2025

Silver®

TIME WELL SPENT — SINCE 1991

Owner's manual

Hawk BRX | Hawk SCX | Seahawk BRX | Seahawk CCX

OWNER'S MANUAL

SILVER HAWK BRX

TerhiTec Oy
Sorvitie 4
FI-63700 Ähtäri
Finland

FOREWORD

Dear Owner of a Finnish Silver boat! We thank you for choosing Hawk BRX and wish you many pleasant experiences on the water.

This Owner’s Manual is intended to help you use your boat in a safe and enjoyable way. It provides a detailed description of the boat and related equipment and accessories, as well as information about the proper operation and care of the boat. Please read this manual carefully and familiarize yourself with your boat before using it for the first time.

This Owner's Manual alone is not a sufficient source of information on seamanship or boating safety. If this is your first boat, or you have switched to a type of boat that you are not yet familiar with, for your own comfort and safety, make sure that you gain handling and operating experience before taking over the responsibility of captaining the boat. The seller of the boat, boating clubs and national boating or sailing associations will be happy to recommend local boating schools or competent instructors.

Make sure that the design category of your boat corresponds to the anticipated wind and wave conditions and that you and your crew can handle the boat in these conditions. The wind and wave conditions corresponding to design categories A, B, and C range from a storm to strong winds involving a risk of exceptional waves and gusts. Even if your boat is designed for these conditions, they can be dangerous and operated in safely only by a competent, fit, and trained crew operating a well-maintained boat.

This Owner's Manual is not a detailed maintenance or troubleshooting guide. In case of problems, contact the boat manufacturer or dealer. Always use qualified and trained personnel for maintenance, repairs, and modifications. Changes that may affect the safety features of the boat must be assessed, implemented, and documented by a qualified person. The boat manufacturer cannot be held responsible for changes that it has not authorized.

In some countries, a special boating license or authorization may be required to operate the boat. Additional regulations may also apply.

Always keep your boat in good condition and take into account wear and tear resulting from ageing and heavy use or misuse. Any boat – regardless of its strength – can be seriously damaged if not used properly. This is not compatible with safe boating. Always adjust the speed and direction of the boat to the wave conditions.

If your boat is equipped with a life raft, carefully read its operating instructions. The boat should be equipped with the appropriate safety equipment, such as life jackets and safety harnesses, according to the type of boat and weather conditions, for example. This equipment is mandatory in some countries. The crew should be familiar with the use of all safety equipment and emergency maneuvering, including man overboard recovery and towing. Boating schools and clubs regularly organize rescue exercises.

All persons onboard should use buoyancy aids, life jackets or boating vests on deck. Please note that in some countries, national boating regulations may require everyone aboard to wear a personal flotation device whenever onboard.

PLEASE KEEP THIS MANUAL IN A SAFE PLACE AND GIVE IT TO THE NEXT OWNER IF YOU SELL YOUR BOAT.

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BEFORE SETTING OFF:
Familiarise yourself with this Owner's Manual. *Always check the following before setting off:*

- **Weather conditions and forecast**
  Take into consideration the wind, waves, and visibility. Are the design category, size and equipment of your boat, as well as the skills of the skipper and crew, sufficient for the type of water you are going to? In strong winds and big waves, hatches must be closed to prevent splash water from entering the boat.

- **Load**
  Do not overload the boat and distribute loads appropriately. To avoid impairing the stability of the boat, do not place heavy objects in elevated positions.

- **Passengers**
  Make sure that everyone onboard has a life jacket. Assign the duties and tasks of each member of the crew before setting off.

- **Fuel**
  Check that there is enough fuel, including sufficient reserves in case of bad weather, for example.

- **Engine and equipment**
  Check the functioning and condition of the steering, electrical equipment and battery, and carry out the routine checks required by the owner's manual of the engine. Check the seaworthiness of the boat also in other regards, for example by making sure there are no fuel or water leaks and that all safety equipment is onboard. Check that the amount of bilge water is at a minimum. Additional instructions for the engine can be found in the separate owner's manual for the engine.

- **Ventilation**
  Let the engine compartment fan run for at least 4 minutes before starting the engine. Start the engine according to the instructions of the engine manufacturer. Take care of the ventilation of fuel compartments to reduce the risk of fire.

- **Fastening of items**
  Check that all items are fastened in such a way that they remain in place even in big waves and strong winds.

- **Nautical charts**
  If you are not navigating totally familiar waters, make sure you have nautical charts covering the entire area.

- **Departure and docking**
  Agree in advance who will release each mooring line, for example. Be careful not to let mooring lines or other ropes tangle with the propeller during manoeuvring. Check the functioning of the bow thruster.

1. General

This Owner’s Manual will help familiarise you with the properties and features of your new boat, as well as its care and maintenance. This Owner's Manual is not intended to serve as a complete maintenance guide or repair manual, but rather to help the user get to know the features of their new boat and to use their boat in an appropriate way.

It is the responsibility of the owner and skipper of the boat that the boat is used according to its intended use.

Separate manuals for installed equipment are attached to this Owner’s Manual and are referred to in many sections. Other manuals for devices that are installed afterwards can also be attached to this Owner’s Manual. In addition, there is space for your own notes at the end of this Owner’s Manual.

Before use

1.1.1. Registration

In Finland, according to the Water Traffic Act, any watercraft equipped with an engine or sails with a hull length of at least 5.5 metres and any watercraft equipped with an engine producing at least 15 kW, i.e. more than 20 horsepower, must be registered. You can get more detailed instructions on registration from the Finnish Transport and Communications Agency Traficom. The operator of a registered boat must be at least 15 years old.

1.1.2. Insurance

Boat insurance can cover damage that occurs on the water or during transport and docking. Check your insurance liability for raising the boat. Insurance also has an indirect effect on safety on the water: in the event of a serious accident, you can focus above all on saving people. Insurance companies can provide more detailed information about different insurance options.

1.1.3. Training

No one is born an expert, and boating is no exception. There are plenty of books about boating, and navigation courses are offered by the Finnish Navigation Association (Suomen Navigaatioliitto, tel. +358 50 5508827, https://suomennavigaatioliitto.com/) and adult education centres.

Information about boating courses is available from the Finnish Sailing and Boating Association (SPV – Suomen Purjehdus ja Veneily ry, tel. +358 40 834 3407, https://spv.fi/). These courses provide a good foundation for your skills, but confidence in boat handling, navigation, mooring and anchoring is achieved only through extended practice. Information about local boating clubs and their activities is also available from SPV.

2. Definitions

The warnings and cautions used in this Owner's Manual are defined as following:

IMMEDIATE DANGER! Indicates a serious hazard that will result in death or serious injury if proper precautions are not taken.

DANGER! Indicates a potential hazard that could result in death or serious injury if proper precautions are not taken.

WARNING! Indicates a potential hazard that could result in injury if proper precautions are not taken.

NOTE! Indicates important information related to the risk of damage to the boat, its parts or other property, but not to personal danger.

The units used in this manual are in accordance with the International System of Units (SI). In some cases, other units have been added in brackets. An exception to this is wind speed, for which the Beaufort scale is used as in the EU directive on recreational craft and personal watercraft.

3. Basic boat information

The technical specifications for your boat model is presented in Appendix 1 at the back of this Owner's Manual.

The basic information of **Silver Hawk BRX** – boat are as follows:

Manufacturer/dealer:
TerhiTec Oy, Sorvitie 4, 63700 ÄHTÄRI, Finland

Type: **Silver Hawk BRX**

Design category: **C**
Design category refers to the following:

Category A: The boat is designed for use in conditions where the wind strength may reach up to Beaufort force 10 (approximately 25 m/s) with corresponding wave heights. Such conditions may be encountered on extended voyages, for example when crossing oceans or in coastal waters when unsheltered from the wind and waves for several hundred nautical miles. Depending on the atmospheric conditions, gusts may reach approximately 32 m/s.

Category B: The boat is designed for use in conditions where the wind strength may reach up to Beaufort force 8 (approximately 21 m/s) with corresponding waves (significant wave heights up to 4 m, see NOTE below). Such conditions may be encountered on sufficiently long open sea voyages or in coastal waters unsheltered from the wind and waves for several tens of nautical miles. The described conditions can also be encountered on lakes that are large enough to generate such wave heights. Depending on the atmospheric conditions, gusts may reach approximately 27 m/s.

Category C*:* The boat is designed for use in conditions with a maximum steady wind strength of Beaufort force 6 (approximately 14 m/s) with corresponding waves (significant wave height up to 2 m, see **NOTE** below). Such conditions may be encountered on open lakes, in river estuaries and in coastal waters in moderate weather conditions. Depending on the atmospheric conditions, gusts may reach approximately 18 m/s.

Category D*:* The boat is designed for use in conditions where the wind strength is no more than Beaufort force 4 (approximately 8 m/s) with corresponding waves (significant wave height does not exceed 0.3 m, occasional maximum wave height of 0.5 m). Such conditions may be encountered in sheltered inland waters and coastal waters in good weather. Depending on the atmospheric conditions, gusts may reach approximately 12 m/s.

NOTE! The significant wave height is the average height of the highest third of all wave heights measured in the waters, which roughly corresponds to the wave height estimated by an experienced observer. Some individual waves may be approximately double this height.

Maximum recommended load: 646 kg, in manufacturer´s sign 560 kg
See also Section 5: “Loading”.

Main dimensions and capacities:
The boat’s precise technical specifications, such as length, beam, draught, unloaded weight, total weight and tank capacities, are presented in the technical specifications in Appendix 1.

Builder’s plate:
The builder's plate (Figure 1), which is mounted in the boat next to the steering console, contains some of the information specified above. Detailed information that supplements the information provided on the plate is given in the relevant sections of this manual.

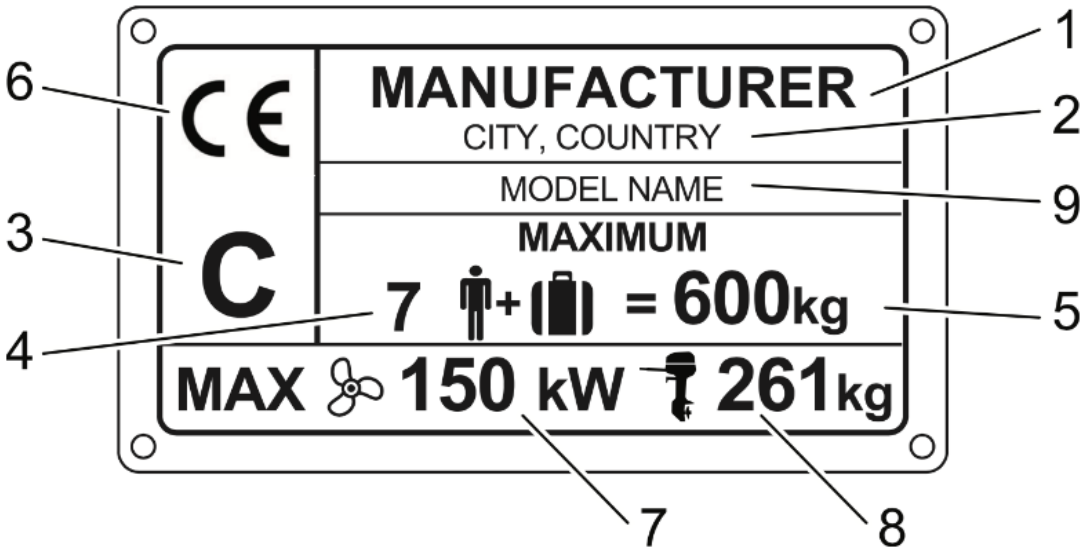


Figure 1. Information presented on the builder’s plate: 1. Name of manufacturer, 2. Contact information for the manufacturer/dealer, and possibly also its Business ID, 3. Design category, 4. Maximum number of persons, 5. Maximum recommended load (kg), 6. CE marking, 7. Maximum output of outboard(s) [kW], 8. Maximum weight of outboard(s) [kg], 9. Model name

4. Maximum number of persons

The maximum permissible number of persons on board is 7. The seats designated for them are shown in Figure 2.

WARNING! **Do not exceed the maximum permissible number of persons.**

Regardless of the number of persons on board, the total weight of persons and equipment must never exceed the maximum permissible load (see Section 5: “Loading”). Always use the seats or seating spaces provided.

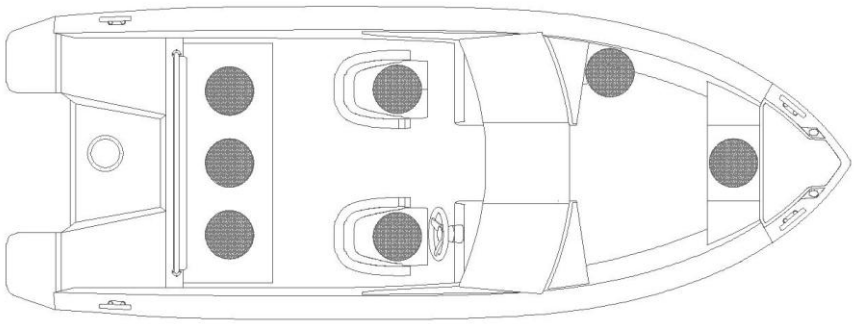


Figure 2. *Seats for the maximum permissible number of persons*

5. Loading

The maximum permissible load of your Silver Hawk BRX as **indicated on the builder’s plate** is 560 kg. This includes the following weights:

a) The total weight of persons onboard amounting to 525 kg (the default mass of an adult is 75 kg and of a child 37.5 kg)
b) The total weight of personal items, other equipment, supplies and other stores, cargo (such as recreational equipment), a life raft and liquids carried in portable containers (such as water and fuel) amounting to 80 kg

NOTE! The weight of the liquids in fixed container are not included on the builder´s plate

The maximum permissible load of your Silver Hawk BRX including the weight of equipment 646 kg.

The maximum permissible load includes only the weight components listed above. The weight of the unloaded boat and gross weight are presented in Appendix 1.

WARNING! **When loading the boat, never exceed the maximum permissible load.**

Always load the boat carefully and distribute loads so that the boat's design trim angle is not compromised (maintaining an even keel). Avoid placing heavy weights high up.

NOTE! Ignoring the restrictions may result in the boat capsizing!

6. Engine and propeller

The maximum permissible engine output of your Silver Hawk BRX is 86 kW. The maximum permissible engine weight is 259 kg.

Follow the instructions of the engine manufacturer when choosing the propeller for your boat. The dimensions of the standard propeller on the original engine are (Honda 3x13,25x18).

Before setting off, always check that there is enough fuel and perform the daily inspection and maintenance recommended in the separate owner’s manual for the engine. Periodic servicing and maintenance should always be carried out in accordance with the owner’s manual for the engine. If necessary, also service the boat's exhaust system.

The boat can be equipped with a bow thruster, the operating switches / joystick for which are located next to the remote control device. Familiarise yourself with their use according to the manufacturer's separate appendix/owner’s manual. Only use the bow thruster for short periods at a time.

A remote control device that is equipped with an immobiliser must be used with the engine when the gear is engaged.

When starting the engine manually, follow the instructions in the separate owner’s manual for the engine.

7. Prevention of water incursion and stability

7.1. General

The prevention of water incursion and stability of the boat are based on the load situations presented in Appendix 1.

7.2. Openings in hull and deck

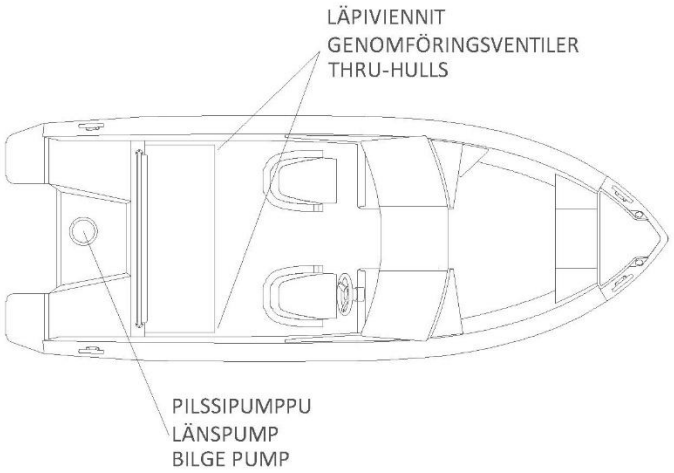
The location of drainage valves and through-hull fittings is presented in Figure 3. It is recommended that drainage valves be kept shut (except to drain rainwater from cockpits) whenever the boat is not in use.

There are two through-hull fittings for draining rainwater from the cockpit. The drainage valves for these should be kept shut during maximum loading to prevent water incursion. In other loading conditions, keep these drainage valves open.

NOTE! The tightness of the maintenance hatch of the engine well must be checked regularly. A leaking engine well service hatch can expose the boat to the risk of sinking.

NOTE! All the hatches and doors must be kept closed while underway.

The location of drainage valves and through-hull fittings is presented below in Figure 3.
Figure 3. *Location of drainage valves, through-hull fittings and bilge pumps*



7.3. Bilge pumps and drainage

Your Silver Hawk BRX is equipped with bilge pump. Their location is indicated in Figure 3. The nominal capacity of the electric bilge pump is 40 l/min. Maintenance instructions for the bilge pumps are included in a separate appendix.

The electric bilge pump is activated from the switch panel, as described in Section 9: “Electrical system”. The lever for the manual bilge pump is situated in the cockpit’s locker and attached to the boat with a line.

Check at regular intervals that there is no debris in the suction heads of the bilge pumps.

The owner is responsible for ensuring that at least one device for emptying the boat is kept onboard, and it must be secured to the boat. Note that the bilge pump system is not designed to cope with a leak caused by running aground or other hull damage.

WARNING! The bilge pump system is not designed to cope with a leak caused by running aground or other hull damage.

NOTE! Check at regular intervals that all bilge pumps function properly. Clear any debris from the suction heads

7.4. Stability and buoyancy

Your Silver Hawk BRX has been designed for good stability by locating heavy weights low and by keeping the cockpit and other recesses on deck relatively small. However, remember that large breaking waves are always a serious danger to stability.

Note also that the stability of your boat is reduced by adding weight up high. Any change in the distribution of weight onboard (such as adding a fishing tower, radar, in-mast furling system, changing the engine, etc.) may significantly affect the stability, trim and performance of your boat. Contact the boat manufacturer if you are planning such changes.

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

Take into account that stability may be reduced when towing or lifting heavy weights using a davit or boom.

7.5. Running aground

If you run aground, check immediately to see if the damage has caused a leak. Check especially the area around the keel, the through-hull fittings, the transom, the area around the rudder and the propeller.

If you notice a significant leak, call for help. Try to plug the leak if possible. If there is no leak in the structure, proceed carefully to the nearest port and inspect or request an inspection of the structural damage of the boat.

Contact your insurance company and repair the damage as soon as possible.

8. Prevention of fire and explosions

8.1. General

Follow general precautions when handling flammable substances and open flames.

8.2. Engines

Before refuelling, switch off the engine and extinguish any cigarettes. Do not operate any switches or devices that may produce sparks.

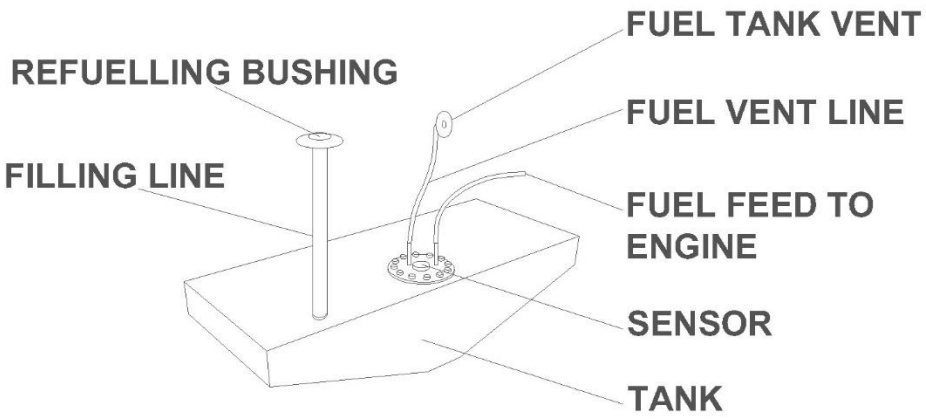
The fuel inlet () is located on the starboard side deck of the boat.

When refuelling at a service station, do not use a plastic funnel because it will prevent the discharge of static voltage between the filler pistol and fuel inlet bushing. After refuelling (check tank capacity in Appendix 1), make sure that no fuel has leaked into the bilge or engine compartment. Wipe off any fuel splashes immediately.

Do not stow any spare tanks in unventilated spaces or unsecured. Equipment that contains fuel may only be stowed in compartments that are intended for that purpose.

Recommendations for storing spare fuel:
Store spare fuel in containers made of corrosion-resistant material and keep the amount of fuel as low as possible. Spare fuel must be stored outside living quarters in a place where the temperature must not exceed 60 C degrees.

8.3. LPG systems



The boat is equipped with a fixed fuel tank. The fuel tank vent is placed in the middle of the swim platform, on the front side of the engine well. The fuel tank cap says FUEL, which means gasoline 98E or 95E. A fuel filter is installed in the fuel line, which also acts as a water separator. The filter must be changed at least once a year. When a new filter or a filter that was out of place has been installed, the fuel line must be pumped full with a ball pump before starting the engine.

Fuel hoses should be inspected regularly, and efforts should be made to prevent their damage. Hoses must be replaced with new ones if cracks or other damage is detected. If you replace the fuel hoses, make sure they are marked with ISO 7840

We recommend always using 98 E fuel, because of the better shelf life, lower alcohol content (accumulation in the tank, dissolution of dirt) and density of energy.

8.4. Fire protection

When using your Silver Hawk BRX, it must be equipped with portable fire extinguishers (2 KG 13A 70B PD2G) as illustrated in Figure 3.

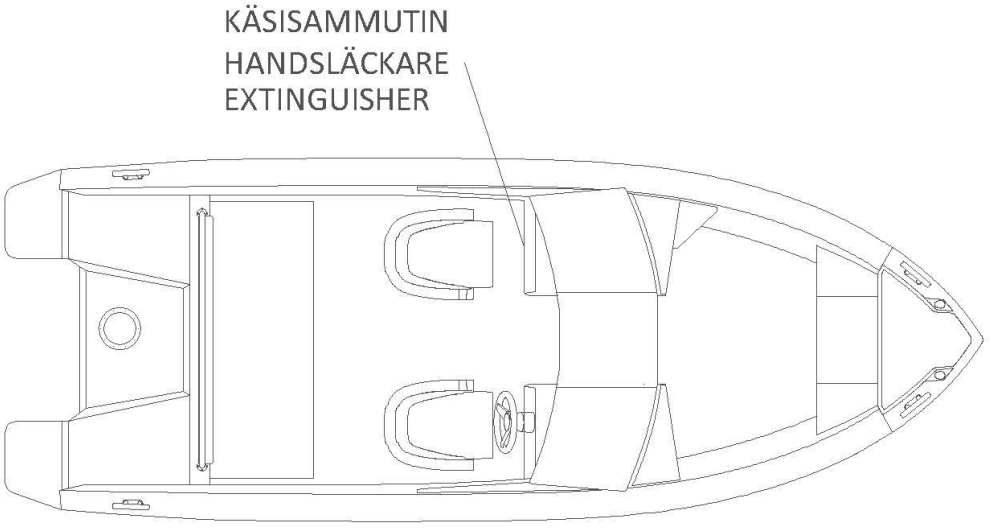


Figure 3. *Location of fire extinguisher*

Portable fire extinguishers must be serviced annually. Fire extinguishers that are more than ten years old are not accepted without new pressure testing of the container. In the event that the fire extinguisher is replaced, for example due to expiry, discharging or other condition, the capacity of the new one must be at least equivalent to the old.

9. Electrical system

The electrical diagram of the boat is attached separately. The location and function of the battery disconnect switch is as follows:

- Position "OFF": Batterie disconnected from all circuits
- Position "1": Battery 1 in use, generator charges batterie

The instruments and switches for electrical devices in the inside cab are arranged according to Figure 6

Circuit fuses are located next to the corresponding switches, and the fuse sizes are also shown in Figure 6. Your Silver Hawk BRX has resettable fuses, which can be reset in the event of an overload by pressing the toggle switch that popped down back up.

Do not alter the rated current amperage of the fuses or install any electrical components exceeding the rated current amperage of the circuit.

Figure 6. *Location of switchboard and fuses*

When leaving the boat for a longer period of time, turn off the main switch. Also switch off the power if you perform any electrical installations.

When connecting or disconnecting a battery, do not touch both terminals or a terminal and the hull of the boat simultaneously with metal objects.

Charge the batteries only with the installed charger or with one with similar capacity. Charging with overcurrent causes risk of explosion. Make sure that there are no obstructions to ventilating the battery box.

NOTE! Never disconnect the batteries while the engine is running.

NOTE! Do not use a metal boat hull as a conductor.

Do not modify the boat's electrical system or related drawings; changes and maintenance should be performed by a competent marine electrical technician.

10. Operation

Familiarise yourself with the features of your boat at first at low speed. Practice port manoeuvres where there is suitable space. Learn how to use the bow thruster in different wind conditions.

10.1. Operating at high speeds

The maximum engine power rating for this boat is 86 kW **Do not operate the boat if the actual engine power exceeds the power indicated on the builder's plate.**

The basic trim angle adjustments are as follows:

- To plane the boat, the trim should be adjusted all the way down (negative setting: “bow down”).
- When the boat is planing in low waves, the trim should be raised until the boat starts to porpoise or the propeller loses grip. When this happens, lower the bow slightly until the ride is stable. The log (speed indicator) can be used to optimise the trim angle.
- When the boat is riding into waves, the bow should be lowered until the ride becomes smooth. When driving with a tailwind, the bow should be raised slightly to avoid diving into the waves.
- Refer to the separate owner’s manual for the engine for further instructions.

The outboard motor is normally intended to be mounted on the transom at the lowest height level.

WARNING! Be very careful when adjusting the trim angle at high speed: it may radically affect the boat's behaviour. Do not operate the boat with the bow too low because this could cause the boat to handle erratically.

Do not operate the boat at a high speed with a fully negative trim angle (bow down) as this may cause the boat to roll from side to side and make steering unstable.

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

- Set to “bow down” position at semiplaning speeds .
- When the boat is planing in low waves, raise the bow slowly and monitor the log to see how long the speed is increasing.

- When the boat is riding into waves, the bow should be lowered until the ride becomes smooth. When driving with a tailwind, the bow should be raised slightly to avoid diving into the waves.
- In sidewinds, adjust the trim tabs until the boat is exactly upright.

WARNING! Be very careful when adjusting the trim angle at high speed: it may radically affect the boat's behaviour. Do not operate the boat with the bow too low because this could cause the boat to handle erratically.

WARNING! Manoeuvrability above XX knots is limited. Sudden turns may cause loss of control. Reduce speed before making sharp turns in either direction.

WARNING! Waves reduce the boat's manoeuvrability and can cause the boat to swing from side to side. Reduce speed as wave height increases.

Learn the seafaring rules and the COLREG provisions (International Regulations for Preventing Collisions at Sea). Navigate with care and make sure your charts are up to date.

Always adapt your speed to the prevailing conditions and the environment. Take into account the following:

- Wave height (also ask your passengers' opinion about what speed is comfortable)
- Your own wake (largest when lifting the boat to planing, smallest at displacement speed, i.e. below 6 knots). Observe and obey the speed limit and no wake zones. Reduce speed and wake as a courtesy and as a safety consideration to yourself and others.
- Visibility (islands, fog, rain, sun in the eyes)
- Familiarity of your route (time needed for navigation)
- Narrow routes (other boaters, noise and wake on shore)
- Space needed to stop or avoid obstacles

10.2. Starting the engine

Before starting the engine, make sure that the gear is in neutral, as indicated by the warning sign attached in front of the steering position (Figure 7). Sudden starts may endanger persons on board.

A remote control device must be used with the engine installed in the boat, which prevents the engine from being started when the gear is engaged.

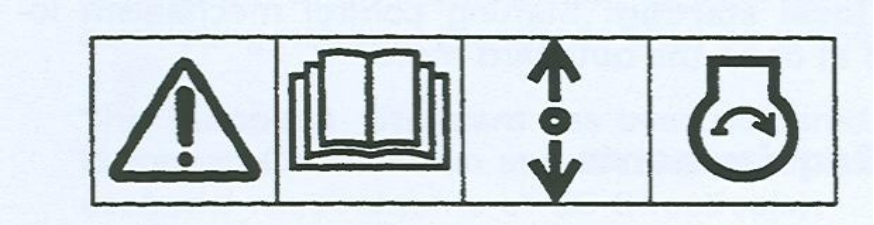


Figure 7. *Warning sign for starting the engine only in neutral*

Attach the emergency cut-off cord to yourself as soon as you have released the mooring lines. Please refer to the separate owner’s manual for the engine for details. If you are operating the boat alone, it is very important that the engine stops if you fall overboard or fall down in the boat. Remember, however, to release the emergency cord before landing manoeuvres.

DANGER! The rotating propeller may be fatal for someone who has fallen overboard or is swimming close to the boat. Use the emergency switch to stop the engine when a swimmer or water-skier is about to re-enter the boat from the water.

10.3. Visibility from the steering position

It is easy to operate a boat in fair weather when the sea is calm, but always remember to keep a lookout in accordance with the International Regulations for Preventing Collisions at Sea (COLREG). Always make sure that visibility from the steering position is as good as possible and that you can navigate even when visibility is temporarily limited. This is especially important at high speeds.

- Position passengers, loads, equipment, curtains, etc. in such a way that they do not obstruct visibility.
- Do not operate at the planing threshold speed for extended periods as the raised bow impairs forward visibility.
- Set the engine's trim function (power trim) and any trim tabs you may have installed to adjust the bow so that visibility is not impaired.
- In poor visibility (rain, darkness, fog, waves or splashes) keep a lookout over the windshield.
- Use the windshield wipers when necessary.
- Also remember to look behind the boat, particularly in shipping lanes.

Use the navigation lights during darkness or when visibility is limited for any other reason (such as in fog).

11. Proper use – other recommendations and guidelines

11.1. Man-overboard prevention and recovery

If a person has fallen in the water in calm weather, the easiest way to reboard is by using the swimming ladders located at the transom/swimming platform. The ladders can be pulled down also from the water. In

rough weather it is normally best to lift a fallen person from the lee side of the boat by rigging the boom in place and using a tackle attached to it.

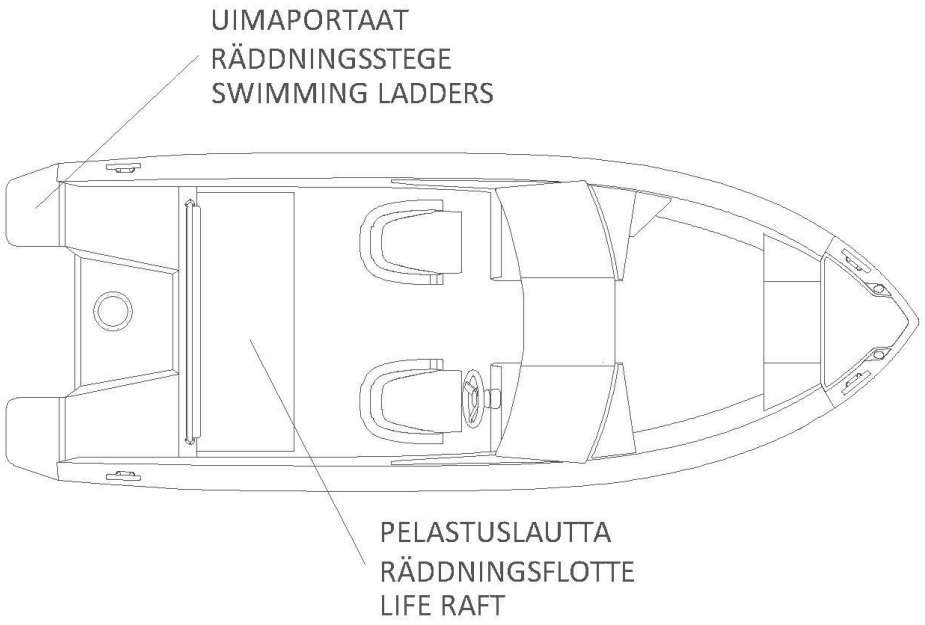


Figure 8. *Location of swimming ladders and place for life raft*

11.2. Life raft stowage

There is a place for a life raft under the aft bench of the cockpit as shown in Figure 8.
Maxim weight of life raft is 28kg.

11.3. Danger from moving parts

The moving parts of engine are protected with various guards (see separate owner's manual for the engine), and a wire-net is attached on the propeller shaft to prevent unintended contact. If you remove

these guards, for example in conjunction with maintenance, always attach them carefully back in place before setting off.

11.4. Securing loose equipment

Secure all heavy equipment, such as anchors, before setting off.

11.5. Respect for the environment

Finland's archipelago and lakes are unique, and preserving their nature is a matter of honour for all boaters. Therefore, you should avoid:

- Fuel or oil spills, or discharging toilet waste into the water
- Emptying rubbish and waste into the water or leaving them on the shore
- Discharging detergents or solvents to water
- Excessive noise on the water and in harbours
- Wake formation, especially in narrow channels and shallow waters

In the Baltic Sea, it is not allowed to discharge toilet waste close to the shore. Use pump-out stations for emptying the septic tank.
Make sure you comply also with other local environmental laws and guidelines. Familiarise yourself with the International Convention for the Prevention of Pollution from Ships (MARPOL) and respect it to the greatest possible extent. Ensure the condition of the exhaust system and do not make any changes to it that could increase noise levels in the environment.

11.6. Anchoring, mooring and towing

Always moor your boat carefully, even in sheltered places, because conditions can change rapidly. Mooring lines should be equipped with absorbers to dampen any jolts. To prevent abrasion, use fenders that are large enough. The strong points for mooring are shown in Figure 9.

The breaking strength of lines for mooring, towing and anchoring must not exceed 80% of the breaking strength of the respective strong point. The breaking strengths of strong points are shown in Figure 9.

It is the owner's/operators responsibility to ensure that mooring lines, towing lines, anchor chains, anchor lines and anchors are adequate for the boat's intended use, i.e. the lines or chains do not exceed 80% of the breaking strength of the respective strong point. The owner should also consider the measures necessary for securing the boat's towing line.

In normal conditions, the following diameters of lines and anchor weights are recommended for your boat:

		ø diameter (mm.)	**lenght (m.)**	**weight (kg)**
Mooring lines:		12	6-10	---
Anchor line:		12	30	---
Main anchor:		---	---	5,5
Light anchor:	(Bruce, Danforth, CQR jne.	---	---	

		ø diameter (mm.)	**lenght (m.)**	**weight (kg)**
Stock or drag:		---	---	
Anchor line:				---

When you land at a natural harbour, ensure sufficient water depth using a plumb line, for example. DROP THE ANCHOR AT A SUFFICIENT DISTANCE FROM THE SHORE. Reasonable grip is attained if the anchor line length is 4-5 times the water depth.

WARNING! Do not try to stop the boat by hand and do not put your hand or foot between your boat and the dock, shore or other boat. Practice landing in good conditions, and use engine power in a controlled but determined way.

NOTE! When securing your boat, take into consideration the possibility of changes in wind direction and water levels, bow wakes, etc. You can get more information from your insurance company, for example.

NOTE! Strength of fastening- and towing spots is 15kN (n. 1500 kp)

When towing another boat, use a floating line that is strong enough for the task. Begin towing slowly, avoid jerks, and do not overload the engine. If you are towing a small dinghy, adjust the towing line so that the dinghy rides ”downhill” on the wave. In narrow channels and large waves, pull the dinghy near the transom to decrease yawing. Secure carefully all equipment in the dinghy if capsizing is possible. When crossing open waters, cover the dinghy to prevent the ingression of spray water.

If you are towing or if your boat has to be towed, attach the towing line to the strong points as shown in Figure 9. The stability of the boat decreases if the boom of the mast is used for towing or lifting heavy weights.

WARNING! When towing another boat or being towed, always operate at low speeds. If the boat has a displacement hull, never exceed the hull speed while towing.

WARNING! When towing, the towline is under high tension. If it should break, the end that snaps off may lash back fast enough to cause serious injury or death. Always use a thick enough line and keep to one side of the towline.

NOTE! The towing rope must be removable when loaded

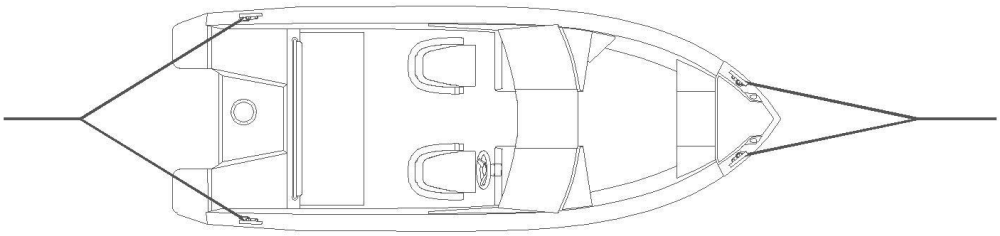


Figure 9.

If the boat's strong points are non-metallic, their limited service life should be taken into account. They must be replaced when they show signs of wear, visible cracks or permanent deformation. Please note that black materials are less susceptible to UV radiation than light ones.

11.7. Trailering

The calculated weight of your Silver Hawk BRX when transported by trailer is 1074 kg. When loading your Silver Hawk BRX onto the trailer, ensure that the trailer is suitable for your boat: that there is a sufficient number of supports to decrease point loads, that the capacity of the trailer is adequate for your boat, its engine and equipment, etc. You can find the maximum permissible total weight of the trailer from the registration book of your car.

Remove extra items and bilge water from the boat before loading it onto the trailer. Adjust the side supports of the trailer so that the keel supports carry the majority of the boat's weight. Fasten the boat firmly to the trailer before actual transport. Check the owner's manual of the engine for trailering instructions.

NOTE! The trailer must be slightly front-weighted. Ensure that the boat is fastened securely to the trailer and that the weight of the boat is divided equally between side supports. If the boat swings against a side support during transport, it may sustain hull damage.

12. Warranty

The boat and equipment installed on it by the manufacturer have a 5-year warranty in accordance with the attached warranty conditions. The warranty for the following equipment is the direct responsibility of their manufacturers:

- Engine and transmission
- Trim tabs
- Bow propeller
- Cushions
- Canopies and covers
- Compass
- Instrument cluster
- Navigation equipment
- Adjustable seat legs

The warranty books and contact information for the suppliers of this equipment are attached separately.

13. Servicing and winter storage

Familiarise yourself with the maintenance procedures described in the separate owner's manual for the engine. Do these yourself carefully or let an authorised service shop do them. Other items that require regular servicing include the following:

- Steering system and controls
- Trim tabs
- Bilge pump
- Fire extinguisher

Service these in accordance with the separate instructions or manuals.

14. Repairs

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

Small dents in the surface layer (gelcoat) of the hull or deck can be repaired by yourself. However, a neat and flawless result requires skill and large amount of work:

- Protect with tape the surrounding of the area to be repaired.
- Bevel the edges of the dent and degrease with acetone.
- Mix 1.5-2% hardener with the gelcoat.
- Apply the gelcoat to the area to be fixed so that the surface is slightly above the surrounding surface.
- Carefully apply a tape on the patch.
- After the gelcoat has hardened, remove the tape and sand the patch down to the surrounding surface if necessary.
- Polish the fixed area with cutting paste.

The colours used in the boat are indicated in Appendix 1. More precise instructions for repairs can be requested from the boat manufacturer or supplier of the gelcoat.

Larger damages should be repaired by the manufacturer or boatyards:

NOTE! Some retrofitting and modifications, if done incorrectly, may cause damage to the structure or endanger safety. Contact the manufacturer or authorised boatyards before installing new groundings and hatches, for example. Do not install any attachments that can puncture the air floats.

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

14.1. Measures before winter storage

Lift your Silver Hawk BRX out of the water in good time before ice formation. Your boat is not designed for use or storage in ice.

Before lifting out of the water, it is normally recommended to carry out the following measures:

- Change the engine oil
- Wash the boat
- Empty the bilge water and any items from the boat. However, leave safety equipment, such as fire extinguishers, in the boat.

14.2. Washing and cleaning

Keep your boat clean and tidy. This will increase the comfort, safety and resale value of the boat.

Normally it is sufficient to wash and wax the deck and sides. Special boat cleaning agents are most suitable for the purpose. Do not use strong solvents; they can cause glossy reinforced plastic surfaces to fade. Mildly abrasive polishes can be used to remove chafes and embedded dirt from the deck. Waxes containing silicon are not recommended, as they decrease the adhesion of paint and resin, making repairs of possible damages more difficult.

After lifting the boat out of the water, wash the bottom immediately. It is easier to remove algae and slime before they dry out.

14.3. Winter storage and maintenance

Perform the necessary service procedures following the owner's manuals of the engine and other equipment. If your boat is stored outside or in humid spaces, empty textiles and other equipment that may mould or corrode in a humid environment. Ropes should be washed with fresh water and worn ones renewed.

Electrical instruments are best protected against corrosion and theft by removing them and storing them in dry indoor spaces for wintertime. Remove also the batteries, take them to a warm and dry place, and charge at least two times during the winter. Spray the connectors of the electrical system with a moisture repellent antioxidant.

Check the condition of the hull and remove the caps from air tanks to drain any condensed water.

Cover your boat so that no snow can accumulate inside. However, take care of adequate ventilation. Normally, snow does not build up on the tarpaulin if the angle of the ridge is up to 90°. Suitable dimensions for the tarpaulin are 8 × 6 m.

NOTE! The tarpaulin or its fastening lines should not come into direct contact with the surfaces of the boat, as they may cause abrasion on the gelcoat surface when moving and flapping.

14.4. Measures before launching

Repair any damage to the gelcoat surface according to Section 14 "Repairs".

In sea areas, antifouling paint should be used to prevent the hull from becoming covered with vegetation. Fouling of the bottom and especially the propeller increases fuel consumption significantly. However, if the boat is anchored at the inlet of a stream or in a land-locked lake, or if it is lifted out of the water at least once every two weeks, it is normally not necessary to use antifouling paint. Carefully follow the paint manufacturer's instructions when applying the paint. When sanding old antifouling paint, remember that the dust is toxic.

Antifouling paint is not necessary or recommended in fresh water (lake areas).

NOTE! Do not paint over the zinc anodes or the piston rods of hydraulic trim tabs. Do not apply paints containing copper on aluminium parts, and remember to follow the paint manufacturer's instructions.

To prevent galvanic corrosion, zinc anodes have been installed on your Silver Hawk BRX. The anodes should be replaced at the latest when over half of the material has been eroded. The location of the anodes is shown in Figure 10.

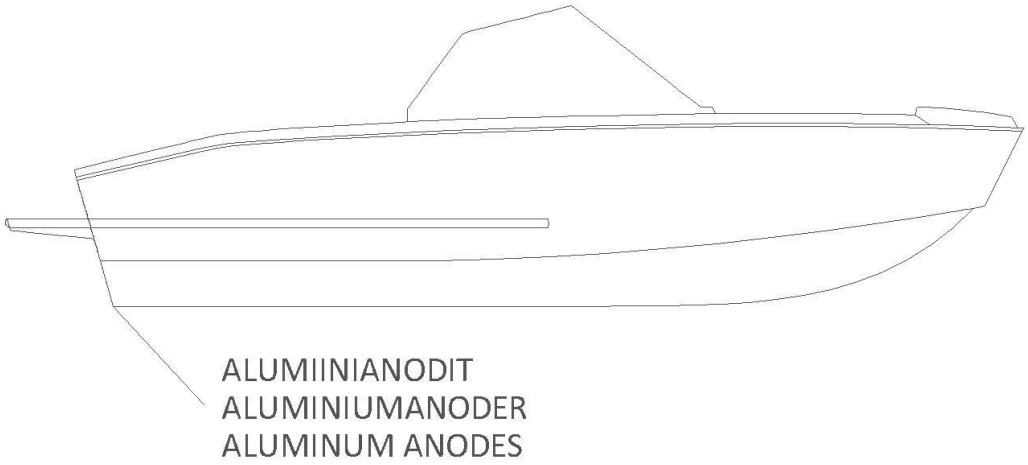


Figure 10. *Spots for anodes*

Perform the necessary service procedures required for the engine according to the separate owner's manual for the engine. Check the functioning of electrical equipment and remove any oxidation from fuse connectors, for example. Check that the plugs of air tanks are attached.

After launching the boat, open all seacocks and check that there is no leakage in hoses or connections. The location of through-hull fittings is shown in Section 7 "Prevention of water incursion and stability". Remember to load all safety equipment onboard before setting off.

16. Appendices

APPENDICES:	
APPENDIX 1	TECHNICAL SPECIFICATION AND TANK CAPACITIES
DECLARATION OF CONFORMITY	***MODEL:***
OTHER APPENDICES:	**MANUFACTURER indicates** (X) if included
TANK DIAGRAM	X
ELECTRICAL DIAGRAM	X
WARRANTY TERMS	X
OWNER'S MANUAL FOR ENGINE	
MAINTENANCE INSTRUCTIONS FOR BILGE PUMP	X

APPENDIX 1

TECHNICAL SPECIFICATION AND TANK CAPACITIES

Your boat has a craft identification number (CIN) that is labelled on the hull aft on the right side / on outer surface of the transom beneath the side strip. You should write down the CIN in the table below.

When contacting the manufacturer or dealer, give the CIN and the type of boat. This will help ordering the correct spare parts. If you need gelcoat for repairs, specify the colour code when ordering.

Type designation:	*Silver Hawk BRX*
Designer:	
CIN:	FI-SLVHX
Engine serial number:	0000000000000
Colour codes	
- hull:	000
- deck:	Consoles/bow deck RAL7024
Hull material:	Aluminium

		QUANTITY/MEASUREMENT	UNIT
Main dimensions:	Length overall (Lmax)	5,70	m
(In accordance with ISO 8666)	Hull length (Lh)	5,64	m
	Maximum beam (Bmax)	2,16	m
	Hull beam (Bh)	2,13	m
	Draught at maximum load (*xxx* kg)		m
	Maximum height from water surface (light load)		m
	Weight without loading, liquids and equipment*, but including weight of largest recommended outboard(s)*	988	kg
	Total weight with full load	1634	kg
	Weight during performance test		kg
	Sail area		m2
Loading:	Maximum number of persons	7	persons
(In accordance with builder's plate, ISO 14946)	**Maximum load, which includes the following:**	646	kg
	- combined weight of persons		kg
	- basic equipment		kg
	- liquids in portable containers:		
	- water		kg
	- fuel		kg
		QUANTITY/MEASUREMENT	UNIT

	Consumable liquids in fixed containers:		
	- water		kg
	- fuel (gasoline/diesel)		kg
	- provisions and other stores		kg
	- life raft		kg
	- cargo		kg
	Total weight of liquids when all fixed tanks are full		kg
Tank capacities:	Fuel tank(s)	115	l
	Fresh water tank(s)		l
	Septic tank		l
	LPG cylinders		kg
Propulsion type (primary)	Engine/sail/oars, etc.		
Sail area and rig type			
Maximum recommended engine output:		86	kW (hp)
Standard propeller:		3x13,25x18	(” x ”)
Maximum speed:	(loading during performance test: *x* persons & full fuel tanks)		Knots
Electrical system:	Voltage	12	V (DC)
	Battery capacity		x × Ah
	Shore power connection		x V, x-phase. x-x Hz

Due to manufacturing technology, small differences in main dimensions and capacities may occur.

The fuel filling fitting is located on *port side deck of the boat*.

Boat owners own notes

OWNER'S MANUAL

SILVER HAWK SCX

TerhiTec Oy
Sorvitie 4
FI-63700 Ähtäri
Finland

FOREWORD

Dear Owner of a Finnish Silver boat! We thank you for choosing Hawk SCX and wish you many pleasant experiences on the water.

This Owner’s Manual is intended to help you use your boat in a safe and enjoyable way. It provides a detailed description of the boat and related equipment and accessories, as well as information about the proper operation and care of the boat. Please read this manual carefully and familiarize yourself with your boat before using it for the first time.

This Owner's Manual alone is not a sufficient source of information on seamanship or boating safety. If this is your first boat, or you have switched to a type of boat that you are not yet familiar with, for your own comfort and safety, make sure that you gain handling and operating experience before taking over the responsibility of captaining the boat. The seller of the boat, boating clubs and national boating or sailing associations will be happy to recommend local boating schools or competent instructors.

Make sure that the design category of your boat corresponds to the anticipated wind and wave conditions and that you and your crew can handle the boat in these conditions. The wind and wave conditions corresponding to design categories A, B, and C range from a storm to strong winds involving a risk of exceptional waves and gusts. Even if your boat is designed for these conditions, they can be dangerous and operated in safely only by a competent, fit, and trained crew operating a well-maintained boat.

This Owner's Manual is not a detailed maintenance or troubleshooting guide. In case of problems, contact the boat manufacturer or dealer. Always use qualified and trained personnel for maintenance, repairs, and modifications. Changes that may affect the safety features of the boat must be assessed, implemented, and documented by a qualified person. The boat manufacturer cannot be held responsible for changes that it has not authorized.

In some countries, a special boating license or authorization may be required to operate the boat. Additional regulations may also apply.

Always keep your boat in good condition and take into account wear and tear resulting from ageing and heavy use or misuse. Any boat – regardless of its strength – can be seriously damaged if not used properly. This is not compatible with safe boating. Always adjust the speed and direction of the boat to the wave conditions.

If your boat is equipped with a life raft, carefully read its operating instructions. The boat should be equipped with the appropriate safety equipment, such as life jackets and safety harnesses, according to the type of boat and weather conditions, for example. This equipment is mandatory in some countries. The crew should be familiar with the use of all safety equipment and emergency maneuvering, including man overboard recovery and towing. Boating schools and clubs regularly organize rescue exercises.

All persons onboard should use buoyancy aids, life jackets or boating vests on deck. Please note that in some countries, national boating regulations may require everyone aboard to wear a personal flotation device whenever onboard.

PLEASE KEEP THIS MANUAL IN A SAFE PLACE AND GIVE IT TO THE NEXT OWNER IF YOU SELL YOUR BOAT.

TABLE OF CONTENTS

BEFORE SETTING OFF:
Familiarise yourself with this Owner's Manual. *Always check the following before setting off:*

- **Weather conditions and forecast**
  Take into consideration the wind, waves, and visibility. Are the design category, size and equipment of your boat, as well as the skills of the skipper and crew, sufficient for the type of water you are going to? In strong winds and big waves, hatches must be closed to prevent splash water from entering the boat.

- **Load**
  Do not overload the boat and distribute loads appropriately. To avoid impairing the stability of the boat, do not place heavy objects in elevated positions.

- **Passengers**
  Make sure that everyone onboard has a life jacket. Assign the duties and tasks of each member of the crew before setting off.

- **Fuel**
  Check that there is enough fuel, including sufficient reserves in case of bad weather, for example.

- **Engine and equipment**
  Check the functioning and condition of the steering, electrical equipment and battery, and carry out the routine checks required by the owner's manual of the engine. Check the seaworthiness of the boat also in other regards, for example by making sure there are no fuel or water leaks and that all safety equipment is onboard. Check that the amount of bilge water is at a minimum. Additional instructions for the engine can be found in the separate owner's manual for the engine.

- **Ventilation**
  Let the engine compartment fan run for at least 4 minutes before starting the engine. Start the engine according to the instructions of the engine manufacturer. Take care of the ventilation of fuel compartments to reduce the risk of fire.

- **Fastening of items**
  Check that all items are fastened in such a way that they remain in place even in big waves and strong winds.

- **Nautical charts**
  If you are not navigating totally familiar waters, make sure you have nautical charts covering the entire area.

- **Departure and docking**
  Agree in advance who will release each mooring line, for example. Be careful not to let mooring lines or other ropes tangle with the propeller during manoeuvring. Check the functioning of the bow thruster.

1. General

This Owner’s Manual will help familiarise you with the properties and features of your new boat, as well as its care and maintenance. This Owner's Manual is not intended to serve as a complete maintenance guide or repair manual, but rather to help the user get to know the features of their new boat and to use their boat in an appropriate way.

It is the responsibility of the owner and skipper of the boat that the boat is used according to its intended use.

Separate manuals for installed equipment are attached to this Owner’s Manual and are referred to in many sections. Other manuals for devices that are installed afterwards can also be attached to this Owner’s Manual. In addition, there is space for your own notes at the end of this Owner’s Manual.

Before use

1.1.1. Registration

In Finland, according to the Water Traffic Act, any watercraft equipped with an engine or sails with a hull length of at least 5.5 metres and any watercraft equipped with an engine producing at least 15 kW, i.e. more than 20 horsepower, must be registered. You can get more detailed instructions on registration from the Finnish Transport and Communications Agency Traficom. The operator of a registered boat must be at least 15 years old.

1.1.2. Insurance

Boat insurance can cover damage that occurs on the water or during transport and docking. Check your insurance liability for raising the boat. Insurance also has an indirect effect on safety on the water: in the event of a serious accident, you can focus above all on saving people. Insurance companies can provide more detailed information about different insurance options.

1.1.3. Training

No one is born an expert, and boating is no exception. There are plenty of books about boating, and navigation courses are offered by the Finnish Navigation Association (Suomen Navigaatioliitto, tel. +358 50 5508827, https://suomennavigaatioliitto.com/) and adult education centres.

Information about boating courses is available from the Finnish Sailing and Boating Association (SPV – Suomen Purjehdus ja Veneily ry, tel. +358 40 834 3407, https://spv.fi/). These courses provide a good foundation for your skills, but confidence in boat handling, navigation, mooring and anchoring is achieved only through extended practice. Information about local boating clubs and their activities is also available from SPV.

2. Definitions

The warnings and cautions used in this Owner's Manual are defined as following:

IMMEDIATE DANGER! Indicates a serious hazard that will result in death or serious injury if proper precautions are not taken.

DANGER! Indicates a potential hazard that could result in death or serious injury if proper precautions are not taken.

WARNING! Indicates a potential hazard that could result in injury if proper precautions are not taken.

NOTE! Indicates important information related to the risk of damage to the boat, its parts or other property, but not to personal danger.

The units used in this manual are in accordance with the International System of Units (SI). In some cases, other units have been added in brackets. An exception to this is wind speed, for which the Beaufort scale is used as in the EU directive on recreational craft and personal watercraft.

3. Basic boat information

The technical specifications for your boat model is presented in Appendix 1 at the back of this Owner's Manual.

The basic information of **Silver Hawk SCX** – boat are as follows:

Manufacturer/dealer:
TerhiTec Oy, Sorvitie 4, 63700 ÄHTÄRI, Finland

Type: **Silver Hawk SCX**

Design category: **C**
Design category refers to the following:

Category A: The boat is designed for use in conditions where the wind strength may reach up to Beaufort force 10 (approximately 25 m/s) with corresponding wave heights. Such conditions may be encountered on extended voyages, for example when crossing oceans or in coastal waters when unsheltered from the wind and waves for several hundred nautical miles. Depending on the atmospheric conditions, gusts may reach approximately 32 m/s.

Category B: The boat is designed for use in conditions where the wind strength may reach up to Beaufort force 8 (approximately 21 m/s) with corresponding waves (significant wave heights up to 4 m, see NOTE below). Such conditions may be encountered on sufficiently long open sea voyages or in coastal waters unsheltered from the wind and waves for several tens of nautical miles. The described conditions can also be encountered on lakes that are large enough to generate such wave heights. Depending on the atmospheric conditions, gusts may reach approximately 27 m/s.

Category C*:* The boat is designed for use in conditions with a maximum steady wind strength of Beaufort force 6 (approximately 14 m/s) with corresponding waves (significant wave height up to 2 m, see **NOTE** below). Such conditions may be encountered on open lakes, in river estuaries and in coastal waters in moderate weather conditions. Depending on the atmospheric conditions, gusts may reach approximately 18 m/s.

Category D*:* The boat is designed for use in conditions where the wind strength is no more than Beaufort force 4 (approximately 8 m/s) with corresponding waves (significant wave height does not exceed 0.3 m, occasional maximum wave height of 0.5 m). Such conditions may be encountered in sheltered inland waters and coastal waters in good weather. Depending on the atmospheric conditions, gusts may reach approximately 12 m/s.

NOTE! The significant wave height is the average height of the highest third of all wave heights measured in the waters, which roughly corresponds to the wave height estimated by an experienced observer. Some individual waves may be approximately double this height.

Maximum recommended load: 646 kg, in manufacturer´s sign 560 kg
See also Section 5: “Loading”.

Main dimensions and capacities:
The boat’s precise technical specifications, such as length, beam, draught, unloaded weight, total weight and tank capacities, are presented in the technical specifications in Appendix 1.

Builder’s plate:
The builder's plate (Figure 1), which is mounted in the boat next to the steering console, contains some of the information specified above. Detailed information that supplements the information provided on the plate is given in the relevant sections of this manual.

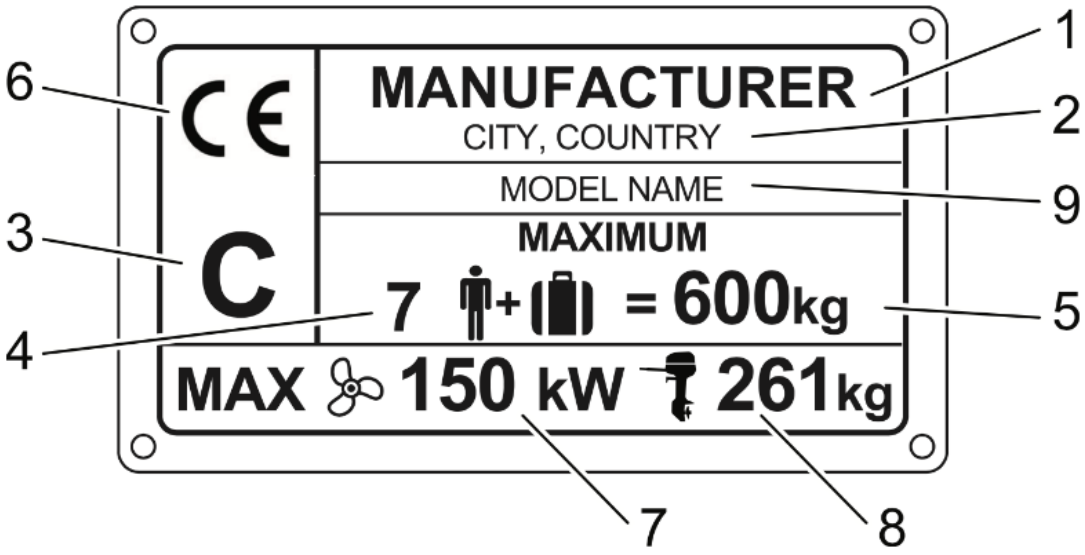


Figure 1. Information presented on the builder’s plate: 1. Name of manufacturer, 2. Contact information for the manufacturer/dealer, and possibly also its Business ID, 3. Design category, 4. Maximum number of persons, 5. Maximum recommended load (kg), 6. CE marking, 7. Maximum output of outboard(s) [kW], 8. Maximum weight of outboard(s) [kg], 9. Model name

4. Maximum number of persons

The maximum permissible number of persons on board is 7. The seats designated for them are shown in Figure 2.

WARNING! **Do not exceed the maximum permissible number of persons.**

Regardless of the number of persons on board, the total weight of persons and equipment must never exceed the maximum permissible load (see Section 5: “Loading”). Always use the seats or seating spaces provided.

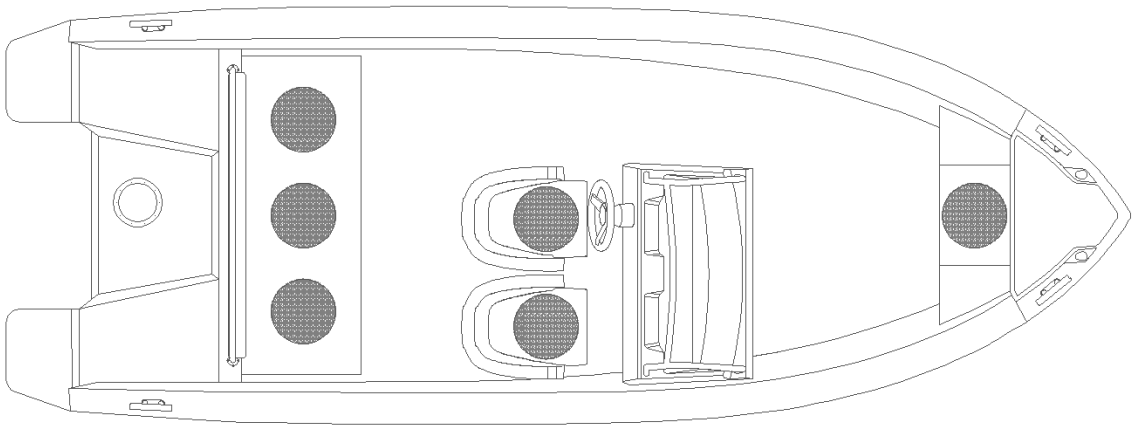


Figure 2. *Seats for the maximum permissible number of persons*

5. Loading

The maximum permissible load of your Silver Hawk SCX as **indicated on the builder’s plate** is 560 kg. This includes the following weights:

a) The total weight of persons onboard amounting to 525 kg (the default mass of an adult is 75 kg and of a child 37.5 kg)
b) The total weight of personal items, other equipment, supplies and other stores, cargo (such as recreational equipment), a life raft and liquids carried in portable containers (such as water and fuel) amounting to 80 kg

NOTE! The weight of the liquids in fixed container are not included on the builder´s plate

The maximum permissible load of your Silver Hawk SCX including the weight of equipment 646 kg.

The maximum permissible load includes only the weight components listed above. The weight of the unloaded boat and gross weight are presented in Appendix 1.

WARNING! **When loading the boat, never exceed the maximum permissible load.**

Always load the boat carefully and distribute loads so that the boat's design trim angle is not compromised (maintaining an even keel). Avoid placing heavy weights high up.

NOTE! Ignoring the restrictions may result in the boat capsizing!

6. Engine and propeller

The maximum permissible engine output of your Silver Hawk SCX is 86 kW. The maximum permissible engine weight is 259 kg.

Follow the instructions of the engine manufacturer when choosing the propeller for your boat. The dimensions of the standard propeller on the original engine are (Honda 3x13,25x18).

Before setting off, always check that there is enough fuel and perform the daily inspection and maintenance recommended in the separate owner’s manual for the engine. Periodic servicing and maintenance should always be carried out in accordance with the owner’s manual for the engine. If necessary, also service the boat's exhaust system.

The boat can be equipped with a bow thruster, the operating switches / joystick for which are located next to the remote control device. Familiarise yourself with their use according to the manufacturer's separate appendix/owner’s manual. Only use the bow thruster for short periods at a time.

A remote control device that is equipped with an immobiliser must be used with the engine when the gear is engaged.

When starting the engine manually, follow the instructions in the separate owner’s manual for the engine.

7. Prevention of water incursion and stability

7.1. General

The prevention of water incursion and stability of the boat are based on the load situations presented in Appendix 1.

7.2. Openings in hull and deck

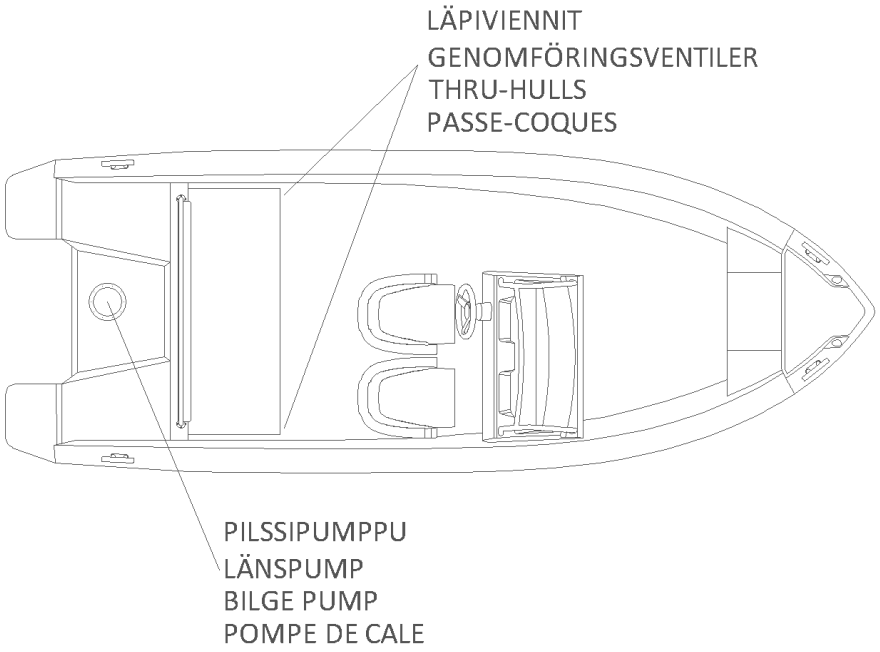
The location of drainage valves and through-hull fittings is presented in Figure 3. It is recommended that drainage valves be kept shut (except to drain rainwater from cockpits) whenever the boat is not in use.

There are two through-hull fittings for draining rainwater from the cockpit. The drainage valves for these should be kept shut during maximum loading to prevent water incursion. In other loading conditions, keep these drainage valves open.

NOTE! The tightness of the maintenance hatch of the engine well must be checked regularly. A leaking engine well service hatch can expose the boat to the risk of sinking.

NOTE! All the hatches and doors must be kept closed while underway.

The location of drainage valves and through-hull fittings is presented below in Figure 3.
Figure 3. *Location of drainage valves, through-hull fittings and bilge pumps*



7.3. Bilge pumps and drainage

Your Silver Hawk SCX is equipped with bilge pump. Their location is indicated in Figure 3. The nominal capacity of the electric bilge pump is 40 l/min. Maintenance instructions for the bilge pumps are included in a separate appendix.

The electric bilge pump is activated from the switch panel, as described in Section 9: “Electrical system”. The lever for the manual bilge pump is situated in the cockpit’s locker and attached to the boat with a line.

Check at regular intervals that there is no debris in the suction heads of the bilge pumps.

The owner is responsible for ensuring that at least one device for emptying the boat is kept onboard, and it must be secured to the boat. Note that the bilge pump system is not designed to cope with a leak caused by running aground or other hull damage.

WARNING! The bilge pump system is not designed to cope with a leak caused by running aground or other hull damage.

NOTE! Check at regular intervals that all bilge pumps function properly. Clear any debris from the suction heads

7.4. Stability and buoyancy

Your Silver Hawk SCX has been designed for good stability by locating heavy weights low and by keeping the cockpit and other recesses on deck relatively small. However, remember that large breaking waves are always a serious danger to stability.

Note also that the stability of your boat is reduced by adding weight up high. Any change in the distribution of weight onboard (such as adding a fishing tower, radar, in-mast furling system, changing the engine, etc.) may significantly affect the stability, trim and performance of your boat. Contact the boat manufacturer if you are planning such changes.

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

Take into account that stability may be reduced when towing or lifting heavy weights using a davit or boom.

7.5. Running aground

If you run aground, check immediately to see if the damage has caused a leak. Check especially the area around the keel, the through-hull fittings, the transom, the area around the rudder and the propeller.

If you notice a significant leak, call for help. Try to plug the leak if possible. If there is no leak in the structure, proceed carefully to the nearest port and inspect or request an inspection of the structural damage of the boat.

Contact your insurance company and repair the damage as soon as possible.

8. Prevention of fire and explosions

8.1. General

Follow general precautions when handling flammable substances and open flames.

8.2. Engines

Before refuelling, switch off the engine and extinguish any cigarettes. Do not operate any switches or devices that may produce sparks.

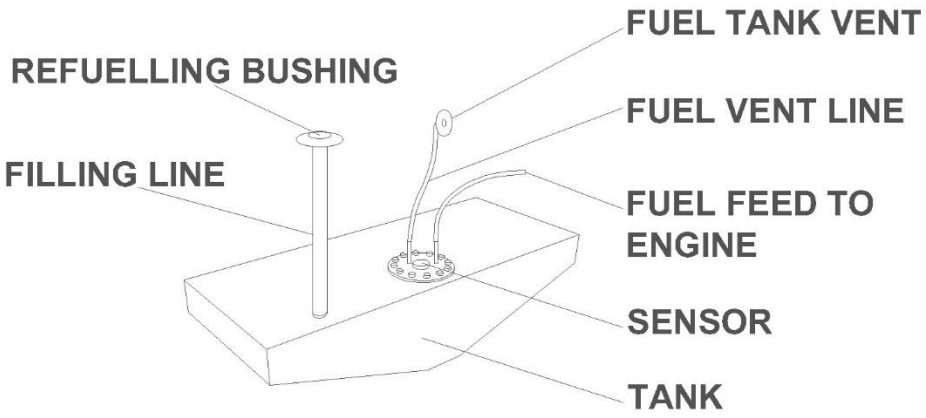
The fuel inlet () is located on the starboard side deck of the boat.

When refuelling at a service station, do not use a plastic funnel because it will prevent the discharge of static voltage between the filler pistol and fuel inlet bushing. After refuelling (check tank capacity in Appendix 1), make sure that no fuel has leaked into the bilge or engine compartment. Wipe off any fuel splashes immediately.

Do not stow any spare tanks in unventilated spaces or unsecured. Equipment that contains fuel may only be stowed in compartments that are intended for that purpose.

Recommendations for storing spare fuel:
Store spare fuel in containers made of corrosion-resistant material and keep the amount of fuel as low as possible. Spare fuel must be stored outside living quarters in a place where the temperature must not exceed 60 C degrees.

8.3. LPG systems



The boat is equipped with a fixed fuel tank. The fuel tank vent is placed in the middle of the swim platform, on the front side of the engine well. The fuel tank cap says FUEL, which means gasoline 98E or 95E. A fuel filter is installed in the fuel line, which also acts as a water separator. The filter must be changed at least once a year. When a new filter or a filter that was out of place has been installed, the fuel line must be pumped full with a ball pump before starting the engine.

Fuel hoses should be inspected regularly, and efforts should be made to prevent their damage. Hoses must be replaced with new ones if cracks or other damage is detected. If you replace the fuel hoses, make sure they are marked with ISO 7840

We recommend always using 98 E fuel, because of the better shelf life, lower alcohol content (accumulation in the tank, dissolution of dirt) and density of energy.

8.4. Fire protection

When using your Silver Hawk SCX, it must be equipped with portable fire extinguishers (2 KG 13A 70B PD2G) as illustrated in Figure 3.

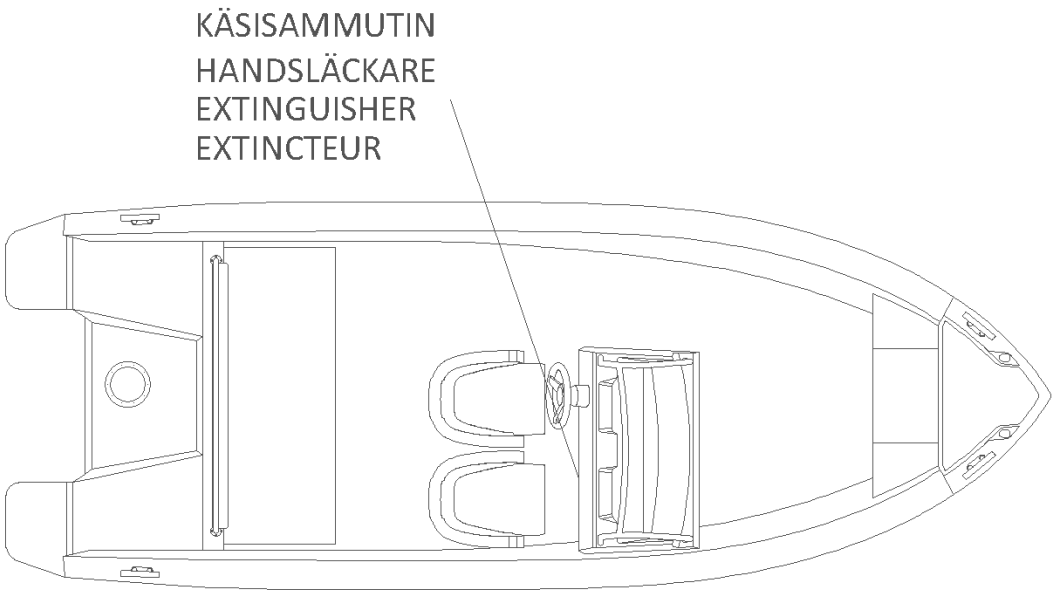


Figure 3. *Location of fire extinguisher*

Portable fire extinguishers must be serviced annually. Fire extinguishers that are more than ten years old are not accepted without new pressure testing of the container. In the event that the fire extinguisher is replaced, for example due to expiry, discharging or other condition, the capacity of the new one must be at least equivalent to the old.

9. Electrical system

The electrical diagram of the boat is attached separately. The location and function of the battery disconnect switch is as follows:

- Position "OFF": Batterie disconnected from all circuits
- Position "1": Battery 1 in use, generator charges batterie

The instruments and switches for electrical devices in the inside cab are arranged according to Figure 6

Circuit fuses are located next to the corresponding switches, and the fuse sizes are also shown in Figure 6. Your Silver Hawk SCX has resettable fuses, which can be reset in the event of an overload by pressing the toggle switch that popped down back up.

Do not alter the rated current amperage of the fuses or install any electrical components exceeding the rated current amperage of the circuit.

Figure 6. *Location of switchboard and fuses*

When leaving the boat for a longer period of time, turn off the main switch. Also switch off the power if you perform any electrical installations.

When connecting or disconnecting a battery, do not touch both terminals or a terminal and the hull of the boat simultaneously with metal objects.

Charge the batteries only with the installed charger or with one with similar capacity. Charging with overcurrent causes risk of explosion. Make sure that there are no obstructions to ventilating the battery box.

NOTE! Never disconnect the batteries while the engine is running.

NOTE! Do not use a metal boat hull as a conductor.

Do not modify the boat's electrical system or related drawings; changes and maintenance should be performed by a competent marine electrical technician.

10. Operation

Familiarise yourself with the features of your boat at first at low speed. Practice port manoeuvres where there is suitable space. Learn how to use the bow thruster in different wind conditions.

10.1. Operating at high speeds

The maximum engine power rating for this boat is 86 kW **Do not operate the boat if the actual engine power exceeds the power indicated on the builder's plate.**

The basic trim angle adjustments are as follows:

- To plane the boat, the trim should be adjusted all the way down (negative setting: “bow down”).
- When the boat is planing in low waves, the trim should be raised until the boat starts to porpoise or the propeller loses grip. When this happens, lower the bow slightly until the ride is stable. The log (speed indicator) can be used to optimise the trim angle.
- When the boat is riding into waves, the bow should be lowered until the ride becomes smooth. When driving with a tailwind, the bow should be raised slightly to avoid diving into the waves.
- Refer to the separate owner’s manual for the engine for further instructions.

The outboard motor is normally intended to be mounted on the transom at the lowest height level.

WARNING! Be very careful when adjusting the trim angle at high speed: it may radically affect the boat's behaviour. Do not operate the boat with the bow too low because this could cause the boat to handle erratically.

Do not operate the boat at a high speed with a fully negative trim angle (bow down) as this may cause the boat to roll from side to side and make steering unstable.

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

- Set to “bow down” position at semiplaning speeds .
- When the boat is planing in low waves, raise the bow slowly and monitor the log to see how long the speed is increasing.

- When the boat is riding into waves, the bow should be lowered until the ride becomes smooth. When driving with a tailwind, the bow should be raised slightly to avoid diving into the waves.
- In sidewinds, adjust the trim tabs until the boat is exactly upright.

WARNING! Be very careful when adjusting the trim angle at high speed: it may radically affect the boat's behaviour. Do not operate the boat with the bow too low because this could cause the boat to handle erratically.

WARNING! Manoeuvrability above XX knots is limited. Sudden turns may cause loss of control. Reduce speed before making sharp turns in either direction.

WARNING! Waves reduce the boat's manoeuvrability and can cause the boat to swing from side to side. Reduce speed as wave height increases.

Learn the seafaring rules and the COLREG provisions (International Regulations for Preventing Collisions at Sea). Navigate with care and make sure your charts are up to date.

Always adapt your speed to the prevailing conditions and the environment. Take into account the following:

- Wave height (also ask your passengers' opinion about what speed is comfortable)
- Your own wake (largest when lifting the boat to planing, smallest at displacement speed, i.e. below 6 knots). Observe and obey the speed limit and no wake zones. Reduce speed and wake as a courtesy and as a safety consideration to yourself and others.
- Visibility (islands, fog, rain, sun in the eyes)
- Familiarity of your route (time needed for navigation)
- Narrow routes (other boaters, noise and wake on shore)
- Space needed to stop or avoid obstacles

10.2. Starting the engine

Before starting the engine, make sure that the gear is in neutral, as indicated by the warning sign attached in front of the steering position (Figure 7). Sudden starts may endanger persons on board.

A remote control device must be used with the engine installed in the boat, which prevents the engine from being started when the gear is engaged.

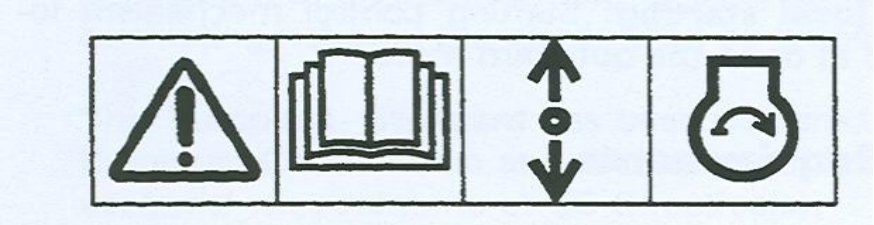


Figure 7. *Warning sign for starting the engine only in neutral*

Attach the emergency cut-off cord to yourself as soon as you have released the mooring lines. Please refer to the separate owner’s manual for the engine for details. If you are operating the boat alone, it is very important that the engine stops if you fall overboard or fall down in the boat. Remember, however, to release the emergency cord before landing manoeuvres.

DANGER! The rotating propeller may be fatal for someone who has fallen overboard or is swimming close to the boat. Use the emergency switch to stop the engine when a swimmer or water-skier is about to re-enter the boat from the water.

10.3. Visibility from the steering position

It is easy to operate a boat in fair weather when the sea is calm, but always remember to keep a lookout in accordance with the International Regulations for Preventing Collisions at Sea (COLREG). Always make sure that visibility from the steering position is as good as possible and that you can navigate even when visibility is temporarily limited. This is especially important at high speeds.

- Position passengers, loads, equipment, curtains, etc. in such a way that they do not obstruct visibility.
- Do not operate at the planing threshold speed for extended periods as the raised bow impairs forward visibility.
- Set the engine's trim function (power trim) and any trim tabs you may have installed to adjust the bow so that visibility is not impaired.
- In poor visibility (rain, darkness, fog, waves or splashes) keep a lookout over the windshield.
- Use the windshield wipers when necessary.
- Also remember to look behind the boat, particularly in shipping lanes.

Use the navigation lights during darkness or when visibility is limited for any other reason (such as in fog).

11. Proper use – other recommendations and guidelines

11.1. Man-overboard prevention and recovery

If a person has fallen in the water in calm weather, the easiest way to reboard is by using the swimming ladders located at the transom/swimming platform. The ladders can be pulled down also from the water. In

rough weather it is normally best to lift a fallen person from the lee side of the boat by rigging the boom in place and using a tackle attached to it.

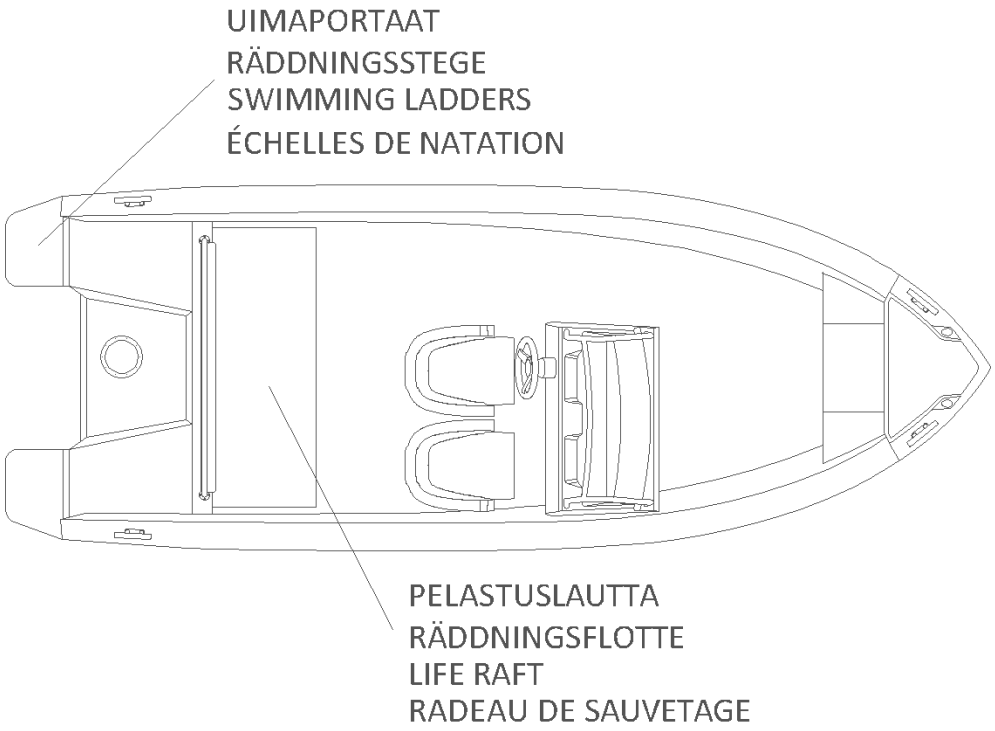


Figure 8. *Location of swimming ladders and place for life raft*

11.2. Life raft stowage

There is a place for a life raft under the aft bench of the cockpit as shown in Figure 8.
Maxim weight of life raft is 28kg.

11.3. Danger from moving parts

The moving parts of engine are protected with various guards (see separate owner's manual for the engine), and a wire-net is attached on the propeller shaft to prevent unintended contact. If you remove these guards, for example in conjunction with maintenance, always attach them carefully back in place before setting off.

11.4. Securing loose equipment

Secure all heavy equipment, such as anchors, before setting off.

11.5. Respect for the environment

Finland's archipelago and lakes are unique, and preserving their nature is a matter of honour for all boaters. Therefore, you should avoid:

- Fuel or oil spills, or discharging toilet waste into the water
- Emptying rubbish and waste into the water or leaving them on the shore
- Discharging detergents or solvents to water
- Excessive noise on the water and in harbours
- Wake formation, especially in narrow channels and shallow waters

In the Baltic Sea, it is not allowed to discharge toilet waste close to the shore. Use pump-out stations for emptying the septic tank.
Make sure you comply also with other local environmental laws and guidelines. Familiarise yourself with the International Convention for the Prevention of Pollution from Ships (MARPOL) and respect it to the greatest possible extent. Ensure the condition of the exhaust system and do not make any changes to it that could increase noise levels in the environment.

11.6. Anchoring, mooring and towing

Always moor your boat carefully, even in sheltered places, because conditions can change rapidly. Mooring lines should be equipped with absorbers to dampen any jolts. To prevent abrasion, use fenders that are large enough. The strong points for mooring are shown in Figure 9.

The breaking strength of lines for mooring, towing and anchoring must not exceed 80% of the breaking strength of the respective strong point. The breaking strengths of strong points are shown in Figure 9.

It is the owner's/operators responsibility to ensure that mooring lines, towing lines, anchor chains, anchor lines and anchors are adequate for the boat's intended use, i.e. the lines or chains do not exceed 80% of the breaking strength of the respective strong point. The owner should also consider the measures necessary for securing the boat's towing line.

In normal conditions, the following diameters of lines and anchor weights are recommended for your boat:

		ø diameter (mm.)	**lenght (m.)**	**weight (kg)**
Mooring lines:		12	6-10	---
Anchor line:		12	30	---

Main anchor:		---	---	5,5
Light anchor:	(Bruce, Danforth, CQR jne.	---	---	
		ø diameter (mm.)	**lenght (m.)**	**weight (kg)**
Stock or drag:		---	---	
Anchor line:				---

When you land at a natural harbour, ensure sufficient water depth using a plumb line, for example. DROP THE ANCHOR AT A SUFFICIENT DISTANCE FROM THE SHORE. Reasonable grip is attained if the anchor line length is 4-5 times the water depth.

WARNING! Do not try to stop the boat by hand and do not put your hand or foot between your boat and the dock, shore or other boat. Practice landing in good conditions, and use engine power in a controlled but determined way.

NOTE! When securing your boat, take into consideration the possibility of changes in wind direction and water levels, bow wakes, etc. You can get more information from your insurance company, for example.

NOTE! Strength of fastening- and towing spots is 15kN (n. 1500 kp)

When towing another boat, use a floating line that is strong enough for the task. Begin towing slowly, avoid jerks, and do not overload the engine. If you are towing a small dinghy, adjust the towing line so that the dinghy rides ”downhill” on the wave. In narrow channels and large waves, pull the dinghy near the transom to decrease yawing. Secure carefully all equipment in the dinghy if capsizing is possible. When crossing open waters, cover the dinghy to prevent the ingression of spray water.

If you are towing or if your boat has to be towed, attach the towing line to the strong points as shown in Figure 9. The stability of the boat decreases if the boom of the mast is used for towing or lifting heavy weights.

WARNING! When towing another boat or being towed, always operate at low speeds. If the boat has a displacement hull, never exceed the hull speed while towing.

WARNING! When towing, the towline is under high tension. If it should break, the end that snaps off may lash back fast enough to cause serious injury or death. Always use a thick enough line and keep to one side of the towline.

NOTE! The towing rope must be removable when loaded

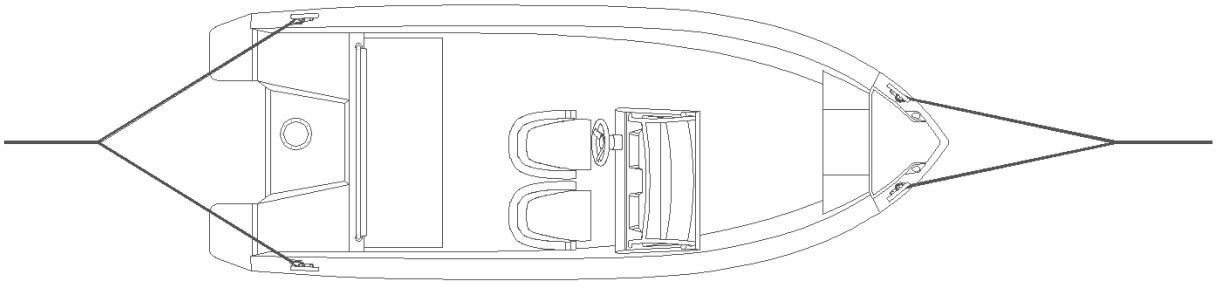


Figure 9.

If the boat's strong points are non-metallic, their limited service life should be taken into account. They must be replaced when they show signs of wear, visible cracks or permanent deformation. Please note that black materials are less susceptible to UV radiation than light ones.

11.7. Trailering

The calculated weight of your Silver Hawk SCX when transported by trailer is 1074 kg. When loading your Silver Hawk SCX onto the trailer, ensure that the trailer is suitable for your boat: that there is a sufficient number of supports to decrease point loads, that the capacity of the trailer is adequate for your boat, its engine and equipment, etc. You can find the maximum permissible total weight of the trailer from the registration book of your car.

Remove extra items and bilge water from the boat before loading it onto the trailer. Adjust the side supports of the trailer so that the keel supports carry the majority of the boat's weight. Fasten the boat firmly to the trailer before actual transport. Check the owner's manual of the engine for trailering instructions.

NOTE! The trailer must be slightly front-weighted. Ensure that the boat is fastened securely to the trailer and that the weight of the boat is divided equally between side supports. If the boat swings against a side support during transport, it may sustain hull damage.

12. Warranty

The boat and equipment installed on it by the manufacturer have a 2-year warranty in accordance with the attached warranty conditions. The warranty for the following equipment is the direct responsibility of their manufacturers:

- Engine and transmission
- Trim tabs
- Bow propeller
- Cushions
- Canopies and covers
- Compass
- Instrument cluster
- Navigation equipment
- Adjustable seat legs

The warranty books and contact information for the suppliers of this equipment are attached separately.

13. Servicing and winter storage

Familiarise yourself with the maintenance procedures described in the separate owner's manual for the engine. Do these yourself carefully or let an authorised service shop do them. Other items that require regular servicing include the following:

- Steering system and controls
- Trim tabs
- Bilge pump
- Fire extinguisher

Service these in accordance with the separate instructions or manuals.

14. Repairs

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

Small dents in the surface layer (gelcoat) of the hull or deck can be repaired by yourself. However, a neat and flawless result requires skill and large amount of work:

- Protect with tape the surrounding of the area to be repaired.
- Bevel the edges of the dent and degrease with acetone.
- Mix 1.5-2% hardener with the gelcoat.
- Apply the gelcoat to the area to be fixed so that the surface is slightly above the surrounding surface.
- Carefully apply a tape on the patch.
- After the gelcoat has hardened, remove the tape and sand the patch down to the surrounding surface if necessary.
- Polish the fixed area with cutting paste.

The colours used in the boat are indicated in Appendix 1. More precise instructions for repairs can be requested from the boat manufacturer or supplier of the gelcoat.

Larger damages should be repaired by the manufacturer or boatyards:

NOTE! Some retrofitting and modifications, if done incorrectly, may cause damage to the structure or endanger safety. Contact the manufacturer or authorised boatyards before installing new groundings and hatches, for example. Do not install any attachments that can puncture the air floats.

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

14.1. Measures before winter storage

Lift your Silver Hawk BRX out of the water in good time before ice formation. Your boat is not designed for use or storage in ice.

Before lifting out of the water, it is normally recommended to carry out the following measures:

- Change the engine oil
- Wash the boat
- Empty the bilge water and any items from the boat. However, leave safety equipment, such as fire extinguishers, in the boat.

14.2. Washing and cleaning

Keep your boat clean and tidy. This will increase the comfort, safety and resale value of the boat.

Normally it is sufficient to wash and wax the deck and sides. Special boat cleaning agents are most suitable for the purpose. Do not use strong solvents; they can cause glossy reinforced plastic surfaces to fade. Mildly abrasive polishes can be used to remove chafes and embedded dirt from the deck. Waxes containing silicon are not recommended, as they decrease the adhesion of paint and resin, making repairs of possible damages more difficult.

After lifting the boat out of the water, wash the bottom immediately. It is easier to remove algae and slime before they dry out.

14.3. Winter storage and maintenance

Perform the necessary service procedures following the owner's manuals of the engine and other equipment. If your boat is stored outside or in humid spaces, empty textiles and other equipment that may mould or corrode in a humid environment. Ropes should be washed with fresh water and worn ones renewed.

Electrical instruments are best protected against corrosion and theft by removing them and storing them in dry indoor spaces for wintertime. Remove also the batteries, take them to a warm and dry place, and charge at least two times during the winter. Spray the connectors of the electrical system with a moisture repellent antioxidant.

Check the condition of the hull and remove the caps from air tanks to drain any condensed water.

Cover your boat so that no snow can accumulate inside. However, take care of adequate ventilation. Normally, snow does not build up on the tarpaulin if the angle of the ridge is up to 90°. Suitable dimensions for the tarpaulin are 8 × 6 m.

NOTE! The tarpaulin or its fastening lines should not come into direct contact with the surfaces of the boat, as they may cause abrasion on the gelcoat surface when moving and flapping.

14.4. Measures before launching

Repair any damage to the gelcoat surface according to Section 14 "Repairs".

In sea areas, antifouling paint should be used to prevent the hull from becoming covered with vegetation. Fouling of the bottom and especially the propeller increases fuel consumption significantly. However, if the boat is anchored at the inlet of a stream or in a land-locked lake, or if it is lifted out of the water at least once every two weeks, it is normally not necessary to use antifouling paint. Carefully follow the paint manufacturer's instructions when applying the paint. When sanding old antifouling paint, remember that the dust is toxic.

Antifouling paint is not necessary or recommended in fresh water (lake areas).

NOTE! Do not paint over the zinc anodes or the piston rods of hydraulic trim tabs. Do not apply paints containing copper on aluminium parts, and remember to follow the paint manufacturer's instructions.

To prevent galvanic corrosion, zinc anodes have been installed on your Silver Hawk BRX. The anodes should be replaced at the latest when over half of the material has been eroded. The location of the anodes is shown in Figure 10.

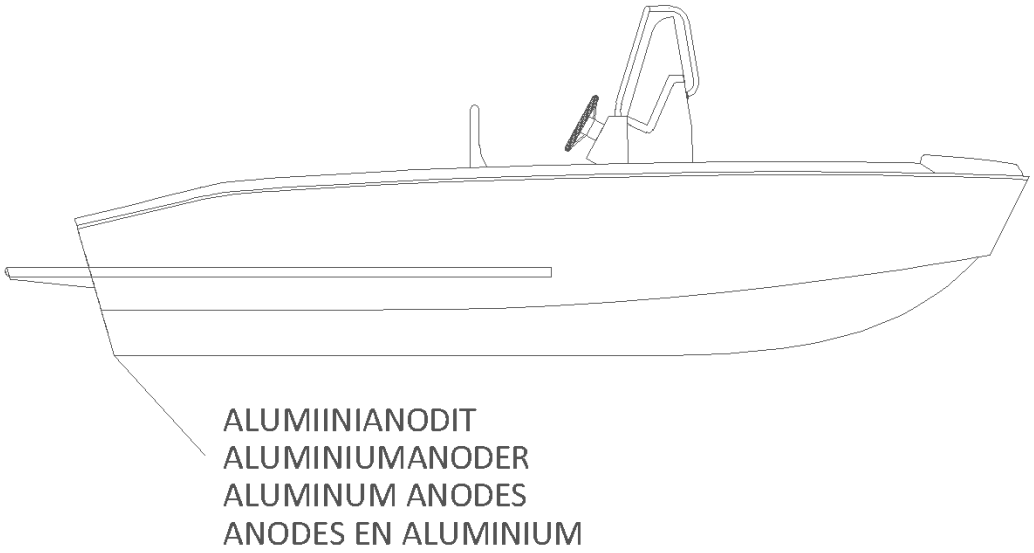


Figure 10. *Spots for anodes*

Perform the necessary service procedures required for the engine according to the separate owner's manual for the engine. Check the functioning of electrical equipment and remove any oxidation from fuse connectors, for example. Check that the plugs of air tanks are attached.

After launching the boat, open all seacocks and check that there is no leakage in hoses or connections. The location of through-hull fittings is shown in Section 7 "Prevention of water incursion and stability". Remember to load all safety equipment onboard before setting off.

16. Appendices

APPENDICES:	
APPENDIX 1	TECHNICAL SPECIFICATION AND TANK CAPACITIES
DECLARATION OF CONFORMITY	***MODEL:***
OTHER APPENDICES:	**MANUFACTURER indicates** (X) if included
TANK DIAGRAM	X
ELECTRICAL DIAGRAM	X
WARRANTY TERMS	X
OWNER'S MANUAL FOR ENGINE	
MAINTENANCE INSTRUCTIONS FOR BILGE PUMP	X

APPENDIX 1

TECHNICAL SPECIFICATION AND TANK CAPACITIES

Your boat has a craft identification number (CIN) that is labelled on the hull aft on the right side / on outer surface of the transom beneath the side strip. You should write down the CIN in the table below.

When contacting the manufacturer or dealer, give the CIN and the type of boat. This will help ordering the correct spare parts. If you need gelcoat for repairs, specify the colour code when ordering.

Type designation:	*Silver Hawk SCX*
Designer:	
CIN:	FI-SLVHX
Engine serial number:	0000000000000
Colour codes	
- hull:	000
- deck:	Consoles/bow deck RAL7024
Hull material:	Aluminium

		QUANTITY/MEASUREMENT	UNIT
Main dimensions:	Length overall (Lmax)	5,70	m
(In accordance with ISO 8666)	Hull length (Lh)	5,64	m
	Maximum beam (Bmax)	2,16	m
	Hull beam (Bh)	2,13	m
	Draught at maximum load (*xxx* kg)		m
	Maximum height from water surface (light load)		m
	Weight without loading, liquids and equipment*, but including weight of largest recommended outboard(s)*	988	kg
	Total weight with full load	1634	kg
	Weight during performance test		kg
	Sail area		m2
Loading:	Maximum number of persons	7	persons
(In accordance with builder's plate, ISO 14946)	**Maximum load, which includes the following:**	646	kg
	- combined weight of persons		kg
	- basic equipment		kg
	- liquids in portable containers:		
	- water		kg
	- fuel		kg
		QUANTITY/MEASUREMENT	UNIT

	Consumable liquids in fixed containers:		
	- water		kg
	- fuel (gasoline/diesel)		kg
	- provisions and other stores		kg
	- life raft		kg
	- cargo		kg
	Total weight of liquids when all fixed tanks are full		kg
Tank capacities:	Fuel tank(s)	115	l
	Fresh water tank(s)		l
	Septic tank		l
	LPG cylinders		kg
Propulsion type (primary)	Engine/sail/oars, etc.		
Sail area and rig type			
Maximum recommended engine output:		86	kW (hp)
Standard propeller:		3x13,25x18	(” x ”)
Maximum speed:	(loading during performance test: *x* persons & full fuel tanks)		Knots
Electrical system:	Voltage	12	V (DC)
	Battery capacity		x × Ah
	Shore power connection		x V, x-phase. x-x Hz

Due to manufacturing technology, small differences in main dimensions and capacities may occur.

The fuel filling fitting is located on *port side deck of the boat*.

Boat owners own notes

OWNER'S MANUAL

SILVER SEAHAWK BRX

TerhiTec Oy
Sorvitie 4
FI-63700 Ähtäri
Finland

FOREWORD

Dear Owner of a Finnish Silver boat! We thank you for choosing Seahawk BRX and wish you many pleasant experiences on the water.

This Owner's Manual is intended to help you use your boat in a safe and enjoyable way. It provides a detailed description of the boat and related equipment and accessories, as well as information about the proper operation and care of the boat. Please read this manual carefully and familiarize yourself with your boat before using it for the first time.

This Owner's Manual alone is not a sufficient source of information on seamanship or boating safety. If this is your first boat, or you have switched to a type of boat that you are not yet familiar with, for your own comfort and safety, make sure that you gain handling and operating experience before taking over the responsibility of captaining the boat. The seller of the boat, boating clubs and national boating or sailing associations will be happy to recommend local boating schools or competent instructors.

Make sure that the design category of your boat corresponds to the anticipated wind and wave conditions and that you and your crew can handle the boat in these conditions. The wind and wave conditions corresponding to design categories A, B, and C range from a storm to strong winds involving a risk of exceptional waves and gusts. Even if your boat is designed for these conditions, they can be dangerous and operated in safely only by a competent, fit, and trained crew operating a well-maintained boat.

This Owner's Manual is not a detailed maintenance or troubleshooting guide. In case of problems, contact the boat manufacturer or dealer. Always use qualified and trained personnel for maintenance, repairs, and modifications. Changes that may affect the safety features of the boat must be assessed, implemented, and documented by a qualified person. The boat manufacturer cannot be held responsible for changes that it has not authorized.

In some countries, a special boating license or authorization may be required to operate the boat. Additional regulations may also apply.

Always keep your boat in good condition and take into account wear and tear resulting from ageing and heavy use or misuse. Any boat – regardless of its strength – can be seriously damaged if not used properly. This is not compatible with safe boating. Always adjust the speed and direction of the boat to the wave conditions.

If your boat is equipped with a life raft, carefully read its operating instructions. The boat should be equipped with the appropriate safety equipment, such as life jackets and safety harnesses, according to the type of boat and weather conditions, for example. This equipment is mandatory in some countries. The crew should be familiar with the use of all safety equipment and emergency maneuvering, including man overboard recovery and towing. Boating schools and clubs regularly organize rescue exercises.

All persons onboard should use buoyancy aids, life jackets or boating vests on deck. Please note that in some countries, national boating regulations may require everyone aboard to wear a personal flotation device whenever onboard.

PLEASE KEEP THIS MANUAL IN A SAFE PLACE AND GIVE IT TO THE NEXT OWNER IF YOU SELL YOUR BOAT.

TABLE OF CONTENTS

BEFORE SETTING OFF:
Familiarise yourself with this Owner's Manual. *Always check the following before setting off:*

- **Weather conditions and forecast**
  Take into consideration the wind, waves, and visibility. Are the design category, size and equipment of your boat, as well as the skills of the skipper and crew, sufficient for the type of water you are going to? In strong winds and big waves, hatches must be closed to prevent splash water from entering the boat.

- **Load**
  Do not overload the boat and distribute loads appropriately. To avoid impairing the stability of the boat, do not place heavy objects in elevated positions.

- **Passengers**
  Make sure that everyone onboard has a life jacket. Assign the duties and tasks of each member of the crew before setting off.

- **Fuel**
  Check that there is enough fuel, including sufficient reserves in case of bad weather, for example.

- **Engine and equipment**
  Check the functioning and condition of the steering, electrical equipment and battery, and carry out the routine checks required by the owner's manual of the engine. Check the seaworthiness of the boat also in other regards, for example by making sure there are no fuel or water leaks and that all safety equipment is onboard. Check that the amount of bilge water is at a minimum. Additional instructions for the engine can be found in the separate owner's manual for the engine.

- **Ventilation**
  Let the engine compartment fan run for at least 4 minutes before starting the engine. Start the engine according to the instructions of the engine manufacturer. Take care of the ventilation of fuel compartments to reduce the risk of fire.

- **Fastening of items**
  Check that all items are fastened in such a way that they remain in place even in big waves and strong winds.

- **Nautical charts**
  If you are not navigating totally familiar waters, make sure you have nautical charts covering the entire area.

- **Departure and docking**
  Agree in advance who will release each mooring line, for example. Be careful not to let mooring lines or other ropes tangle with the propeller during manoeuvring. Check the functioning of the bow thruster.

1. General

This Owner’s Manual will help familiarise you with the properties and features of your new boat, as well as its care and maintenance. This Owner's Manual is not intended to serve as a complete maintenance guide or repair manual, but rather to help the user get to know the features of their new boat and to use their boat in an appropriate way.

It is the responsibility of the owner and skipper of the boat that the boat is used according to its intended use.

Separate manuals for installed equipment are attached to this Owner’s Manual and are referred to in many sections. Other manuals for devices that are installed afterwards can also be attached to this Owner’s Manual. In addition, there is space for your own notes at the end of this Owner’s Manual.

Before use

1.1.1. Registration

In Finland, according to the Water Traffic Act, any watercraft equipped with an engine or sails with a hull length of at least 5.5 metres and any watercraft equipped with an engine producing at least 15 kW, i.e. more than 20 horsepower, must be registered. You can get more detailed instructions on registration from the Finnish Transport and Communications Agency Traficom. The operator of a registered boat must be at least 15 years old.

1.1.2. Insurance

Boat insurance can cover damage that occurs on the water or during transport and docking. Check your insurance liability for raising the boat. Insurance also has an indirect effect on safety on the water: in the event of a serious accident, you can focus above all on saving people. Insurance companies can provide more detailed information about different insurance options.

1.1.3. Training

No one is born an expert, and boating is no exception. There are plenty of books about boating, and navigation courses are offered by the Finnish Navigation Association (Suomen Navigaatioliitto, tel. +358 50 5508827, https://suomennavigaatioliitto.com/) and adult education centres.

Information about boating courses is available from the Finnish Sailing and Boating Association (SPV – Suomen Purjehdus ja Veneily ry, tel. +358 40 834 3407, https://spv.fi/). These courses provide a good foundation for your skills, but confidence in boat handling, navigation, mooring and anchoring is achieved only through extended practice. Information about local boating clubs and their activities is also available from SPV.

2. Definitions

The warnings and cautions used in this Owner's Manual are defined as following:

IMMEDIATE DANGER! Indicates a serious hazard that will result in death or serious injury if proper precautions are not taken.

DANGER! Indicates a potential hazard that could result in death or serious injury if proper precautions are not taken.

WARNING! Indicates a potential hazard that could result in injury if proper precautions are not taken.

NOTE! Indicates important information related to the risk of damage to the boat, its parts or other property, but not to personal danger.

The units used in this manual are in accordance with the International System of Units (SI). In some cases, other units have been added in brackets. An exception to this is wind speed, for which the Beaufort scale is used as in the EU directive on recreational craft and personal watercraft.

3. Basic boat information

The technical specifications for your boat model is presented in Appendix 1 at the back of this Owner's Manual.

The basic information of **Silver Seahawk BRX** – boat are as follows:

Manufacturer/dealer:
TerhiTec Oy, Sorvitie 4, 63700 ÄHTÄRI, Finland

Type: **Silver Seahawk BRX**

Design category: **C**
Design category refers to the following:

Category A: The boat is designed for use in conditions where the wind strength may reach up to Beaufort force 10 (approximately 25 m/s) with corresponding wave heights. Such conditions may be encountered on extended voyages, for example when crossing oceans or in coastal waters when unsheltered from the wind and waves for several hundred nautical miles. Depending on the atmospheric conditions, gusts may reach approximately 32 m/s.

Category B: The boat is designed for use in conditions where the wind strength may reach up to Beaufort force 8 (approximately 21 m/s) with corresponding waves (significant wave heights up to 4 m, see NOTE below). Such conditions may be encountered on sufficiently long open sea voyages or in coastal waters unsheltered from the wind and waves for several tens of nautical miles. The described conditions can also be encountered on lakes that are large enough to generate such wave heights. Depending on the atmospheric conditions, gusts may reach approximately 27 m/s.

Category C*:* The boat is designed for use in conditions with a maximum steady wind strength of Beaufort force 6 (approximately 14 m/s) with corresponding waves (significant wave height up to 2 m, see **NOTE** below). Such conditions may be encountered on open lakes, in river estuaries and in coastal waters in moderate weather conditions. Depending on the atmospheric conditions, gusts may reach approximately 18 m/s.

Category D*:* The boat is designed for use in conditions where the wind strength is no more than Beaufort force 4 (approximately 8 m/s) with corresponding waves (significant wave height does not exceed 0.3 m, occasional maximum wave height of 0.5 m). Such conditions may be encountered in sheltered inland waters and coastal waters in good weather. Depending on the atmospheric conditions, gusts may reach approximately 12 m/s.

NOTE! The significant wave height is the average height of the highest third of all wave heights measured in the waters, which roughly corresponds to the wave height estimated by an experienced observer. Some individual waves may be approximately double this height.

Maximum recommended load: 845 kg, in manufacturer´s sign 680 kg
See also Section 5: “Loading”.

Main dimensions and capacities:
The boat’s precise technical specifications, such as length, beam, draught, unloaded weight, total weight and tank capacities, are presented in the technical specifications in Appendix 1.

Builder’s plate:
The builder's plate (Figure 1), which is mounted in the boat next to the steering console, contains some of the information specified above. Detailed information that supplements the information provided on the plate is given in the relevant sections of this manual.

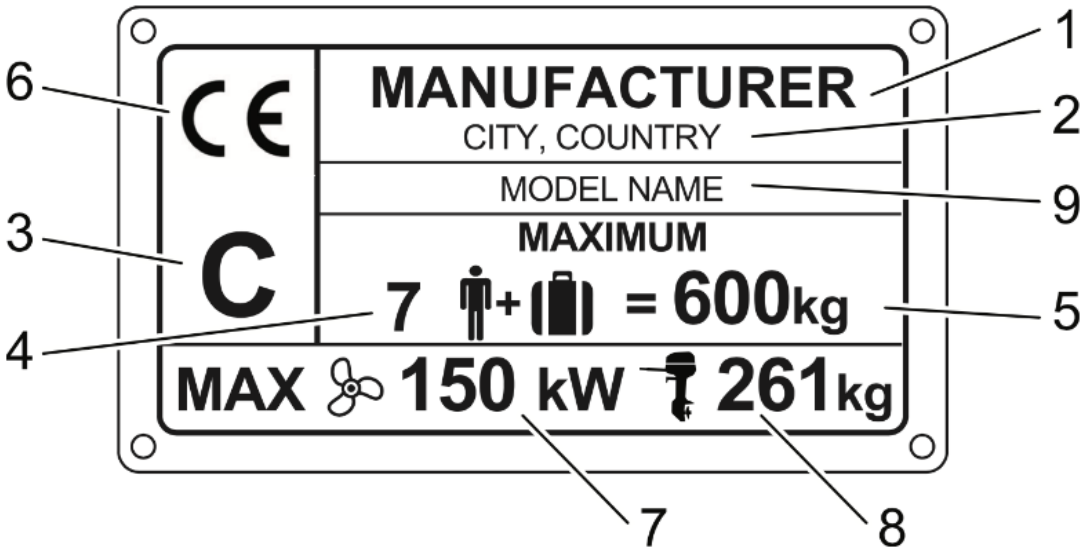


Figure 1. Information presented on the builder’s plate: 1. Name of manufacturer, 2. Contact information for the manufacturer/dealer, and possibly also its Business ID, 3. Design category, 4. Maximum number of persons, 5. Maximum recommended load (kg), 6. CE marking, 7. Maximum output of outboard(s) [kW], 8. Maximum weight of outboard(s) [kg], 9. Model name

4. Maximum number of persons

The maximum permissible number of persons on board is 8. The seats designated for them are shown in Figure 2.

WARNING! **Do not exceed the maximum permissible number of persons.**

Regardless of the number of persons on board, the total weight of persons and equipment must never exceed the maximum permissible load (see Section 5: "Loading"). Always use the seats or seating spaces provided.

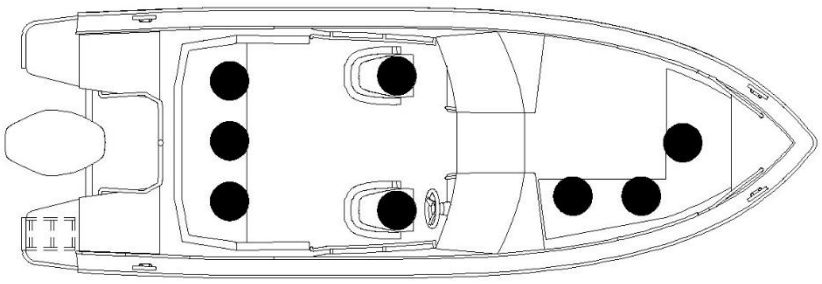


Figure 2. *Seats for the maximum permissible number of persons*

5. Loading

The maximum permissible load of your Silver Seahawk BRX as **indicated on the builder's plate** is 680 kg. This includes the following weights:

a) The total weight of persons onboard amounting to 600 kg (the default mass of an adult is 75 kg and of a child 37.5 kg)
b) The total weight of personal items, other equipment, supplies and other stores, cargo (such as recreational equipment), a life raft and liquids carried in portable containers (such as water and fuel) amounting to 80 kg

NOTE! The weight of the liquids in fixed container are not included on the builder´s plate

The maximum permissible load of your Silver Seahawk BRX including the weight of equipment 845 kg.

The maximum permissible load includes only the weight components listed above. The weight of the unloaded boat and gross weight are presented in Appendix 1.

WARNING! **When loading the boat, never exceed the maximum permissible load.**

Always load the boat carefully and distribute loads so that the boat's design trim angle is not compromised (maintaining an even keel). Avoid placing heavy weights high up.

NOTE! Ignoring the restrictions may result in the boat capsizing!

6. Engine and propeller

The maximum permissible engine output of your Silver Seahawk BRX is 184 kW. The maximum permissible engine weight is 296 kg.

Follow the instructions of the engine manufacturer when choosing the propeller for your boat. The dimensions of the standard propeller on the original engine are (Honda A19HR).

Before setting off, always check that there is enough fuel and perform the daily inspection and maintenance recommended in the separate owner’s manual for the engine. Periodic servicing and maintenance should always be carried out in accordance with the owner’s manual for the engine. If necessary, also service the boat's exhaust system.

The boat can be equipped with a bow thruster, the operating switches / joystick for which are located next to the remote control device. Familiarise yourself with their use according to the manufacturer's separate appendix/owner’s manual. Only use the bow thruster for short periods at a time.

A remote control device that is equipped with an immobiliser must be used with the engine when the gear is engaged.

When starting the engine manually, follow the instructions in the separate owner’s manual for the engine.

7. Prevention of water incursion and stability

7.1. General

The prevention of water incursion and stability of the boat are based on the load situations presented in Appendix 1.

7.2. Openings in hull and deck

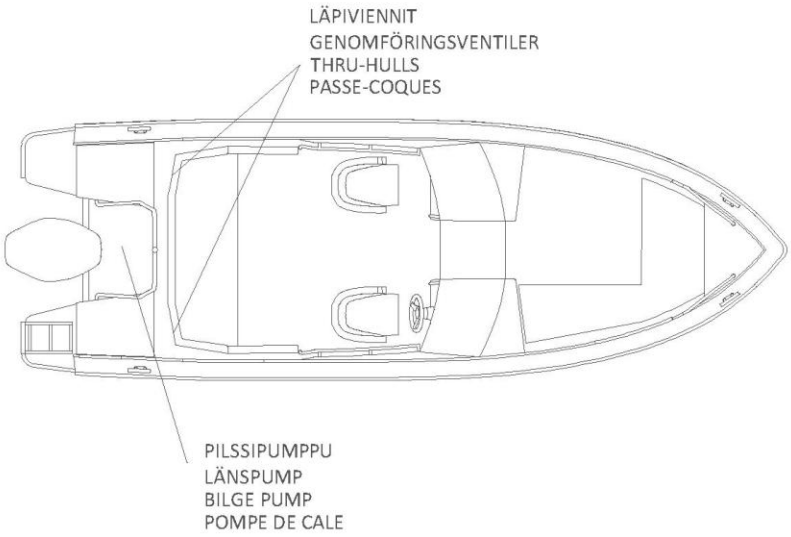
The location of drainage valves and through-hull fittings is presented in Figure 3. It is recommended that drainage valves be kept shut (except to drain rainwater from cockpits) whenever the boat is not in use.

There are two through-hull fittings for draining rainwater from the cockpit. The drainage valves for these should be kept shut during maximum loading to prevent water incursion. In other loading conditions, keep these drainage valves open.

NOTE! The tightness of the maintenance hatch of the engine well must be checked regularly. A leaking engine well service hatch can expose the boat to the risk of sinking.

NOTE! All the hatches and doors must be kept closed while underway.

The location of drainage valves and through-hull fittings is presented below in Figure 3.
Figure 3. *Location of drainage valves, through-hull fittings and bilge pumps*



7.3. Bilge pumps and drainage

Your Silver Seahawk BRX is equipped with bilge pump. Their location is indicated in Figure 3. The nominal capacity of the electric bilge pump is 40 l/min. Maintenance instructions for the bilge pumps are included in a separate appendix.

The electric bilge pump is activated from the switch panel, as described in Section 9: “Electrical system”. The lever for the manual bilge pump is situated in the cockpit’s locker and attached to the boat with a line.

Check at regular intervals that there is no debris in the suction heads of the bilge pumps.

The owner is responsible for ensuring that at least one device for emptying the boat is kept onboard, and it must be secured to the boat. Note that the bilge pump system is not designed to cope with a leak caused by running aground or other hull damage.

WARNING! The bilge pump system is not designed to cope with a leak caused by running aground or other hull damage.

NOTE! Check at regular intervals that all bilge pumps function properly. Clear any debris from the suction heads

7.4. Stability and buoyancy

Your Silver Seahawk BRX has been designed for good stability by locating heavy weights low and by keeping the cockpit and other recesses on deck relatively small. However, remember that large breaking waves are always a serious danger to stability.

Note also that the stability of your boat is reduced by adding weight up high. Any change in the distribution of weight onboard (such as adding a fishing tower, radar, in-mast furling system, changing the engine, etc.) may significantly affect the stability, trim and performance of your boat. Contact the boat manufacturer if you are planning such changes.

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

Take into account that stability may be reduced when towing or lifting heavy weights using a davit or boom.

7.5. Running aground

If you run aground, check immediately to see if the damage has caused a leak. Check especially the area around the keel, the through-hull fittings, the transom, the area around the rudder and the propeller.

If you notice a significant leak, call for help. Try to plug the leak if possible. If there is no leak in the structure, proceed carefully to the nearest port and inspect or request an inspection of the structural damage of the boat.

Contact your insurance company and repair the damage as soon as possible.

8. Prevention of fire and explosions

8.1. General

Follow general precautions when handling flammable substances and open flames.

8.2. Engines

Before refuelling, switch off the engine and extinguish any cigarettes. Do not operate any switches or devices that may produce sparks.

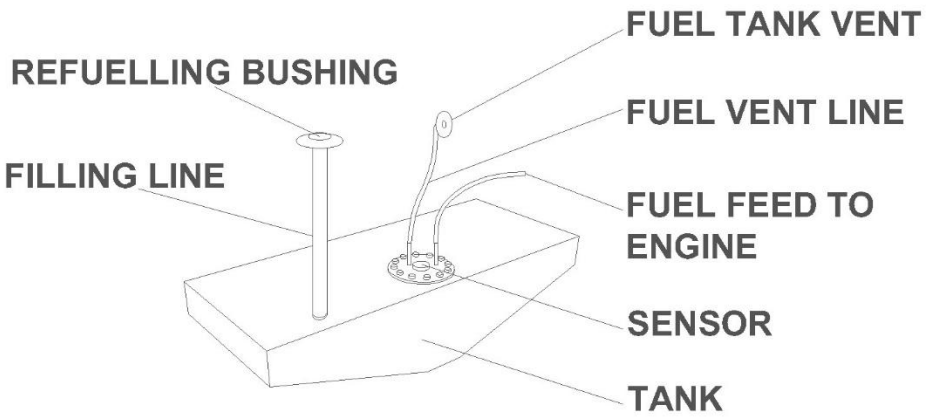
The fuel inlet () is located on the starboard side deck of the boat.

When refuelling at a service station, do not use a plastic funnel because it will prevent the discharge of static voltage between the filler pistol and fuel inlet bushing. After refuelling (check tank capacity in Appendix 1), make sure that no fuel has leaked into the bilge or engine compartment. Wipe off any fuel splashes immediately.

Do not stow any spare tanks in unventilated spaces or unsecured. Equipment that contains fuel may only be stowed in compartments that are intended for that purpose.

Recommendations for storing spare fuel:
Store spare fuel in containers made of corrosion-resistant material and keep the amount of fuel as low as possible. Spare fuel must be stored outside living quarters in a place where the temperature must not exceed 60 C degrees.

8.3. LPG systems



The boat is equipped with a fixed fuel tank. The fuel tank vent is placed in the middle of the swim platform, on the front side of the engine well. The fuel tank cap says FUEL, which means gasoline 98E or 95E. A fuel filter is installed in the fuel line, which also acts as a water separator. The filter must be changed at least once a year. When a new filter or a filter that was out of place has been installed, the fuel line must be pumped full with a ball pump before starting the engine.

Fuel hoses should be inspected regularly, and efforts should be made to prevent their damage. Hoses must be replaced with new ones if cracks or other damage is detected. If you replace the fuel hoses, make sure they are marked with ISO 7840

We recommend always using 98 E fuel, because of the better shelf life, lower alcohol content (accumulation in the tank, dissolution of dirt) and density of energy.

8.4. Fire protection

When using your Silver Seahawk BRX, it must be equipped with portable fire extinguishers (2 KG 13A 70B PD2G) as illustrated in Figure 3.

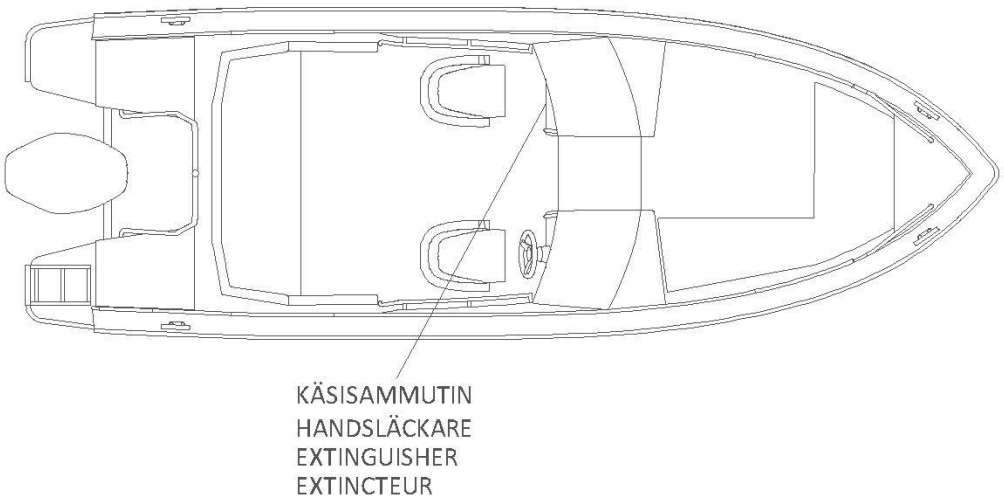


Figure 3. *Location of fire extinguisher*

Portable fire extinguishers must be serviced annually. Fire extinguishers that are more than ten years old are not accepted without new pressure testing of the container. In the event that the fire extinguisher is replaced, for example due to expiry, discharging or other condition, the capacity of the new one must be at least equivalent to the old.

9. Electrical system

The electrical diagram of the boat is attached separately. The location and function of the battery disconnect switch is as follows:

- On the right side of the stern seat (vertical wall)
- Position "OFF": Both batteries disconnected from all circuits
- Position "1": Battery 1 in use, generator charges both batteries

Additional on 2-battery switch system:

- Position ”2”: Battery 2 in use, generator charges battery 2
- Position ”1+2”: Both batteries in use, generator charges both batteries

The instruments and switches for electrical devices in the inside cab are arranged according to Figure 6

Circuit fuses are located next to the corresponding switches, and the fuse sizes are also shown in Figure 6. Your Silver Seahawk CCX has resettable fuses, which can be reset in the event of an overload by pressing the toggle switch that popped down back up.

Do not alter the rated current amperage of the fuses or install any electrical components exceeding the rated current amperage of the circuit.

Figure 6*.* *Location of switchboard and fuses*

When leaving the boat for a longer period of time, turn off the main switch. Also switch off the power if you perform any electrical installations.

When connecting or disconnecting a battery, do not touch both terminals or a terminal and the hull of the boat simultaneously with metal objects.

Charge the batteries only with the installed charger or with one with similar capacity. Charging with overcurrent causes risk of explosion. Make sure that there are no obstructions to ventilating the battery box.

NOTE! Never disconnect the batteries while the engine is running.

NOTE! Do not use a metal boat hull as a conductor.

Do not modify the boat's electrical system or related drawings; changes and maintenance should be performed by a competent marine electrical technician.

10. Operation

Familiarise yourself with the features of your boat at first at low speed. Practice port manoeuvres where there is suitable space. Learn how to use the bow thruster in different wind conditions.

10.1. Operating at high speeds

The maximum engine power rating for this boat is 184 kW **Do not operate the boat if the actual engine power exceeds the power indicated on the builder's plate.**

The basic trim angle adjustments are as follows:

- To plane the boat, the trim should be adjusted all the way down (negative setting: “bow down”).
- When the boat is planing in low waves, the trim should be raised until the boat starts to porpoise or the propeller loses grip. When this happens, lower the bow slightly until the ride is stable. The log (speed indicator) can be used to optimise the trim angle.
- When the boat is riding into waves, the bow should be lowered until the ride becomes smooth. When driving with a tailwind, the bow should be raised slightly to avoid diving into the waves.
- Refer to the separate owner’s manual for the engine for further instructions.

The outboard motor is normally intended to be mounted on the transom at the lowest height level.

WARNING! Be very careful when adjusting the trim angle at high speed: it may radically affect the boat's behaviour. Do not operate the boat with the bow too low because this could cause the boat to handle erratically.

Do not operate the boat at a high speed with a fully negative trim angle (bow down) as this may cause the boat to roll from side to side and make steering unstable.

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

- Set to “bow down” position at semiplaning speeds .
- When the boat is planing in low waves, raise the bow slowly and monitor the log to see how long the speed is increasing.
- When the boat is riding into waves, the bow should be lowered until the ride becomes smooth. When driving with a tailwind, the bow should be raised slightly to avoid diving into the waves.
- In sidewinds, adjust the trim tabs until the boat is exactly upright.

WARNING! Be very careful when adjusting the trim angle at high speed: it may radically affect the boat's behaviour. Do not operate the boat with the bow too low because this could cause the boat to handle erratically.

WARNING! Manoeuvrability above XX knots is limited. Sudden turns may cause loss of control. Reduce speed before making sharp turns in either direction.

WARNING! Waves reduce the boat's manoeuvrability and can cause the boat to swing from side to side. Reduce speed as wave height increases.

Learn the seafaring rules and the COLREG provisions (International Regulations for Preventing Collisions at Sea). Navigate with care and make sure your charts are up to date.

Always adapt your speed to the prevailing conditions and the environment. Take into account the following:

- Wave height (also ask your passengers' opinion about what speed is comfortable)
- Your own wake (largest when lifting the boat to planing, smallest at displacement speed, i.e. below 6 knots). Observe and obey the speed limit and no wake zones. Reduce speed and wake as a courtesy and as a safety consideration to yourself and others.
- Visibility (islands, fog, rain, sun in the eyes)
- Familiarity of your route (time needed for navigation)
- Narrow routes (other boaters, noise and wake on shore)
- Space needed to stop or avoid obstacles

10.2. Starting the engine

Before starting the engine, make sure that the gear is in neutral, as indicated by the warning sign attached in front of the steering position (Figure 7). Sudden starts may endanger persons on board.

A remote control device must be used with the engine installed in the boat, which prevents the engine from being started when the gear is engaged.

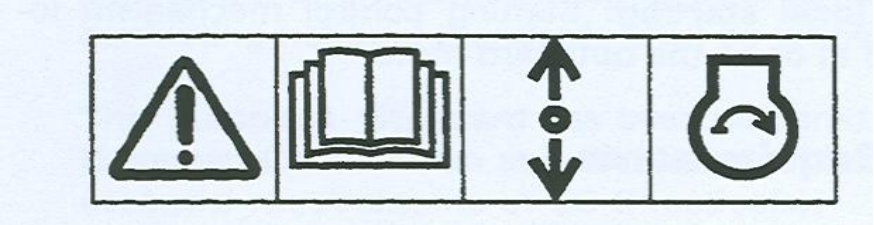


Figure 7. *Warning sign for starting the engine only in neutral*

Attach the emergency cut-off cord to yourself as soon as you have released the mooring lines. Please refer to the separate owner's manual for the engine for details. If you are operating the boat alone, it is very important that the engine stops if you fall overboard or fall down in the boat. Remember, however, to release the emergency cord before landing manoeuvres.

DANGER! The rotating propeller may be fatal for someone who has fallen overboard or is swimming close to the boat. Use the emergency switch to stop the engine when a swimmer or water-skier is about to re-enter the boat from the water.

10.3. Visibility from the steering position

It is easy to operate a boat in fair weather when the sea is calm, but always remember to keep a lookout in accordance with the International Regulations for Preventing Collisions at Sea (COLREG). Always make sure that visibility from the steering position is as good as possible and that you can navigate even when visibility is temporarily limited. This is especially important at high speeds.

- Position passengers, loads, equipment, curtains, etc. in such a way that they do not obstruct visibility.
- Do not operate at the planing threshold speed for extended periods as the raised bow impairs forward visibility.
- Set the engine's trim function (power trim) and any trim tabs you may have installed to adjust the bow so that visibility is not impaired.
- In poor visibility (rain, darkness, fog, waves or splashes) keep a lookout over the windshield.
- Use the windshield wipers when necessary.
- Also remember to look behind the boat, particularly in shipping lanes.

Use the navigation lights during darkness or when visibility is limited for any other reason (such as in fog).

11. Proper use – other recommendations and guidelines

11.1. Man-overboard prevention and recovery

If a person has fallen in the water in calm weather, the easiest way to reboard is by using the swimming ladders located at the transom/swimming platform. The ladders can be pulled down also from the water. In rough weather it is normally best to lift a fallen person from the lee side of the boat by rigging the boom in place and using a tackle attached to it.

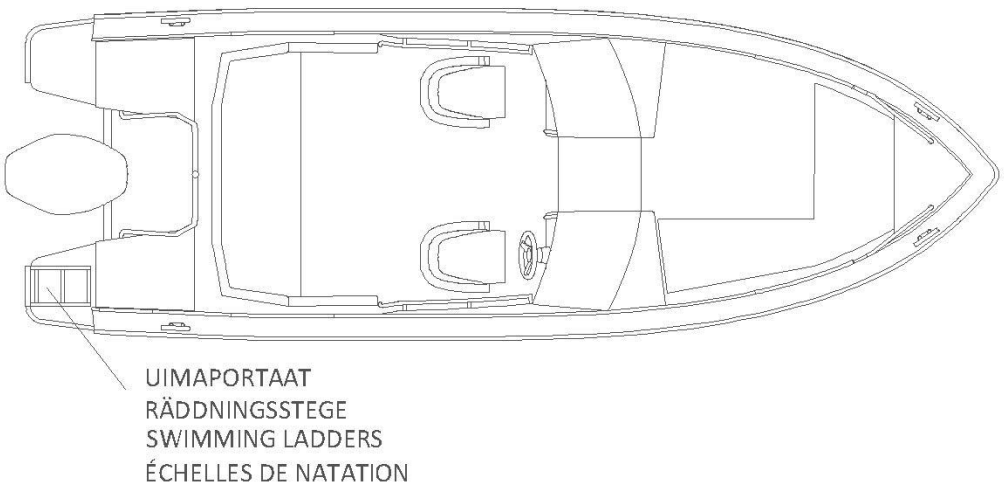


Figure 8. *Location of swimming ladders and place for life raft*

11.2. Life raft stowage

There is a place for a life raft under the aft bench of the cockpit as shown in Figure 8.
Maxim weight of life raft is 28kg.

11.3. Danger from moving parts

The moving parts of engine are protected with various guards (see separate owner's manual for the engine), and a wire-net is attached on the propeller shaft to prevent unintended contact. If you remove these guards, for example in conjunction with maintenance, always attach them carefully back in place before setting off.

11.4. Securing loose equipment

Secure all heavy equipment, such as anchors, before setting off.

11.5. Respect for the environment

Finland's archipelago and lakes are unique, and preserving their nature is a matter of honour for all boaters. Therefore, you should avoid:

- Fuel or oil spills, or discharging toilet waste into the water
- Emptying rubbish and waste into the water or leaving them on the shore
- Discharging detergents or solvents to water
- Excessive noise on the water and in harbours
- Wake formation, especially in narrow channels and shallow waters

In the Baltic Sea, it is not allowed to discharge toilet waste close to the shore. Use pump-out stations for emptying the septic tank.
Make sure you comply also with other local environmental laws and guidelines. Familiarise yourself with the International Convention for the Prevention of Pollution from Ships (MARPOL) and respect it to the greatest possible extent. Ensure the condition of the exhaust system and do not make any changes to it that could increase noise levels in the environment.

11.6. Anchoring, mooring and towing

Always moor your boat carefully, even in sheltered places, because conditions can change rapidly. Mooring lines should be equipped with absorbers to dampen any jolts. To prevent abrasion, use fenders that are large enough. The strong points for mooring are shown in Figure 9.

The breaking strength of lines for mooring, towing and anchoring must not exceed 80% of the breaking strength of the respective strong point. The breaking strengths of strong points are shown in Figure 9.

It is the owner's/operators responsibility to ensure that mooring lines, towing lines, anchor chains, anchor lines and anchors are adequate for the boat's intended use, i.e. the lines or chains do not exceed 80% of the breaking strength of the respective strong point. The owner should also consider the measures necessary for securing the boat's towing line.

In normal conditions, the following diameters of lines and anchor weights are recommended for your boat:

		ø diameter (mm.)	**lenght (m.)**	**weight (kg)**
Mooring lines:		12	6-10	---
Anchor line:		12	30	---
Main anchor:		---	---	5,5
Light anchor:	(Bruce, Danforth, CQR jne.	---	---	
		ø diameter (mm.)	**lenght (m.)**	**weight (kg)**
Stock or drag:		---	---	
Anchor line:				---

When you land at a natural harbour, ensure sufficient water depth using a plumb line, for example. DROP THE ANCHOR AT A SUFFICIENT DISTANCE FROM THE SHORE. Reasonable grip is attained if the anchor line length is 4-5 times the water depth.

WARNING! Do not try to stop the boat by hand and do not put your hand or foot between your boat and the dock, shore or other boat. Practice landing in good conditions, and use engine power in a controlled but determined way.

NOTE! When securing your boat, take into consideration the possibility of changes in wind direction and water levels, bow wakes, etc. You can get more information from your insurance company, for example.

NOTE! Strength of fastening- and towing spots is 20kN (n. 2000 kp)

When towing another boat, use a floating line that is strong enough for the task. Begin towing slowly, avoid jerks, and do not overload the engine. If you are towing a small dinghy, adjust the towing line so that the dinghy rides ”downhill” on the wave. In narrow channels and large waves, pull the dinghy near the transom to decrease yawing. Secure carefully all equipment in the dinghy if capsizing is possible. When crossing open waters, cover the dinghy to prevent the ingression of spray water.

If you are towing or if your boat has to be towed, attach the towing line to the strong points as shown in Figure 9. The stability of the boat decreases if the boom of the mast is used for towing or lifting heavy weights.

WARNING! When towing another boat or being towed, always operate at low speeds. If the boat has a displacement hull, never exceed the hull speed while towing.

WARNING! When towing, the towline is under high tension. If it should break, the end that snaps off may lash back fast enough to cause serious injury or death. Always use a thick enough line and keep to one side of the towline.

NOTE! The towing rope must be removable when loaded

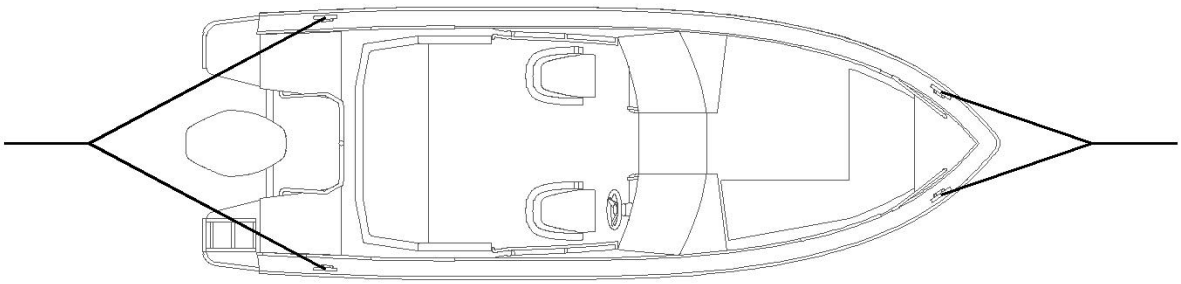


Figure 9.

If the boat's strong points are non-metallic, their limited service life should be taken into account. They must be replaced when they show signs of wear, visible cracks or permanent deformation. Please note that black materials are less susceptible to UV radiation than light ones.

11.7. Trailering

The calculated weight of your Silver Seahawk BRX when transported by trailer is 1628 kg. When loading your Silver Seahawk BRX onto the trailer, ensure that the trailer is suitable for your boat: that there is a sufficient number of supports to decrease point loads, that the capacity of the trailer is adequate for your boat, its engine and equipment, etc. You can find the maximum permissible total weight of the trailer from the registration book of your car.

Remove extra items and bilge water from the boat before loading it onto the trailer. Adjust the side supports of the trailer so that the keel supports carry the majority of the boat's weight. Fasten the boat firmly to the trailer before actual transport. Check the owner's manual of the engine for trailering instructions.

NOTE! The trailer must be slightly front-weighted. Ensure that the boat is fastened securely to the trailer and that the weight of the boat is divided equally between side supports. If the boat swings against a side support during transport, it may sustain hull damage.

12. Warranty

The boat and equipment installed on it by the manufacturer have a 5-year warranty in accordance with the attached warranty conditions. The warranty for the following equipment is the direct responsibility of their manufacturers:

- Engine and transmission
- Trim tabs
- Bow propeller
- Cushions
- Canopies and covers
- Compass
- Instrument cluster
- Navigation equipment
- Adjustable seat legs

The warranty books and contact information for the suppliers of this equipment are attached separately.

13. Servicing and winter storage

Familiarise yourself with the maintenance procedures described in the separate owner's manual for the engine. Do these yourself carefully or let an authorised service shop do them. Other items that require regular servicing include the following:

- Steering system and controls
- Trim tabs
- Bilge pump
- Fire extinguisher

Service these in accordance with the separate instructions or manuals.

14. Repairs

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

Small dents in the surface layer (gelcoat) of the hull or deck can be repaired by yourself. However, a neat and flawless result requires skill and large amount of work:

- Protect with tape the surrounding of the area to be repaired.
- Bevel the edges of the dent and degrease with acetone.
- Mix 1.5-2% hardener with the gelcoat.
- Apply the gelcoat to the area to be fixed so that the surface is slightly above the surrounding surface.
- Carefully apply a tape on the patch.
- After the gelcoat has hardened, remove the tape and sand the patch down to the surrounding surface if necessary.
- Polish the fixed area with cutting paste.

The colours used in the boat are indicated in Appendix 1. More precise instructions for repairs can be requested from the boat manufacturer or supplier of the gelcoat.

Larger damages should be repaired by the manufacturer or boatyards:

NOTE! Some retrofitting and modifications, if done incorrectly, may cause damage to the structure or endanger safety. Contact the manufacturer or authorised boatyards before installing new groundings and hatches, for example. Do not install any attachments that can puncture the air floats.

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

14.1. Measures before winter storage

Lift your Silver Seahawk CCX out of the water in good time before ice formation. Your boat is not designed for use or storage in ice.

Before lifting out of the water, it is normally recommended to carry out the following measures:

- Change the engine oil
- Wash the boat
- Empty the bilge water and any items from the boat. However, leave safety equipment, such as fire extinguishers, in the boat.

14.2. Washing and cleaning

Keep your boat clean and tidy. This will increase the comfort, safety and resale value of the boat.

Normally it is sufficient to wash and wax the deck and sides. Special boat cleaning agents are most suitable for the purpose. Do not use strong solvents; they can cause glossy reinforced plastic surfaces to fade. Mildly abrasive polishes can be used to remove chafes and embedded dirt from the deck. Waxes containing silicon are not recommended, as they decrease the adhesion of paint and resin, making repairs of possible damages more difficult.

After lifting the boat out of the water, wash the bottom immediately. It is easier to remove algae and slime before they dry out.

14.3. Winter storage and maintenance

Perform the necessary service procedures following the owner's manuals of the engine and other equipment. If your boat is stored outside or in humid spaces, empty textiles and other equipment that may mould or corrode in a humid environment. Ropes should be washed with fresh water and worn ones renewed.

Electrical instruments are best protected against corrosion and theft by removing them and storing them in dry indoor spaces for wintertime. Remove also the batteries, take them to a warm and dry place, and charge at least two times during the winter. Spray the connectors of the electrical system with a moisture repellent antioxidant.

Check the condition of the hull and remove the caps from air tanks to drain any condensed water.

Cover your boat so that no snow can accumulate inside. However, take care of adequate ventilation. Normally, snow does not build up on the tarpaulin if the angle of the ridge is up to 90°. Suitable dimensions for the tarpaulin are 8 × 6 m.

NOTE! The tarpaulin or its fastening lines should not come into direct contact with the surfaces of the boat, as they may cause abrasion on the gelcoat surface when moving and flapping.

14.4. Measures before launching

Repair any damage to the gelcoat surface according to Section 14 "Repairs".

In sea areas, antifouling paint should be used to prevent the hull from becoming covered with vegetation. Fouling of the bottom and especially the propeller increases fuel consumption significantly. However, if the boat is anchored at the inlet of a stream or in a land-locked lake, or if it is lifted out of the water at least once every two weeks, it is normally not necessary to use antifouling paint. Carefully follow the paint manufacturer's instructions when applying the paint. When sanding old antifouling paint, remember that the dust is toxic.

Antifouling paint is not necessary or recommended in fresh water (lake areas).

NOTE! Do not paint over the zinc anodes or the piston rods of hydraulic trim tabs. Do not apply paints containing copper on aluminium parts, and remember to follow the paint manufacturer's instructions.

To prevent galvanic corrosion, zinc anodes have been installed on your Silver Seahawk CCX. The anodes should be replaced at the latest when over half of the material has been eroded. The location of the anodes is shown in Figure 10.

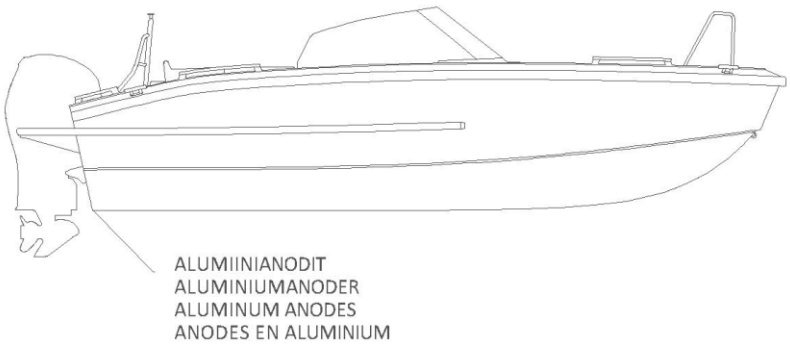


Figure 10. *Spots for anodes*

Perform the necessary service procedures required for the engine according to the separate owner's manual for the engine. Check the functioning of electrical equipment and remove any oxidation from fuse connectors, for example. Check that the plugs of air tanks are attached.

After launching the boat, open all seacocks and check that there is no leakage in hoses or connections. The location of through-hull fittings is shown in Section 7 “Prevention of water incursion and stability”. Remember to load all safety equipment onboard before setting off.

16. Appendices

APPENDICES:	
APPENDIX 1	TECHNICAL SPECIFICATION AND TANK CAPACITIES
DECLARATION OF CONFORMITY	***MODEL:***
OTHER APPENDICES:	**MANUFACTURER indicates** (X) if included
TANK DIAGRAM	X
ELECTRICAL DIAGRAM	X
WARRANTY TERMS	X
OWNER’S MANUAL FOR ENGINE	
MAINTENANCE INSTRUCTIONS FOR BILGE PUMP	X

APPENDIX 1

TECHNICAL SPECIFICATION AND TANK CAPACITIES

Your boat has a craft identification number (CIN) that is labelled on the hull aft on the right side / on outer surface of the transom beneath the side strip. You should write down the CIN in the table below.

When contacting the manufacturer or dealer, give the CIN and the type of boat. This will help ordering the correct spare parts. If you need gelcoat for repairs, specify the colour code when ordering.

Type designation:	*Silver Seahawk BRX*
Designer:	
CIN:	FI-SLVSH
Engine serial number:	0000000000000
Colour codes	
- hull:	000
- deck:	000
Hull material:	Aluminium

		QUANTITY/MEASUREMENT	UNIT
Main dimensions:	Length overall (Lmax)	6,98	m
(In accordance with ISO 8666)	Hull length (Lh)	6,63	m
	Maximum beam (Bmax)	2,45	m
	Hull beam (Bh)	2,10	m
	Draught at maximum load (*xxx* kg)		m
	Maximum height from water surface (light load)		m
	Weight without loading, liquids and equipment*, but including weight of largest recommended outboard(s)*	1628	kg
	Total weight with full load		kg
	Weight during performance test		kg
	Sail area		m2
Loading:	Maximum number of persons	8	persons
(In accordance with builder's plate, ISO 14946)	**Maximum load, which includes the following:**	845	kg
	- combined weight of persons		kg
	- basic equipment		kg
	- liquids in portable containers:		
	- water		kg
	- fuel		kg
		QUANTITY/MEASUREMENT	UNIT

	Consumable liquids in fixed containers:		
	- water		kg
	- fuel (gasoline/diesel)		kg
	- provisions and other stores		kg
	- life raft		kg
	- cargo		kg
	Total weight of liquids when all fixed tanks are full		kg
Tank capacities:	Fuel tank(s)	220	l
	Fresh water tank(s)		l
	Septic tank		l
	LPG cylinders		kg
Propulsion type (primary)	Engine/sail/oars, etc.		
Sail area and rig type			
Maximum recommended engine output:		184	kW (hp)
Standard propeller:			(” x ”)
Maximum speed:	(loading during performance test: *x* persons & full fuel tanks)		Knots
Electrical system:	Voltage	12	V (DC)
	Battery capacity		x × Ah
	Shore power connection		x V, x-phase. x-x Hz

Due to manufacturing technology, small differences in main dimensions and capacities may occur.

The fuel filling fitting is located on *port side deck of the boat* and the water filling fitting on *starboard side deck of the boat*.

The pump-out deck fitting for the septic tank is located on the *fore deck*. Please note that the full capacity of tanks may not always be usable according to trim or heel angle.

OWNER'S MANUAL

SILVER SEAHAWK CCX

TerhiTec Oy
Sorvitie 4
FI-63700 Ähtäri
Finland

FOREWORD

Dear Owner of a Finnish Silver boat! We thank you for choosing Seahawk CCX and wish you many pleasant experiences on the water.

This Owner's Manual is intended to help you use your boat in a safe and enjoyable way. It provides a detailed description of the boat and related equipment and accessories, as well as information about the proper operation and care of the boat. Please read this manual carefully and familiarize yourself with your boat before using it for the first time.

This Owner's Manual alone is not a sufficient source of information on seamanship or boating safety. If this is your first boat, or you have switched to a type of boat that you are not yet familiar with, for your own comfort and safety, make sure that you gain handling and operating experience before taking over the responsibility of captaining the boat. The seller of the boat, boating clubs and national boating or sailing associations will be happy to recommend local boating schools or competent instructors.

Make sure that the design category of your boat corresponds to the anticipated wind and wave conditions and that you and your crew can handle the boat in these conditions. The wind and wave conditions corresponding to design categories A, B, and C range from a storm to strong winds involving a risk of exceptional waves and gusts. Even if your boat is designed for these conditions, they can be dangerous and operated in safely only by a competent, fit, and trained crew operating a well-maintained boat.

This Owner's Manual is not a detailed maintenance or troubleshooting guide. In case of problems, contact the boat manufacturer or dealer. Always use qualified and trained personnel for maintenance, repairs, and modifications. Changes that may affect the safety features of the boat must be assessed, implemented, and documented by a qualified person. The boat manufacturer cannot be held responsible for changes that it has not authorized.

In some countries, a special boating license or authorization may be required to operate the boat. Additional regulations may also apply.

Always keep your boat in good condition and take into account wear and tear resulting from ageing and heavy use or misuse. Any boat – regardless of its strength – can be seriously damaged if not used properly. This is not compatible with safe boating. Always adjust the speed and direction of the boat to the wave conditions.

If your boat is equipped with a life raft, carefully read its operating instructions. The boat should be equipped with the appropriate safety equipment, such as life jackets and safety harnesses, according to the type of boat and weather conditions, for example. This equipment is mandatory in some countries. The crew should be familiar with the use of all safety equipment and emergency maneuvering, including man overboard recovery and towing. Boating schools and clubs regularly organize rescue exercises.

All persons onboard should use buoyancy aids, life jackets or boating vests on deck. Please note that in some countries, national boating regulations may require everyone aboard to wear a personal flotation device whenever onboard.

PLEASE KEEP THIS MANUAL IN A SAFE PLACE AND GIVE IT TO THE NEXT OWNER IF YOU SELL YOUR BOAT.

TABLE OF CONTENTS

BEFORE SETTING OFF:
Familiarise yourself with this Owner's Manual. *Always check the following before setting off:*

- **Weather conditions and forecast**
  Take into consideration the wind, waves, and visibility. Are the design category, size and equipment of your boat, as well as the skills of the skipper and crew, sufficient for the type of water you are going to? In strong winds and big waves, hatches must be closed to prevent splash water from entering the boat.

- **Load**
  Do not overload the boat and distribute loads appropriately. To avoid impairing the stability of the boat, do not place heavy objects in elevated positions.

- **Passengers**
  Make sure that everyone onboard has a life jacket. Assign the duties and tasks of each member of the crew before setting off.

- **Fuel**
  Check that there is enough fuel, including sufficient reserves in case of bad weather, for example.

- **Engine and equipment**
  Check the functioning and condition of the steering, electrical equipment and battery, and carry out the routine checks required by the owner's manual of the engine. Check the seaworthiness of the boat also in other regards, for example by making sure there are no fuel or water leaks and that all safety equipment is onboard. Check that the amount of bilge water is at a minimum. Additional instructions for the engine can be found in the separate owner's manual for the engine.

- **Ventilation**
  Let the engine compartment fan run for at least 4 minutes before starting the engine. Start the engine according to the instructions of the engine manufacturer. Take care of the ventilation of fuel compartments to reduce the risk of fire.

- **Fastening of items**
  Check that all items are fastened in such a way that they remain in place even in big waves and strong winds.

- **Nautical charts**
  If you are not navigating totally familiar waters, make sure you have nautical charts covering the entire area.

- **Departure and docking**
  Agree in advance who will release each mooring line, for example. Be careful not to let mooring lines or other ropes tangle with the propeller during manoeuvring. Check the functioning of the bow thruster.

1. General

This Owner’s Manual will help familiarise you with the properties and features of your new boat, as well as its care and maintenance. This Owner's Manual is not intended to serve as a complete maintenance guide or repair manual, but rather to help the user get to know the features of their new boat and to use their boat in an appropriate way.

It is the responsibility of the owner and skipper of the boat that the boat is used according to its intended use.

Separate manuals for installed equipment are attached to this Owner’s Manual and are referred to in many sections. Other manuals for devices that are installed afterwards can also be attached to this Owner’s Manual. In addition, there is space for your own notes at the end of this Owner’s Manual.

Before use

1.1.1. Registration

In Finland, according to the Water Traffic Act, any watercraft equipped with an engine or sails with a hull length of at least 5.5 metres and any watercraft equipped with an engine producing at least 15 kW, i.e. more than 20 horsepower, must be registered. You can get more detailed instructions on registration from the Finnish Transport and Communications Agency Traficom. The operator of a registered boat must be at least 15 years old.

1.1.2. Insurance

Boat insurance can cover damage that occurs on the water or during transport and docking. Check your insurance liability for raising the boat. Insurance also has an indirect effect on safety on the water: in the event of a serious accident, you can focus above all on saving people. Insurance companies can provide more detailed information about different insurance options.

1.1.3. Training

No one is born an expert, and boating is no exception. There are plenty of books about boating, and navigation courses are offered by the Finnish Navigation Association (Suomen Navigaatioliitto, tel. +358 50 5508827, https://suomennavigaatioliitto.com/) and adult education centres.

Information about boating courses is available from the Finnish Sailing and Boating Association (SPV – Suomen Purjehdus ja Veneily ry, tel. +358 40 834 3407, https://spv.fi/). These courses provide a good foundation for your skills, but confidence in boat handling, navigation, mooring and anchoring is achieved only through extended practice. Information about local boating clubs and their activities is also available from SPV.

2. Definitions

The warnings and cautions used in this Owner's Manual are defined as following:

IMMEDIATE DANGER! Indicates a serious hazard that will result in death or serious injury if proper precautions are not taken.

DANGER! Indicates a potential hazard that could result in death or serious injury if proper precautions are not taken.

WARNING! Indicates a potential hazard that could result in injury if proper precautions are not taken.

NOTE! Indicates important information related to the risk of damage to the boat, its parts or other property, but not to personal danger.

The units used in this manual are in accordance with the International System of Units (SI). In some cases, other units have been added in brackets. An exception to this is wind speed, for which the Beaufort scale is used as in the EU directive on recreational craft and personal watercraft.

3. Basic boat information

The technical specifications for your boat model is presented in Appendix 1 at the back of this Owner's Manual.

The basic information of **Silver Seahawk CCX** – boat are as follows:

Manufacturer/dealer:
TerhiTec Oy, Sorvitie 4, 63700 ÄHTÄRI, Finland

Type: **Silver Seahawk CCX**

Design category: **C**
Design category refers to the following:

Category A: The boat is designed for use in conditions where the wind strength may reach up to Beaufort force 10 (approximately 25 m/s) with corresponding wave heights. Such conditions may be encountered on extended voyages, for example when crossing oceans or in coastal waters when unsheltered from the wind and waves for several hundred nautical miles. Depending on the atmospheric conditions, gusts may reach approximately 32 m/s.

Category B: The boat is designed for use in conditions where the wind strength may reach up to Beaufort force 8 (approximately 21 m/s) with corresponding waves (significant wave heights up to 4 m, see NOTE below). Such conditions may be encountered on sufficiently long open sea voyages or in coastal waters unsheltered from the wind and waves for several tens of nautical miles. The described conditions can also be encountered on lakes that are large enough to generate such wave heights. Depending on the atmospheric conditions, gusts may reach approximately 27 m/s.

Category C*:* The boat is designed for use in conditions with a maximum steady wind strength of Beaufort force 6 (approximately 14 m/s) with corresponding waves (significant wave height up to 2 m, see **NOTE** below). Such conditions may be encountered on open lakes, in river estuaries and in coastal waters in moderate weather conditions. Depending on the atmospheric conditions, gusts may reach approximately 18 m/s.

Category D*:* The boat is designed for use in conditions where the wind strength is no more than Beaufort force 4 (approximately 8 m/s) with corresponding waves (significant wave height does not exceed 0.3 m, occasional maximum wave height of 0.5 m). Such conditions may be encountered in sheltered inland waters and coastal waters in good weather. Depending on the atmospheric conditions, gusts may reach approximately 12 m/s.

NOTE! The significant wave height is the average height of the highest third of all wave heights measured in the waters, which roughly corresponds to the wave height estimated by an experienced observer. Some individual waves may be approximately double this height.

Maximum recommended load: 845 kg, in manufacturer´s sign 680 kg
See also Section 5: “Loading”.

Main dimensions and capacities:
The boat’s precise technical specifications, such as length, beam, draught, unloaded weight, total weight and tank capacities, are presented in the technical specifications in Appendix 1.

Builder’s plate:
The builder's plate (Figure 1), which is mounted in the boat next to the steering console, contains some of the information specified above. Detailed information that supplements the information provided on the plate is given in the relevant sections of this manual.

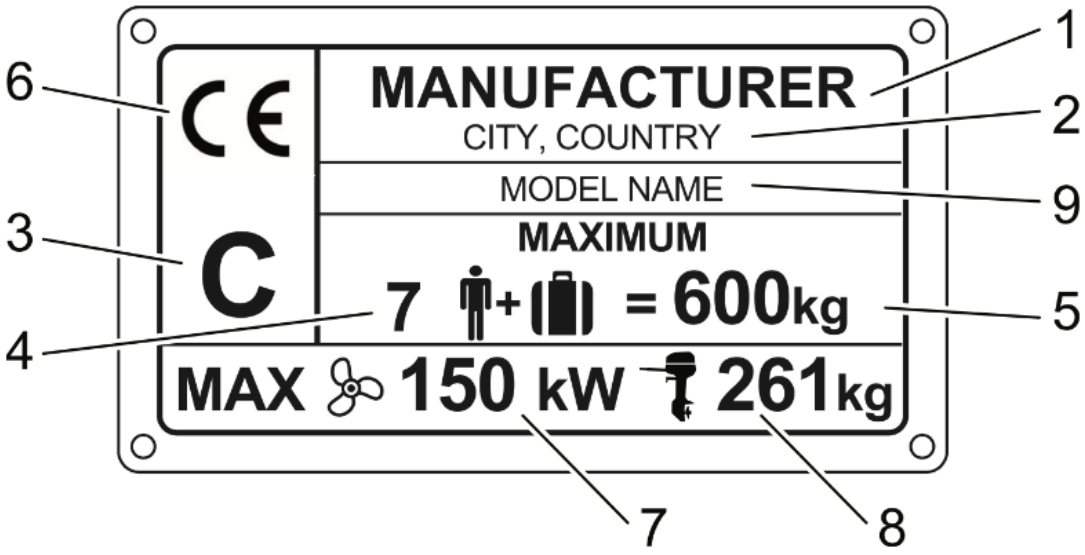


Figure 1. Information presented on the builder’s plate: 1. Name of manufacturer, 2. Contact information for the manufacturer/dealer, and possibly also its Business ID, 3. Design category, 4. Maximum number of persons, 5. Maximum recommended load (kg), 6. CE marking, 7. Maximum output of outboard(s) [kW], 8. Maximum weight of outboard(s) [kg], 9. Model name

4. Maximum number of persons

The maximum permissible number of persons on board is 8. The seats designated for them are shown in Figure 2.

WARNING! **Do not exceed the maximum permissible number of persons.**

Regardless of the number of persons on board, the total weight of persons and equipment must never exceed the maximum permissible load (see Section 5: “Loading”). Always use the seats or seating spaces provided.

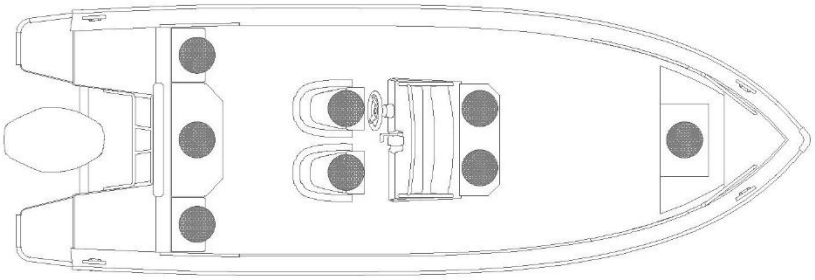


Figure 2. *Seats for the maximum permissible number of persons*

5. Loading

The maximum permissible load of your Silver Seahawk CCX as **indicated on the builder’s plate** is 680 kg. This includes the following weights:

a) The total weight of persons onboard amounting to 600 kg (the default mass of an adult is 75 kg and of a child 37.5 kg)
b) The total weight of personal items, other equipment, supplies and other stores, cargo (such as recreational equipment), a life raft and liquids carried in portable containers (such as water and fuel) amounting to 80 kg

NOTE! The weight of the liquids in fixed container are not included on the builder´s plate

The maximum permissible load of your Silver Seahawk CCX including the weight of equipment 845 kg.

The maximum permissible load includes only the weight components listed above. The weight of the unloaded boat and gross weight are presented in Appendix 1.

WARNING! **When loading the boat, never exceed the maximum permissible load.**

Always load the boat carefully and distribute loads so that the boat's design trim angle is not compromised (maintaining an even keel). Avoid placing heavy weights high up.

NOTE! Ignoring the restrictions may result in the boat capsizing!

6. Engine and propeller

The maximum permissible engine output of your Silver Seahawk CCX is 184 kW. The maximum permissible engine weight is 313 kg.

Follow the instructions of the engine manufacturer when choosing the propeller for your boat. The dimensions of the standard propeller on the original engine are (Honda A19HR).

Before setting off, always check that there is enough fuel and perform the daily inspection and maintenance recommended in the separate owner’s manual for the engine. Periodic servicing and maintenance should always be carried out in accordance with the owner’s manual for the engine. If necessary, also service the boat's exhaust system.

The boat can be equipped with a bow thruster, the operating switches / joystick for which are located next to the remote control device. Familiarise yourself with their use according to the manufacturer's separate appendix/owner’s manual. Only use the bow thruster for short periods at a time.

A remote control device that is equipped with an immobiliser must be used with the engine when the gear is engaged.

When starting the engine manually, follow the instructions in the separate owner’s manual for the engine.

7. Prevention of water incursion and stability

7.1. General

The prevention of water incursion and stability of the boat are based on the load situations presented in Appendix 1.

7.2. Openings in hull and deck

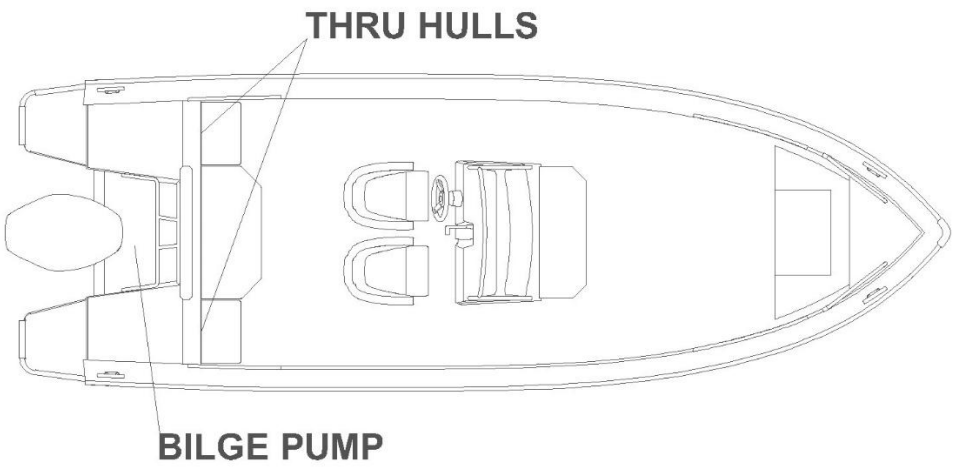
The location of drainage valves and through-hull fittings is presented in Figure 3. It is recommended that drainage valves be kept shut (except to drain rainwater from cockpits) whenever the boat is not in use.

There are two through-hull fittings for draining rainwater from the cockpit. The drainage valves for these should be kept shut during maximum loading to prevent water incursion. In other loading conditions, keep these drainage valves open.

NOTE! The tightness of the maintenance hatch of the engine well must be checked regularly. A leaking engine well service hatch can expose the boat to the risk of sinking.

NOTE! All the hatches and doors must be kept closed while underway.

The location of drainage valves and through-hull fittings is presented below in Figure 3.
Figure 3. *Location of drainage valves, through-hull fittings and bilge pumps*



7.3. Bilge pumps and drainage

Your Silver Seahawk CCX is equipped with bilge pump. Their location is indicated in Figure 3. The nominal capacity of the electric bilge pump is 40 l/min. Maintenance instructions for the bilge pumps are included in a separate appendix.

The electric bilge pump is activated from the switch panel, as described in Section 9: “Electrical system”. The lever for the manual bilge pump is situated in the cockpit’s locker and attached to the boat with a line.

Check at regular intervals that there is no debris in the suction heads of the bilge pumps.

The owner is responsible for ensuring that at least one device for emptying the boat is kept onboard, and it must be secured to the boat. Note that the bilge pump system is not designed to cope with a leak caused by running aground or other hull damage.

WARNING! The bilge pump system is not designed to cope with a leak caused by running aground or other hull damage.

NOTE! Check at regular intervals that all bilge pumps function properly. Clear any debris from the suction heads

7.4. Stability and buoyancy

Your Silver Seahawk CCX has been designed for good stability by locating heavy weights low and by keeping the cockpit and other recesses on deck relatively small. However, remember that large breaking waves are always a serious danger to stability.

Note also that the stability of your boat is reduced by adding weight up high. Any change in the distribution of weight onboard (such as adding a fishing tower, radar, in-mast furling system, changing the engine, etc.) may significantly affect the stability, trim and performance of your boat. Contact the boat manufacturer if you are planning such changes.

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

Take into account that stability may be reduced when towing or lifting heavy weights using a davit or boom.

7.5. Running aground

If you run aground, check immediately to see if the damage has caused a leak. Check especially the area around the keel, the through-hull fittings, the transom, the area around the rudder and the propeller.

If you notice a significant leak, call for help. Try to plug the leak if possible. If there is no leak in the structure, proceed carefully to the nearest port and inspect or request an inspection of the structural damage of the boat.

Contact your insurance company and repair the damage as soon as possible.

8. Prevention of fire and explosions

8.1. General

Follow general precautions when handling flammable substances and open flames.

8.2. Engines

Before refuelling, switch off the engine and extinguish any cigarettes. Do not operate any switches or devices that may produce sparks.

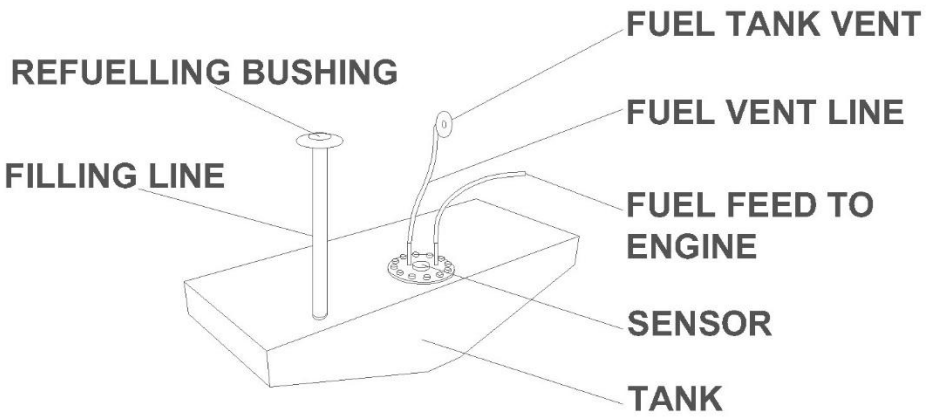
The fuel inlet () is located on the starboard side deck of the boat.

When refuelling at a service station, do not use a plastic funnel because it will prevent the discharge of static voltage between the filler pistol and fuel inlet bushing. After refuelling (check tank capacity in Appendix 1), make sure that no fuel has leaked into the bilge or engine compartment. Wipe off any fuel splashes immediately.

Do not stow any spare tanks in unventilated spaces or unsecured. Equipment that contains fuel may only be stowed in compartments that are intended for that purpose.

Recommendations for storing spare fuel:
Store spare fuel in containers made of corrosion-resistant material and keep the amount of fuel as low as possible. Spare fuel must be stored outside living quarters in a place where the temperature must not exceed 60 C degrees.

8.3. LPG systems



The boat is equipped with a fixed fuel tank. The fuel tank vent is placed in the middle of the swim platform, on the front side of the engine well. The fuel tank cap says FUEL, which means gasoline 98E or 95E. A fuel filter is installed in the fuel line, which also acts as a water separator. The filter must be changed at least once a year. When a new filter or a filter that was out of place has been installed, the fuel line must be pumped full with a ball pump before starting the engine.

Fuel hoses should be inspected regularly, and efforts should be made to prevent their damage. Hoses must be replaced with new ones if cracks or other damage is detected. If you replace the fuel hoses, make sure they are marked with ISO 7840

We recommend always using 98 E fuel, because of the better shelf life, lower alcohol content (accumulation in the tank, dissolution of dirt) and density of energy.

8.4. Fire protection

When using your Silver Seahawk CCX, it must be equipped with portable fire extinguishers (2 KG 13A 70B PD2G) as illustrated in Figure 3.

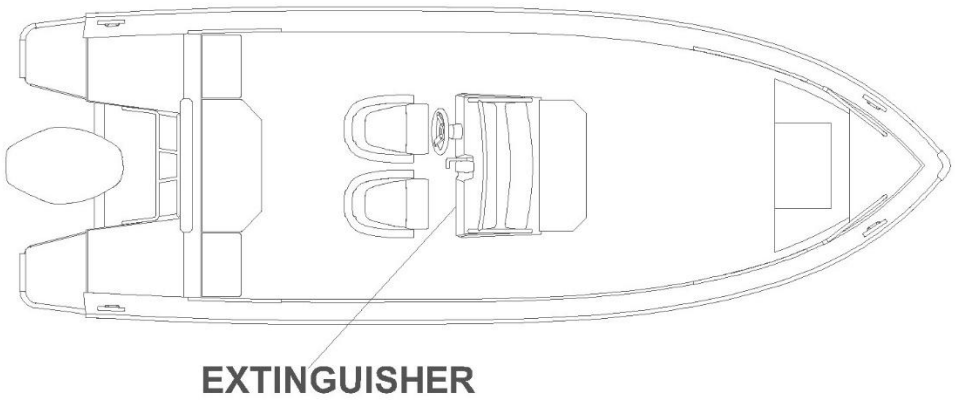


Figure 3. *Location of fire extinguisher*

Portable fire extinguishers must be serviced annually. Fire extinguishers that are more than ten years old are not accepted without new pressure testing of the container. In the event that the fire extinguisher is replaced, for example due to expiry, discharging or other condition, the capacity of the new one must be at least equivalent to the old.

9. Electrical system

The electrical diagram of the boat is attached separately. The location and function of the battery disconnect switch is as follows:

- On the right side of the stern seat (vertical wall)
- Position "OFF": Both batteries disconnected from all circuits
- Position "1": Battery 1 in use, generator charges both batteries

Additional on 2-battery switch system:

- Position ”2”: Battery 2 in use, generator charges battery 2
- Position ”1+2”: Both batteries in use, generator charges both batteries

The instruments and switches for electrical devices in the inside cab are arranged according to Figure 6

Circuit fuses are located next to the corresponding switches, and the fuse sizes are also shown in Figure 6. Your Silver Seahawk CCX has resettable fuses, which can be reset in the event of an overload by pressing the toggle switch that popped down back up.

Do not alter the rated current amperage of the fuses or install any electrical components exceeding the rated current amperage of the circuit.

Figure 6. *Location of switchboard and fuses*

When leaving the boat for a longer period of time, turn off the main switch. Also switch off the power if you perform any electrical installations.

When connecting or disconnecting a battery, do not touch both terminals or a terminal and the hull of the boat simultaneously with metal objects.

Charge the batteries only with the installed charger or with one with similar capacity. Charging with overcurrent causes risk of explosion. Make sure that there are no obstructions to ventilating the battery box.

NOTE! Never disconnect the batteries while the engine is running.

NOTE! Do not use a metal boat hull as a conductor.

Do not modify the boat's electrical system or related drawings; changes and maintenance should be performed by a competent marine electrical technician.

10. Operation

Familiarise yourself with the features of your boat at first at low speed. Practice port manoeuvres where there is suitable space. Learn how to use the bow thruster in different wind conditions.

10.1. Operating at high speeds

The maximum engine power rating for this boat is 184 kW **Do not operate the boat if the actual engine power exceeds the power indicated on the builder's plate.**

The basic trim angle adjustments are as follows:

- To plane the boat, the trim should be adjusted all the way down (negative setting: “bow down”).
- When the boat is planing in low waves, the trim should be raised until the boat starts to porpoise or the propeller loses grip. When this happens, lower the bow slightly until the ride is stable. The log (speed indicator) can be used to optimise the trim angle.
- When the boat is riding into waves, the bow should be lowered until the ride becomes smooth. When driving with a tailwind, the bow should be raised slightly to avoid diving into the waves.
- Refer to the separate owner’s manual for the engine for further instructions.

The outboard motor is normally intended to be mounted on the transom at the lowest height level.

WARNING! Be very careful when adjusting the trim angle at high speed: it may radically affect the boat's behaviour. Do not operate the boat with the bow too low because this could cause the boat to handle erratically.

Do not operate the boat at a high speed with a fully negative trim angle (bow down) as this may cause the boat to roll from side to side and make steering unstable.

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

- Set to “bow down” position at semiplaning speeds .
- When the boat is planing in low waves, raise the bow slowly and monitor the log to see how long the speed is increasing.
- When the boat is riding into waves, the bow should be lowered until the ride becomes smooth. When driving with a tailwind, the bow should be raised slightly to avoid diving into the waves.
- In sidewinds, adjust the trim tabs until the boat is exactly upright.

WARNING! Be very careful when adjusting the trim angle at high speed: it may radically affect the boat's behaviour. Do not operate the boat with the bow too low because this could cause the boat to handle erratically.

WARNING! Manoeuvrability above XX knots is limited. Sudden turns may cause loss of control. Reduce speed before making sharp turns in either direction.

WARNING! Waves reduce the boat's manoeuvrability and can cause the boat to swing from side to side. Reduce speed as wave height increases.

Learn the seafaring rules and the COLREG provisions (International Regulations for Preventing Collisions at Sea). Navigate with care and make sure your charts are up to date.

Always adapt your speed to the prevailing conditions and the environment. Take into account the following:

- Wave height (also ask your passengers' opinion about what speed is comfortable)
- Your own wake (largest when lifting the boat to planing, smallest at displacement speed, i.e. below 6 knots). Observe and obey the speed limit and no wake zones. Reduce speed and wake as a courtesy and as a safety consideration to yourself and others.
- Visibility (islands, fog, rain, sun in the eyes)
- Familiarity of your route (time needed for navigation)
- Narrow routes (other boaters, noise and wake on shore)
- Space needed to stop or avoid obstacles

10.2. Starting the engine

Before starting the engine, make sure that the gear is in neutral, as indicated by the warning sign attached in front of the steering position (Figure 7). Sudden starts may endanger persons on board.

A remote control device must be used with the engine installed in the boat, which prevents the engine from being started when the gear is engaged.

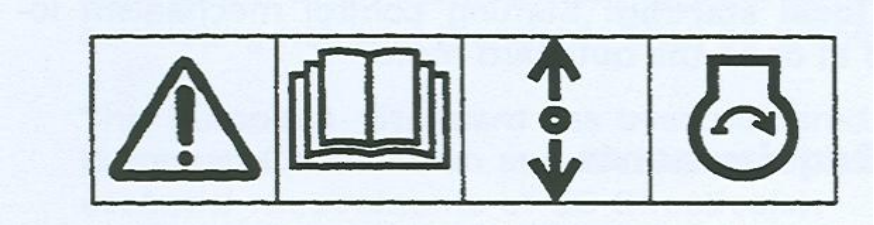


Figure 7. *Warning sign for starting the engine only in neutral*

Attach the emergency cut-off cord to yourself as soon as you have released the mooring lines. Please refer to the separate owner's manual for the engine for details. If you are operating the boat alone, it is very important that the engine stops if you fall overboard or fall down in the boat. Remember, however, to release the emergency cord before landing manoeuvres.

DANGER! The rotating propeller may be fatal for someone who has fallen overboard or is swimming close to the boat. Use the emergency switch to stop the engine when a swimmer or water-skier is about to re-enter the boat from the water.

10.3. Visibility from the steering position

It is easy to operate a boat in fair weather when the sea is calm, but always remember to keep a lookout in accordance with the International Regulations for Preventing Collisions at Sea (COLREG). Always make sure that visibility from the steering position is as good as possible and that you can navigate even when visibility is temporarily limited. This is especially important at high speeds.

- Position passengers, loads, equipment, curtains, etc. in such a way that they do not obstruct visibility.
- Do not operate at the planing threshold speed for extended periods as the raised bow impairs forward visibility.
- Set the engine's trim function (power trim) and any trim tabs you may have installed to adjust the bow so that visibility is not impaired.
- In poor visibility (rain, darkness, fog, waves or splashes) keep a lookout over the windshield.
- Use the windshield wipers when necessary.
- Also remember to look behind the boat, particularly in shipping lanes.

Use the navigation lights during darkness or when visibility is limited for any other reason (such as in fog).

11. Proper use – other recommendations and guidelines

11.1. Man-overboard prevention and recovery

If a person has fallen in the water in calm weather, the easiest way to reboard is by using the swimming ladders located at the transom/swimming platform. The ladders can be pulled down also from the water. In rough weather it is normally best to lift a fallen person from the lee side of the boat by rigging the boom in place and using a tackle attached to it.

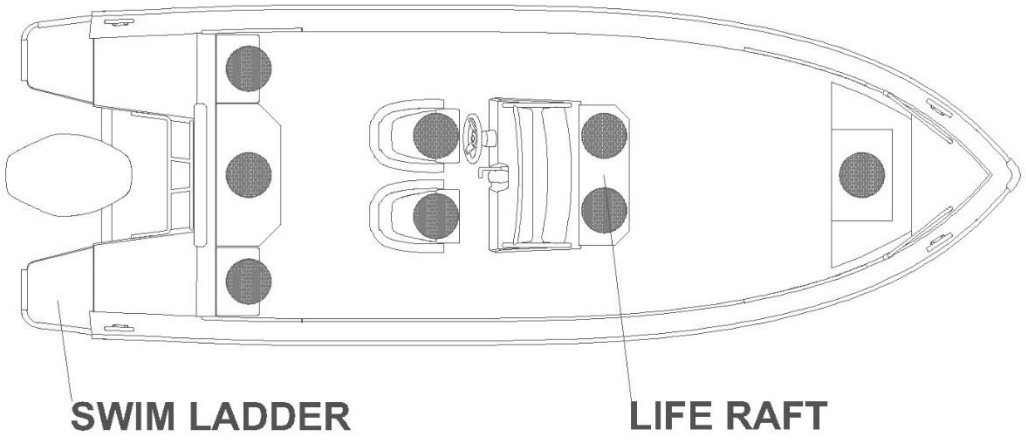


Figure 8. *Location of swimming ladders and place for life raft*

11.2. Life raft stowage

There is a place for a life raft under the aft bench of the cockpit as shown in Figure 8.
Maxim weight of life raft is 28kg.

11.3. Danger from moving parts

The moving parts of engine are protected with various guards (see separate owner's manual for the engine), and a wire-net is attached on the propeller shaft to prevent unintended contact. If you remove these guards, for example in conjunction with maintenance, always attach them carefully back in place before setting off.

11.4. Securing loose equipment

Secure all heavy equipment, such as anchors, before setting off.

11.5. Respect for the environment

Finland's archipelago and lakes are unique, and preserving their nature is a matter of honour for all boaters. Therefore, you should avoid:

- Fuel or oil spills, or discharging toilet waste into the water
- Emptying rubbish and waste into the water or leaving them on the shore
- Discharging detergents or solvents to water
- Excessive noise on the water and in harbours
- Wake formation, especially in narrow channels and shallow waters

In the Baltic Sea, it is not allowed to discharge toilet waste close to the shore. Use pump-out stations for emptying the septic tank.
Make sure you comply also with other local environmental laws and guidelines. Familiarise yourself with the International Convention for the Prevention of Pollution from Ships (MARPOL) and respect it to the greatest possible extent. Ensure the condition of the exhaust system and do not make any changes to it that could increase noise levels in the environment.

11.6. Anchoring, mooring and towing

Always moor your boat carefully, even in sheltered places, because conditions can change rapidly. Mooring lines should be equipped with absorbers to dampen any jolts. To prevent abrasion, use fenders that are large enough. The strong points for mooring are shown in Figure 9.

The breaking strength of lines for mooring, towing and anchoring must not exceed 80% of the breaking strength of the respective strong point. The breaking strengths of strong points are shown in Figure 9.

It is the owner's/operators responsibility to ensure that mooring lines, towing lines, anchor chains, anchor lines and anchors are adequate for the boat's intended use, i.e. the lines or chains do not exceed 80% of the breaking strength of the respective strong point. The owner should also consider the measures necessary for securing the boat's towing line.

In normal conditions, the following diameters of lines and anchor weights are recommended for your boat:

		ø diameter (mm.)	**lenght (m.)**	**weight (kg)**
Mooring lines:		12	6-10	---
Anchor line:		12	30	---
Main anchor:		---	---	5,5
Light anchor:	(Bruce, Danforth, CQR jne.	---	---	
		ø diameter (mm.)	**lenght (m.)**	**weight (kg)**
Stock or drag:		---	---	
Anchor line:				---

When you land at a natural harbour, ensure sufficient water depth using a plumb line, for example. DROP THE ANCHOR AT A SUFFICIENT DISTANCE FROM THE SHORE. Reasonable grip is attained if the anchor line length is 4-5 times the water depth.

WARNING! Do not try to stop the boat by hand and do not put your hand or foot between your boat and the dock, shore or other boat. Practice landing in good conditions, and use engine power in a controlled but determined way.

NOTE! When securing your boat, take into consideration the possibility of changes in wind direction and water levels, bow wakes, etc. You can get more information from your insurance company, for example.

NOTE! Strength of fastening- and towing spots is 20kN (n. 2000 kp)

When towing another boat, use a floating line that is strong enough for the task. Begin towing slowly, avoid jerks, and do not overload the engine. If you are towing a small dinghy, adjust the towing line so that the dinghy rides ”downhill” on the wave. In narrow channels and large waves, pull the dinghy near the transom to decrease yawing. Secure carefully all equipment in the dinghy if capsizing is possible. When crossing open waters, cover the dinghy to prevent the ingression of spray water.

If you are towing or if your boat has to be towed, attach the towing line to the strong points as shown in Figure 9. The stability of the boat decreases if the boom of the mast is used for towing or lifting heavy weights.

WARNING! When towing another boat or being towed, always operate at low speeds. If the boat has a displacement hull, never exceed the hull speed while towing.

WARNING! When towing, the towline is under high tension. If it should break, the end that snaps off may lash back fast enough to cause serious injury or death. Always use a thick enough line and keep to one side of the towline.

NOTE! The towing rope must be removable when loaded

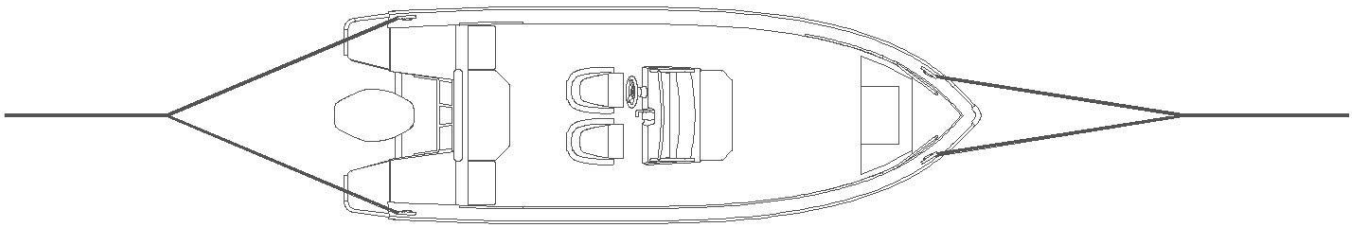


Figure 9.

If the boat's strong points are non-metallic, their limited service life should be taken into account. They must be replaced when they show signs of wear, visible cracks or permanent deformation. Please note that black materials are less susceptible to UV radiation than light ones.

11.7. Trailering

The calculated weight of your Silver Seahawk CCX when transported by trailer is 1496 kg. When loading your Silver Seahawk CCX onto the trailer, ensure that the trailer is suitable for your boat: that there is a sufficient number of supports to decrease point loads, that the capacity of the trailer is adequate for your boat, its engine and equipment, etc. You can find the maximum permissible total weight of the trailer from the registration book of your car.

Remove extra items and bilge water from the boat before loading it onto the trailer. Adjust the side supports of the trailer so that the keel supports carry the majority of the boat's weight. Fasten the boat firmly to the trailer before actual transport. Check the owner's manual of the engine for trailering instructions.

NOTE! The trailer must be slightly front-weighted. Ensure that the boat is fastened securely to the trailer and that the weight of the boat is divided equally between side supports. If the boat swings against a side support during transport, it may sustain hull damage.

12. Warranty

The boat and equipment installed on it by the manufacturer have a 5-year warranty in accordance with the attached warranty conditions. The warranty for the following equipment is the direct responsibility of their manufacturers:

- Engine and transmission
- Trim tabs
- Bow propeller
- Cushions
- Canopies and covers
- Compass
- Instrument cluster
- Navigation equipment
- Adjustable seat legs

The warranty books and contact information for the suppliers of this equipment are attached separately.

13. Servicing and winter storage

Familiarise yourself with the maintenance procedures described in the separate owner's manual for the engine. Do these yourself carefully or let an authorised service shop do them. Other items that require regular servicing include the following:

- Steering system and controls
- Trim tabs
- Bilge pump
- Fire extinguisher

Service these in accordance with the separate instructions or manuals.

14. Repairs

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

Small dents in the surface layer (gelcoat) of the hull or deck can be repaired by yourself. However, a neat and flawless result requires skill and large amount of work:

- Protect with tape the surrounding of the area to be repaired.
- Bevel the edges of the dent and degrease with acetone.
- Mix 1.5-2% hardener with the gelcoat.
- Apply the gelcoat to the area to be fixed so that the surface is slightly above the surrounding surface.
- Carefully apply a tape on the patch.
- After the gelcoat has hardened, remove the tape and sand the patch down to the surrounding surface if necessary.
- Polish the fixed area with cutting paste.

The colours used in the boat are indicated in Appendix 1. More precise instructions for repairs can be requested from the boat manufacturer or supplier of the gelcoat.

Larger damages should be repaired by the manufacturer or boatyards:

NOTE! Some retrofitting and modifications, if done incorrectly, may cause damage to the structure or endanger safety. Contact the manufacturer or authorised boatyards before installing new groundings and hatches, for example. Do not install any attachments that can puncture the air floats.

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

14.1. Measures before winter storage

Lift your Silver Seahawk CCX out of the water in good time before ice formation. Your boat is not designed for use or storage in ice.

Before lifting out of the water, it is normally recommended to carry out the following measures:

- Change the engine oil
- Wash the boat
- Empty the bilge water and any items from the boat. However, leave safety equipment, such as fire extinguishers, in the boat.

14.2. Washing and cleaning

Keep your boat clean and tidy. This will increase the comfort, safety and resale value of the boat.

Normally it is sufficient to wash and wax the deck and sides. Special boat cleaning agents are most suitable for the purpose. Do not use strong solvents; they can cause glossy reinforced plastic surfaces to fade. Mildly abrasive polishes can be used to remove chafes and embedded dirt from the deck. Waxes containing silicon are not recommended, as they decrease the adhesion of paint and resin, making repairs of possible damages more difficult.

After lifting the boat out of the water, wash the bottom immediately. It is easier to remove algae and slime before they dry out.

14.3. Winter storage and maintenance

Perform the necessary service procedures following the owner's manuals of the engine and other equipment. If your boat is stored outside or in humid spaces, empty textiles and other equipment that may mould or corrode in a humid environment. Ropes should be washed with fresh water and worn ones renewed.

Electrical instruments are best protected against corrosion and theft by removing them and storing them in dry indoor spaces for wintertime. Remove also the batteries, take them to a warm and dry place, and charge at least two times during the winter. Spray the connectors of the electrical system with a moisture repellent antioxidant.

Check the condition of the hull and remove the caps from air tanks to drain any condensed water.

Cover your boat so that no snow can accumulate inside. However, take care of adequate ventilation. Normally, snow does not build up on the tarpaulin if the angle of the ridge is up to 90°. Suitable dimensions for the tarpaulin are 8 × 6 m.

NOTE! The tarpaulin or its fastening lines should not come into direct contact with the surfaces of the boat, as they may cause abrasion on the gelcoat surface when moving and flapping.

14.4. Measures before launching

Repair any damage to the gelcoat surface according to Section 14 "Repairs".

In sea areas, antifouling paint should be used to prevent the hull from becoming covered with vegetation. Fouling of the bottom and especially the propeller increases fuel consumption significantly. However, if the boat is anchored at the inlet of a stream or in a land-locked lake, or if it is lifted out of the water at least once every two weeks, it is normally not necessary to use antifouling paint. Carefully follow the paint manufacturer's instructions when applying the paint. When sanding old antifouling paint, remember that the dust is toxic.

Antifouling paint is not necessary or recommended in fresh water (lake areas).

NOTE! Do not paint over the zinc anodes or the piston rods of hydraulic trim tabs. Do not apply paints containing copper on aluminium parts, and remember to follow the paint manufacturer's instructions.

To prevent galvanic corrosion, zinc anodes have been installed on your Silver Seahawk CCX. The anodes should be replaced at the latest when over half of the material has been eroded. The location of the anodes is shown in Figure 10.

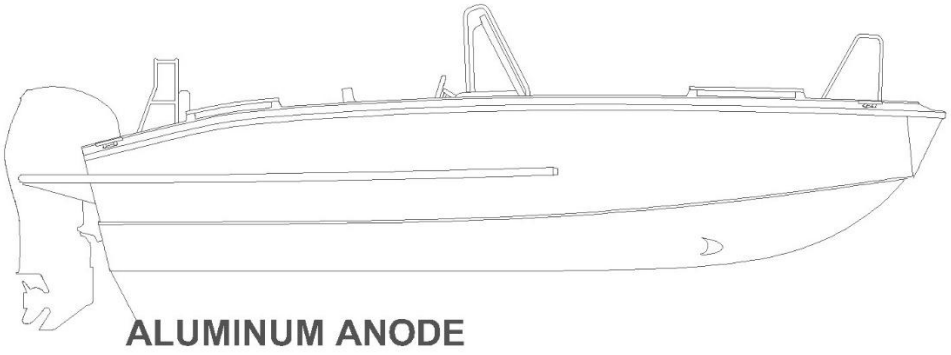


Figure 10. *Spots for anodes*

Perform the necessary service procedures required for the engine according to the separate owner's manual for the engine. Check the functioning of electrical equipment and remove any oxidation from fuse connectors, for example. Check that the plugs of air tanks are attached.

After launching the boat, open all seacocks and check that there is no leakage in hoses or connections. The location of through-hull fittings is shown in Section 7 "Prevention of water incursion and stability". Remember to load all safety equipment onboard before setting off.

16. Appendices

APPENDICES:	
APPENDIX 1	TECHNICAL SPECIFICATION AND TANK CAPACITIES
DECLARATION OF CONFORMITY	***MODEL:***
OTHER APPENDICES:	**MANUFACTURER indicates** (X) if included
TANK DIAGRAM	X
ELECTRICAL DIAGRAM	X
WARRANTY TERMS	X
OWNER'S MANUAL FOR ENGINE	
MAINTENANCE INSTRUCTIONS FOR BILGE PUMP	X

APPENDIX 1

TECHNICAL SPECIFICATION AND TANK CAPACITIES

Your boat has a craft identification number (CIN) that is labelled on the hull aft on the right side / on outer surface of the transom beneath the side strip. You should write down the CIN in the table below.

When contacting the manufacturer or dealer, give the CIN and the type of boat. This will help ordering the correct spare parts. If you need gelcoat for repairs, specify the colour code when ordering.

Type designation:	*Silver Seahawk CCX*
Designer:	
CIN:	FI-SLVSH
Engine serial number:	0000000000000
Colour codes	
- hull:	000
- deck:	000
Hull material:	Aluminium

		QUANTITY/MEASUREMENT	UNIT
Main dimensions:	Length overall (Lmax)	6,98	m
(In accordance with ISO 8666)	Hull length (Lh)	6,63	m
	Maximum beam (Bmax)	2,45	m
	Hull beam (Bh)	2,10	m
	Draught at maximum load (*xxx* kg)		m
	Maximum height from water surface (light load)		m
	Weight without loading, liquids and equipment*, but including weight of largest recommended outboard(s)*	1496	kg
	Total weight with full load		kg
	Weight during performance test		kg
	Sail area		m2
Loading:	Maximum number of persons	8	persons
(In accordance with builder's plate, ISO 14946)	**Maximum load, which includes the following:**	845	kg
	- combined weight of persons		kg
	- basic equipment		kg
	- liquids in portable containers:		
	- water		kg
	- fuel		kg
		QUANTITY/MEASUREMENT	UNIT

	Consumable liquids in fixed containers:		
	- water		kg
	- fuel (gasoline/diesel)		kg
	- provisions and other stores		kg
	- life raft		kg
	- cargo		kg
	Total weight of liquids when all fixed tanks are full		kg
Tank capacities:	Fuel tank(s)	220	l
	Fresh water tank(s)		l
	Septic tank		l
	LPG cylinders		kg
Propulsion type (primary)	Engine/sail/oars, etc.		
Sail area and rig type			
Maximum recommended engine output:		184	kW (hp)
Standard propeller:			(” x ”)
Maximum speed:	(loading during performance test: *x* persons & full fuel tanks)		Knots
Electrical system:	Voltage	12	V (DC)
	Battery capacity		x × Ah
	Shore power connection		x V, x-phase. x-x Hz

Due to manufacturing technology, small differences in main dimensions and capacities may occur.

The fuel filling fitting is located on *port side deck of the boat* and the water filling fitting on *starboard side deck of the boat*.

The pump-out deck fitting for the septic tank is located on the *fore deck*. Please note that the full capacity of tanks may not always be usable according to trim or heel angle.

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