



Owner Manual

Firefish Industries Ltd.



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Congratulations on the Purchase of your new Firefish Jet Boat! On behalf of our company, we would like to thank you for entrusting us with building your new vessel.

We hope that you are completely satisfied with your boat and the care from us both during and after the building process. If you have any questions about your new boat, please do not hesitate to contact us by phone or email and we will be happy to help.

Thank you and welcome to the boating family.

Sincerely,

Steve Beecroft
Owner
Firefish Industries Ltd.

WARNING



**IT IS RECOMMENDED
TO INSTALL A
CARBON MONOXIDE
DETECTOR
FOR ALL DIESEL
HEATERS**

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10 Boating Lessons Learned

- Going boating is optional, getting back is mandatory
- Horsepower is Life Insurance
- It's best to keep the pointy end going forward
- The only time you can have too much fuel is when you're on fire
- A good trip is when you get there and back in the boat.
A great trip is when you can use the boat again
- Trees are softer than rocks, but not by much
- There are three simple rules for safe boating.
Unfortunately, no one knows what they are.
- Good Judgment comes from experience. Experience comes from bad judgment
- Boating is not dangerous. Crashing is dangerous.
- You will be more comfortable if you keep the boat between yourself and the water

Disclaimer: This list is meant in a joking manner.



**BoaterExam.com® is
a Transport Canada
Approved course.**



All Canadians operating a motorized pleasure craft in Canada are required to obtain a boat operator license.

How to Get Your Boating License

- Study Online. At BoaterExam.com, studying online is easy, with animations to help you learn
- Pass the Exam. You can take the exam online and retries are always free.
- Print your Temporary Card. Your Boating License will be mailed to you, but in the meantime, you can print a temporary license and get started boating right away.

Need More Information?

Visit the BoaterExam.com FAQ page for answers to commonly asked questions, or you can visit Transport Canada's Official Website at tc.canada.ca and click Marine Transportation for additional information.

Firefish Industries is not affiliated with, nor sponsored by boaterexam.com.

The Dangers of Drowning



Drowning is the cause of death for most boating fatalities. Males are especially at risk, with twice the overall mortality rates of females. Studies suggest that this is due to increased exposure to water and riskier behavior such as swimming alone, drinking alcohol before swimming and boating alone.

Most drowning accidents are preventable. The following tips will help in the successful completion of your boating trip:

- Learn basic swimming and water safety skills.
- Learn CPR.
- Know the risks of natural waters. There can be hidden hazards such as dangerous currents, rocks, and debris.
- Always tell someone where you plan to go and when you plan to return.
- Never go boating alone.
- Wear a coast guard approved flotation device while in the boat.
- Avoid alcohol while in the boat.
- Carry an empty jug to use “when nature calls”. This is much safer and environmentally friendly.
- Consider the effects of medications. Some medications impair your balance, coordination or judgment
- If you find yourself in the water, **STAY CALM**. Take a deep breath and fill your lungs with fresh air and relax. Float in the water with only the back of your head and your hands above water. When you need a breath, turn your head to the side and push down with your hands. Paddle slowly to safety.

Proper Boating Etiquette



The Unspoken Rules of the Water

Proper boating etiquette has always been the unwritten rule of the water that all great boaters live by. These unspoken rules help keep everyone safe, both on and off the water.

- Be Prepared: always tell someone your plans, adhere to all safety regulations, and obtain your boating license.
- Take it slow: reduce speed in areas of low visibility.
- Lend a hand: all boaters should look out for each other. If someone is requesting help, you should see what is wrong and what you can do to help.
- Respect your neighbours: be polite. Leave a wide berth when passing others and drop off plane if possible. Rules of the road apply to the river too, so oncoming vessels should be passed on the right.
- Respect for property: Minimize the damage from excessive wakes in sensitive areas and minimize impacts on natural areas going to and from the water.
- Respect the wildlife: watch quietly from afar, don't feed the wildlife, and leave rocks and plants as they are.
- Leave no Trace: remove all garbage. Boaters often have a unique ability to pack out the waste of irresponsible users, and this is strongly encouraged.

Following these guidelines, we can all work towards a safer, shared enjoyment of the river by all.

-The Firefish Team

Boat Operation Quick Overview

For more detailed information, please see page ** of your Firefish owner's manual.

Oil

- Refer to engine manufacturer manual for oil type.
- Using oil not recommended by manufacturer could void warranty.
- When you first get your boat, change oil after 10 hours.
- Change oil every 50 hours or twice a year, whichever comes first.

Gasoline

- Fuel should always be of good quality, fresh (no older than 3 months) and clean.
- If putting your boat in storage, use a fuel stabilizer.
- Use an octane boost if north of latitude 56°.
- Fuel filters should be changed annually. A spare should always be kept in the boat.
- The engine should always be shut off for fueling.
- Do not smoke while fueling.
- Moor your boat securely to prevent spills during fueling.

Pump

- **NEVER RUN PUMP OUT OF WATER**
- Lube the thrust bearing (front) every 10 hours.
- Always use manufacturer recommended grease.

Steering

- Inspect steering operation and components before every outing for damage or loose components or fasteners.
- Lube rack housing twice annually.
- Use a lightweight grease on steering cable.

Operating

- DO NOT operate EZ Clean while engine is running.
- If throttle controls stick in reverse, pull up on the bucket at the rear of the boat.
- DO NOT operate pump out of water.

Winterizing

- Drain the sand trap
- Drain all valves (in the hose on the low point at the back of the motor)
- Drain the front exchanger (Location of this is different on every motor.)
- Fog the motor
- Stabilize the fuel
- Change the oil and lube everything
- Remove Batteries
- Check strength of Antifreeze
- Pull end caps and flush heat exchanger
- Check all tubes for sand and/or debris

Before You Go



All boaters are required to have safety equipment on board that is in good working order and is readily accessible and available for immediate use. This includes but is not limited to:

An approved personal flotation device or life jacket for each person	A marine first aid kit that meets the requirements of small vessel regulations
Portable Fire Extinguishers	Fire Buckets and Bailers
Pyrotechnic Distress Signals	Bilge Pump
Magnetic Compass	Navigation Lights
A sound signaling device	Reboarding device
A watertight flashlight	Manual propelling devices

Also necessary to operate a vessel:

- A pleasure craft license
- Proof of competency on board
- Warranty registration as well as terms and conditions
- The vessel must have proper maintenance and have a seaworthiness/operational inspection
- All accidents must be reported
- Safety training of the passengers and crew
- Safe operating practices
- Compliance with environmental regulations
- Avoiding the use of alcohol/drugs
- Proper break-in procedure followed
- Knowledge of boat systems
- Rules of the road

For more information, please visit the Transport Canada website at tc.canada.ca and click on Marine Transportation. Please note boating laws are subject to change. If this information differs from current regulations, use the current regulations instead of this information.

Pre-Trip Safety Checklist



To make sure that you are prepared when going out on the water, it is advisable to follow a safety checklist such as the one listed here. Firefish advocates safe and responsible boat use.

- Inspect your boat
- Check the hull for cracks or other damage
- Check drain plug, hoses and lines
- Check the electrical, fuel, propulsion and cooling systems
- Check engine fluid levels, oil level and fuel level
- Check battery charge
- Check throttle, steering and bilge pump
- Check navigation lights
- Make sure you're not overloaded
- Check weather forecast
- Check all safety gear is in working order
- Tell a person you trust where you are going and when you will return. Also leave specific instructions as to what to do if you don't return.
- Give everyone going on board a safety briefing including marine communication equipment and safety gear locations.
- Stow all gear securely
- Never boat alone

Did you know?

Most mechanical breakdown calls are the result of inadequate fuel supply. Make sure this doesn't happen to you by checking your fuel system and supply before leaving. Also know how to calculate your boat's fuel consumption. A good tip: 1/3 to go, 1/3 to return, 1/3 reserve.

It is strongly recommended by Firefish to read the current edition of the Safe Boating Guide on the Transport Canada website at tc.canada.ca or the information available at uscgboating.org, the official website of the U.S. Coast Guard. Similar information and publications may be available through provincial or state bodies.

Spare Parts Kit

Avoid mechanical breakdowns by keeping your vessel well-tuned and by planning your trip ahead of time. Regular maintenance should be ensured, and you should familiarize yourself with basic mechanical procedures in the event of an unavoidable mechanical breakdown. Spare parts should be kept on your boat for times like these.

Spare Parts

Dry Bag
6" Three Jaw Puller
GADUS S2 Grease
Sierra Fuel Filter
Serpentine Belt
Stator O-Ring
Cotter Pin

Tools

Spark Plug Wrench
Adjustable Wrench
Socket Set
Screwdriver Set
Hammer
Vise-Grips
Slipjoint Pliers
Needle Nose Pliers

Your RGB LEDs by DB Link



Customize your new RGB LEDs in any way you choose! With the DB LINK RGB app found on both Apple Store and Google Play Store, you can customize your lights.

Once you have the app on your preferred device, turn your system on and open the app and follow the prompts. You will be asked to choose RGB or Chase.

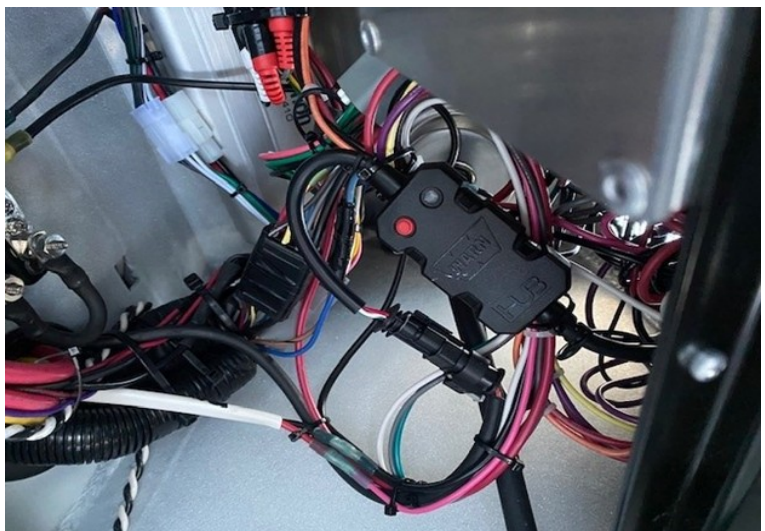
When your app asks to connect, allow it to do so. It will scan for your system and should connect if your system is on. In the settings is an Operations Guide, which will take you through how your app works and what each button, setting and control does.

And that's it! Enjoy your RGB LEDs from DB LINK in whatever color, brightness, temperature, and flash pattern you wish! You can even match your lights to your music, all through the app!

Your New Wireless HUB Control by WARN

This Wireless control system allows you to operate your winch from up to 100' away using the Bluetooth connection on your device. Before you get started using your Hub Control system, you should download the WARN HUB Wireless Control on your smartphone, available in both the Apple Store and the Google Play Store.

Once you have the app downloaded, open the app and follow the prompts. It will ask you to first plug in your HUB receiver. This has already been done; the HUB receiver is located beneath your dash, so you can skip this step! Next, your receiver needs to be active. This may take you turning on your boat, and you'll know it's on when the yellow light on your HUB receiver is on. Then, you're asked to press and hold the button on the receiver until the blue light flashes, then release. Once you've completed these steps, you can then tell the app on your device that you're ready to connect. It will search for your winch, and if everything is correct, it will connect – it's just that easy!



Vessel Maintenance Guide



Pre-Season Service recommendations

- Ensure the battery is fully charged
- Replace oil and lube, top up all fluids (if not done during post season service)
- Check and change all filters (if not done during post season service)
- Close all valves possibly left open during post season service (sand trap, butterfly valve)
- Inspect all systems: electrical, fuel, steering, cooling
- Inspect all wire and cable terminals for loose parts, dirt or corrosion.
- Inspect all hoses and lines for cracks or leaks.
- Inspect flame arrestor, clean with soap and water
- Check throttle connections

Did you know?

Always remove the drain plug after pulling the boat out of the water to ensure proper drainage of excess water.

Mid-Season Service Recommendations

- Review all pre-season checks
- Check impeller/propeller condition
- Inspect lower unit oil for water contamination and replace oil and seal if necessary
- Inspect all components for damage, loose components or fasteners
- Check condition of spark plugs

Post-Season Service Recommendations

- Drain the sand trap
- Drain butterfly valve (in the hose on the low point at the back of the motor)
- For Indmar engines: Drain the front exchanger, port side
- Fog the motor (Fogging oil is available at most hardware stores)
- Stabilize the fuel. This is best done before the last time your vessel is operated
- Seal exhaust, outlets, and intake against foreign objects and animals
- Change the oil and lube all components that use it
- Remove Batteries, store above freezing temperatures
- Check strength of Antifreeze
- Pull end caps and flush heat exchanger
- Check all tubes for sand and/or debris
- Winterize the engine block with anti-corrosive spray (optional)

Warning

Removal of the drain plugs during transport may be required by law. Please check your local provincial/state laws for more information.

Saltwater Operation and Care

The highly conductive nature of saltwater causes corrosion to all aluminum. Firefish boats are made with marine grade aluminum, which produces a corrosive-resistant barrier, however the Firefish team recommends an aluminum compatible anti-fouling paint be applied to the hull for long term saltwater moorage.

Installation of anti-corrosion zinc anodes is imperative for all boats used in saltwater and is the responsibility of the boat owner.

General Care and Maintenance



Battery Care

All battery cables should be kept tightly connected and corrosion free. When not in use, the battery should be stored in a cool, dry place that will not freeze. All batteries lose some charge in storage.

CAUTION

Stray electrical currents from batteries hooked up when not in use hastens the electrolytic process. Batteries should be stored in a cool, dry place that will not go below freezing when not in use.

Steering System

Adjustments to the steering system should always be done by a qualified technician. The steering system should be lubricated during pre-system services and again during post-season/winterizing services.

WARNING

To maintain steering, thrust must be maintained. Once the engine or throttle are shut down, the ability to steer will be lost. The throttle must be kept on to maneuver.

WARNING

Do not travel at high speed directly toward any object closer than 61 m (200ft)

WARNING

Executing quick turns or stops may eject passengers or driver from the boat, causing potential injury or death.
Shifting from forward to rear thrust may cause the bow to dip below the waterline, and the resulting wave to come over the bow. Water must be pumped from the bilge before normal operation resumes or it may cause engine damage.

Navigation Lights

Navigation lights can be turned on with a toggle located on the dash.

Fuel System

Fuel tanks should be kept full to avoid condensation, and fuel older than three months should not be used. Moor securely during refueling to avoid spillage. While the boat is in storage, a fuel stabilizer should be added and filled less than the capacity rating. Fuel filters should be changed, and the fuel system should be inspected annually.

WARNING

Explosion/Fire Hazard – Gasoline is flammable. The engine should be shut off during refueling. Do not smoke during refueling.

Bilge Pump

The bilge pump is used to get rid of excess water in the bilge. To do so, simply turn on the pump using the control toggle on the console. The bilge pump will not reduce water beyond $\frac{3}{4}$ " from the bottom of the hull, so some water will always be left. Do not operate the bilge pump without water intake for prolonged periods of time.

Walk-Thru Windshield

The Walk-Thru windshield (on applicable models) is a five-piece, welded windshield with a central door that can be opened and closed. The central door should always be closed and latched when the boat is under way. While these windshields are durable, functional and reliable, care should always be taken when opening and closing the central door.

Hull

Marine grade aluminum is used to make all Firefish boats. Care must still be taken to minimize galvanic corrosion in any water environment. Avoid any metals apart from stainless steel meeting aluminum surfaces. If there is a need to attach metal fittings, a non-wicking gasket must be between the fitting and the hull. If the hull is drilled for any reason, a sealant such as silicone should be used.

Operation of the EZ Clean Intake Grate

The EZ Clean Intake Grate is designed to allow small material through, which will travel safely through the jet drive and only cause normal wear to the impeller and other components. This grate stops larger items which can harm the impeller, but it can become jammed with this larger debris and cause loss of thrust. The EZ Clean intake grate can free most of this debris.

Shutting off the engine is imperative when using the EZ Clean Intake Grate.

CAUTION

Do not attempt to use the EZ Clean Intake Grate with engine running, this may allow large debris into the jet drive and cause damage.

- **Shut off the engine.**
- Place foot on stomp bar located above swim platform and push down hard.
- Bar will release back into closed position on its own. Easing it closed may cause it to stick open slightly, causing a loss of power and an opening for larger debris to reach the jet drive.

Cleaning a Clogged Jet Pump

If larger debris has made it into the jet drive, it is imperative that it be cleaned out before normal operation is resumed.

- Shut off the engine.
- Pull the lanyard that disengages the emergency shutdown switch if applicable.
- Remove the key from the ignition switch.
- Clean the jet drive system of foreign debris.
- If something has been wound around the impeller shaft:
 - Remove the spark plugs
 - Put a wrench on the crankshaft pullet bolt and turn the engine counterclockwise. As you turn the engine, have someone slowly pull the object from the impeller shaft as it unwinds.
- If the jet drive system cannot be fully cleaned, it is recommended for the boat to be returned to the trailer or a boat lift before further work is attempted.
- It may be necessary to remove the grate to clear the jet drive.

WARNING

Be sure all jet drive components are completely free of debris. Water to cool the engine is supplied through the jet drive. Loss of engine coolant may cause overheating and engine damage.

CAUTION

Do not operate in waters with debris or weeds. The jet drive may become clogged, causing unexpected loss of steering and damage to the jet drive.

When operating in shallow waters, be aware that the jet drive may become damaged from foreign material.

WARNING

Debris sucked into the jet drive is ejected from the jet nozzle at high velocity. Anyone in the path of the jet nozzle may be struck by flying debris, which can cause injury or death.

WARNING

Do not clean or attempt maintenance to the jet drive while the engine is running. Failure to shut off the engine for maintenance or adjustments can cause injury or death.

WARNING

The jet pump does not have a gearbox. The impeller is always turning, even when your boat is in neutral. Always keep limbs, hair clothing etc. away from the jet drive intake and nozzle.

Cleaning and Care of Your Boat

Paint and Cleaning Substances

Please consult your local marine dealer about environmental regulations before painting your boat.

Common household cleaners may cause hazardous reactions with surfaces in your boat. Avoid products containing chlorine, phosphates, fragrances, and non-biodegradable ingredients. These can cause fumes that may be damaging to people, property and the environment.

WARNING

Explosion/Fire Hazard – Ventilate when cleaning or painting. Ingredients in cleaners or paint may be flammable and/or explosive. Refer to the product specifications before use.

Floor Coverings

Nautolex flooring should be wiped weekly with a soft damp cloth before toweling dry. For dirt or stains that cannot be removed with a soft damp cloth, use a mild soap and water solution and, if necessary, a soft-bristle brush. Rinse cleaned area with fresh water and towel dry.

Do not use abrasive powders, steel wool, industrial strength or solvent cleaners, vinyl “conditioners” or “protectors” as these can damage your Nautolex flooring.

CAUTION

Suntan lotion and insect repellents can cause rapid staining and deterioration of Nautolex flooring. Remove these products immediately upon contact, then wash with a mild soap and water solution before toweling dry.

Hydro-Turf can be cleaned using most soap or household cleansers and a soft brush. Be sure to rinse thoroughly, as any leftover residue can cause a slippery surface. Power washing with light pressure is an excellent way to keep your Hydro-Turf clean.

Seats and Glass

Vinyl seats should be cleaned with mild soap and water. Any commercially available window cleaner will work on the glass, but care should be taken around the paint, as the cleaner may damage painted surfaces.

Exposed Aluminum

Abrasive or acidic cleaners should not be used on exposed aluminum. To clean, use mild soap and water or power wash on a light pressure periodically. A marine or automotive wax should be used bi annually to protect the aluminum.

Painted Aluminum

The paint used on your Firefish boat is similar to autobody paint, and therefore care and treatment is the same. Rinse with clean water or clean with automotive or marine approved commercial cleaner. You can use a marine or automotive wax to protect your painted finish from the elements and UV light, as well as to protect the exposed metal where any scratches may have occurred. Firefish recommends waxing three times annually for the best results. Always spot test new cleaners or waxes before using.

Bottom of Hull

The bottom of your hull should be cleaned regularly. If the bottom of your hull is untreated aluminum, it may develop a blackish coating. This coating should not be removed, as it protects the aluminum. Anti-fouling paint may be applied to the bottom of your hull if you are planning to use your boat in saltwater and is the responsibility of the boat owner.

CAUTION

Do not use lead, copper or arsenic based anti-fouling paint directly against aluminum. This can cause poisonous leaching into the marine ecosystem.

Paint Touch Ups

A rubber mallet or autobody tools can be used to remove small dents, and stains may be removed with polish or a fine rubbing compound.

For small scratches that need repainted, touch up paint can be used. Clean the area of dirt, grease and wax, then liberally apply the touch up paint. After the paint is dry, polish the area with an automotive or marine wax.

For larger scratches, clean and lightly sand the area. Apply zinc primer first, then spray on touch up paint. Two or three coats of paint are recommended. If your boat is older or sun faded, the color may not match exactly. For full repaints, please see an automotive body shop.

Trailer

Please see your dealer regarding provincial or state regulations.

CAUTION

Improper trailering may cause irreparable damage to your boat. If you are unsure how to properly secure your boat on the trailer, please contact your dealer.

Before trailering your boat, please check the following:

- The boat should be level and squarely on the trailer.
- The winch strap and safety chain should be securely fastened to the bow eye.
- The tie down straps should be attached from the eye hooks in the transom to the rear of the trailer cinch style.
- The boat should NOT be hanging over the end of the trailer bunks.

Setting up the correct trailer fit for both your boat and vehicle is important. Firefish recommends having a technician from your dealership ensure your trailer is properly set up. Damage due to trailering and transport is not covered under warranty.

Firefish recommends adding a Rock Guard to your trailer for safer transport of your boat. Rock Guards can reduce damage incurred during transport.

Exhaust Emissions Hazard

DANGER

CARBON MONOXIDE POISONING CAN LEAD TO PERMANENT DAMAGE AND EVEN DEATH.

Carbon Monoxide is an odorless, colorless and tasteless deadly poisonous gas that takes thousands of lives all around the world each year. Many of these deaths could have been avoided with some basic precautions and vigilance.

You can become overwhelmed without even knowing it – slipping into unconsciousness and never coming around or even already being asleep and never waking up.

Ensure continuous movement of fresh air, especially in enclosed cockpits and cabins. A carbon monoxide detector is strongly advised in these areas, especially when a diesel heater is present. Other sources of carbon monoxide include cooking ranges, space heaters and charcoal grills – any type of combustion causes carbon monoxide. Always run the bilge blower whenever the engine is idling or when sources of combustion are in use.

Symptoms of Carbon Monoxide Poisoning

- Dull headache
- Weakness
- Dizziness
- Nausea or vomiting
- Shortness of breath
- Confusion
- Blurred vision
- Loss of consciousness

Exposure to Carbon Monoxide may Cause:

- Permanent brain damage
- Damage to your heart, possibly leading to life threatening cardiac complications
- Fetal death or miscarriage
- Death

If someone is suffering from carbon monoxide poisoning, move the person to fresh air and seek emergency medical care.

DANGER

EXTREME HAZARD - Ensure adequate ventilation. Gasoline engines produce carbon monoxide gas (CO). Prolonged exposure can cause serious injury or death. To reduce CO accumulation, increase air movement by opening windows or adjusting canvas. The following conditions require special attention:

Poor Ventilation



Operating at slow speed or dead in the water



Blocking hull exhausts



Operating engine and/or generator in confined spaces



Operating with the bow high



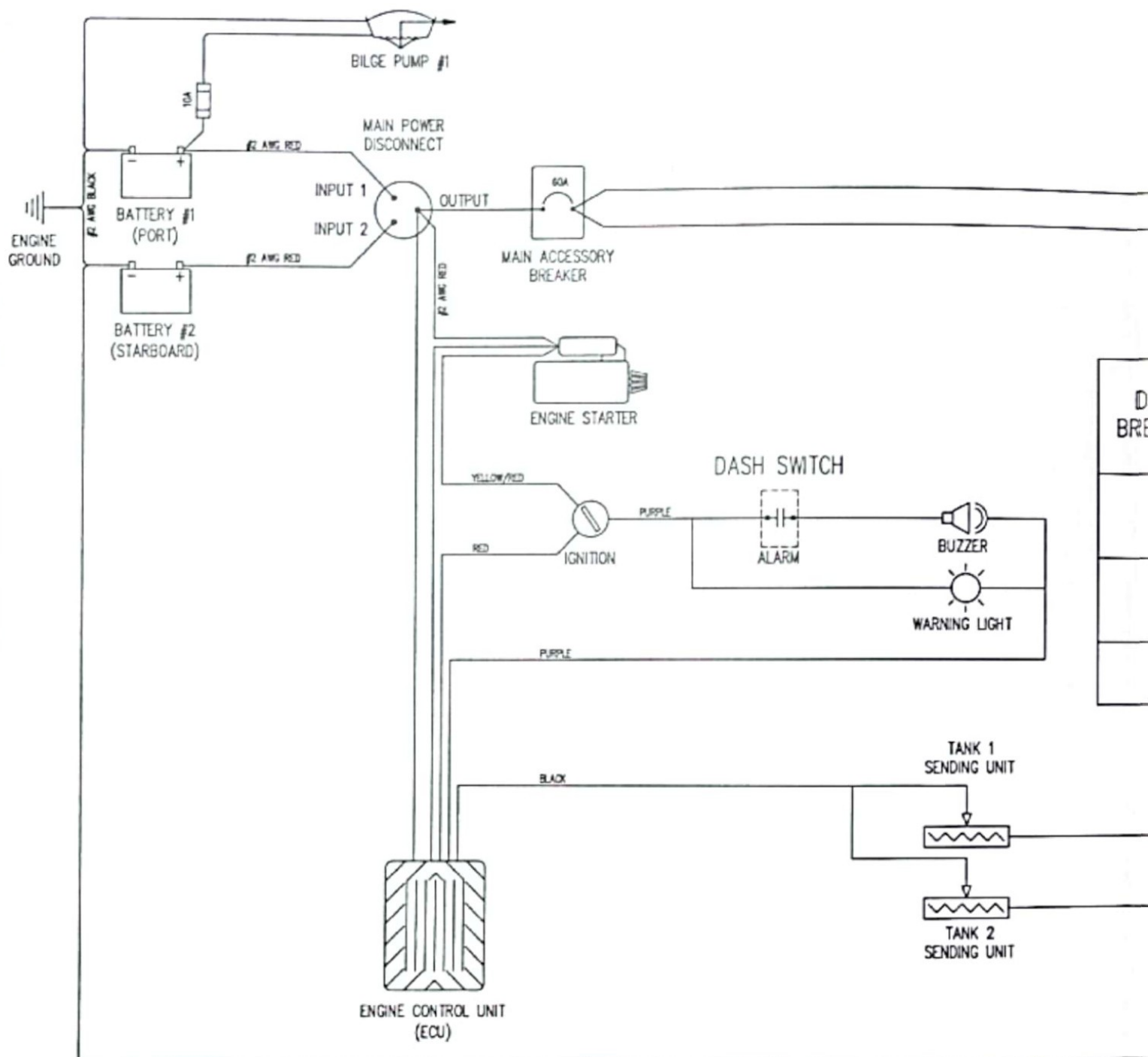
Using canvas curtains



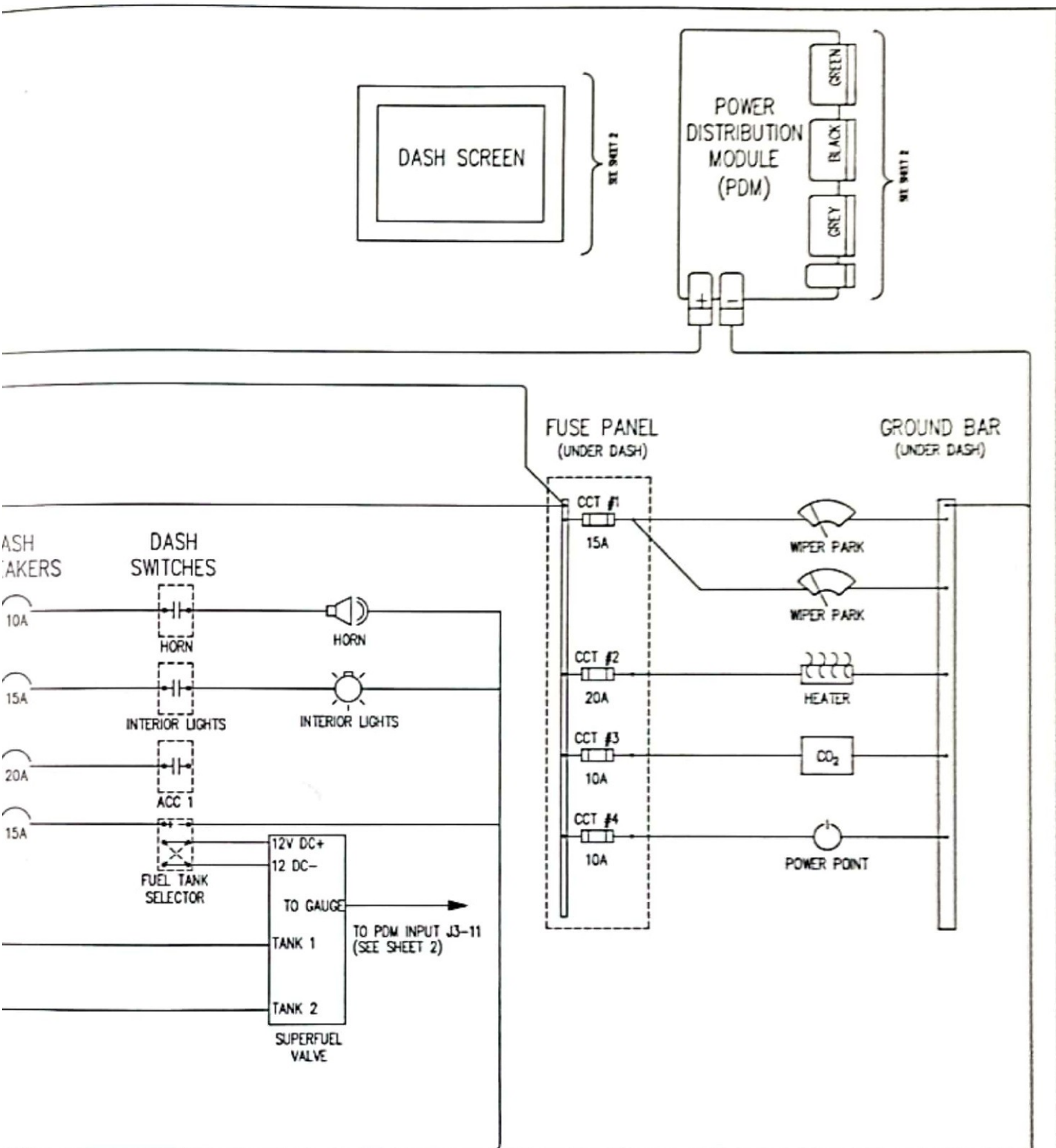
Winds blowing exhaust toward boat occupants

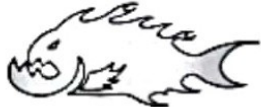
Good Ventilation



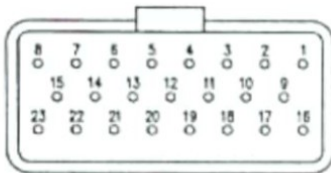


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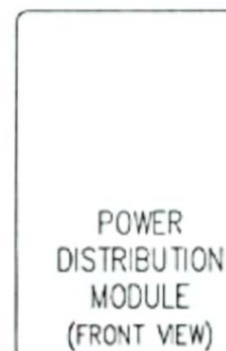


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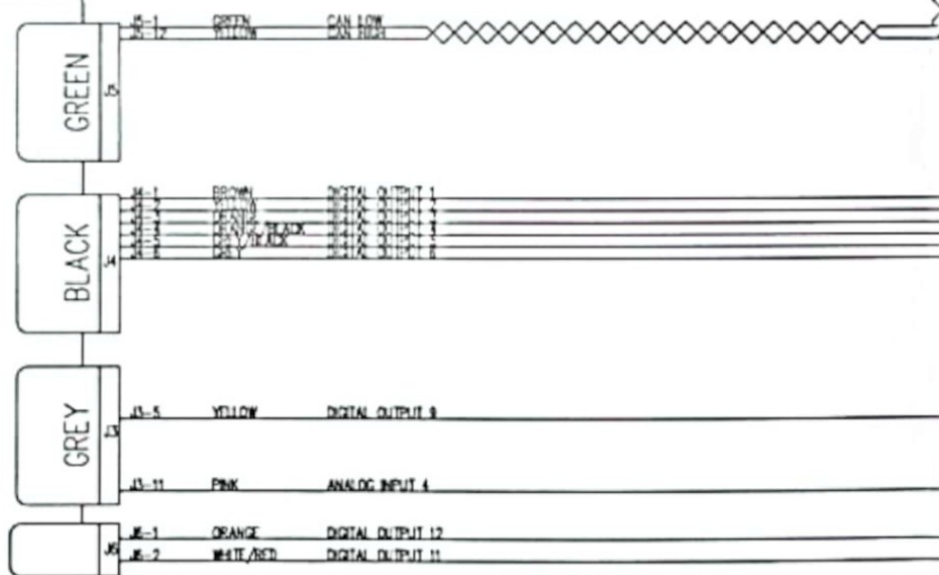
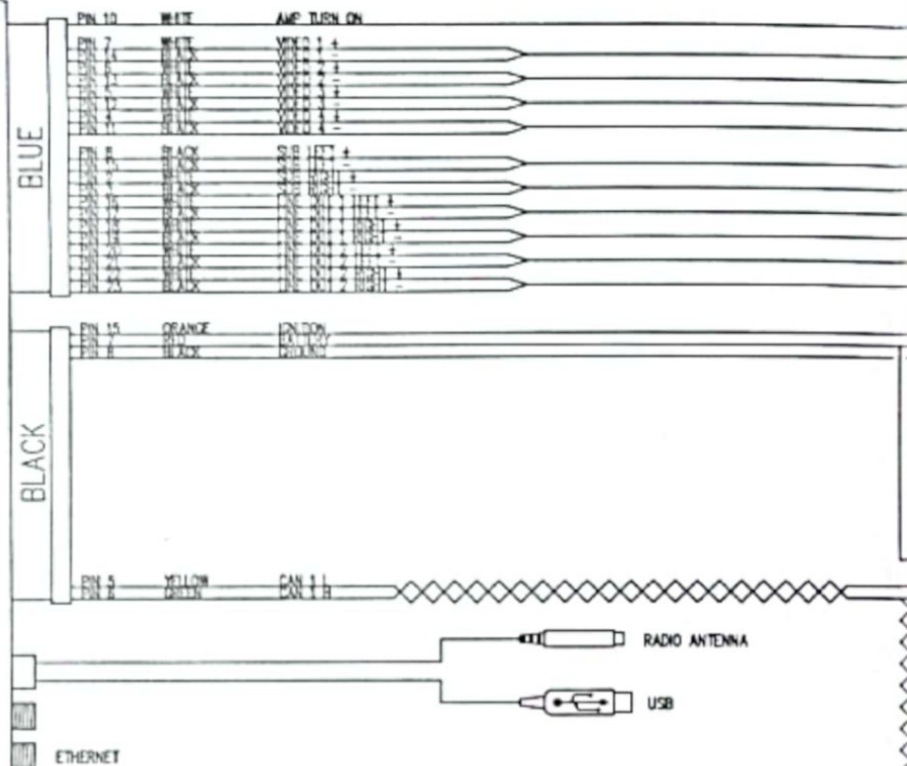
BLUE AND BLACK PLUG
(VIEWED LOOKING IN PLUG)



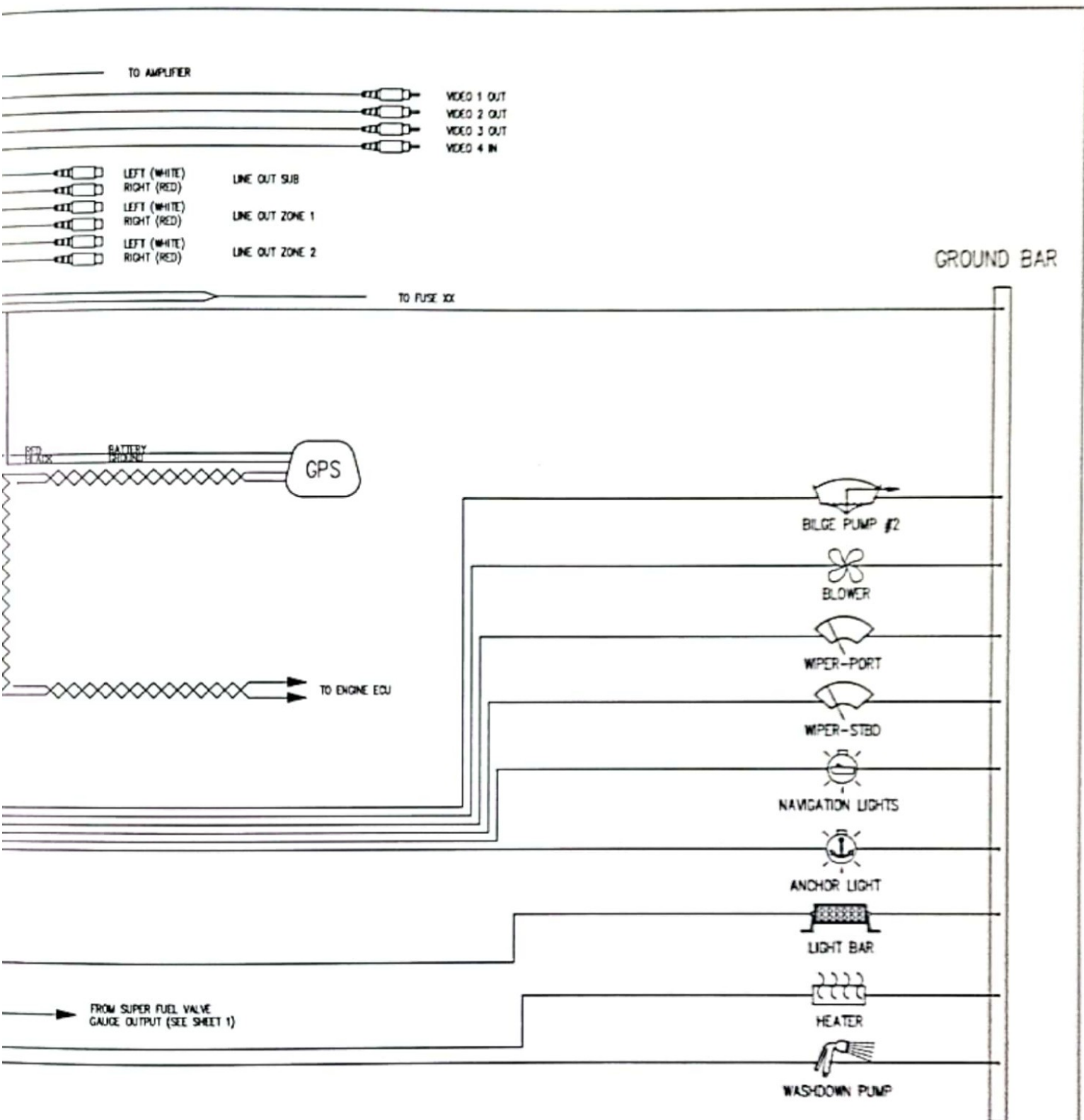
A diagram of a 12-pin D-sub connector. The pins are arranged in two rows of six. The top row is numbered 6, 5, 4, 3, 2, 1 from left to right. The bottom row is numbered 7, 8, 9, 10, 11, 12 from left to right. Each number is positioned above a small circle representing a pin.



SEE SHEET 1

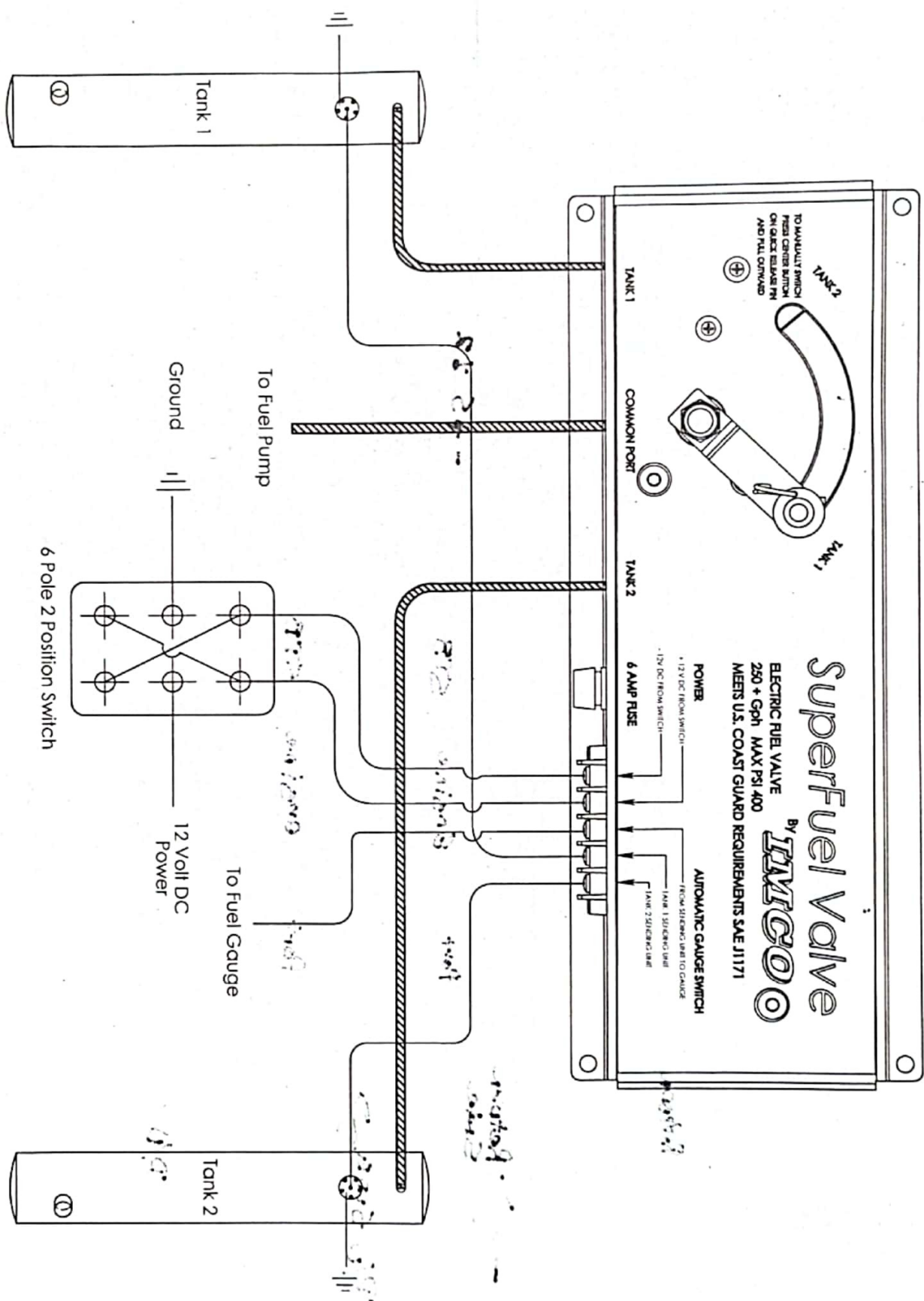


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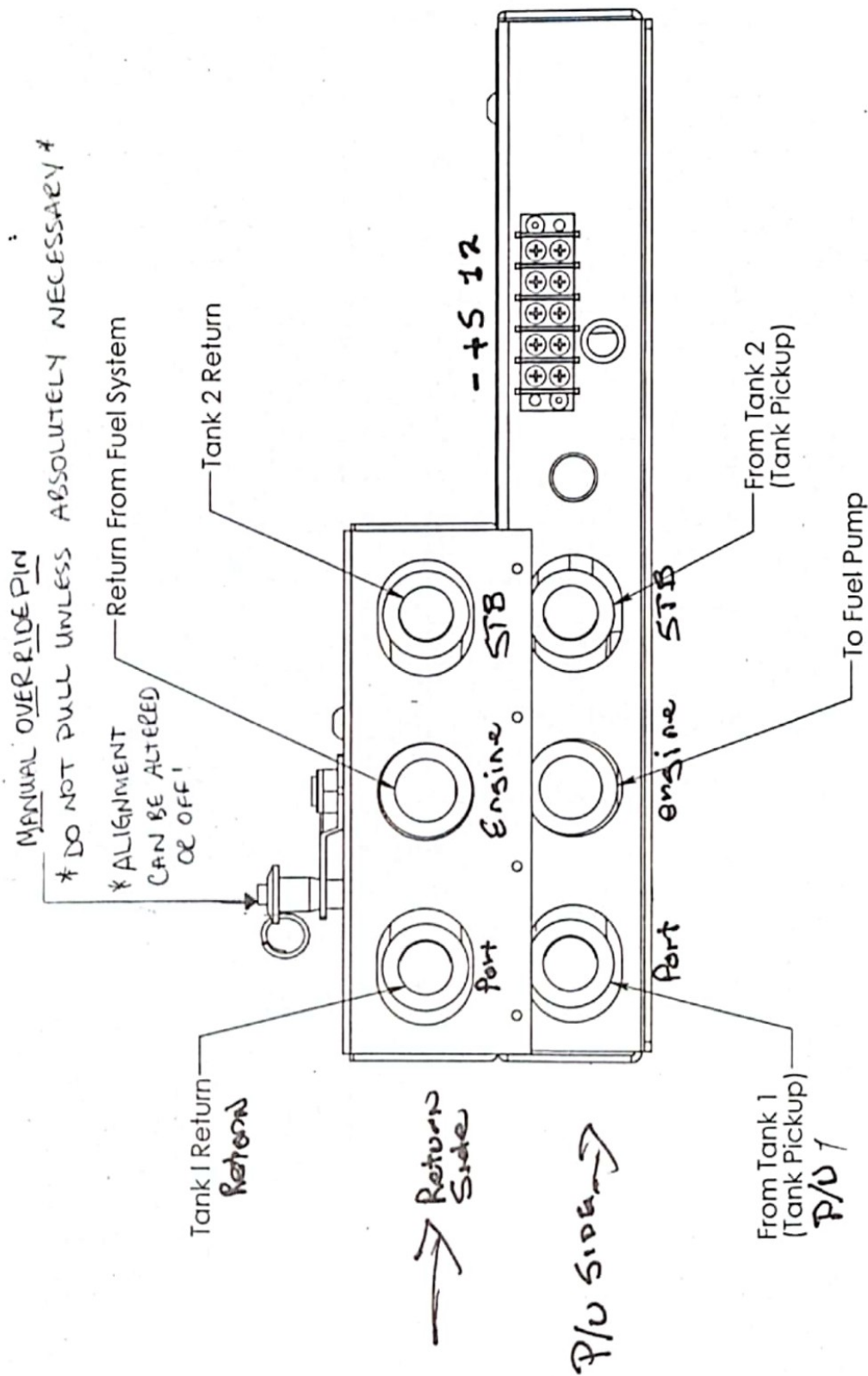


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Fuel Line & Wiring Diagram



Fuel Line Diagram for 6 Port Fuel Valve



Winterization/Storage Checklist

CAUTION

Remove battery when boat is in storage.

CAUTION

Please refer to the manufacturer's manual for correct antifreeze.

Boat Checklist

Hull drain plugs - removed

Bow – store higher than stern

Bilge sump pump – add approximately 1/2 litre of antifreeze

Cover the boat – add supports to prevent water pooling

Ventilation – allow air flow to prevent mildew

Tiedowns – leave slack to reduce hull strain

Regularly inspect during storage

Battery Checklist

Remove battery from boat – remove negative (-) first, then positive (+)

Clean battery surface

Store battery in a cool, dry place that will not go below freezing

Fuel Checklist (Gasoline/Diesel)

Fill fuel tank less than rated capacity

Add fuel stabilizer or treatment

Engine Checklist

Drain sandtrap

Drain the valve and other drain points

Change the oil

Check strength of the antifreeze is sufficient for storage

Pull end caps and flush heat exchanger, check all tubes for sand and/or debris

Refer to the manufacturer's manual for further information on winterization/storage

Trailer Checklist (If applicable)

Protect against theft! Install a lock on the trailer coupling

Jack up trailer and bolster for support to take weight off of wheels and springs

Ensure there is no distortion to the trailer frame, which can distort the hull

Recommission After Storage Checklist

Boat Checklist	
Hull drain plugs - installed	
Bilge – clean thoroughly	
Bilge Blowers – check for proper operation, make sure air is blowing from vent	
Navigation lights – check for proper operation	
Equipment – check for proper operation	
Wiring and Switches – check for proper operation	
Lines and Hoses – check for leaks and obstructions	
Oil and fluids – check for proper levels, change if not done during winterization/storage	
Battery Checklist	
Terminals – clean with wire brush or steel wool	
Check battery for charge	
Clamps – attach positive (+) first, then negative (-)	
Terminals and clamps – apply protective grease	
Check wiring for deterioration	
Fuel Checklist (Gasoline/Diesel)	
Check for worn hoses, leaks and loose connections	
Engine Checklist	
Check all traps and valves are closed	
Change the oil if not done during winterization/storage	
Refer to the manufacturer’s manual for further information	
Trailer Checklist (If applicable)	
Check trailer hitch mechanism	
Winch line and gear – check for proper operation	
Clean and check axle bearings, re-grease if necessary	
Brakes – check for proper operation	

Troubleshooting



In the case of a malfunction, please refer to the manufacturer's manual, your dealer, or a qualified mechanic for more information.

Problem	Possible Solution(s)
Engine - Refer to Manufacturer's Manual for more Information	
Coughs and Sputters	<ul style="list-style-type: none">◦ Check fuel supply◦ Check fuel filters/strainers◦ Check fuel filters/sediment bowl for water in fuel◦ Clear obstructed or pinched fuel line◦ Clean or replace spark plugs◦ Free choke movement◦ Replace fuel pump◦ Seek professional service
Engine Stops Suddenly	<ul style="list-style-type: none">◦ Check battery connections◦ Check safety shutoff lanyard◦ Check ignition wiring and fuse◦ Refer to manufacturer's manual◦ Seek professional service
Runs Hot	<ul style="list-style-type: none">◦ Check oil & coolant levels DANGER: HOT after engine cools◦ Clear water intake◦ Replace cooling system belt◦ Replace water pump◦ Replace pump impeller◦ Replace thermostat

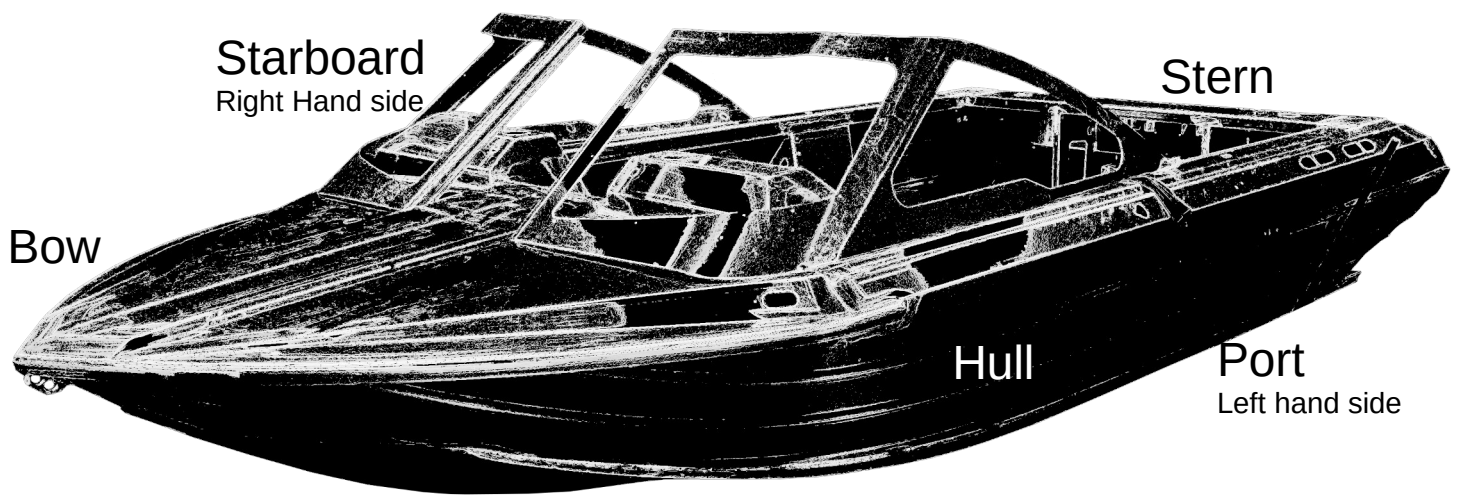
Please refer to the manufacturer's manual for more information on troubleshooting any engine issues.

Troubleshooting



In the case of a malfunction, please refer to the manufacturer's manual, your dealer, or a qualified mechanic for more information.

Problem	Possible Solution(s)
Performance	
Passengers get wet	<ul style="list-style-type: none"> ◦ Lighten your load ◦ Change load distribution ◦ Adjust motor/drive trim
Rides Rough	<ul style="list-style-type: none"> ◦ Change load distribution ◦ Adjust motor/drive trim ◦ Slow down
Goes Too Slow	<ul style="list-style-type: none"> ◦ Change load distribution ◦ Adjust motor/drive trim ◦ Clean hull, propeller/impeller, drive unit ◦ Change propeller/impeller ◦ Check engine
Boat Vibrates	<ul style="list-style-type: none"> ◦ Clear propeller/impeller ◦ Check for bent propeller/shaft or damaged impeller ◦ Check engine mounting/part hitting frame
Steering	
Steers Erratically	<ul style="list-style-type: none"> ◦ Tighten steering wheel ◦ Tighten cable brackets ◦ Clean and adjust cable(s) ◦ Adjust motor/drive trim



Where?		What?	
Aft	Toward the stern	Beam	Width of the boat at the widest point
Bearing	The horizontal direction between two objects	Chine	A relatively sharp angle in the hull compared to the rounded bottom
Bow	The front of the boat	Cleat	Used to secure rope aboard a vessel
Fore	Toward the bow	Deck	Any of the horizontal surfaces of the boat that are structural
Lee	Away from the wind	Fender	A bumper used to protect the hull from chafing
Port	Left hand side, when facing the bow	Gunnel/Gunwale	Upper edge of the hull (pr. Gun-nl)
		Helm	The steering apparatus
Starboard	Right hand side, when facing the bow	Hull	The shell and framework of the boat
		Jet Drive	Inboard/Outboard propulsion unit
Stern	The rear of the ship	Keel	The structural basis of the hull
Windward	Toward the wind	Lanyard	A rope that ties something off
Bearing	The horizontal direction between two objects	Radar	A system used to determine bearing and distance to a target
Aground	Resting on the ground	Sonar	A device used to detect & range underwater targets and obstacles
Ashore	On the beach, shore or land	Transom	A flat surface across the stern
Aboard	On/in the vessel	Trim	Relationship of the boat's hull to the waterline
Underway	Moving; not aground or ashore	Wake	Turbulence behind the boat

Maintenance Log

Model:

Motor:

Trailer:

[illegible]