Buster®

torqeedo

XSr

Owner's Manual

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1 Introduction

1.1 About this manual

The purpose of this owner's manual is to help you use your boat in a safe and enjoyable way.
The manual includes detailed information about the boat and its equipment and accessories, as well as instructions for use and correct maintenance of the boat. Read the manual carefully and familiarize yourself with your boat before using it.

This owner's manual alone is not a sufficient source of information on seamanship and boating safety, nor is this manual a detailed service and troubleshooting guide.

It is your responsibility to ensure that you have the basic boating skills and that the boat is used safely and maintained properly.

For more details about the owner's responsibilities, see *2 Safety on page 9*.

Conventions used in this manual:

- The units of measurement refer to the International System of Units (SI).
- In some cases, other units may have been added in brackets. If other units of measurement are used, they are always calculated from the original SI unit value.
- Wind speed is an exception to this rule: the Recreational Craft Directive uses the Beaufort scale to indicate wind speed. For consistency, this manual uses the same scale.

Retain this manual and provide it to the next owner in case you sell your boat.

Your authorized dealer:

Table 1.1 Record of ownership

1st owner	Year of purchase:	Domicile:
First and last name:		
2nd owner	Year of purchase:	Domicile:
First and last name:		
3rd owner	Year of purchase:	Domicile:
First and last name:		
4th owner	Year of purchase:	Domicile:
First and last name:		
5th owner	Year of purchase:	Domicile:
First and last name:		

1.2 Copyright and disclaimer

The material in this manual is for information purposes only.

The material in this manual has been translated from the original language.

Inha Works Ltd. reserves the right to make changes to its product range and to the models, colours, equipment, and technical solutions of its boats without prior notification. The boat's dimensions, weights, performance, and volumes may differ slightly for production-related technical reasons.

Standard equipment may vary by market. Make sure that the boat and the boat's equipment correspond to your order before accepting the delivery.

1.3 Warranty

A warranty is granted for the boat and the factory-installed equipment under the terms and conditions. Warranty documents are delivered with your boat. It is important that you read the warranty document and this manual before you use your boat the first time.

For optional equipment, the manufacturer of the equipment is directly responsible for the warranty. The boat is supplied with separate warranty documents for this equipment.

For all other warranty issues, contact your dealer.

1.4 Contact information

Manufacturer:

Inha Works Ltd.

Hahdenniementie 2

FI-21120 Raisio

Finland

For any enquiries, contact your local dealer.

1.5 Equipment manuals and connected Apps

To ensure optimal use of the equipment installed on your boat, familiarise yourself with the available third-party manuals and apps.

The following manuals are included in the boat delivery documentation and available online.

- Torqeedo drive battery and charger manual
- Torqeedo motor manual
- Yamaha 12 V battery charger manual

For enhanced user experience, download the Torqeedo app and connect it with a supported Torqeedo motor.

Google Play

App Store

Google Play

App Store

Via the app, you can display the following functions on your mobile device.

- Instrument panel
- Chart plotter
- Logbook
- Motor usage and power consumption data
- Diagnostic Trouble Codes

You can also use the app to update the motor firmware.

2 Safety

2.1 Owner's responsibilities

As the owner of the boat, you are responsible for safety at all times.

In order to guarantee a pleasant and safe boating experience with your new boat, make sure that you have the necessary training and experience and keep your boat in good condition.

Make sure your boat is equipped with all appropriate safety equipment in accordance with the boat type and weather conditions. In some countries, equipment such as life vests, paddle, ropes, anchor, fire extinguishers and safety harnesses may be compulsory. If your boat is equipped with a life raft, study the instructions carefully.

You are also responsible for the safety of your crew. Make sure that:

- The crew is familiar with the correct use and operation of all safety equipment in the event of an emergency, including rescuing a person who has fallen overboard.
- Everybody wears a buoyancy aid, life jacket, or a boating vest on the deck. In some countries national boating regulations require that everyone aboard wears a personal floatation device whenever on board.

Study carefully and internalize the details in this *Safety* section of the manual.

2.1.1 Registration and insurance

In some countries it is mandatory to register boats of your boat type. Furthermore, operating the boat may be subject to qualification and/or minimum age requirements. Before you begin using the boat, find out whether it needs to be registered or if it is subject to any other official requirements.

Depending on the policy, a boat insurance may cover damage that occurs during the use of the boat, in transportation or during dry-docking. If you intend to lift the boat, check that your insurance also covers this.

Insurance can increase safety by giving you a peace of mind: in the event of an accident, you can concentrate on saving lives rather than property. Detailed information on insurance policies is available from insurance providers.

2.1.2 Training and experience

Safe operation of a boat requires prior training and practice. If this is your first boat or if the boat type is not familiar to you, it is particulary important that you obtain sufficient experience in handling and using the boat before you assume the responsibility of a boat master:

- Always remember to adjust the speed and direction of the boat to correspond to the wind and sea conditions.
- Check that the expected wind and sea conditions match the design category of your boat.
- Ensure that you and your crew are able to navigate the boat in the conditions that may arise.

Your boat dealer, local boating clubs and national motor boat and sailing associations can provide you with more information about local training in boating and recommend qualified instructors.

Books and courses provide good preliminary skills, but mastery of boat handling, navigation, mooring and anchoring requires many years of practice.

In some countries, a permit or authorisation may be required to operate the craft and special regulations concerning boats or boating may apply.

2.1.3 Maintenance and care

Always keep your boat in a good condition. A careful use of the boat is part of responsible seamanship.

Be careful to observe any signs of wear caused by age or due to heavy use or abuse. Any boat, no matter how strong it is, may sustain severe damage if used inappropriately.

If you have any questions related to the maintenance of your boat, contact your local dealer. Only use the services of repair companies recommended by your local dealer.

Modifications that affect the safety features of the boat may only be performed with the builder’s written authorisation. The builder assumes no responsibility for unauthorised modifications.

2.1.4 Before setting off

Familiarize yourself with this owner's manual and always check at least the following items before leaving.

Weather conditions and forecast

- Take the wind, waves, and visibility into account. Close all the hull windows and hatches during use to prevent water incursion.
- Make sure that the design category, size and equipment of your boat, as well as the skills of the driver and crew are adequate for the area and expected weather conditions.

Loading and stability

- Do not overload the boat.
- Distribute loads appropriately. Do not place heavy items high up.
- Check that there is no water in the bilge.
- Consider that the stability of the boat is reduced if people stand up when on board.
- Check that all the drain holes are open.

Passengers

- Ensure that there is a personal floatation device or life jacket for all people on board.
- Agree crew tasks before setting off.

Batteries

- Ensure that all batteries onboard are charged.
- Keep in mind that wind, current and travel direction affect the drive battery power consumption, and may increase it unexpectedly. Add a fixed buffer to the required travel range.
- Ensure that battery cable connections are tight, and that all battery ventilation openings are unobstructed.

Motor and manoeuvering equipment

- Check the functioning and condition of steering, batteries and remote control.
- Carry out routine checks according to the motor manual.
- For additional instructions concerning the motor, see the motor manual.

Loose equipment

- Check that all equipment and heavy items are positioned so that they stay in place during travel at sea and high winds.
- Note that the seat cushions may fly overboard if they are not fixed properly with press studs.

Nautical charts

- If you are not navigating in familiar waters, ensure you have nautical charts that cover a large enough area.
- If your boat is equipped with a chartplotter, familiarize yourself with it before setting off. Ensure that the charts are of the latest edition.
- Always keep a paper chart on board, even if you have a chartplotter.

Leaving the berth

- Agree with the crew about responsibilities for tasks, for example, who will release each mooring line.
- Be careful not to let mooring lines or the anchoring line tangle in the propeller during manoeuvering.

Mandatory equipment

- Check that all safety equipment is on board and up to date.
- What is considered mandatory varies from country to country. Find out what is required for your boat.

2.2 Warning symbols

This manual includes symbols highlighting important information. Heed the warnings and cautions according to the following severity:

⚠ DANGER Imminent hazard which **will lead to death or serious injury** if not avoided.

⚠ WARNING Risk of hazard which **could lead to death or serious injury** if not avoided.

NOTICE Situation which **might lead to property damage or in an unwanted result** if not avoided.

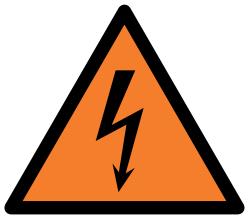
Call for attention.

2.3 Safety labels

The boat has safety labels in dedicated places. Make sure that you familiarize yourself with these labels and their meaning.

To replace a broken safety label, contact your local boat dealer and refer to this manual.

2.3.1 Safety label descriptions and locations

Location	Safety label	Description
1		Electric hazard
2		Always attach the emergency switch cord when driving the boat.

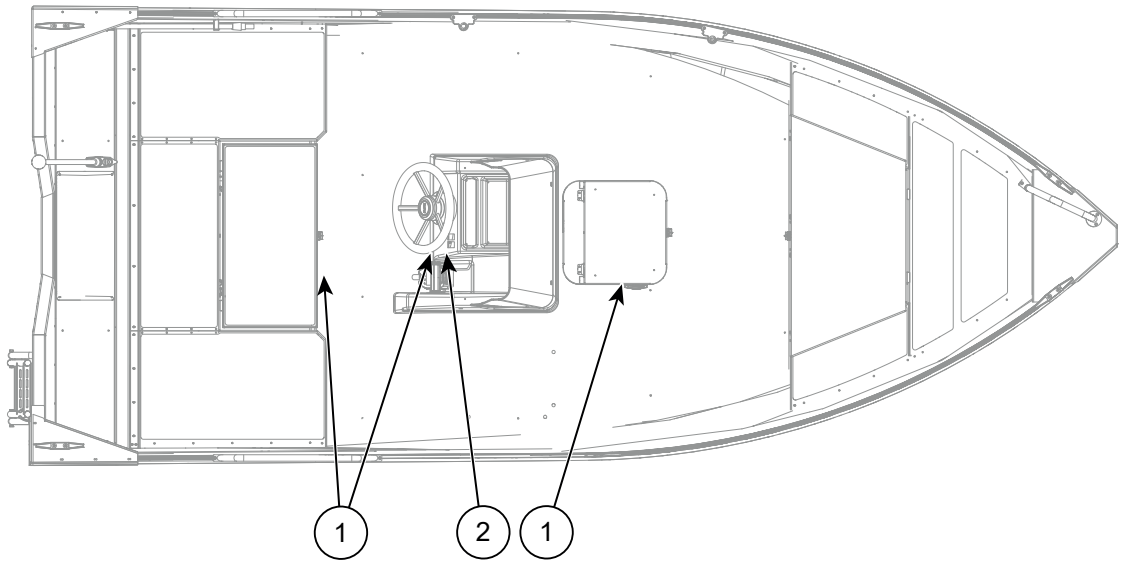


Figure 2.1 Buster XSr Torqeedo safety labels

2.4 Fire-fighting and fire protection

You are responsible for fire protection for the boat. Ensure that the following items are in order at all times when using the boat.

- All fire-fighting equipment is always easily accessible, whether the boat is empty or loaded.
- All crew members know the location and correct operation of the fire-fighting equipment.

⚠ WARNING Fire hazard systems

Improper use of the electrical system may cause fire or explosion and lead to death or serious injury.

Never block access to safety equipment such as the fire extinguisher or the main switch for the electrical system. Ensure that the storage space for the fire extinguisher is unlocked when you use the boat.

Never alter the boat's electrical system or allow an unqualified person to modify any of the boat's systems.

Torqeedo drive batteries are equipped with an intelligent battery protection system, which makes battery fires extremely rare. You can further reduce the risk of battery fire by ensuring correct operation, charging, storage, and maintenance of the batteries.

Boats with a maximum permitted engine or electric motor power less that 25 kW are not required to have a fire extinguisher installed on the boat. Carrying a fire extinguisher that is suitable for the boat's intended use is nevertheless recommended.

For more information on fire safety, see the drive battery system manufacturer's manual.

2.5 Person overboard prevention and recovery

To prevent falling overboard, do not stand or occupy any other area than the seats, when the boat is in motion. See *4.3 Seating areas on page 18* for the seats designated for passengers.

In the event of falling overboard, use the swim ladder located on the transom to reboard the boat safely. You can angle down the ladder from within the water.

3 Basic information

3.1 Builder's plate

The builder’s plate is mounted near the steering console.

Some of the information on the builder’s plate is found in the *3.3 Technical specifications on page 16*. Detailed information that supplements the information provided on the plate is given in the relevant sections of this manual.

In addition to the boat model, the builder's plate contains important information about:

- Design category defining the limitations of use.
- Maximum load and number of persons allowed on board.

3.2 Design categories

Design categories define the most severe weather conditions in which the boat has been designed to be operated.

Design category is an important safety classification that must be respected. Always ensure that:

- The expected wind and sea conditions match the design category of your boat.
- You and your crew are able to navigate the boat in the conditions that may arise
- The boat is well maintained.

For each category, the conditions are given in the form of maximum wind force and significant wave height.

"Significant wave height" refers to an average height based on the highest one-third of the wave profile, corresponding roughly to the wave height observed by an experienced mariner. Individual waves may be twice as high.

All Buster boats belong to design category C or D.

Your boat's design category is given in *3.3 Technical specifications on page 16* in this manual, and on the Builder's plate on the boat.

Design category C

The boat has been designed for voyages where the following conditions may be experienced:

- Wind force of up to and including 6 on the Beaufort scale (approximately 14 m/s).
- Significant wave height of no more than 2 m, with a temporary peak wave height of 4 m.

These refer to a range from storms to strong winds, with a risk of unexpected waves and gusts. These conditions may be experienced during voyages on large lakes, estuaries, and, in moderate weather conditions, on coastal waters.

Design category D

The boat has been designed for voyages where the following conditions may be experienced:

- Wind force of up to and including 4 on the Beaufort scale (approximately 8 m/s).
- Significant wave height of no more than 0.3 m, with a temporary peak wave height of 0.5 m.

These conditions may be experienced during voyages on sheltered lakes, rivers, and, in good weather, on coastal waters.

3.3 Technical specifications

Technical specifications are for reference only. Always refer to the Declaration of Conformity and your boat's builder's plate for accurate information.

3.3.1 Specification details

Table 3.1 Buster XSr Torqeedo technical specifications

Description	Value	Unit
Number of persons	4	persons
Design category	D	A-D
Max load on builder's plate (persons + basic equipment + life raft + stores and cargo)	407 (897)	kg (lb)
Weight without drive system	210 (463)	kg (lb)
Length overall	4.18 (13' 9")	m (ft, in)
Beam	1.76 (5' 9")	m (ft, in)
Estimated height from waterline, light load	1.1 (3' 7")	m (ft, in)
Estimated draught, loaded	0.26 (10")	m (ft, in)
Max engine/motor power	20 (15)	kW (hp)
Max engine/motor weight	105 (231.5)	kg (lb)
Drive battery capacity	10	kWh
Max speed reached in seaworthiness tests	16.3 (18.7)	knots (Mph)
Rated force of mooring points	11.9	kN
Pumping capacity of automatic bilge pump	33 (8.7)	l/min (gal/min)
Max calculated trailer transportation weight	347 (765)	kg (lb)

Constants used in weight calculations	Value	Unit
Weight of passengers adult/child	76/37.5 (165/83)	kg (lb)
Basic equipment	10 (22)	kg (lb)

3.3.2 Measurements for antifouling paint area

The measurements indicate the upper limit of the antifouling paint, not the true waterline of the boat.

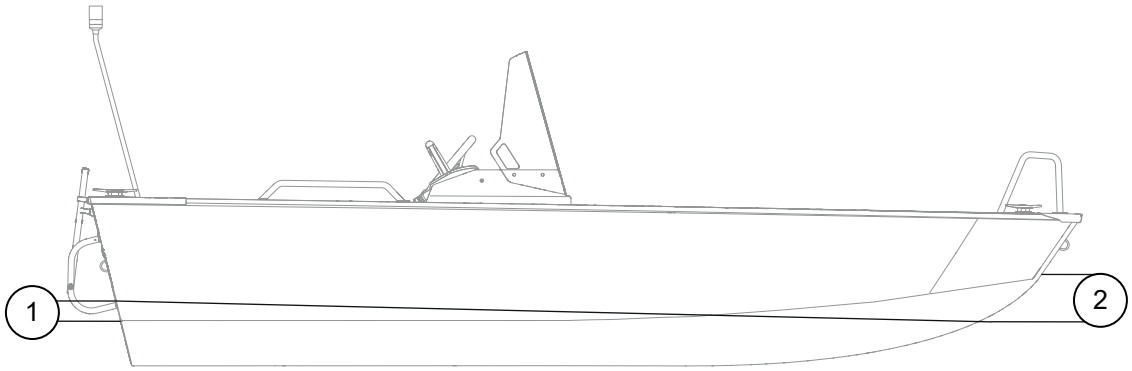


Figure 3.1 Buster XSr Torqeedo antifouling paint area

Position	Description	mm (in)
1	At stern: directly up from chine	70 mm (2,8")
2	At bow: down from chine along the bow	533 mm (21")

4 Structural characteristics

4.1 Stability and buoyancy

The stability of your boat is excellent due to the hull shape and balanced distribution of weight.

However, keep in mind that the stability of the boat can be reduced by the following:

- Large breaking waves.
- Towing or being towed.
- Any load placed above the floor level.
- Freely moving water in the bilge. Make sure the amount of water in the bilge is minimized. See *9 Bilge pumps and draining on page 37*.

⚠ WARNING When loading the boat, never exceed the maximum permitted load stated on the builder's plate.

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

⚠ WARNING Any change in the distribution of weight could significantly affect the boat's stability, design trim and performance.

Contact your boat dealer if you are planning such a change.

4.2 Openings in the hull and deck

There are drain holes for the rain water on the boat. Make sure that you:

- Close the drain holes if the boat begins to take on water during loading.
- Keep them open in all other circumstances.
- Check and clean the drain holes regularly to prevent blockage.
- Unscrew the rear plug when the boat is docked or on a trailer. Remember to reattach the rear plug before launching the boat.
- For more information about drainage equipment see *9 Bilge pumps and draining on page 37*.

4.3 Seating areas

Your boat has dedicated seats for each passenger. Always use the seats on the boat as shown in the picture.

⚠ WARNING Risk of capsizing and sinking.

Do not exceed the maximum permitted number of people.

Make sure the total weight of the people and equipment never exceeds the maximum permitted load, regardless of the number of people on the boat.

For details about the limits, see *3.3 Technical specifications on page 16* or the builder's plate on the boat.

4.3.1 Designated seats

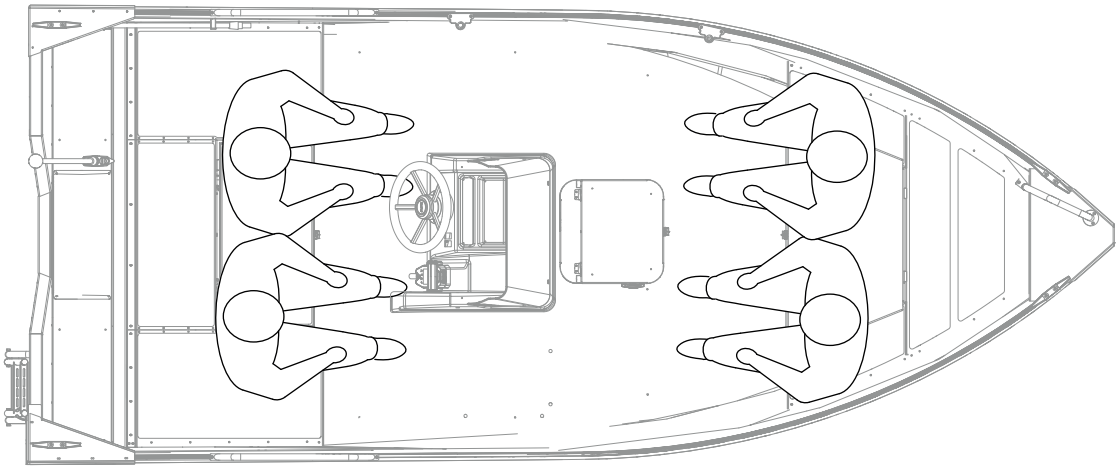


Figure 4.1 Buster XSr Torqeedo seats for a maximum of four (4) passengers

5 Operation

5.1 Helm station controls

The helm station contains all the necessary control devices for the boat's handling and operation. Familiarize yourself with the controls before using the boat.

Some of the equipment shown in this section is part of optional accessory packages and might not be part of your boat's configuration.

5.1.1 Control device locations

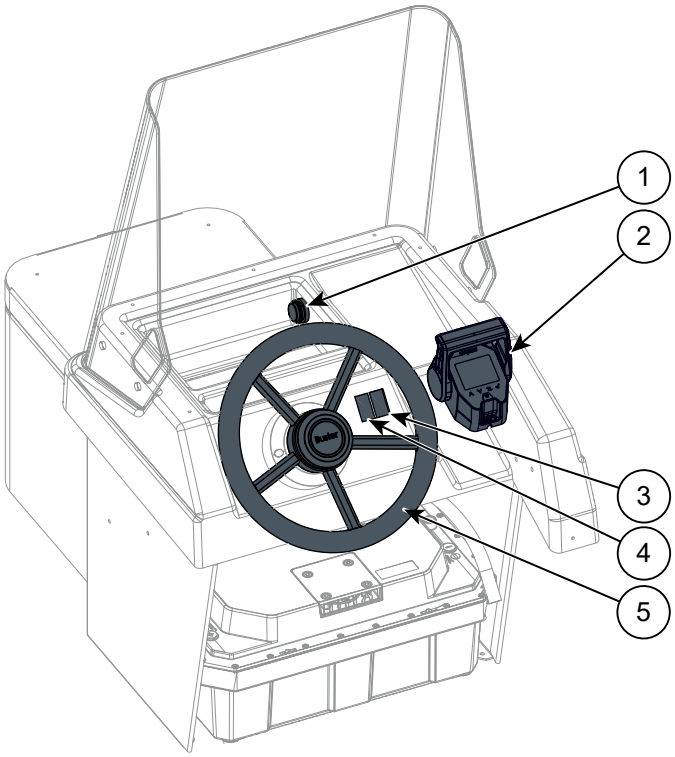


Figure 5.1 Buster XSr Torqeedo helm station controls

1	USB socket	4	Bilge pump switch
2	Remote control and emergency cut-off switch	5	Steering wheel
3	Motor tilt switch		

5.2 Driving

As the driver of the boat you are responsible for your own safety and the safety of everyone on board.

⚠ DANGER Rotating propeller

May cause death or severe injury for persons in the water.

Always stop the motor when a swimmer is approaching the boat or climbing aboard.

Learn the seafaring rules and the COLREG provisions (International Regulations for Preventing Collisions at Sea). Always adapt your speed to the prevailing conditions and pay attention to the following:

- Wave height.
- Comfort of your passengers.
- Your own wake. Observe wake wash prohibitions and reduce your speed to minimize the wake for safety and out of courtesy for others.
- Visibility.
- Familiarity of the route.
- Narrow and crowded waterways.
- The time required for necessary stops and the space for evasive manoeuvers.

5.2.1 Emergency cut-off switch

The motor is set up with an emergency cut-off switch that shuts down the motor if the driver falls overboard or sways out of position. It is crucial that the motor stops if you are driving alone and go overboard or fall down.

⚠ WARNING Loss of steering control

The release of the cut-off switch stops the motor and causes the boat to slow down rapidly and lose most of the steering control. This may cause people and objects to be thrown forward and result in death or severe injury.

Make sure that all passengers are properly seated while you are driving the boat.

Adjust the cut-off cord length so you can easily reach all control devices without the risk of accidentally releasing the switch.

- Attach the emergency cut-off cord to yourself as soon as you have released the mooring lines.
- Do not attach the cut-off cord to clothing that could tear loose.
- Do not route the cord in a way that could cause it to entangle and stop functioning.
- Detach the cut-off cord before leaving the boat to avoid stopping the motor unintentionally.

Test regularly that the emergency cut-off switch is functioning.

- To make sure that the clip will release, pull the cord in every possible direction.
- Make sure that the clip stays firmly in place but does not need excessive force to come off.

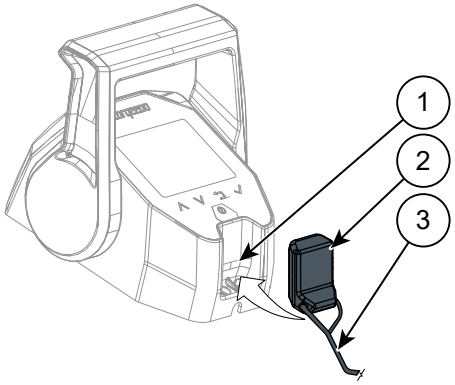


Figure 5.2 Emergency cut-off switch

1	Motor cut-off switch	3	Motor cut-off cord
2	Magnetic clip		

If you notice any issues in the switch operation, contact your local Yamaha dealer for check-up and maintenance.

Refer to the motor manual for more information on the emergency cut-off switch.

5.2.2 Approaching and leaving the dock

Practice boat maneouvering skills in places where it can be done safely, before entering a crowded marina. The propeller is designed to provide the best thrust in forward gear. This makes the steering response weaker when reversing.

⚠ WARNING High-speed operation

May cause severe injury or equipment damage.

Reduce speed when approaching stopping areas.

Learn to estimate the distance it takes to safely come to a stop from planing.

Verify you have adequate stopping distance before planing the boat.

When docking:

- Do not try to stop the boat with your hands while docking. Never put your hand of foot between the boat and the dock, the shore or another boat.
- Use sharp but short applications of throttle to generate enough rudder authority.
- Ensure that as many passengers as possible remain seated while docking. Sudden steering movements may cause the boat to heel and cause injury.
- Prepare the mooring lines and fenders at the bow and stern before docking.
- Approach the dock with the bow first at an acute angle. Just before touching the dock, steer into it and shift into reverse.
- Apply throttle quickly and sharply. The boat will stop and turn parallel to the dock.
- Make the approach into the wind or current if possible, whichever is stronger. This makes departing easier.

When securing the boat, take into consideration the prevailing conditions, such as:

- Possibility of changes in wind direction.
- Changes in the water level.
- Waves and wake wash from other boats.

When departing:

- Push the stern as far out from the dock as possible
- Slowly reverse away from the dock into open water.

5.2.3 Visibility from the steering position

It is easy to drive the boat in fair weather when the sea is calm, but always remember to keep lookout as specified in international waterway rules (COLREG). Ensure maximum visibility from the steering position at all times by following these guidelines:

- Position crew and passengers so that they do not obstruct the driver's visibility.
- Do not drive at the planing threshold speed for extended periods as a raised bow blocks forward visibility.
- Use the motor's trim function (power trim), and trim tabs if any, to adjust the bow so that visibility is not compromised.
- Use the windshield wipers when necessary.
- Remember to look behind the boat, especially in fairways where fast vessels may overtake you.
- Give way to faster ships in narrow fairways, especially if they cannot otherwise overtake you safely because of limited space.
- Use the navigation lights during darkness or when visibility is limited for any other reason, such as fog or heavy rain.

5.2.4 Driving at high speed

If the motor has an electro-hydraulic power trim, the basic trim angle adjustments are as follows:

- To plane the boat, adjust the trim all the way down (bow down).
- When the boat is planing in low waves, raise the trim until the boat starts to porpoise, the propeller loses grip or the motor reaches the upper limit of the normal adjustment range. 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, lower the bow until the ride becomes smooth. When driving with a tailwind or driving into very high waves the raise the bow slightly to avoid ploughing through the waves.
- Do not drive 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.

Consult the motor manual for more information.

⚠ WARNING At full speed the boat's handling characteristics may deteriorate.

- Do not drive the boat with the bow too low because this could cause the boat to behave erratically.
- Be very careful when adjusting the trim angle at a high speed: it may radically affect the boat's behaviour.
- Sudden turns at a high speed may result in loss of control. Slow down before sharp turns.
- Waves reduce the boat's manoeuverability and can cause the boat to swing fromside to side. Reduce the speed when wave height increases.

5.2.5 Leaving the boat after use

After each use and whenever leaving the boat unattended, de-energise the drive system and raise the motor clear of the water.

1. Check that the throttle handle is in the neutral position.
2. Press the motor tilt switch to raise the motor clear of the water.
3. Press the power button on the remote control until the display goes off.
   The motor and the drive battery are off.
4. Switch off the drive system main switch and any other applicable battery main switches.

When operating the boat in saltwater or brackish water, flush the motor with fresh water after each use.

5.3 Mooring, anchoring and towing

When you are mooring, anchoring or towing the boat, use only the mooring points shown in the picture. Ensure that the lines, ropes and chains, as well as the anchors, are suitable for their intended use.

⚠ WARNING Risk of injury

Never try to stop the boat by hand or place your hand or foot between the boat and the pier, shore or another boat.

Practise mooring in fair weather. Use motor power sparingly but resolutely.

Your boat has either a hardened bow eye for locking and trailering, or a bow eye for trailering and a separate hardened locking eye on the deck.

- Use the bow eye for winching the boat onto a trailer or sliding dock, and use the hardened locking eye for locking the boat.
- If your boat has a single hardened bow eye, you can use it for both winching and locking.

NOTICE Risk of material damage.

The bow and locking eyes are only intended for trailering and locking the boat.

Do not use the eyes for any other purpose, such as mooring or towing, or other use that could cause lateral stress.

Mooring

- Use mooring lines, ropes and chains with a breaking strength that do not exceed 80 percent of the rated strength of the mooring points. See *3.3 Technical specifications on page 16*.
- Use mooring ropes equipped with shock-absorbing springs.
- Avoid mooring with the stern against the wind as high waves may crash over the stern.
- Take into account potential changes in the wind direction, changes in water level, waves and wake wash from other boats.
- Use sufficiently large fenders to prevent abrasion.

NOTICE Do not use the mooring points for lifting the boat.

Anchoring

- Make sure the depth is sufficient when anchoring at a natural harbour and anchor sufficiently far from the shore.
- For the anchor to get a good hold ensure that the length of anchoring line equals 4 to 5 times the depth. To increase the hold further, release more rope.
- You can increase the hold of the anchor significantly by using weighted rope or chain on the first 3 to 5 meters of the anchoring line.

Towing

- Use a sufficiently strong, floating towing line when towing another boat.
- Start towing gently and avoid shocks.
- Do not overload the motor.
- When towing a small dinghy, adjust the line length so that the dinghy rides on the downhill slope of your wake.
- In narrow straits and high waves, bring the dinghy closer to the transom to stabilise its movement.
- Fasten all equipment in the dinghy in place securely in case the dinghy capsizes.
- When on the open sea, cover the dinghy to prevent flooding due to spray and splashing from waves.

⚠ WARNING If the towing line snaps, the loose end could cause death or serious injury.

Always use a sufficiently strong towing line and avoid being directly in front of the towing line.

5.3.1 Attachment points

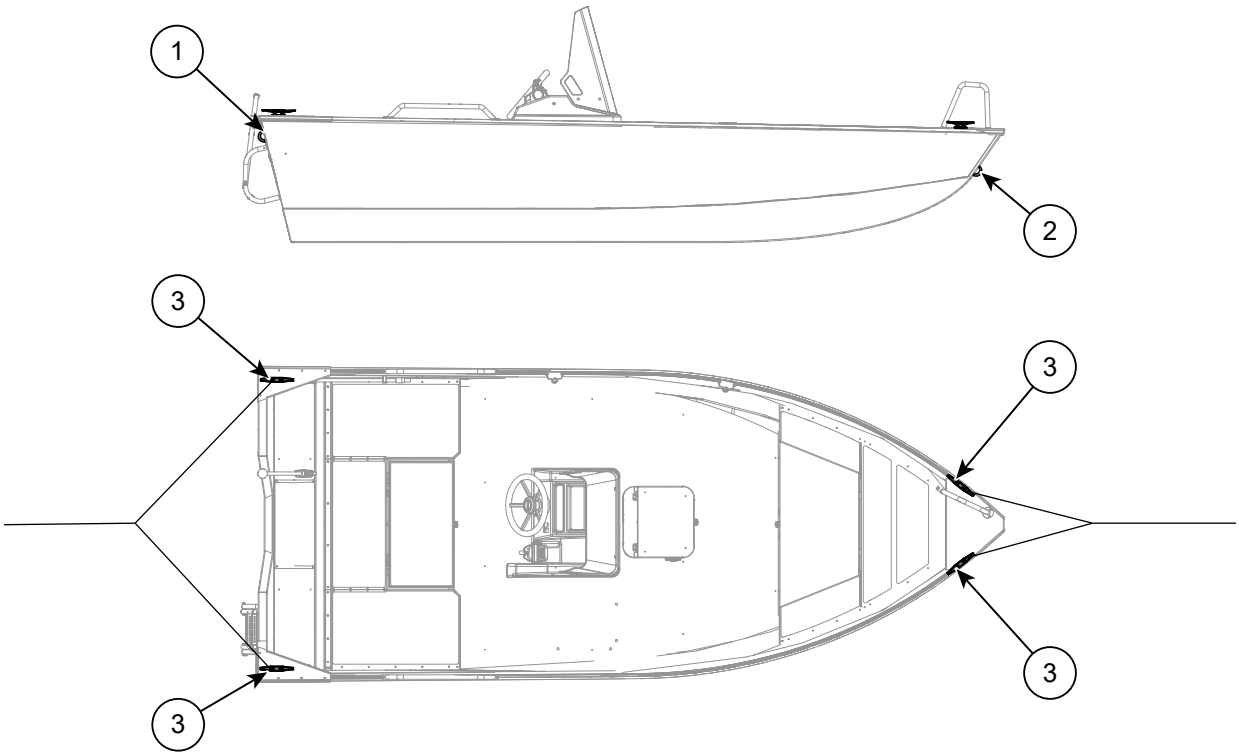


Figure 5.3 Buster XSr Torqeedo mooring and towing points

1	Trailering hook	3	Mooring points
2	Hardened eye for locking and trailering		

6 Drive battery system

The boat is equipped with a Torqeedo Power 48-5000 drive battery system. The system uses a dedicated TorqLink gateway to connect the batteries and power supply with the motor.

⚠ WARNING Unauthorized modification of propulsion and battery systems

May cause injury and equipment damage.

Use only manufacturer-approved propulsion, battery types, and system components.

Verify component compatibility before installation.

⚠ WARNING Overestimated remaining drive range

A depleted battery may leave the boat stranded, which may lead to injury.

Note that the remaining range indicator does not consider wind, current, and direction of travel.

Add a fixed buffer to the required travel range.

Monitor the battery's state of charge at regular intervals while driving.

6.1 System main switch

The drive battery system is equipped with one main switch that is located as indicated in the component diagram. The switch has the symbols **0** = off and **I** = on and it controls the current supply for all installed drive batteries.

Switch off the main switch in the following situations.

- When leaving the boat unattended
- Before recharging the drive batteries
- Before performing any electrical installation or maintenance work

For more information on the main switch, see section *8.2.1 Switch and fuse descriptions on page 33*

6.2 Drive battery system components

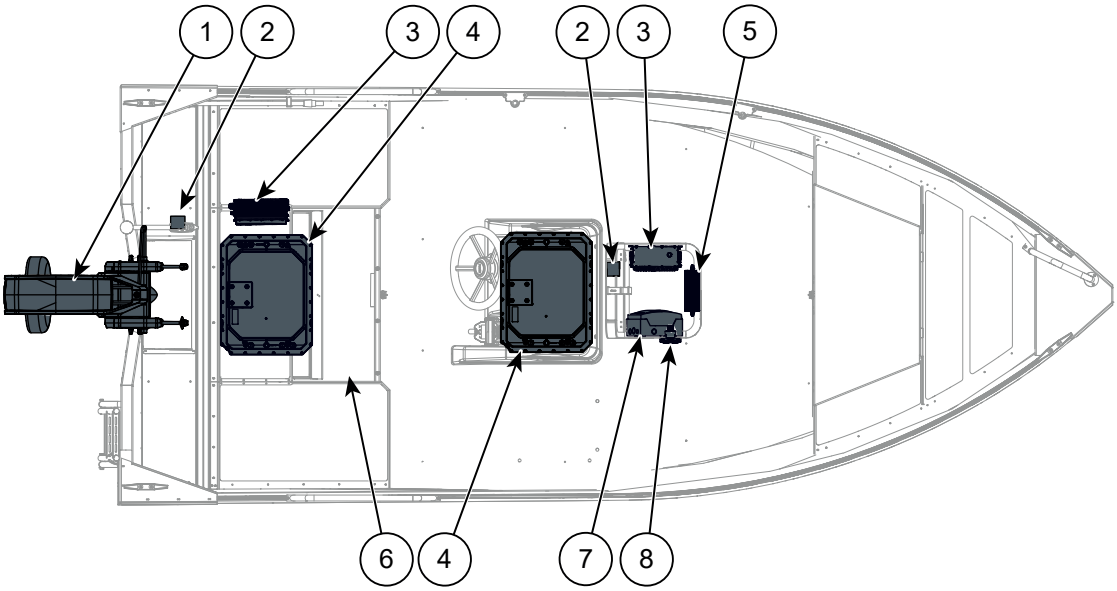


Figure 5.1 Buster XSr Torqeedo drive battery system components

1	Motor	5	Galvanic converter
2	Electric socket for charger	6	Drive system main switch
3	Drive battery charger	7	Shore power RCD
4	Drive battery	8	Shore power inlet plug

6.3 Recharging drive batteries

Charge the batteries only using chargers and charging methods approved by the drive system manufacturer.

⚠ DANGER Fire or explosion

Charging damaged batteries may cause death or serious injury.

Never charge damaged batteries.

Remove any damaged batteries from service.

1. Switch off the drive system from the power button on the electronic remote control.
2. Switch off the drive system main switch.
3. Ensure that the mains plug of each drive battery charger is plugged into a socket.
4. Connect the shore power cable and ensure that the shore power RCD is switched on. The batteries start charging after approximately 20 seconds.

To stop charging, disconnect the shore power cable.

For more information on recharging the batteries under different operating configurations, see the drive battery manufacturer's manual.

6.4 Maintaining drive batteries

The drive batteries require minimal maintenance during the boating season, under normal operating conditions.

⚠ WARNING Electrical hazard

Short circuit may cause serious injury or equipment damage.

Remove all metal jewellery before handling batteries.

Keep tools and metal objects away from energised parts.

NOTICE Damage to battery caused by deep discharge

The battery state of charge should remain between 40–60 % during storage.

Use a maintenance charger when storing the batteries.

- Clean the exterior of the batteries as required using cleaning agents recommended by the manufacturer.
  Never use a pressure washer to clean the batteries.
- Ensure especially that the battery ventilation openings are unobstructed.
- Keep the battery terminals free of corrosion by regularly applying contact spray.
  Protect unused terminals with protective caps.

For more information on battery maintenance and storage, see a separate equipment manufacturer's manual.

7 Motor

The motor has its own manual that is provided with the boat. Refer to the motor manual for more detailed instructions of use and proper maintenance.

7.1 Starting motor

Before starting the motor, ensure that the shore power cable is disconnected from the boat.

Never switch on the drive system if the cables or components have signs of mechanical damage.

1. Switch on the drive system main switch.
2. Check that the throttle handle of the electronic remote control is in the neutral position.
3. Switch on the motor by pressing the power button on the remote control for one (1) second. The system starts up after approximately 15 seconds.
4. Attach the magnetic clip of the emergency cut-off switch to the bottom of the remote control.

Lower the motor into the driving position by pressing the motor tilt switch on the helm station.

For more information on starting the motor, see a separate motor manufacturer's manual.

7.2 Using throttle and shift control

The remote control engages forward or reverse drive and functions as a throttle.

NOTICE Improper shift selection

Do not shift into reverse while travelling at high speeds as this may damage the motor.

When shifting to reverse drive, a delay occurs before the motor generates thrust. Always keep the throttle handle steady and wait for thrust to engage before increasing throttle.

- To drive forward or reverse, move the throttle handle from the neutral position to the desired direction.
- Adjust the speed by moving the handle further in the same direction.
- To stop the boat, bring the throttle handle to the neutral position.
  When the boat is travelling forward at a slow speed, you can use the reverse shift for braking.

For more information on using the remote control, see a separate motor manufacturer's manual.

8 12 V Electrical system

8.1 System description

The boat is equipped with a 12 V DC electrical system for powering auxiliary equipment, such as the bilge pump and navigation lights.

The 12 V system is electrically isolated from the drive battery system and includes its own battery, main fuse and main switch.

The 12 V battery automatically charges via shore power when the shore power cable is connected.

⚠ WARNING Energised electrical system

Working on energised system may cause an electric shock.

Shut-off all power sources.

Verify the system is de-energised before starting work.

⚠ WARNING Unauthorized modification of electrical system

May cause serious injury or equipment damage.

Do not alter the boat's electrical system or diagrams.

Any installation, alteration or maintenance work on the system should be performed by a qualified marine electrician.

The boat's electrical equipment may vary depending on the equipment level. For details, see section *8.5 Electrical equipment on page 34*.

Most of the controllers for the equipment are located at the helm station. For more details, see *5.1 Helm station controls on page 20*.

8.2 Main switch and fuse panel

The main switch for the 12 V electrical system is located on the fuse panel as indicated in the diagram.

Switch off the current using the main switch in the following situations.

- When leaving the boat unattended.
- Before performing any electrical installation or maintenance work.

⚠ WARNING Improper alteration of overcurrent device ratings

May cause injury or equipment damage.

Never alter or modify the rated current amperage of overcurrent protective devices

⚠ WARNING Improper component amperage

May cause injury or equipment damage.

Never replace electrical appliances or devices with components which exceed the rated current amperage of the circuit.

Verify component rating before installation.

NOTICE Electrical fault

If a fuse keeps popping after being reset, consult a qualified marine electrician.

The automatic bilge pump remains operational whenever the 12 V battery is attached to the electrical system, regardless of the position of the main switch.

The 12 V system uses an automatic main fuse, which enable the current to be switched back on following a circuit overload by pressing the fuse button down. The system also uses conventional blade fuses that must be replaced when they have blown.

8.2.1 Switch and fuse descriptions

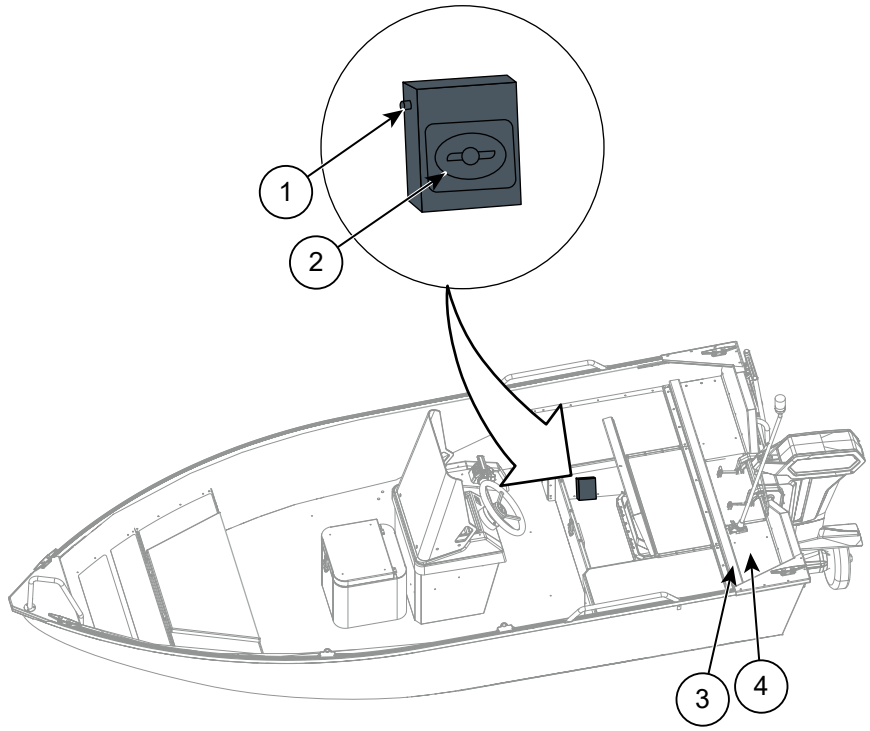


Figure 5.1 Buster XSr Torqeedo main switches and fuses

Position	Description	Amperage
1	12 V system main fuse/main switch*	15 A
2	Drive system main switch	
3	12 V battery charging line fuse**	15 A
4	Bilge pump fuse**	5 A

*On/Off type fuse that functions as the 12 V system main switch

**In-line type fuse

8.3 Recharging 12 V batteries

Recharge the 12 V batteries only using a charger suitable for the battery type.

⚠ DANGER Fire or explosion

Charging a damaged battery may cause death or serious injury.

Never charge damaged batteries.

Remove any damaged batteries from service.

1. Ensure that the 12 V battery charger is connected to a power supply.
2. Connect the shore power cable and ensure that the shore power RCD is switched on.
   The battery starts charging.

Ensure that the battery does not leak or spill battery acid into the boat during recharging.

To stop charging, disconnect the shore power cable.

8.4 Maintaining 12 V batteries

Service the 12 V batteries regularly and follow their charge status in order to prevent them from discharging.

⚠ WARNING Electrical hazard

Short circuit may cause serious injury or equipment damage.

Remove all metal jewellery before handling batteries.

When connecting or disconnecting batteries, make sure that no metal tools make contact with the aluminium parts of the boat or both terminals of the battery simultaneously.

Disconnecting batteries

The batteries need to be disconnected in the following cases.

- You want to deactivate the automatic bilge pump.
- In connection with maintenance and winter lay-up.
- When replacing batteries.

Replacing batteries

Requirements for new batteries:

- The 12 V battery should be a regular lead-acid battery or a deep-cycle lead-acid battery.
- If you are using a special type of battery, take note of any specific requirements in terms of connections, charge regulators, and protection from water.

8.5 Electrical equipment

The configuration of the electrical equipment on your boat may vary. Some of the equipment shown is part of optional accessory packages and might not be part of your boat's configuration.

Inspect the electrical equipment and electrical system at least twice a year.

8.5.1 Locations of electrical equipment

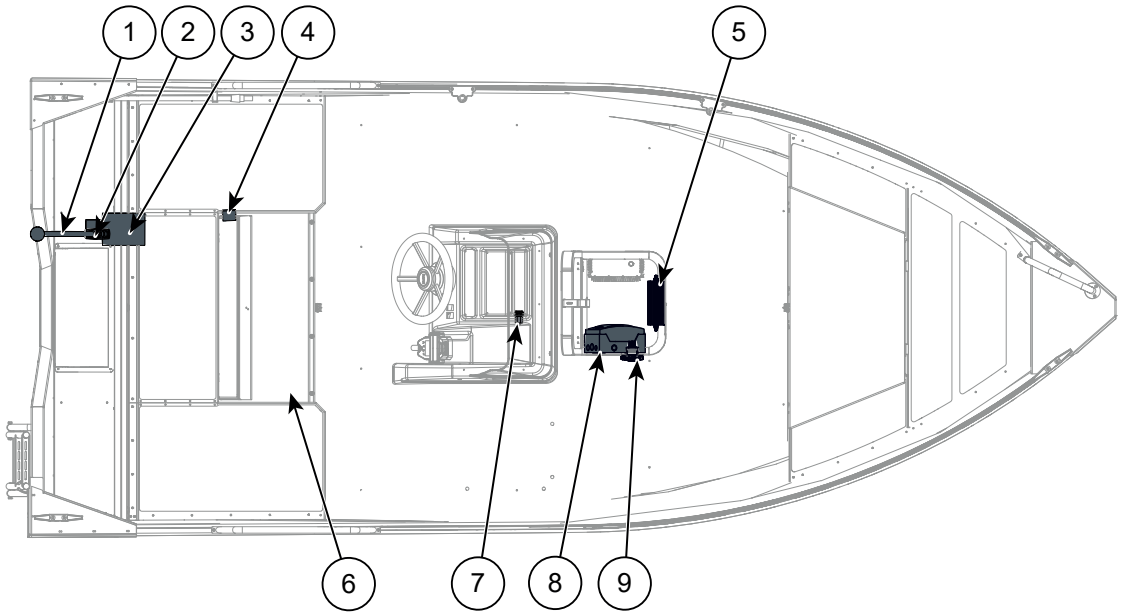


Figure 5.2 Buster XSr Torqeedo location of electrical equipment

1	Light mast	6	12 V main fuse/main switch
2	Electric socket for charger	7	USB socket
3	12 V battery	8	Shore power RCD
4	12 V battery charger	9	Shore power inlet plug
5	Galvanic converter		

8.5.2 Shore power

The boat can be equipped with shore power.

⚠ DANGER Energised AC system

Electric shock may cause death or serious injury.

Disconnect the shore power when it is not in use.

Verify the system is de-energised before performing any work.

⚠ WARNING Power cable contact with water

Connecting the shore power cable may energise the water around the boat and cause death or serious injury to nearby swimmers.

Do not allow any part of the power cable to hang in the water.

Note the following when using shore power.

- Connect metallic housings or enclosures of installed electrical appliances to the protective conductor system in the boat.
- Only use double-insulated or grounded (earthed) electrical appliances.
- Do not alter shore power cable connectors. Only compatible cable connectors and shore power receptacles.
- Test the operation of the RCD (Residual Current Device) monthly.

8.5.2.1 Connecting shore power

Connect the shore power in the correct order to minimise the risk of electric shock and fire.

The shore power system is equipped with an RCD that functions as the system main switch.

1. Connect the shore power cable to the boat's inlet first.
2. Connect power cable to the shore power source.
   If the reverse polarity indicator activates, turn off the RCD switch immediately and correct the polarity fault before activating the boat's electrical system.

To disconnect shore power, unplug the power cable from the shore power source first.

Close the cover of the shore power inlet tightly when the power cable is disconnected.

8.5.3 Navigation lights

Depending on the model, your boat might be equipped with a white anchor light on a removable light mast.

NOTICE Risk of material damage.

If the boat is equipped with a telescopic light mast, store it in the retracted position to avoid bending it.

The rules and regulations on the use of lights when boating can differ locally. Check your local regulations before leaving the port. As a rule of thumb, it is better that you have the lights on than off.

Always check that the lights are functioning before you leave the port. Replace defective lights as soon as possible.

If you install additional lights on the boat, make sure that they do not interfere with the visibility of the standard-regulated anchor or navigation lights. Do not modify the anchor or navigation lights in any way.

9 Bilge pumps and draining

The bilge pump removes excess water that accumulates in the bilge during the boat operation.

Depending on the model and equipment level, your boat can be equipped with automatic electric and/or manual bilge pump(s).

⚠ WARNING Risk of flooding

The bilge pump system is not designed to control water ingress caused by running aground or other structural damage.

Make sure that at least one bucket or bailer is kept on board. It must be attached to the boat with a rope to prevent loss.

Some smaller boats that are designed to be emptied using a removable pump or a bailer may not have a bilge pump installed as a standard equipment. If you wish to install a bilge pump on a boat that is not equipped with one, contact an authorised service.

Regularly inspect the bilge pumps and clean their suction heads of any waste. You can access the pump through the bilge pump service hatch.

To ensure stability it is important that the amount of water in the bilge is kept to a minimum. It is, however, natural that the bilge always contains a small quantity of water that the bilge pumps cannot remove.

9.1 Electric pump

The automatic bilge pump drains water from the bilge when the surface sensor detects water:

- The pump activates when the sensor has been fully submerged for 10 seconds.
- It deactivates when the sensor has been dry for more than two seconds.
- The pump is always on standby when the battery is connected, regardless of the position of the main switch.

NOTICE If the bilge pump is running constantly it could indicate a leak in the hull.

Do not disconnect the bilge pump when the boat is in the water.

You can also activate the automatic pump manually:

- The switch is located in the steering console.
- This switch is equipped with a light that turns on when the pump is operating.
- If the light does not activate, check the fuse of the bilge pump.
- If the fuse is intact and the pump still does not start, consult an authorized dealer for repairs.

9.2 Locations of draining equipment

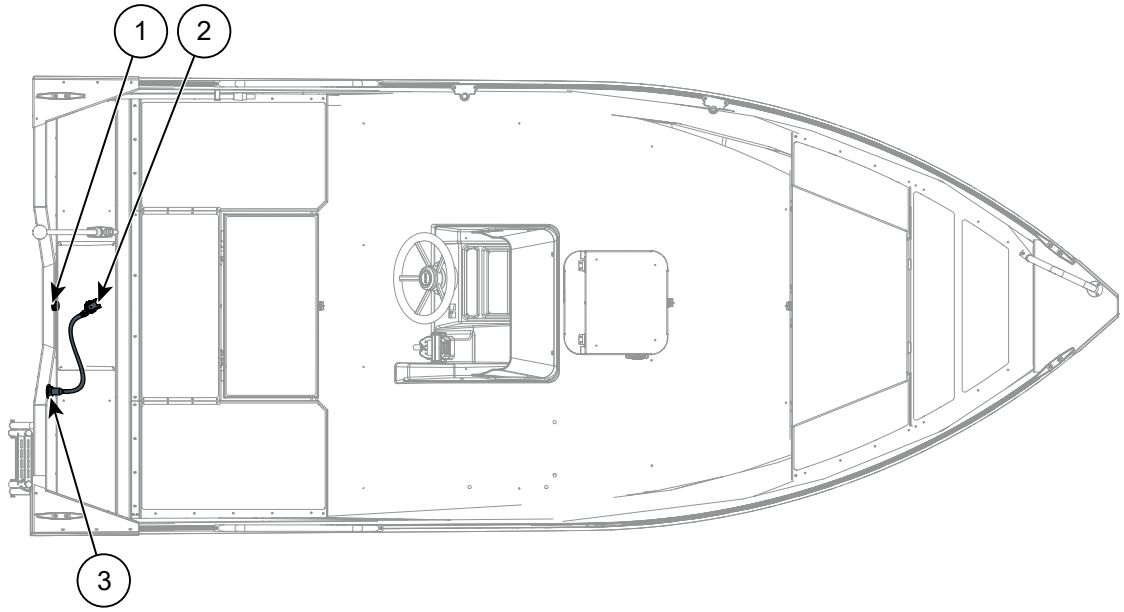


Figure 6.1 Buster XSr Torqeedo draining equipment

1 Rear plug
2 Electric bilge pump
3 Electric bilge pump through fitting

10 Environmental considerations

The seas, lakes and archipelago are unique and it is a matter of honour for boaters to preserve their natural habitats. Avoid the following:

- Fuel and oil leaks.
- Discharge of waste or rubbish into the water or onto the shore.
- Discharge of detergents or solvents into the water.
- Emptying the septic tank into the sea.
- Causing loud noise, whether out on the water or in harbour.
- Causing wake wash, especially on narrow straits and shallow waters.

Always adhere to the applicable environmental laws and regulations. Familiarise yourself with the provisions of the International Convention for the Prevention of Pollution from Ships(MARPOL).

11 Maintenance, repairs and docking

Information on boat maintenance, winter storage, servicing, and repairs is available on the website at www.busterboats.com or from your local dealer.

Consult an authorized dealer for information on repairing large aluminium areas or treating damaged surfaces. In the event of motor failure or problems with other equipment, the primary point of contact is the manufacturer of the equipment in question.

⚠ WARNING Only a qualified electrician is allowed to repair the electric system.

NOTICE If performed incorrectly, retrofits or alterations may cause damage to the boat's structures, expose it to galvanization or spontaneous corrosion, or endanger safety.

- Only use cleaning agents, surface treatments, and paints that are compatible with the materials of your boat.
- Consult an authorized dealer before you make any new electrical connections, hatches, holes, install any equipment, or combine any other metals or alloys with aluminum.

11.1 Maintenance tasks

11.1.1 Before winter lay-up

It is important that you perform the following actions before winter storage:

- Wash the hull and bottom immediately after lifting the boat out of the water.
- Unscrew the rear plug and make sure all other drainage devices are open.
- Make sure there is no water left in the bilge or inside the bilge pumps to avoid freezing. Run the pumps to empty them if necessary, but do not let the automatic pump overheat.
- Remove all cushions and store them indoors in a dry place. Make sure to leave the cabin well ventilated.
- Wash the rear and front decks.
- Remove the batteries and store them in a warm, dry place.
- If the boat is equipped with a refrigerator, winterize it according to the equipment manufacturer's manual.
- Also see the available manufacturer's manuals for other equipment to determine if they require specific preparations before winter storage.

11.1.2 Before launching

Perform these actions before launching the boat:

- If you have stored the boat under a tarpaulin, remove it in good time before launching.
- Wash the hull and bottom with a suitable detergent and a soft brush.
- Paint the bottom with antifouling paint if the boat is to be used in salt water.
- Put the batteries back and check the electrolyte levels in the cells. Check the condition and charge levels of the batteries.
- Check all cables, clamps, motor mountings and other fastenings.
- Check the steering and instrumentation before launching.
- Make sure that all drainage devices are tight and in order. Check that there is no frost damage.
- Check the condition of anodes and replace them if necessary.

NOTICE To avoid corrosion, only paint the aluminium hull with antifouling paints that are completely free of copper compounds.

Consult your local dealer for recommendations of suitable paints.

11.2 Care instructions

11.2.1 Washing and waxing the boat

Keeping your boat clean will help prevent dirt from staining the surfaces, make it easier to maintain your boat and reduce the overall amount of maintenance required.

- For normal cleaning, fresh water and a soft brush or sponge are usually sufficient. Use special boat care products or mild general purpose cleaning agents if needed.
- Rinse off any bird droppings from the boat's surfaces and canopy as soon as possible. Brush off dried bird droppings and clean them using fresh water and a mild detergent if needed.
- Wash the exterior hull immediately after lifting the boat out of the water, as it is easiest to remove any algae and dirt when the hull is still wet. Use a pressure washer or brush with fresh water.
- If the hull has been treated with anti-fouling paint, wash the surface and remove the paint by wet-grinding. Collect any grinding dust to protect the environment.

Consult your local dealer for information on the correct cleaning agents for the boat.

11.2.1.1 Aluminium surfaces

- For aluminium parts, use only cleaning agents that are specifically meant for aluminium surfaces. Do not use alcohol-based agents, solvent-based agents or cleaning agents that contain acids.
- Wash painted aluminium surfaces using the same cleaning agents that are suitable for aluminium in general.
- Remove chafe, oxidation, and stubborn stains from non-surface treated aluminium surfaces mechanically using fine-grade abrasive polish. Protect the aluminium surfaces after abrasive polishing using waxing products or protective oil.

- Protect aluminium surfaces above the waterline using a thin layer of protective oil for aluminium or similar multipurpose oil. Spray the oil onto the surface of the boat and wipe with a dry cloth.
- Wax the surfaces after polishing as wax protects the clean surface from getting dirty again and maintains the shine longer. Do not use abrasive polishing or wax products on anodized aluminium surfaces, such as fittings and railings. Waxing also protects painted and shiny metal surfaces.
- The removal of oxidation marks from aluminium surfaces is not necessary since oxide protects the metal naturally.
- Before winter storage, spray a generous layer of protective oil onto the aluminium surfaces, but do not wipe it off. Instead, leave the oil on the surface and wipe it clean only in the spring. This will also remove any dirt and dust that has accumulated during winter storage.
- Do not use abrasive polishing or wax products on anodized aluminium surfaces, such as fittings and railings.

11.2.1.2 Stainless steel surfaces

- Clean and wax the boat's stainless steel parts, such as rails, handles and bollards at least twice every season to keep them shiny. Also clean the edges of the mounting flanges of the rails as any dirt that remains under the edge of the flange will begin to look like rust.
- Carry out these maintenance measures also before putting the boat into winter storage.

11.2.1.3 Plastic surfaces

- Do not apply solvent-based cleaning agents to the consoles and other plastic components.
- Use only non-abrasive mild detergents.

11.2.1.4 Windshield

The boat’s windshield is made of acrylic. Clean it with warm water and non-abrasive mild detergents.

- Do not apply solvent-based cleaning agents to the windshield.
- Avoid circular motions when wiping the windshield dry after cleaning. This can create smudges, which become visible in sunlight and impede visibility.
- Wipe off any streaks with soft, damp cotton cloth using first horizontal, then vertical motions.

11.2.2 Marine upholstery

Follow these instructions in order to best care for and preserve the boat's upholstery.

Sunlight

The materials are designed for marine use and the surface is UV-protected, but long-term exposure to UV-radiation will fade the colours and shorten the service life of the materials.

Avoid storing cushions in direct sunlight for extended periods of time.

Humidity

Although the open cell plastic foam inside the cushions is protected with plastic, fungal growth may form on the inner surface of plastic foam and artificial leather.

- Do not store the cushions so that they are exposed to constant humidity.
- Do not let the cushions become waterlogged.

Frost

Avoid transporting, storage or use in temperatures under -20°C, as the surface of the material may rip.

Care and protection

To clean the upholstery:

- Wipe the upholstery with a damp cloth moistened with a neutral washing liquid; for example, dishwashing liquids or window-cleaning products diluted with water.
- It is a good idea to dry the cushions after washing.
- Remove more persistent dirt and stains by dissolving them with undiluted neutral washing detergent. Rinse and dry them afterwards.

Avoid the following:

- Solvents and petrol.
- Grease and motor oil.
- Abrasive cleaning equipment and scouring agents.
- Strong alkaline and acid cleaning products.
- Sharp and hot objects.
- Colouring liquids.
- Protective or conserving agents not intended for artificial leather.

11.2.3 Electronic remote control device

If there is a problem in the functioning of the electronic remote control device, it must be serviced at an authorised Yamaha workshop.

11.2.4 Steering system

Depending on the model and selected accessories, the boat can be equipped with either hydraulic, electrical, or mechanical steering.

If you replace any component in the steering system, note that all components must conform to the ISO 10592 standard and carry the CE mark.

Hydraulic steering

The hydraulic steering wheel's position changes constantly, which is why the boat is equipped with a symmetrical steering wheel.

The hydraulic steering does not require maintenance under normal circumstances. However, if the steering starts to feel loose, there is a leak in the system.

⚠ WARNING A hydraulic steering system that has a leak or trapped air in the hoses is extremely dangerous.

Have leaks repaired immediately.

Electrical steering

Electrical steering is maintenance free in normal conditions, but like any steering system should be checked for correct functionality regularly.

Mechanical steering

Have the uncovered parts of the mechanical steering system cleaned and greased during maintenance.

If the mechanical steering starts to feel stuck, take the boat in for professional servicing.

11.2.5 Electrical components

Electrical components such as main switches, other switches and connections do not normally need to be serviced if the boat is stored in a dry and well-ventilated place for the winter.

If, however, you wish to protect electrical components against oxidation, spray them every now and then with a moisture-repellent antioxidant.

11.3 Trailer transportation and lifting

Trailer transportation

Before loading the trailer:

- Make sure you do not exceed the boat's calculated trailer transport weight. See *3.3 Technical specifications on page 16*.
- Remove all excess load and pump out as much bilge water as possible.
  - Drain out any water left in the bilge through the rear plug when the boat is out of the water.
  - Remember to reattach the plug before launching the boat.
- Make sure the trailer is suitable for the boat and has a sufficient number of support guides to reduce point loads.

⚠ WARNING Traffic hazard.

Using an unsuitable or poorly maintained trailer can endanger safety and lead to a traffic accident.

Always use a well-maintained trailer that is rated for the boat’s weight.

NOTICE Risk of material damage.

When transporting the boat on a trailer, the movement of the trailer can cause the boat to shift unexpectedly.

To minimize the risk of damage, do not overtighten the fastening straps.

Placing the boat on the trailer:

- Adjust the trailer's longside support guides so that the main weight of the boat rests on the keel support.
- Use only the trailer eye on the bow for pulling the boat onto the trailer as the mooring points are not designed for this.
- If you want to lift the boat, take extra caution. See *Lifting* in this section for more details.
- Fasten the boat securely to the trailer before transporting the boat on the road. Always use trailer hooks, if provided, to secure the boat to the trailer. Insert pads between the boat and fastening straps to protect the boat.
- Use two separate fastening straps at the aft. Do not tie the boat with one fastening strap going over it.
- Ensure that the pulling force of the fastening straps is directed correctly.

  At the bow, down and towards the aft. At the aft, down and towards the bow.

Before road transportation:

- Raise the motor all the way up.
- Make sure that there are no loose items on the boat that can fall off during transport.

- Make sure your towing vehicle has high enough rated towing capacity for the loaded trailer. See the vehicle's registration certificate for its towing capacity.
- Make sure your driver's license allows you to drive the combination of your vehicle and trailer.
- When towing the trailer the weight should rest slightly on the towing bar.

After transportation, wash off any salt or grime that may have accumulated on the hull to prevent corrosion.

Lifting

⚠ WARNING Safety risk.

Serious injury or death may occur if the boat falls when it is being lifted.

Never go under the boat when it is being lifted.

When lifting the boat, consider the following:

- Only use a professional crane operator for lifting the boat.
- Make sure that the crane and lifting implements have sufficient lifting capacity.

- Do not use chains for lifting. Only use straps.
- Make sure the straps go under the keel when lifting. Never lift the boat using the mooring points.

11.3.1 Placement on the trailer

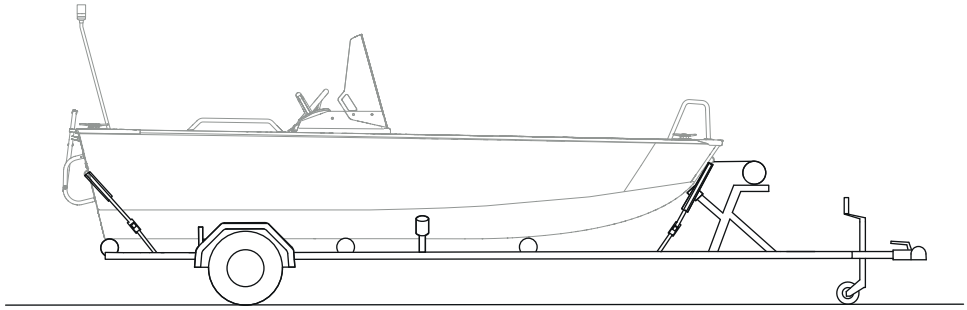


Figure 8.1 Buster XSr Torqeedo trailer transportation

12 Related documents

The following documents are available as part of the owner's manual appendices.

- Declaration of conformity

  This document certifies that the boat meets all relevant standards and regulations. Ensure that the Declaration of Conformity form is filled in with the Watercraft Identification Number (WIN) of your boat, or that you obtain a separate form filled in by your dealer at the time of purchase.

- Wiring diagrams

  These diagrams provide detailed information on the boat's electrical system, which is essential for maintenance and troubleshooting.