure both batteries are in the ON position.

Get acquainted with the instructions in sections 21. Equipment and 29. Electrical system.

15. Visibility from helm station

Driving in nice weather and with a calm sea is simple, but remember to arrange for proper lookouts as per International Regulations for Preventing Collisions at Sea (COLREG). Always ensure that the visibility from the helm station is as good as possible:

- people, curtains, etc. should not obstruct the view,
- do not drive continuously at the planing threshold, as raising of the bow obstructs visibility,
- adjust the trim angle using trim tabs and/or power-trim so that the raising of the bow does not obstruct visibility,
- use the windscreen wipers if necessary,
- in poor visibility open the hatch above the helm position and keep lookout through it,
- especially in shipping lanes, remember to look aft.

Operator vision from the helm can be obstructed by high trim angles of the craft and other factors; for example transition from displacement to planing mode and sea conditions.

Use relevant navigation lights if it is dark or visibility is otherwise restricted (e.g. fog). Switch off the lights inside the craft, if they or their reflections reduce visibility.

16. Man-overboard prevention and recovery

The working decks of the boat are shown in Fig. 8.

Other areas, such as the cabin roof (HT and Cabin models), must not be occupied when underway.

If a person has fallen into the water in calm seas, use the reboarding ladder located on the stern platform. The ladders can be pulled down by a swimmer in the water.



Figure 8. Location of working decks and reboarding ladder.

17. General service instructions

17.1 Washing and cleaning

Keep your boat clean and tidy. It increases comfort, safety, and the resale value of the craft.

Washing and waxing is normally sufficient care for the deck and sides. Special boat shampoos are the most suitable agents for washing. Do not use powerful solvents; they may tarnish the gloss of reinforced plastic surfaces. Slightly abrasive polishers can be used to remove stains or foreign bodies. Waxes including silicon are not recommended, because they adversely affect paint and resin, making the repair of any damage more difficult.

After lifting the boat from the water, wash the bottom of the craft immediately. Algae and slime can be removed much more easily before they dry out.

18. Maintenance

The purpose of the owner's handbook is to familiarise the user with the properties and features of the boat so it is operated properly. No boat or engine functions properly without maintenance. In order to save money and time, service the boat and engine regularly. This prevents faults.

18.1 Regular maintenance of the boat

During the boating season, the maintenance of the boat is simple and trouble free. Normally it is sufficient to just keep the boat clean. Use low-phosphate, non-polluting detergents. Boats made of reinforced plastic should be waxed at least twice a season. New boats must be waxed before use.

Carry out the necessary service procedures in compliance with the owner's handbooks for the engine and other equipment (see attachments). If your boat is stored outside or in moist areas, remove fabrics and anything else that may be affected by humidity. Ropes must be washed with fresh water and worn ropes replaced.

Drain tanks and leave the valves partly open.

Electrical instruments are best protected against corrosion and theft by removing them and storing them in a dry room over the wintertime. Also remove batteries and store them in a dry place. Charge at least twice over the winter. Spray the connectors of the electrical system with a suitable anti-moisture and anti-corrosion substance.

Check the hull and sand any dents to allow any moisture that has penetrated into the hull to dry out.

18. Maintenance

18.2 Regular maintenance of the engine

In order to keep your engine running efficiently it will need to be serviced at regular intervals. Keep an engine logbook with maintenance record. The logbook can be used to record drift hours, oil changes, service and checking procedures, repairs and fuel refills. Follow the service instructions in the handbook exactly. If you do not have a service handbook for the engine, you can obtain one from the manufacturer or importer.

During the boating season the manufacturer of the engine recommends that the following services be carried out:

- change of oil
- check the amount of oil before leaving
- grease all grease spots
- check the functioning of the cooling system
- check the functioning of the fuel system
- clean the sediment bowls in the fuel tanks and carburator
- change or clean the filter
- check electrical equipment, grease and clean fittings
- check the battery water
- check the outside of the engine.

If faults develop despite these maintenance operations, contact the vendor, manufacturer, importer or a service provider immediately.

18.3 Winter maintenance of the engine

Familiarise yourself with the service procedures specified in the owner's engine handbook.

If the engine has no faults, you can carry out winter maintenance yourself. Especially when storing an inboard engine, there is a risk of freezing. Careful checking over the winter period, servicing and repairs, together with the correct use of the engine, ensure a flawless condition of the engine for years ahead. If all the procedures have been carried out properly, you will be able to start up the engine in the beginning of the season without delays. **Remember regular service schedules!**

18.4 Actions before winterizing

If frost is likely, drain the engine cooling water as specified in the owner's handbook. Also drain the fresh water tank, hot water boiler, toilet and septic tank. Make sure that there are no liquids in any tubes that can get frozen.

Lift your Aquador out of the water in good time before it ices over. The craft must not be left in an icy environment.

Remove the battery from the boat. Most of the batteries lose their effect and broke when deeply discharged.

18.5 Winter maintenance of the boat

The bigger the boat, the more time and effort required to ensure the proper winter maintenance of your boat. The boat has to be supported so that the hull is not damaged by its own weight. The boat must be covered carefully, the cover allowing the free flow of air. Do not fix the cover onto the hull. The canopy should be steep enough to allow snow to run off.

Changes of weather can damage the surface of the boat. When freezing, water expands and could damage the engine, reinforced plastic and wooden parts. Make sure the boat is properly ventilated over the winter. Check out the condition of the boat throughout the winter period.

18. Maintenance

18.6 Actions prior to, and after, boating season

A new boat does not really need any special maintenance at the beginning of the season, but if the boat is used in polluted waters, special care should be taken with shells, which may become attached to the hull. They are very hard to remove. To prevent this, paint the bottom of the boat with a primer before the boating season. At the end of the boating season you must lay up the boat early enough to let it dry out before winter frosts. Maintenance at the end of the season should be carried out very carefully; proper maintenance means the boat can be used again without delay. Clean the boat thoroughly. Remove all the loose things, especially fabrics and store them in a dry place. Service, clean and check all the equipment. Replace any worn parts.

After launching your boat open all the valves of the outlets/inlets and check that the hoses or fittings don't leak. (The position of the outlets/inlets is shown in the technical section of the handbook.) Ensure all safety equipment is on board before leaving shore.

18.7 Repairs

In case of failure in the engine or other equipment, contact the individual suppliers.

You can repair small dents in the surface layer (gel coat) of the hull or deck. However, a neat and flawless result requires skill and a great deal of work.

Repair instructions:

- protect the area surrounding the repair with tape
- bevel the edges of the dent and clean with acetone
- mix 1.5-2% hardener with the gel coat
- apply the gel coat to the area to be fixed, so that the surface is slightly above the surrounding surface
- carefully apply tape onto the patch
- after hardening of the gel coat, remove the tape and sand the patch down to the surrounding surface level
- polish the repaired area with grinding paste

The colours used for the craft are shown in the appendix. More precise instructions for repairs can be obtained from authorised dealers.

Larger damage should be repaired by the authorised dealers:

CAUTION!

Some retrofit and alteration work, if carried out improperly, may damage the structure or endanger safety. Contact the manufacturer or authorised dealer before installing new groundings, hatches etc.

CAUTION!

When maintaining electrical equipment, disconnect the batteries. If you have to renew electrical appliances, ensure that they are compatible with the voltage of the boat's system.

18. Maintenance

18.8 Maintenance of the railing

The railing is made of acid-proof steel.

When lifting the boat do not use steel wires or shackles in direct contact with the acid-proof components.

Make sure no parts of the boat are scratched or damaged during transportation. If any damage occurs, the railings and fittings should be polished and waxed carefully.

To keep the acid-proof parts of your boat shiny and new, clean and wax the parts at least twice per season. At the end of the season, when the boat is being transferred for the winter, clean and wax the railings to keep them in tip-top condition.

18.9 Maintenance of teak surfaces

When handling teak, remember the following three principles:

- do not use strong solvents, only tall oil soap,
- do not spray teak surfaces with a pressure cleaner,
- if you clean teak by brushing, use only a soft brush, but do not brush along the seams.

18.9.1 Removing stains

If there are stains on a teak surface, remove them manually by sanding gently. Use sandpaper with a degree of coarseness of no more than 60. Sand along the grain of the wood.

18.9.2 Teak turned grey

Teak reacts with the acidity of the air and daylight and turns grey over time. Copper looks green for the same reason. Under the oxidised green layer, the copper is intact. The same is true of teak. The oxidised grey surface is only a couple of tenths of mm thick and conceals the actual teak surface, which is still of excellent quality.

18.9.3 Processing teak with oil

If need be, teak can be processed with oil. However, this is usually not necessary because teak itself contains oil. If you do decide to use oil, use it sparingly otherwise the surfaces become slippery.

18.9.4 Cleaning the material in the steering position

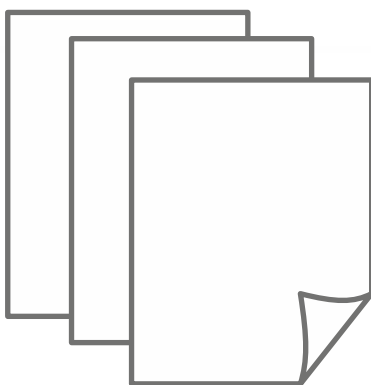
The material in the steering position is to be cleaned with a soft spunch of soft brush. Use only mild soap water in cleansing. DO NOT USE ANY ALCALOIDES OR SOLVENT. After wash, flush well with clean water.

18.9.5 Canopy

It is recommended that the Sunbrella-fabrics are cleaned regularly in order to forestall the grease and debris to cling. Brush of the debris and sluice with warm water. Wash by using a mild soap solution. Sluice well. Du not use any solvents. Dry well.

18.9.6 Maintaining the door- and hatchglides

To make sure that the door- and hatch glides work properly, they need to be lubricated every once in a while. Use silicone based grease or spray.



**Owners handbook
Technical part**

19. Technical specifications

640 DC

The boat has a serial number, the CIN code. The CIN code is marked on the right side of the back of the hull of the craft. Write down the CIN code in the chart below. When you contact the manufacturer or retail dealers, tell them the CIN code as well as the type of the boat to ensure that you get the suitable spare parts. If you need gel coat for repairs give the code for the colour when ordering. Part of the information can be found on the manufacturer's plate attached to the boat. A full account of the information is given in the relevant parts of this handbook.

Technical information:

Designer	Bella team
CIN-code	
Engine serial number	
Plate serial number	
Main drive serial number	
Hull material	polyester-resin/ glass-fibre reinforced plastic
Design category	C (coats)

Main measurements:

Overall length	6,58 m
Hull length	6,05 m
Maximum width	2,34 m
Draught with maximum allowed load	0,55 m
Maximum height from sea level	1,70 m

Weight information:

Weight without engine	1150 kg
Weight of biggest recommended engine (Mercury 150)	265 kg
Weight without load, liquids and equipment. Incl. max engine	1415 kg
Trailer weight	1465 kg
Max. recommended nr. of people on board	7 525 kg
Maximum recommended load including the weight of passengers	630 kg

Tank capacities:

Fuel tank	135 l 102 kg
* Fresh water tank	10 l
Weight of all liquids	112 kg
Total weight, fully laden	2095 kg

Electrical system:

Voltage	12 V DC
Battery capacity	
Start batteri	95 Ah
Extra batteri *	95 Ah

Engine power and maximum speed:

Maximum recommended engine power	111 kW (150 hp)
Maximum speed with the strongest engine recommended	app. 41 knots

Fire extinguisher:

Extinguisher	Kidde 13 A 70 BC 2 kg
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Bilge pump:

Pumping effect as given by manufacturer	
Electric bilge pump	41 l/min

Color codes:

White	Ral 9003
Grey	Ral 7016

For production engineering reasons there might be a slight difference in the main measurements and volumes compared to your vessel. Part of the equipment in the technical part of the handbook might be available as accessories, not as standing fittings.

Due to trim and slant, the full capacity of tanks cannot always be used. Keep a fuel container ready to top up, with about 20 % of the tank capacity.

20. Design categories

Design categories are as follows:

Category A: This craft is designed to be used in conditions in which wind forces may exceed 8 on the Beaufort scale (ca. 21 m/s) and waves may be 4 m high. In these conditions, category A vessels are largely self-sufficient. Abnormal conditions such as hurricanes are excluded. The conditions described may be encountered on extended voyages, for example across oceans, or on coastal waters for several hundred nautical miles.

Category B: This craft is designed to be used in conditions in which wind forces are up to 8 on the Beaufort scale (ca. 21 m/s) and waves may be up to 4 m high (see note below). Such conditions may be encountered on offshore voyages of sufficient length or on coastal waters, for several dozens of nautical miles. These conditions may also occur on lakes of sufficient size for 4 m waves to be created.

Category C: This craft is designed to be used in conditions in which wind forces are up to 6 on the Beaufort scale (ca. 14 m/s) and waves may be up to 2 m high (see note below). Such conditions may be encountered on open lakes, in river deltas, and in coastal waters in moderate weather conditions.

Category D: This craft is designed to be used in conditions in which wind forces are up to 4 on the Beaufort scale (ca. 8 m/s) and waves may be up to 0.3 m high (or occasional bigger waves of 0.5 m). Such conditions may be encountered on sheltered lakes and in coastal waters in fine weather.

CAUTION!

Wave height is the mean height of the highest one third of the waves, which approximately corresponds to the wave height estimated by an experienced observer. Some waves may be double this height.

21. Equipment

Dry powder extinguisher

The boat is equipped with a dry powder extinguisher rated 13A 70 BC. The total effect of the boat's extinguishers must be at least 8A 68B. The extinguisher must be checked annually at an authorized service site. Please get acquainted with the instructions of the extinguisher before your first trip, and also make sure the crew knows where the extinguisher is and how it works.

CAUTION!

Empty all the content of the extinguisher onto the fire.

Battery and electrical system

The battery must be fully charged at all times to function properly. Make sure it does not get damaged e.g. in cold weather. Check the voltage of the battery with a voltmeter (available e.g. at service stations) and if necessary, charge it with a battery charger equipped with an automatic circuit breaker, according to the instructions for the charger. Keep the battery poles clean - clean them as needed, and protect them with anti-corrosion grease.

CAUTION!

Switch off the current by the main switch before disconnecting the battery cables. Do not mix up the + (plus) and - (minus) cables.

WARNING!

When the batteries are charged, explosive gas is built up. Smoking, open fire or sparkles in the vicinity of the battery box might lead to a danger of explosion.

Main current switch

The main current switch must be turned on before starting the engine.

CAUTION!

Never turn off the current by the main switch while the engine is running. The engine and the generator might be damaged. The other circuit breakers are situated in the instrument panel, and are protected with automatic fuses.

Navigation lights

The boat is equipped with three (3) navigation lights: two side lights, green and red, and a light mast showing light all around. These lights must be used when travelling in the dark. The lights are switched on from the switch panel.

Bilge pump

The boat is equipped with a manually operated bilge pump.

When you use the bilge pump, by moving the handle back and forth, water is drained from the bilge.

Reboarding ladder

The ladder is either foldable or telescopic.

DANGER!

A rotating propeller is a life-threatening device to anyone in the water. Use the emergency switch or stop the engine when a swimmer or a water skier gets on board.

Switches

The switches for the controls are on the steering panel.

1. Mainswitch and fuses
2. Extinguisher
3. navigation lights
4. CE-plate
5. Fuelfiller
6. Bilgepump
7. CIN-code
8. Draining (Make sure the drainholes are not blocked by any debris)
9. Closing valves of cockpit draining (valves must always be open when boat is in dock or unwatched)

* OPTIONAL



2.



5.



6.



8.



9.



The locations of the equipment can vary depending on the accessories installed.

1. Fuel tank 135 L
2. Batteries
3. Liferaft (place)

* OPTIONAL



The locations of the equipment can vary depending on the accessories installed.

23. Loading

The maximum recommended load for the boat can be calculated as follows:

- a) the total weight of persons on board (the default mass of an adult is 75 kg and of a child 37.5 kg).
- b) basic equipment xxx kg
- c) consumable liquids (fresh water, fuel etc.) in portable containers xxx kg
- d) consumable liquids (fresh water, fuel etc.) in permanently installed tanks xxx kg (filled to the maximum capacity)
- e) dry provisions and other stores xxx kg
- f) a life raft or a dinghy, when such is meant to be carried.

The recommended load includes only the weight components mentioned above.

! WARNING!

When loading the craft, never exceed the maximum recommended load. Always load the craft carefully and distribute loads appropriately to maintain the designed trim (approximate level). Avoid placing heavy weights high up.

! WARNING!

Do not take more persons on board than recommended. The overall weight of persons must not exceed the load limitations irrespective of their number. Passengers should always be seated when the boat is in motion.



Figure 1. Passenger seats in different boat models (with max. number of passengers).

24. To prevent water entering the vessel

24.1 Openings in the hull and deck

The locations of the outlets/inlets and their closing valves are illustrated in section 22. Location of the equipment. We recommend closing the valves (except for rain water drainage in the open deck space) when the boat is left without crew.

The engine compartment hatch must be kept closed at all times when the boat is moving. If it is necessary for you to open the hatch while in motion (e.g. because of service or repair procedures), make sure not too much water gets into the engine compartment. In rough weather keep the doors, portholes, ventilation hatches and lockers of the steering cabin closed.

WARNING!

If you want to keep the roof hatch open at sea, secure it with the locking mechanisms (HT and Cabin models). If the hatch opens accidentally while the boat is in motion, it may result in personal injury. Also secure other hatches and doors in closed or open position.

24.2 Bilge pumps and drainage

Before leaving make sure there is no water in the bilge.

The location of the bilge pump is shown in section 22. Location of the equipment. Check regularly that there is no debris in the bilge pump suction inlets.

It is owner's/operator's responsibility to see to it that there is at least one bucket or bailer in the boat for emptying and that it is secured against disappearing.

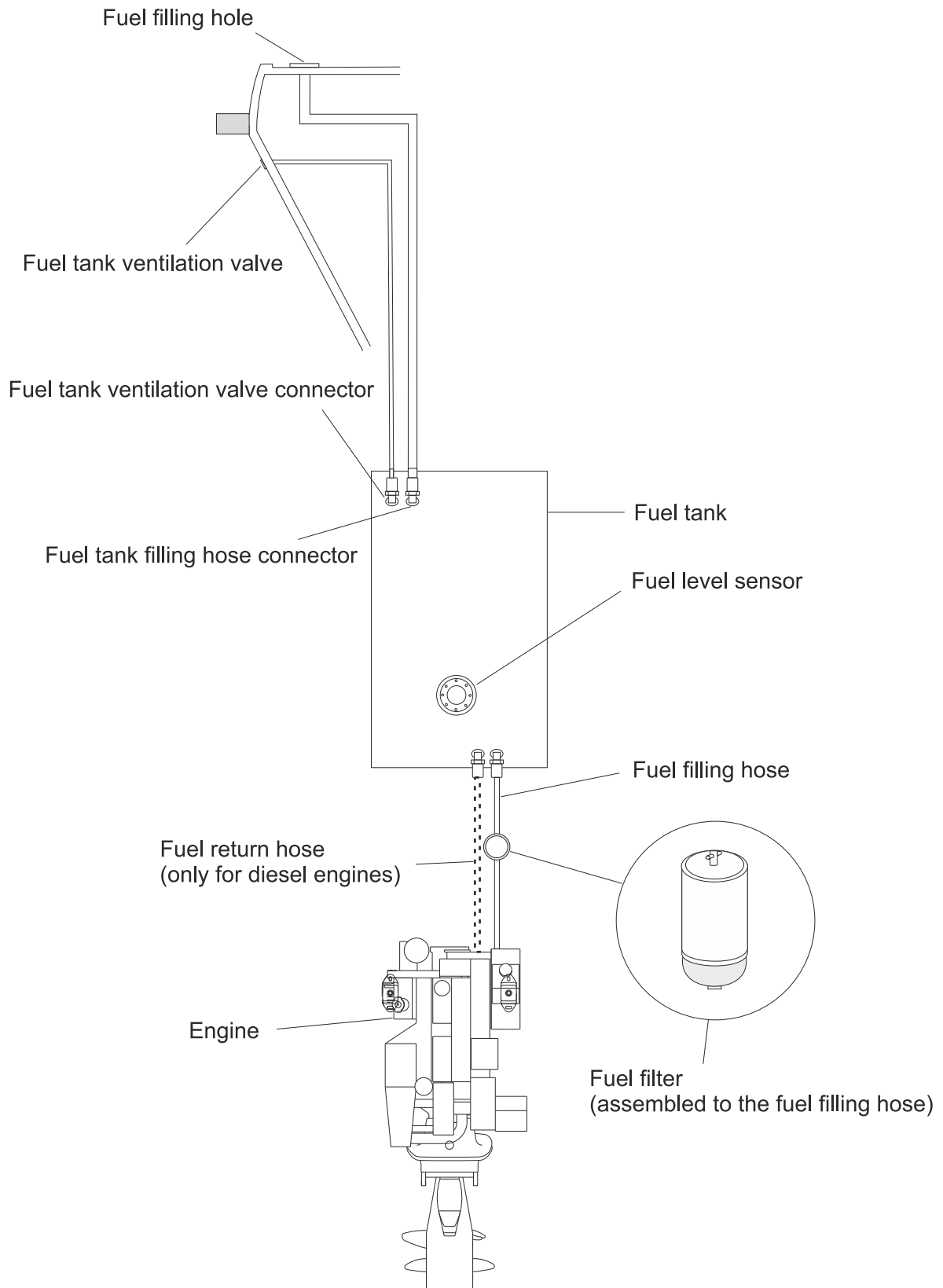
WARNING!

The bilge pumping system is not designed for damage control (e.g. leakage due to running aground).

CAUTION!

Check the functioning of all bilge pumps regularly. Clear pump suction inlets from debris.

28. Fuel system functioning



The location of equipment may vary depending on the model or the equipment.

29. Electrical system

The fuses fitted in Bella boats are so-called automatic fuses, which can be reactivated after overload by pressing the toggle that has flipped downwards. Do not alter the rated amps of the fuses or install any electrical components exceeding the rated current of the circuit.

If you leave the craft for a longer time, disconnect the power with the main switch. Cut the power when carrying out any electrical installations.

When you remove or install batteries, do not touch both poles simultaneously with metallic items. Do not touch the positive pole and metallic boat hull simultaneously.

Charge the batteries only with the charger supplied or with another, with similar capacity. Over-charging may cause an explosion.

CAUTION!

Do not block the ventilation pipes of the batteries.

CAUTION!

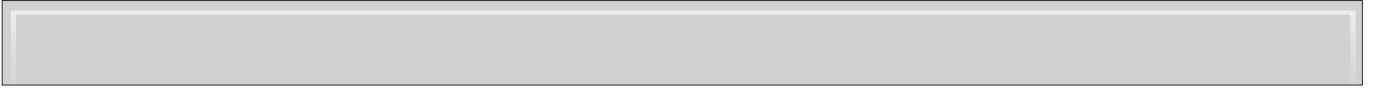
Never disconnect the power using the main switch when the engine is running.

Do not modify the craft's electrical systems or drawings. Installations, alterations and maintenance should be carried out by a skilled marine electrician. All installations and alterations should be properly documented and to be approved with manufacturer. Without proper documentation, manufacturer has all rights to discontinue the warranty.

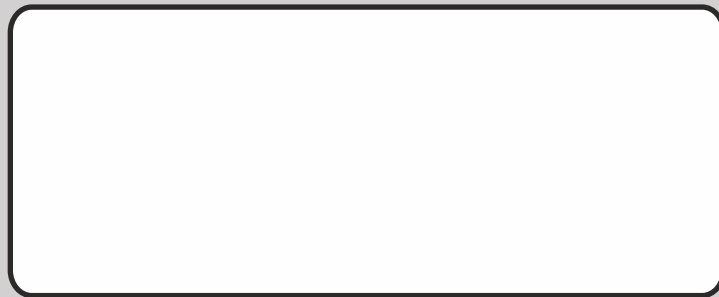
The electric wiring diagrams is in the pocket at the back cover of this manual!

Fuses

F1	Navigationlights	F7	trimm
F2	Cabin light	F8	12 V DC
F3	Windshield wiper	F9	Extra
F4	Radio	F10	Fridge
F5	Plotter	F11	Bilge pump
F6	Pentrypump	F12	Memory / bilge alarm



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