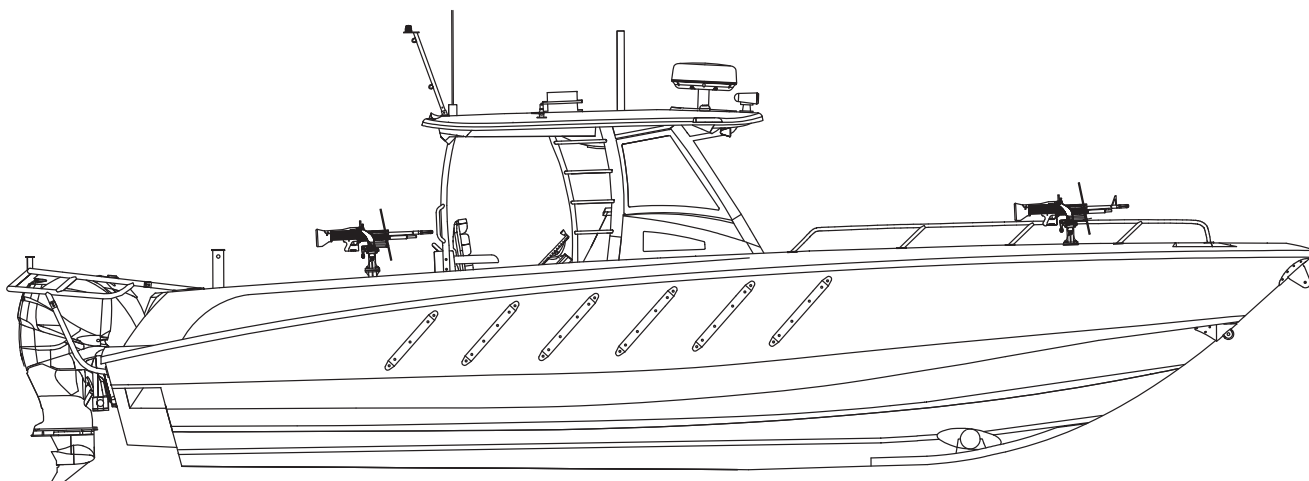


Operation & Maintenance Manual

Part Number 2081409



Boston Whaler® **37 Justice® Series**

Fast Patrol Boat



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420 Megan Avenue, Edgewater, FL 32132 USA

Safety Notices

This manual uses three levels of notification for safety-related information.

The signal words CAUTION, WARNING, and DANGER identify specific levels of hazard. They are defined as:



CAUTION

A hazard that might result in injury or damage to property or equipment.



WARNING

A hazard that could result in death or serious injury.



DANGER

A hazard that will result in death or serious injury.

When you see a safety information box in this manual, carefully read the message before you proceed. Take these safety warnings seriously and be alert to the possibility of property damage, serious injury, or death. If you do not understand a safety warning, call the Customer Service Department at Brunswick Commercial & Government Products.

About This Manual

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Brunswick Commercial & Government Products reserves the right to make changes at any time, without notice, to features, specifications, and model availability. The right is also reserved to change any specification, part, or system without incurring any obligation to update older boats.

The information in this manual is based on the latest specifications available at the time of publication. The photographs and illustrations might not depict actual models or equipment, but are intended as representative views for reference only. The continuing accuracy of this manual cannot be guaranteed.

Certain features, parts, options, systems, and accessories discussed in this manual might not be found on your boat.

Be sure that the operator and at least one other person in the boat are familiar with the contents of this manual. A second person should be able to safely operate the boat if the primary operator is not available.

Make this manual available to anyone who will operate this boat.

Warranty Information

Read the Brunswick Commercial & Government Products Limited Commercial Warranty that was shipped with this boat. It explains what is covered and what is not covered under warranty. It also explains your responsibilities and obligations as the owner.

A product registration card was shipped with this boat. Complete this card and mail it to Brunswick Commercial & Government Products. We use the information to initiate your warranty coverage and to contact you in case of a safety-related issue with your boat.

Include your boat's Hull Identification Number (HIN) when completing the registration card and anytime you contact the factory. See the **Maintenance Section** for information about your boat's HIN.

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Operator Responsibilities

It is expected by Brunswick Commercial & Government Products (BCGP) that the personnel authorized to operate this boat are experienced boat handlers familiar with high-performance boating. BCGP can neither predict, nor warn against, every possible hazardous situation related to the operation and maintenance of this boat.

If you use a method or procedure different from one outlined in this manual, you must satisfy yourself that your method or procedure will not put your boat or your crew at risk.

The safety of this boat and its crew is your responsibility. Always follow these general guidelines when operating this boat:

- Always operate this boat within the limits of your skill and experience. If you do not have the appropriate level of experience, ask someone to instruct you.
- Understand all of the information contained in this manual, particularly Sections 1 and 2
- Understand the operation of all boat controls and systems
- Understand and follow all applicable boating regulations
- Always use safety equipment and operating procedures that are appropriate for your mission
- Never work alone around machinery such as outboard engines, generators, and fire pumps

Giving Assistance

The **1971 Federal Boat Safety Act** grants "good samaritan" protection to any boater who offers good faith assistance to someone in distress. The Act also protects that boater from liability related to any assistance given.

You should attempt to give assistance when you see a distress signal while boating, if you can do so without endangering your boat or crew.



Personal Flotation Devices

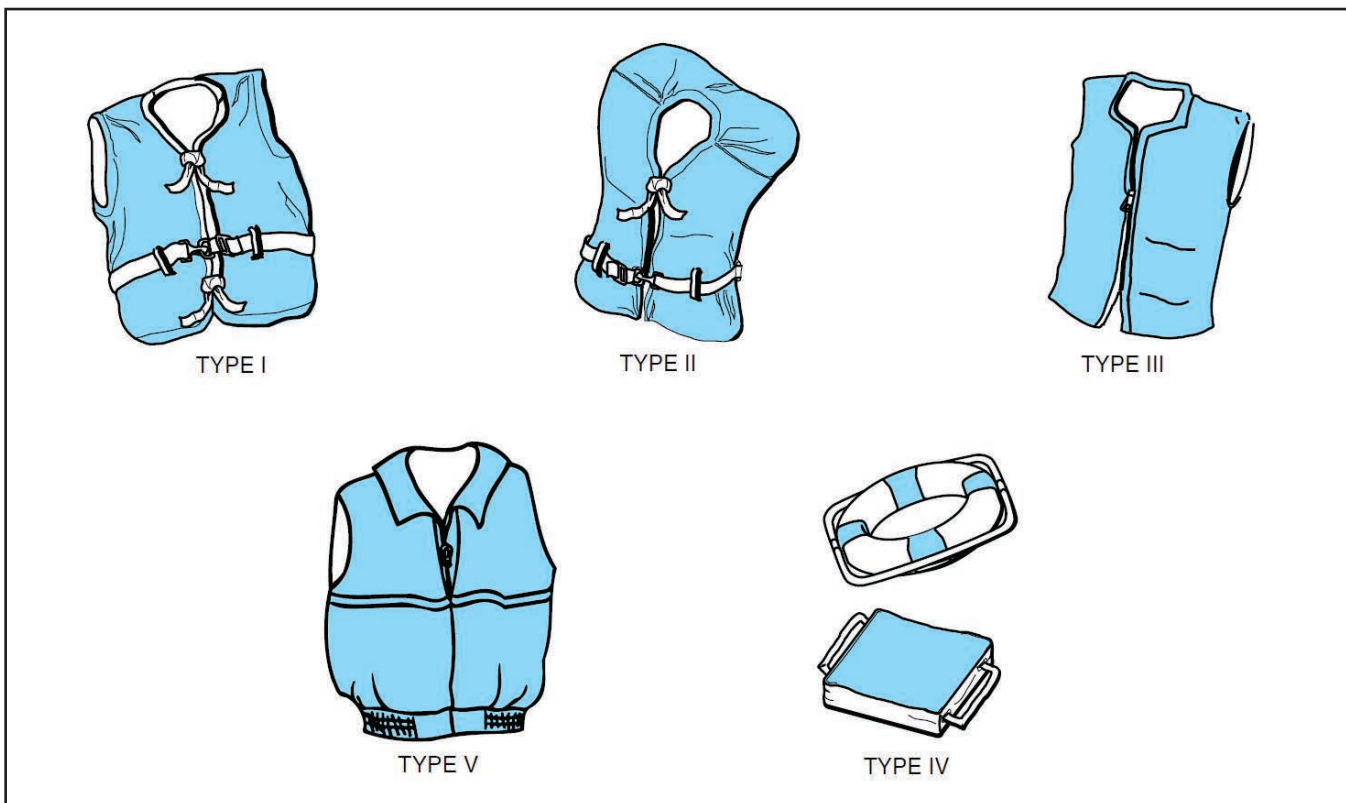
Personal Flotation Devices (PFD's) are designed to save lives. It is your responsibility to ensure that the boat has a sufficient number of PFD's for your crew. It is your responsibility to ensure that non-swimmers wear PFD's at all times and that everyone wears a PFD during emergencies and severe weather.

The United States Coast Guard recognizes four types of wearable devices and one type of throwable device.

- **Type I**- Life preserver, appropriate for off-shore and foul weather.
- **Type II**- Buoyant vest, appropriate for near-shore and inland waters.
- **Type III**- Flotation aid, appropriate for continuous use in calm inland waters.
- **Type IV**- Throwable device, appropriate to throw to a person already in the water. These devices must never be worn as a vest.
- **Type V**- Special-purpose device; includes harnesses, certain jackets, and rafting vests. These vests must be worn while underway to count toward minimum PFD requirements.

All PFD's must be easily accessible. They must be removed from their shipping bags and they should be unbulked. Make sure that everyone knows where the PFD's are located. Make sure that everyone knows how to put one on and correctly adjust it.

Check the availability and condition of all PFD's before each mission.

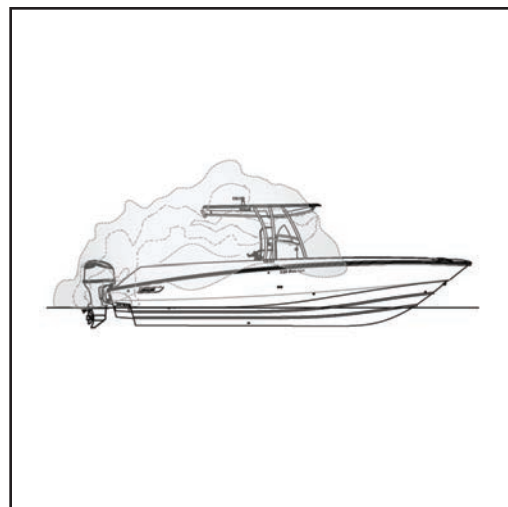


Exhaust Emissions

Gasoline and diesel-powered engines produce carbon monoxide when they are running. Carbon monoxide is a colorless and odorless gas. It is extremely toxic. Be aware of the threat and respond accordingly.

Always be aware of operating conditions that might allow carbon monoxide to collect in occupied spaces on your boat. Remember these general precautions:

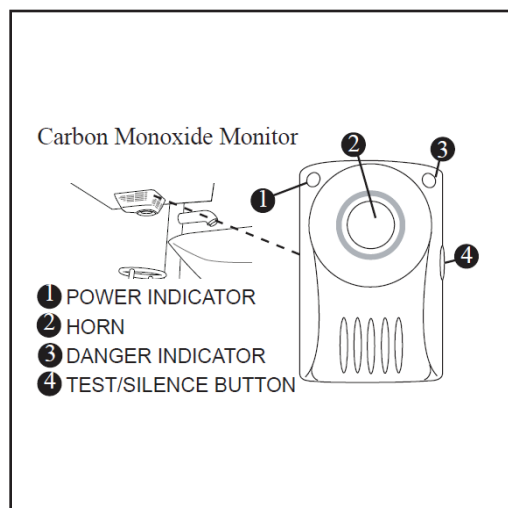
- Avoid running engines or generators in confined areas such as boat houses
- Be aware of other boats when you are moored
- Be aware of wind direction when operating at slow speeds
- Adjust hatches, doors, windows, and awnings to increase air movement in confined spaces when engines and generator are running
- Sleeping aboard a boat requires a working carbon monoxide detection system, preferably in each sleeping quarter. Always ensure these monitors are functioning before heading out.



Carbon Monoxide Detector

There is a carbon monoxide detector for your boat that should be located on the starboard side of the cabin under the cabinette above the sink. The detector is very sensitive and will notify you before dangerous amounts of carbon monoxide accumulate which will allow you to take measures to dissipate the gas from the areas.

Follow all recommendations regarding this section to reduce the risk of carbon monoxide poisoning. For more information about the dangers of carbon monoxide, read the booklet **What You Can't See** that is in your operator's bag.



DANGER

Prolonged exposure to carbon monoxide can cause serious injury or death. Always ensure that confined spaces in your boat have an adequate supply of fresh air.



Fire Extinguishers

Your boat is equipped with three United States Coast Guard approved Type ABC fire extinguishers. Each extinguisher is UL Rated 1-A:10-BC. This rating indicates that each extinguisher can be used to fight Class A, B, and C fires. These classes include fires involving wood, cloth, gasoline, oil, grease, and live electrical equipment.

One fire extinguisher is located to port at midship, just forward of the dive door. The other two are port and starboard, just forward of the bow storage compartment area. Be familiar with these locations. Read and understand the instructions on the extinguisher label and in the manufacturer's instruction booklet located in your operator's bag.



Formulate a fire plan in advance that will help you evaluate your risk and response in the case of an on-board fire.

Fire Suppression System

This vessel has a USCG approved automatic fire suppression system which is located on the forward port bilge bulkhead by the battery trays and can be accessed by lifting the hatch in the aft cockpit deck. The system will activate when the temperature in the enclosed area reaches 165°F (74°C).



DANGER

DO NOT handle the extinguisher actuator. The fire suppression system is under pressure (195 psi). Accidental discharge may result in death or serious injury.

Fires

Most marine fires result from spilled fuel or oil accumulating in the bilge. Careful use of on-board fire extinguishers should control small fires.

Direct the fire extinguisher output toward the base of the flames in a sweeping motion. Check carefully and verify that the fire has been extinguished. Evaluate the damage and get assistance immediately.

Larger fires involving the boat's fuel tank might result in explosion and complete destruction of the boat. Formulate a fire plan in advance that will help you decide if you can fight the fire or if you should abandon the boat.



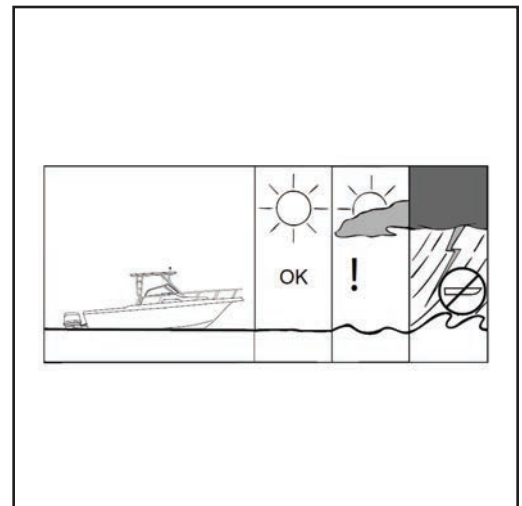
WARNING

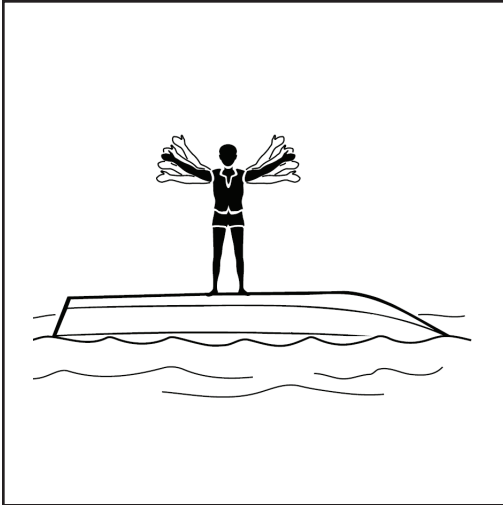
Gasoline and other flammable liquids float on water. If you abandon the boat, swim up wind or up current from the boat to avoid burning fuels that might spread on the surface of the water.

Severe Weather

Take these general safety precautions if you must operate your boat in severe weather conditions:

- Review the condition and operation of all safety and communication gear
- Have everyone wear personal flotation devices
- Use your ignition shutoff key and lanyard
- Stow loose gear and lash down equipment
- Close all hatches, doors, and windows
- Install the dive door, if equipped
- Reduce boat speed
- Periodically report your location and situation by radio
- Monitor marine weather advisories





Capsizing

Your boat might **capsize** due to improper loading, improper operation, or severe weather conditions. Formulate a **capsizing** plan in advance that includes the following actions:

- Try to turn off the engines to avoid injury and additional damage
- Locate all crew and evaluate their condition
- Stay with the boat, it should float and it is easier to locate
- Distribute PFD's if possible
- Try to climb onto the hull
- Initiate emergency locating signal or radio communication if possible

Boat Load Capacities

Specific capacity information for this boat is listed in the **Maintenance Section**.

- Do not exceed the capacity limits of this boat under any circumstances
- Consider reducing these capacity limits during special operations and severe weather conditions
- You are always responsible for the safety of the boat and its crew even if the capacity limits have not been exceeded.



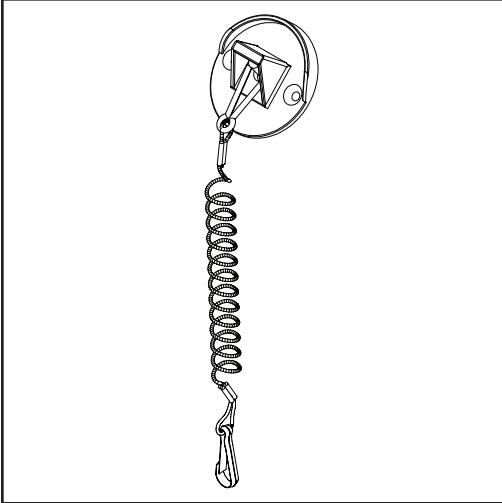
WARNING

Excessive loading, improper load distribution, and mismatching loads to existing conditions can contribute to boat swamping or capsizing. These situations can result in serious injury or death.

Swamping

Swamping or flooding the interior of the boat can occur for a number of reasons, including severe weather conditions, improper operation, and improper loading. Consider the following:

- Know the safe loading limits for this boat under normal conditions. Refer to the boat specifications in the **Maintenance Section** of this manual.
- Consider reducing loading limits during special operations or severe weather conditions.
- Distribute any load or cargo evenly front to back and port to starboard so that the approximate center of the load is near the middle of the boat.
- Close all hatches, doors, and windows during severe weather.
- Install the dive door, if equipped.
- Adjust boat trim and speed to match weather conditions.
- Avoid backing into large waves whenever possible.
- Check operation of all bilge pumps, float switches, and water level sensors before each trip.



Ignition Shutoff Switch

This vessel is equipped with an emergency engine stop switch. The switch is located on the console, below the shift/throttle control.

The ignition shutoff safety switch incorporates a shut-off switch, switch clip, lanyard and lanyard clip, which is clipped to the operator when running. If an emergency arises and the engines must be shut down, a pull on the cord to release the clip from the shut-off will shut off the engines.

This switch is designed to shut the engines off when the operator of the boat leaves the control station, either accidentally by falling into the boat, or by being ejected overboard.

See more details in **Section 2** of this manual.



WARNING

Do not activate the ignition shutoff switch during normal operations when the boat is on plane. Activating the ignition shutoff switch at planing speeds will cause the boat to suddenly decelerate, possibly injuring or ejecting passengers.

You should connect the ignition shutoff switch clip and lanyard to a sturdy part of your clothing. If you move beyond the scope of the lanyard, the ignition shutoff switch will be activated and both engines will shut off immediately.

Proposition 65 Information

The following information is included in this manual as recommended by **California's Safe Drinking Water and Toxic Enforcement Act of 1986**, amended through Proposition 65.



WARNING

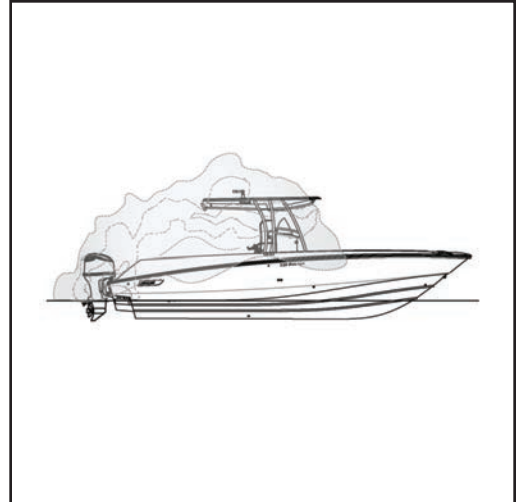
A wide variety of components used on this boat contain or emit chemicals known to the State of California to cause cancer, birth defects, and other reproductive harm.

Examples include:

- Engine and generator exhaust
- Gasoline, diesel fuel, coolants, and motor oil
- Cooking fuels
- Cleaners, solvents, and paint
- Waste materials that result from wear of boat components
- Lead from battery terminals and other sources

To avoid harm:

- Keep away from engine, generator, and cooking fuel exhaust fumes
- Wash areas thoroughly with soap and water after handling the substances listed in this warning



Deck Occupancy Chart



Working Decks: Do not allow passengers on these decks while the boat is underway. These decks can only be used when you are at the dock, mooring, or anchoring.



Accommodation Decks: You are not allowed passengers to move around these decks while the boat is underway. You must continually evaluate the sea state and boat performance. Restrict passenger access to these decks if conditions warrant. Keep accommodation decks free of loose gear.

**WARNING**

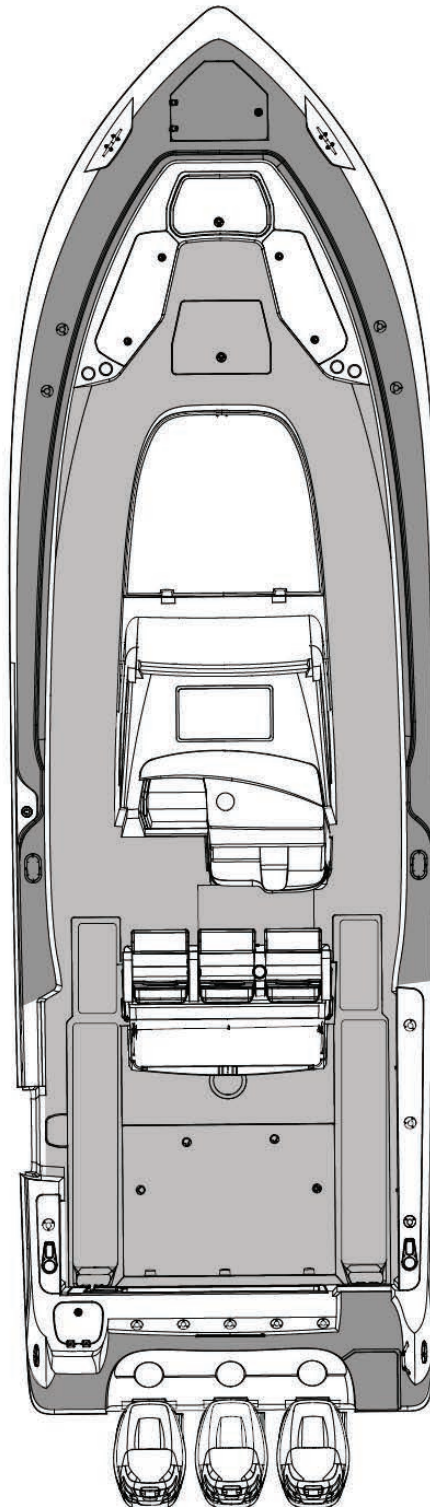
Gelcoat surfaces are always slippery when wet. Use extreme caution when walking on wet surfaces to avoid slipping or falling. Never wax portions of the boat that have a non-skid pattern.

**DANGER**

Never occupy working decks while the boat is underway. Do not sit on the gunwale or any part of a working deck while the boat is underway.

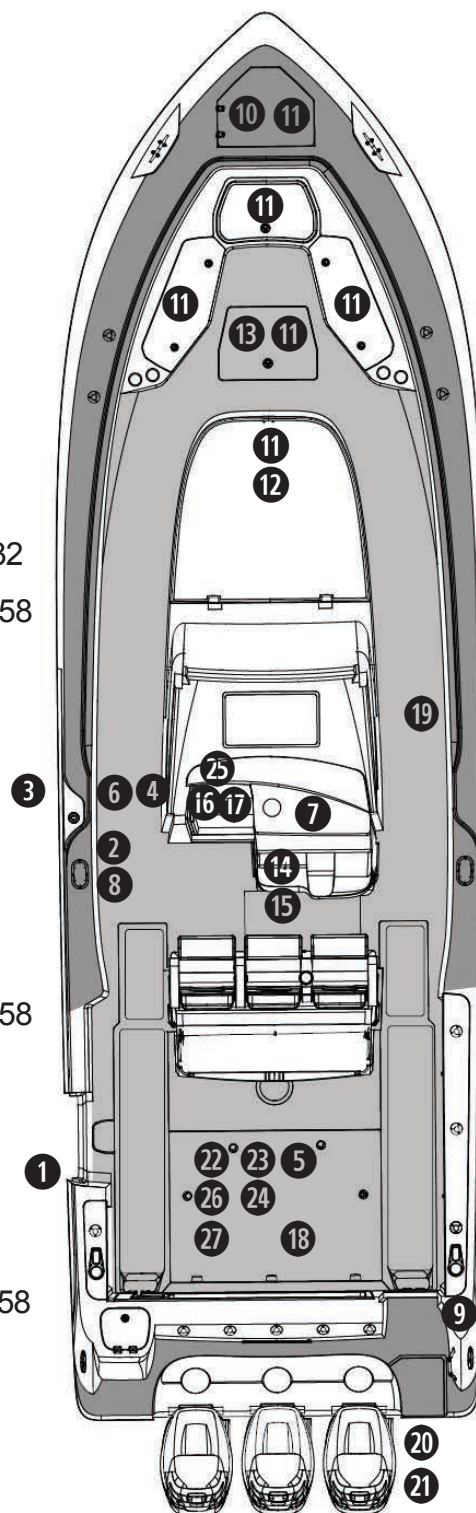
**DANGER**

Do not stand or walk on the hardtop while the boat is underway. Serious injury could result.



Warning Labels

- ❶ WARNING, SECURE DOOR 1754632
- ❷ VESSEL CERTIFICATION/CAPACITY
- ❸ FUEL RECOMMENDATION 91 OCTANE 1749551
- ❹ US EPA EVAP EMISSIONS BCGP 1974618
- ❺ PREVENT DISCHARGE OF POLLUTANT 1745514
- ❻ WARNING, LEAKING FUEL 1907336
- ❼ PROP 65 HANG TAG 1795087
- ❽ MAXIMUM ENGINE WEIGHT 1851949
- ❾ DANGER, TRANSOM DOOR SECURE 1743571
- ❿ DANGER, STAY CLEAR OF MOVING PARTS 2028932
- ⓫ CAUTION, AVOID INJURY, BOAT MOVEMENT 1836858
- ⓬ WARNING, DO NOT STORE FUEL 1691003
- ⓭ CAUTION, DO NOT ALLOW LIQUID 1963299
- ⓮ WARNING, ROTATING PROPELLER 1950698
- ⓯ DANGER, CO HELM 1811368
- ⓰ WARNING, CO CABIN 1812911
- ⓱ WARNING, RUNNING BOAT WITH DOOR 2028922
- ⓲ CAUTION, AVOID INJURY, BOAT MOVEMENT 1836858
- ⓳ WARNING, INTERMEDIATE BREAKER 2029122
- ⓴ WARNING, CO TRANSOM 1811367
- ⓵ WARNING, ROTATING PROPELLER 1903624
- ⓶ DISCHARGE OF OIL 1744737
- ⓷ CAUTION, AVOID INJURY, BOAT MOVEMENT 1836858
- ⓸ NOTICE, BILGE VOLUME 1758080
- ⓹ DISPOSAL OF GARBAGE 1744745
- ⓺ SEACOCK LOCATIONS 1957077
- ⓻ NOTICE, OVERBOARD DISCHARGE 1745156



Operator's Notes

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Pre-Operation Checklist

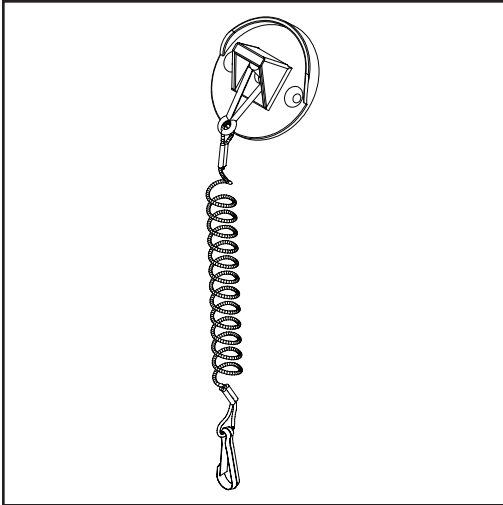
Review all the items on this checklist each time you prepare for a departure. Resolve any issues before you leave the dock.

- ☐ Drain plug(s) installed in hull
- ☐ Verify trip routing and navigational information
- ☐ Check regional weather advisories
- ☐ Operator's manual on-board
- ☐ Safety equipment on-board
- ☐ Hull in seaworthy condition
- ☐ VHF and HF radios operational
- ☐ GPS/chartplotter operational
- ☐ Depth sounder unit operational
- ☐ Radar operational
- ☐ Adequate fuel load for trip
- ☐ Fuel tanks, valves and hoses in good condition
- ☐ Fuel filters in good condition
- ☐ No water in water separators
- ☐ Navigation lights operational
- ☐ Spotlight/floodlights operational
- ☐ Whelan strobe light operational
- ☐ Horn operational
- ☐ Bilge pumps (12 VDC) operational
- ☐ Float switches/water level sensors operational
- ☐ Engine starting batteries in good condition
- ☐ House battery in good condition
- ☐ Battery OFF-ON switches correctly set
- ☐ Shore power cord(s) disconnected and aboard
- ☐ Shore power breakers are off
- ☐ Check generator coolant level
- ☐ Check generator oil level
- ☐ Control levers in NEUTRAL
- ☐ Ignition shutoff switch and lanyard in place
- ☐ Engines operational and normal
- ☐ Engines in full tilt down position
- ☐ Steering system operational and normal



CAUTION

Test your bilge pumps and water level sensors before each trip. Clear away any debris that might restrict pump or water level sensor operation.



Ignition Shutoff Switch

Your boat is equipped with an ignition shutoff switch. The ignition shutoff switch is located on the lower console face, below the throttles.

The ignition shutoff switch is designed to shut off the vessel's engines if you move away from the helm station by accident, either by falling down or by being ejected from the helm seat. Both of these situations can be caused by unsafe operating techniques or severe operating conditions. Do not use the ignition shutoff switch to stop the engines during normal boat operation.

WARNING

Do not activate the ignition shutoff switch during normal operations when the boat is on plane. Activating the ignition shutoff switch at planing speeds will cause the boat to suddenly decelerate, possibly injuring or ejecting passengers.

You should connect the ignition shutoff switch to a sturdy part of your boat. If you move beyond the scope of the lanyard, the ignition shutoff switch will be activated and both engines will shut off immediately.

Understand this important information about your ignition shutoff switch :

- It is your responsibility to decide when to attach the switch lanyard, but we strongly recommend that you use the shutoff switch anytime you are operating the boat.
- Test the ignition shutoff switch periodically by pulling the clip and lanyard while the engines are at idle speed. The engines should stop immediately.
- The engines will not start if the clip and lanyard is not attached to the shutoff switch .
- The switch can only function properly when the lanyard is attached to a sturdy part of your boat.
- Do not shorten the switch lanyard. It must be long enough to avoid inadvertent switch activation during normal operator activity.
- Refer to the engine operator's manual for specific information about the ignition shutoff switch .



Starting the Engines

Before you attempt to start the engines, ensure the lower units are in water of sufficient depth for operation and that there are no people or objects in the vicinity subject to injury or damage.

In order to start the boat's engines, you need to follow a specific sequence, including running the blower to dispel fumes, turning on the batteries, engaging the key switches, securing the ignition shutoff switch lanyard, positioning the controls in NEUTRAL and then activating the START setting on the push-to-start panel for each engine.

Battery Selector Switches

This boat uses remote battery selector switches (one for each engine) to control delivery of DC power from the batteries. The battery switches are located behind an access door on the starboard side of the control station. In order to start the engines, the battery switches must be in the ON position.

- You must turn the remote engine battery switches to the ON position before you use the main engine start switches.
- The center battery switch also controls the power to the components powered by the house battery.
- You must turn the main engine key switches to the OFF position after you secure the engines from service.
- You should turn the remote engine battery switches to the OFF position after you secure the engines from service.



Main Ignition Key Switches

The main ignition key switches are located on the bottom of the main breaker panel behind an access door on the port aft wall of the cabin. **The keys must be turned clockwise to the ON position to activate the system.**



CAUTION

The engines CANNOT be started from this location.



Push-to-Start Panel

This vessel may be equipped with Mercury Marine's DTS push-to-start engine control panel. The push-to-start panel is located on the control console, adjacent to the DTS engine control. The panel has three soft-touch START/STOP buttons that allow you to start and stop the outboard engines.

The DTS push-to-start engine control panel will only work if the main ignition key switches are in the ON position and the DTS control levers (throttles) are in NEUTRAL.



DANGER

Never start or operate the engines when people are in the water near your boat. Contact with the boat, propellers or propulsion units can cause serious injury or death.



CAUTION

Never start or run engines without an adequate supply of cooling water. The engines will be damaged immediately.





Automatic Charging Relays (ACR)

The engine/house batteries are automatically connected in parallel through the use of ACRs (Automatic Charging Relay) when a sufficient charging source is present. The battery banks are automatically separated when the charging source falls below 13.5 volts for a predetermined amount of time.

The ACRs are located on the port side of the forward bulkhead of the mechanical equipment compartment in the cockpit.

The use of ACRs eliminates the need for the operator to monitor battery voltage and to decide whether or not it is okay to parallel the battery banks. It also eliminates the risk of a dead battery bank if a paralleling switch were left in the "combined" position without a sufficient charging source present. In an emergency, the operation of the ACRs can be manually overridden by use of the knob on the top of the ACR.

Refer to the manufacturer's operation manual for complete instructions, warranty information and safety precautions.



Starting Procedure

Use the following checklist each time you start the engines. Additional detailed information about these systems is covered in the engine operator's manual.



DANGER

Never start or operate the engines when people are in the water near your boat. Contact with the boat or propulsion units can cause serious injury or death.



CAUTION

Never start or run engines without an adequate supply of cooling water. The engines will be damaged immediately.

- ☐ Operator's manual on-board
- ☐ Review **Pre-operation Checklist**
- ☐ Engine battery OFF-ON switch es to ON position
- ☐ House battery OFF-ON switch to ON position (e nter engine switch)
- ☐ Release engine tilt lock and lower engines to full Tilt Down position
- ☐ Verify fuel supply
- ☐ Engage the blower for at least four minutes
- ☐ Turn main ignition keys to ON
- ☐ Move DTS control levers to NEUTRAL position
- ☐ Attach ignition shutoff switch clip and lanyard
- ☐ Start engines using the push-to-start switches
- ☐ Verify engine cooling system operation by observing the overboard indicators
- ☐ Verify all engine systems at Vessel View display
- ☐ Let engines idle in NEUTRAL for five minutes before leaving the dock



Shift and Throttle Control

Boat direction, boat speed, and close-quarter maneuvering are controlled by the controls. The optional dual-lever DTS control includes gear selection, engine speed, and engine trim angle functions for the engines. Additional detailed information about your dual-lever DTS control is covered in the engine operator's manual.

Shadow Mode Technology

With triple Verado engines, the DTS® system incorporates Shadow Mode Technology which enables the center engine to “shadow” or follow the outboard engines when the outboard engines are in the same gear. When the outboard engines are in opposite gears, as they would be for docking maneuverability, the center engine automatically defaults to neutral. This gives the operator greater control when docking.

Shifting

- Each shift lever controls gear selection for one engine. The shift lever must be in NEUTRAL before starting engine. The engine will not start if the shift lever is in FORWARD or REVERSE.
- The engine must be running before you shift into FORWARD or REVERSE.
- From NEUTRAL, move the shift lever forward to select FORWARD gear for each engine.
- From NEUTRAL, move the shift lever backward to select REVERSE gear for each engine.
- Never shift directly from FORWARD to REVERSE without pausing in NEUTRAL.
- Never shift directly from REVERSE to FORWARD without pausing in NEUTRAL.



CAUTION

Shifting the engines from FORWARD to REVERSE at any boat speed above idle can cause catastrophic engine damage. This engine damage can include gearcase failure or water ingestion.

Speed Control

- Move the shift lever forward from the FORWARD gear detent to increase engine speed in forward gear.
- Move the shift lever backward from the REVERSE gear detent to increase speed in reverse gear.

Auto Sync®

The unique Auto Sync® feature has been designed to synchronize ALL engines, automatically, when the port and starboard control levers are within 10 degrees of each other and the engines are running above 1500 rpm and below 95 percent throttle. This feature eliminates the need for the levers to be perfectly aligned in order to synchronize the three engines.

Throttle Only

This function on the DTS control pad allows the operator to increase engine RPM for warm-up without engaging the propeller. To engage throttle only, move the control handle to neutral, press the “throttle only” button and move the throttle(s) ahead to the forward detent. The horn will sound once and the neutral lights will flash. The horn will sound twice when throttle only is engaged. Advance the throttle(s) to increase engine RPM. To disengage, return control handle to neutral and press the “throttle only” button.

- The dual-lever DTS control has a neutral throttle feature. Depress the **Throttle Only** button and move the shift lever forward to increase engine speed in NEUTRAL. The warning horn will beep and the red Neutral LED will flash, indicating that the neutral throttle feature is selected.
- Move the shift lever back to NEUTRAL to disengage the neutral throttle feature.





Docking

Pressing the “DOCK” button initiates docking mode. Docking mode reduces throttle capacity to approximately 50% of normal throttle. To turn off docking mode, shift the engine into neutral and press the “DOCK” button.

Keep in mind that the bow thruster is also extremely useful when engaging in docking maneuvers.

1 Lever

Pressing the “1 LEVER” button initiates single lever mode. Single lever mode enables the throttle and shift functions of all engines to be controlled by the port control handle. To turn off single lever mode, shift into neutral and press the “1 LEVER” button.

Refer to the operation manual in your owner’s bag for detailed information about the operation of this important system.

Engine Trim

The power trim & tilt system allows you to raise and lower the engines for optimum performance in the water and for trailering, launching and beaching. The switches are a momentary type switch; constant pressure must be applied to the switch during the raising and lowering cycle.

The trim switches are located on a control pad at the center of the operator console. The engines can be individually trimmed by pressing the appropriate coordinating switch. All engines can be trimmed at the same time by pressing the "ALL" switch on the control pad or the trim switch located on the port throttle control lever.

WARNING

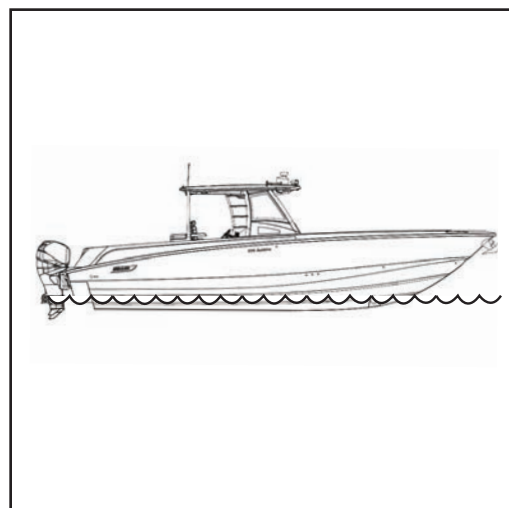
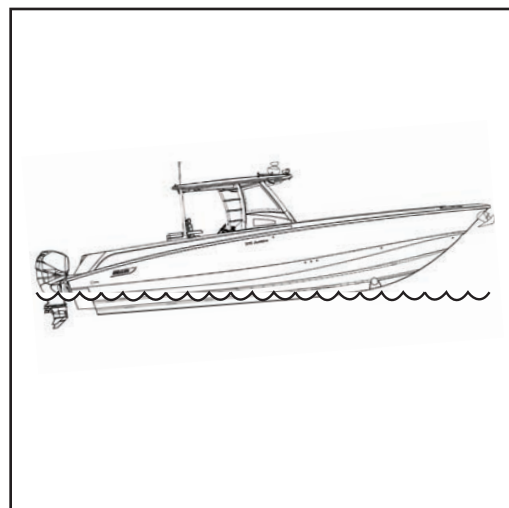
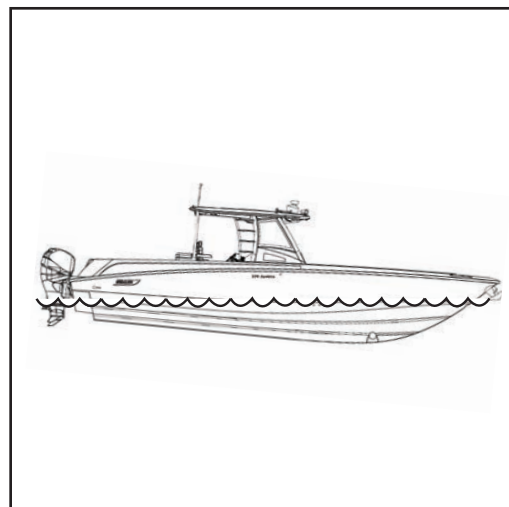
Certain combinations of engine trim angle, boat operating angle, and boat speed can reduce your forward-facing visibility. Reduced operator visibility can contribute to collisions, causing serious injury or death.

Trimming the engines **down or in** is best for acceleration and carrying heavy loads. The boat ride tends to be slower and wetter, and the boat might bow steer.

Trimming the engines **up or out** increases boat performance and fuel economy. Excessive trim angle will reduce boat performance. Excessive trim angle might cause propeller ventilation and engine over-speed alarms.

WARNING

Excessive engine trim angle can cause the boat to "porpoise" or bounce. Porpoising can reduce operator control and visibility, resulting in unsafe boat operation.





You must determine the correct engine trim adjustments through experimentation or experience, based on your mission loads and operating conditions.

The trim switches are located on a control pad at the center of the control console. The engines can be individually trimmed by pressing the appropriate coordinating switch.

- Adjusting engine trim angles can affect ride comfort and boat performance. 4° “bow up” is an average setting for boat operating angle.
- Adjusting engine trim angles can compensate for uneven boat loading and some weather conditions.
- All engines can be trimmed at the same time by pressing the “ALL” switch on the control pad or the trim switch located on the port throttle control lever.



CAUTION

Be aware that the port engine cowl can hit the transom if the engines are turned to port and tilted fully UP. Center the outboard engines before tilting to avoid potential damage.

SmartCraft Vessel View® System

Your boat is equipped with the SmartCraft Vessel View boat and engine information system. The Vessel View color LCD display is mounted on the control console face, above DTS controls. The Vessel View system powers up when either engine main ignition key switch is turned ON.

The Vessel View system is a comprehensive boat and engine information center that continuously monitors and reports detailed information about your boat, your engines, and your boating environment. Your Vessel View system is networked with the boat's GPS to provide detailed operational information such as navigation, speed over ground, and fuel to destination.

Your Vessel View system has a user-friendly interface that is controlled by seven buttons and a track pad. These controls allow you to navigate and control all of the information reports and formats.

The Vessel View information reports are grouped into four categories.

- **Propulsion** includes all engine systems information
- **Vessel** includes information about fuel use and tank levels
- **Environmental** includes information about water depth, navigation, and GPS
- **Setup** includes screens related to calibration, display, and setup

The Vessel View system reports warnings using five levels of graphical icons. The icons change appearance as the warnings become more critical.

Refer to the SmartCraft Vessel View operation manual in your owner's bag for detailed information about the setup and operation of this important system.





Propellers

Your outboard engines are equipped with propellers of a tested size and design to provide best engine and boat performance. Refer to the engine operator's manual for detailed information about propeller designs and the correct propeller selection method.



CAUTION

Never use a propeller that allows the engine to operate outside of its recommended RPM range at full throttle. Extensive engine damage can occur.

You should always carry a spare propeller, propeller installation hardware, and propeller wrench on-board. You should replace a propeller anytime it becomes damaged to avoid collateral damage to the engine's gearcase.



DANGER

To prevent the engine from starting accidentally, turn the correct engine battery OFF-ON switch to the OFF position before changing a propeller.



In some situations, you may want to change the propellers to give the boat slightly different performance characteristics. Changes to the boat's configuration, such as additional equipment or adding bottom paint, can affect the type and size of propeller required.

Reducing propeller pitch and diameter will increase acceleration and load carrying capability, with a slight decrease in top speed. It will also **increase** the engine's full-throttle RPM at a rate of about 150 RPM per inch of pitch change.

Increasing propeller pitch and diameter will decrease acceleration and might increase top speed. It will also **decrease** the engine's full-throttle RPM at a rate of about 150 RPM per inch of pitch change.

Your boat is equipped with one engine that is counter-rotating, which means that the port propeller rotates in a counter-clockwise direction while in forward gear when viewed from behind the boat. Counter-rotating propellers have significant advantages for the boat operator. They improve slow-speed maneuverability, help absorb engine torque, reduce steering effort, and help carry extra weight.

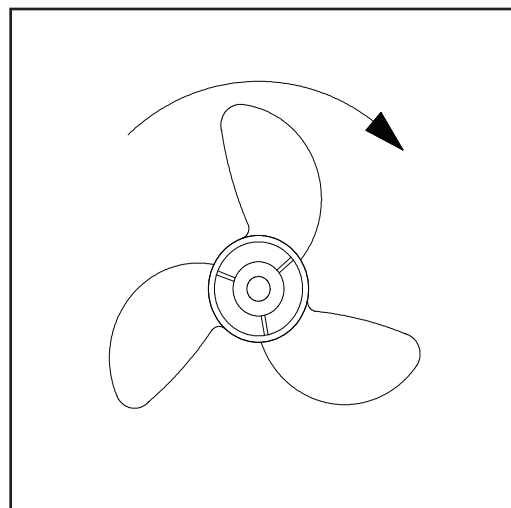
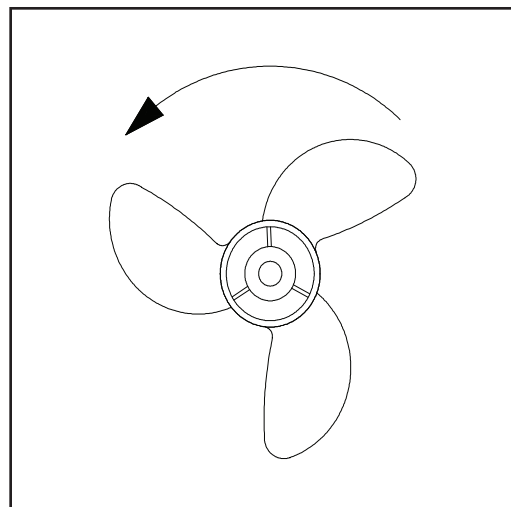


CAUTION

Mismatching propellers on counter-rotating outboard engines could cause a loss of directional control and could result in catastrophic gearcase failure.

If you are considering a propeller change, the type, pitch, and diameter should be discussed with an authorized service technician.

Refer to the engine operator's manual for detailed information about changing your propeller.



Maneuvering

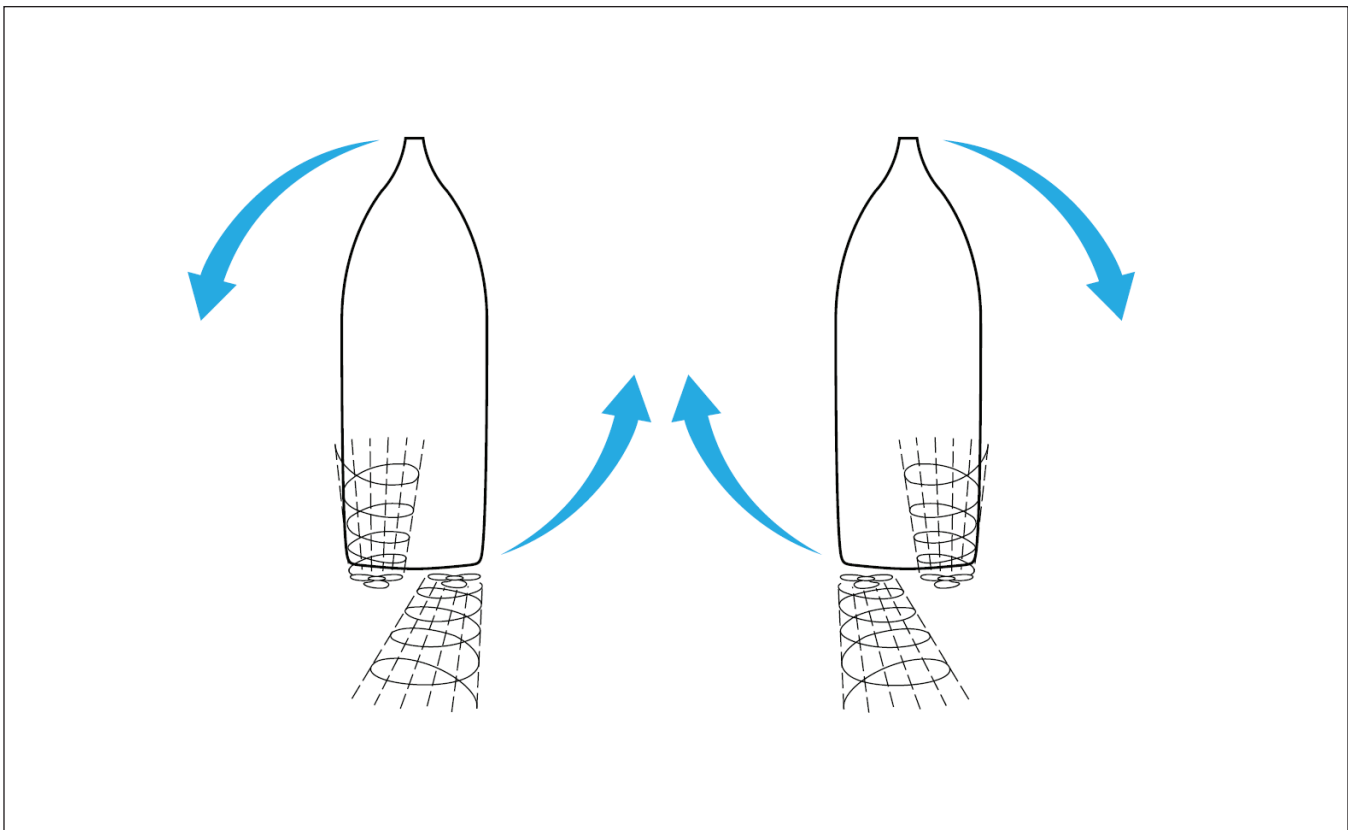
Maneuvering this boat requires experience and a high level of skill. Always operate any boat within the limits of your experience. If you do not have this experience, ask someone to instruct you or gain experience through experimentation under controlled conditions.

If you do not have this experience, do not operate this boat under high-risk conditions, such as:

- Heavy wind or current
- High-traffic areas
- Mission-related time limitations
- Confined or restricted areas
- Carrying hazardous cargo
- Compromised boat or engine systems

Always follow established boating regulations and directions from boating law authorities when maneuvering or underway. Always maneuver around objects, docks, and other boats at idle speed. Always evaluate the wind strength, wind direction, current strength, and current direction as you maneuver. If possible, approach a dock or another boat moving into the wind or current.

Always keep your crew informed and prepared. Have mooring lines and fenders in place before you reach the dock.



At idle speed, you can control boat direction and position by engine gear selection alone. With both outboard engines facing straight ahead:

- You can rotate the boat to **port** by shifting the starboard engine into FORWARD and the port engine into REVERSE.
- You can rotate the boat to **starboard** by shifting the port engine into FORWARD and the starboard engine into REVERSE.

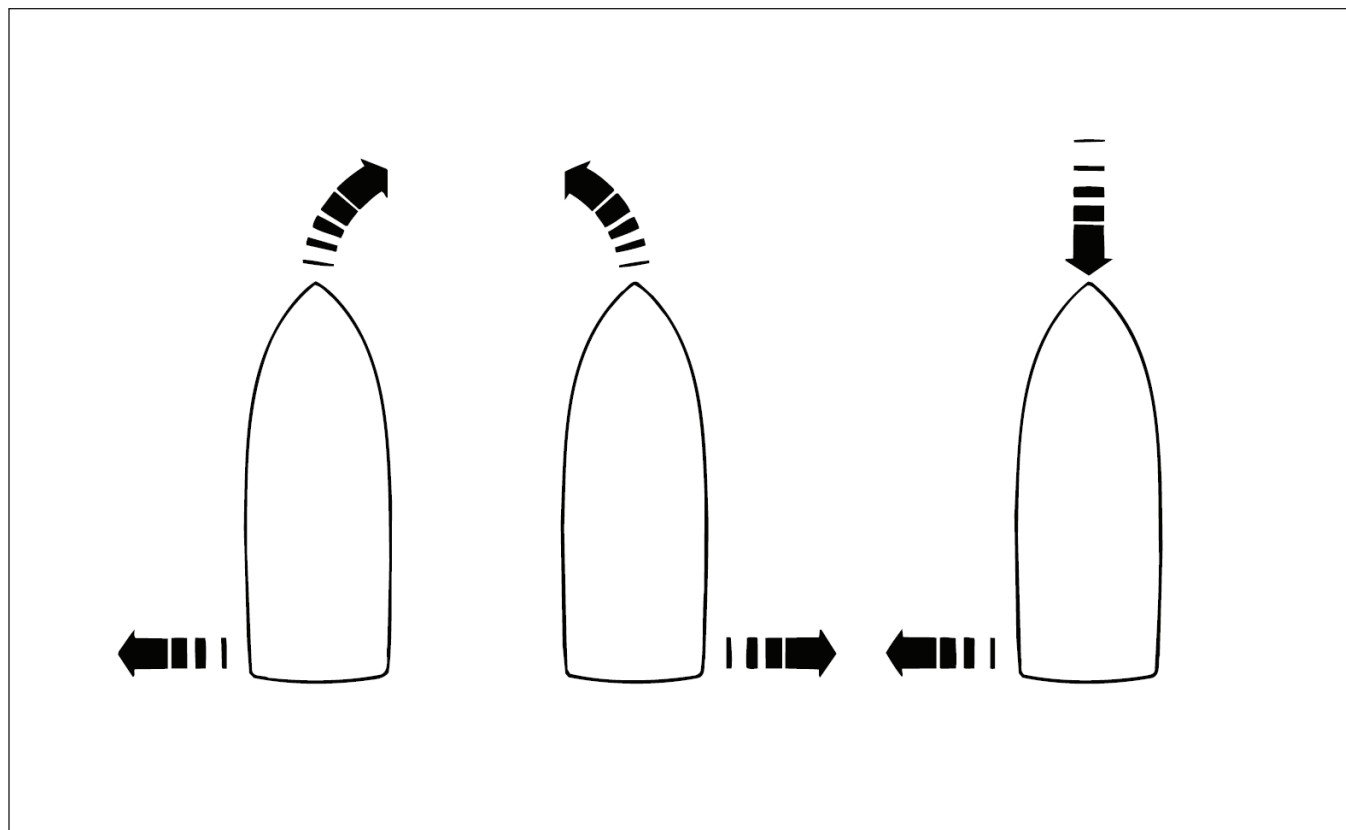
Above idle speed in FORWARD, you can control boat direction with the steering wheel:

- Turn the steering wheel in a counter-clockwise direction to turn to **port**.
- Turn the steering wheel in a clockwise direction to turn to **starboard**.

You can use the engine throttles to greatly increase boat response while performing certain slow speed turning maneuvers. To turn quickly to port or starboard at slow speed, turn the steering wheel in the direction you want to go. **After** you have turned the steering wheel, increase the engine speed and the boat will turn quickly. It is important to turn the steering wheel **before** you increase engine speed, because the boat will accelerate in the direction it is steered.

Backing down, you can control boat direction with the steering wheel:

- Turn the steering wheel in a counter-clockwise direction to back down to **port**.
- Turn the steering wheel in a clockwise direction to back down to **starboard**.



Load Distribution

Placement and concentration of non-permanent loads in a boat can affect boat performance and crew safety. Refer to **Boat Load Capacities** in **Section 1** of this manual for additional information.



WARNING

Improper operation, excessive loading, improper load distribution, and mismatching loads to existing conditions can contribute to boat swamping or capsizing. These situations can result in serious injury or death.

Follow these guidelines for non-permanent loads:

- Never exceed the capacity limits listed in this manual.
- Consider reducing the capacity limits for special operating conditions or severe weather.
- Never concentrate a heavy load in one small area.
- Equipment and people are considered part of your non-permanent load.
- Distribute any non-permanent load or cargo evenly front to back and port to starboard.
- The center of the non-permanent load distribution should be in the middle of the boat.
- Do not allow your non-permanent loads or cargo to shift. Always secure non-permanent loads and cargo with netting, tie-down straps, lines, and appropriate deck hardware.
- You must be prepared to adjust the load distribution as operating conditions change.

Boat Trim Tabs

Your boat is equipped with Lenco[®] electric trim tabs. The trim tab control switches and LED indicator lights are located on the control console face, port of the DTS engine controls.

Using the boat trim tabs properly requires experience and skill. Always operate any boat system within the limits of your experience. If you do not have this experience, ask someone to instruct you or gain experience through experimentation under controlled conditions.

WARNING

The boat's attitude and steering effort can react very quickly to changes in trim tab position. Adjust trim tab deployment in small increments to avoid loss of boat control.

You can use the boat trim tabs to:

- Adjust for uneven load distribution
- Adjust for strong crosswinds
- Adjust for changing weather conditions
- Trim the boat fore and aft
- Trim the boat port and starboard
- Improve ride smoothness
- Improve boat performance

The electric trim tabs and indicators are located on the lower portion of the boat's transom.

The trim tab control box senses switched 12 VDC at the engine main ignition key switch.

- The trim tab system will only operate when the engine main ignition key switch is ON
- The trim tabs will automatically retract when the starboard engine main ignition key switch is turned OFF





The trim tab switch panel is labeled and wired to make tab operation simple. When operating the trim switches, think of how you want the **bow of the boat** to move to properly trim the boat.

- To lower the **port** side of the bow, push the left switch **BOW DOWN**. This lowers the trim plane on the **starboard** side of the transom.
- To lower the **starboard** side of the bow, push the right switch **BOW DOWN**. This lowers the trim plane on the **port** side of the transom.
- To evenly lower or raise the bow of the boat, you can push both switches in the same direction at the same time. To evenly **lower** the bow, push both switches **forward**. To evenly **raise** the bow, push both switches **back**.

The Lenco switch panel includes two LED segment bars that represent the relative position of both trim tabs. When you **lower** one or both of the trim tabs, the LED segment bars will extend to indicate that the trim tabs are moving down. When you **raise** one or both of the trim tabs, the LED segment bars will retract to indicate that the trim tabs are moving up.



CAUTION

The trim tabs will automatically retract when the center engine main ignition key is turned OFF. Make sure that both trim tabs are fully retracted before you put the boat on a trailer, cradle, or boatlift. Contact with the trim tabs can cause serious damage to the tabs and boat.

Refer to the Lenco operator's manual for detailed information about system operation and maintenance.

Bow Thruster

Be sure you thoroughly understand the operation and safety requirements of the thruster before using. The thruster should not be operated in close proximity to swimmers, as a powerful suction is created when in use.

This vessel is equipped with a 4kW bow thruster with a dedicated battery bank and charging system. The electrically-driven bow thruster gives the operator more maneuverability of the bow when docking or maneuvering the vessel in narrow channels or where space is at a premium.

The bow thruster motor, batteries and battery charger are accessed by lifting the forward hatch under the cabin bunk. The battery switch is accessed through the aft hatch under the cabin bunk.

The bow thruster joystick located on the control station switch panel is used to operate the thruster and maneuver the bow of your boat.

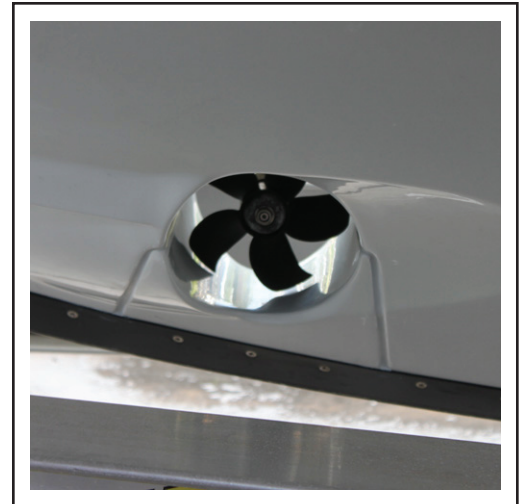
To Operate the **Bow Thruster**:

- Turn ON battery switch. (The battery switch is accessed through the aft hatch under the cabin bunk.)
- Press the activation button for one second.
- Push the joystick to move it in the direction you wish to move the bow.



CAUTION

DO NOT move the joystick port to starboard in quick succession as this could damage the motor.





When the desired boat movement has been achieved, return the joystick to the center position (spring return).

The bow thruster motor is equipped with an internal thermally-activated breaker. The thermal breaker protects the motor from overheating. To avoid damage to the thruster, if the thermal breaker trips allow the unit to cool down before continuing operation.

**CAUTION**

DO NOT move the joystick port to starboard in quick succession as this could damage the motor.

**CAUTION**

If thruster is operated constantly for 3 minutes it will power down and panel will deactivate. The system is designed to automatically power down after 20 minutes of no operation. If thermal cut-out is activated all power to the controls is disabled. WAIT FOR UNIT TO COOL DOWN.

Refer to the bow thruster manufacturer's manual for complete instructions and warranty.

Stopping Procedure

Use the following checklist at the end of each mission to verify that the appropriate boat systems are configured for a short period of non-use at the dock.

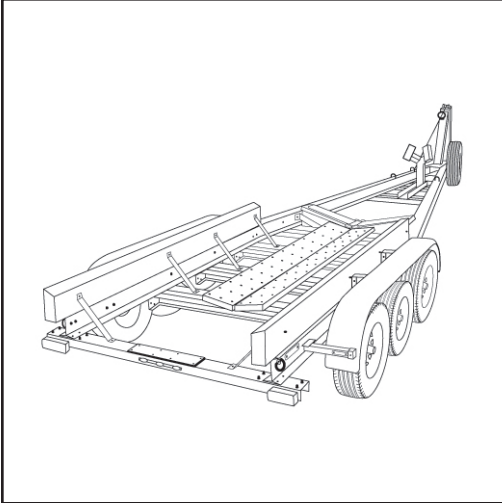
If you are not going to use the boat for a long period of time, refer to **Off-Season Storage** in Section 6.

- ☐ Put both DTS control levers in NEUTRAL
- ☐ Secure the boat and deploy fenders and fender boards
- ☐ Push the push to stop buttons for each engine
- ☐ Turn main engine key switches to the OFF position
- ☐ Verify that the boat trim tabs are fully retracted
- ☐ Power down all electronic equipment following manufacturer's instructions
- ☐ Center the outboard engines before tilting to avoid contact with the boat's transom
- ☐ Raise engines to full Tilt Up position and engage tilt lock
- ☐ Turn engine/house battery OFF-ON switches to OFF position
- ☐ Verify bilge pump control switches are in the AUTO position (bilge pumps have an uninterruptible power supply to support automatic operation)
- ☐ Connect and activate shore power, if appropriate
- ☐ Verify shore power polarity



CAUTION

Keep the bilge pump control switches in the AUTO position anytime the bilge drain plug is in place, whether the boat is in the water or on a trailer. Leaving the boat unattended for long periods of time with the bilge pump control switches in the OFF position can allow rainwater or melting snow to accumulate in the bilge.



Trailer

If BCGP supplied the trailer for your boat, it is designed specifically for your boat and it is commercial-grade. The trailer construction is heavy-duty and it exceeds the capacity requirements for your boat. This trailer might be equipped with additional upgrades to suit your mission.

Regulations controlling trailer equipment and manufacture vary from place to place. You must verify that your trailer meets the laws and transportation regulations in the states or countries where you use it.

Refer to the trailer owner's manual for detailed information about the operation and maintenance of this trailer.

If you supplied the trailer for your boat, you must be satisfied that the trailer's design is adequate for your boat.

Review these guidelines when evaluating a customer-supplied trailer:

- The trailer's net carrying capacity must exceed the weight of the boat in its fully-loaded condition
- Construction materials must suit your operating environment
- The trailer should have torsion axles
- All trailer equipment (brakes, tires, winch, straps, etc.) should be heavy-duty
- Trailer bunks must be continuous and as long as possible
- Trailer bunk angle must match the boat
- Trailer bunks must be parallel with the boat centerline and must not touch any lifting straps
- Trailer bunks must not be segmented or swivel
- Trailer must not be an "all-roller" design
- Trailer must not support boat weight at any single, concentrated point such as a single roller
- Trailer might be equipped with a barge stop to support the boat

**CAUTION**

Transporting your boat on a sub-standard trailer can cause serious, permanent damage to the hull. This type of hull damage is considered "improper storage" and is not covered under the BCGP limited warranty.

Safety Checklist

Use the following safety checklist to verify that your boat, trailer, and towing vehicle are in good condition. Use this checklist each time you prepare for a mission. Resolve any issues before beginning your mission.

- ☐ Tow vehicle gross combined weight rating (GCWR) must exceed combined weights of your tow vehicle, boat, and trailer
- ☐ Tow vehicle is in good condition
- ☐ All gear and equipment in boat is secured
- ☐ Boat engines supported by trailering locks
- ☐ Boat correctly positioned on trailer bunks
- ☐ Winchable tight and locked
- ☐ Bow safety anchor attached
- ☐ Bow tie-down link secured
- ☐ Stern tie-down straps secured
- ☐ Trailer surge or electric brakes operational
- ☐ Trailer tires and spare in good condition
- ☐ Tire pressure is appropriate
- ☐ Lug nut torque is adequate
- ☐ Wheel bearings lubricated and functional
- ☐ Trailer pintle or coupler securely attached to tow vehicle
- ☐ Trailer safety anchors attached to tow vehicle using cross-hatch pattern
- ☐ Trailer brake emergency actuator bail attached to tow vehicle
- ☐ Trailer light connected or plugged in to tow vehicle
- ☐ Trailer bearing, brake, and turn signal lights operational
- ☐ Trailer jack completely retracted and aster wheel removed if applicable

Refer to the trailer owner's manual for information about maintenance procedures and service specifications.

Securing Boat to Trailer

You must be certain that your boat is properly secured to the trailer before you begin any over-the-road transportation.

Use the following checklist to secure your boat before any over-the-road transportation:

- All loose gear must be secured or removed
- Special display masts/antennas must be folded down or removed
- Boat must be straight on the trailer
- Bow must be secured in the forward barge stop assembly
- Trailer winch cable must be tight and locked

Towing



WARNING

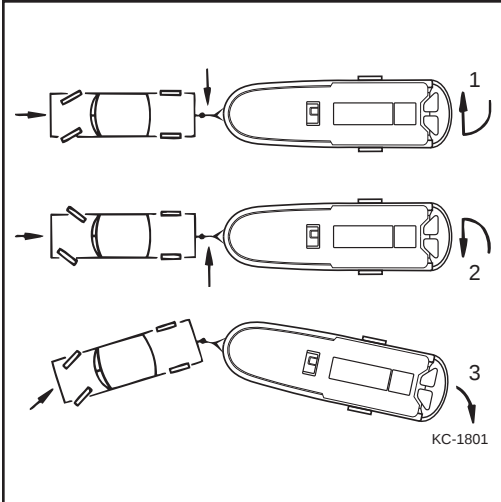
Tow vehicle GCWR must exceed the combined weights of your tow vehicle, boat, and trailer. Overloading the tow vehicle is unsafe and could cause loss of vehicle control.

Towing your boat on a trailer requires experience and skill. Always operate a towing vehicle within the limits of your experience. If you do not have this experience, ask someone to instruct you or gain experience through experimentation under controlled conditions.

When maneuvering on streets or highways, always remember that the boat and trailer have at least doubled the effective length and weight of your tow vehicle. Follow these guidelines when towing:

- Always use common sense when trailering a boat
- Operate your tow vehicle well within the existing traffic regulations
- Pay close attention to road and weather conditions
- Always avoid traffic situations where rapid acceleration or deceleration is required
- Double the standard following distance for your vehicle speed
- Always be aware of traffic conditions around you
- Identify any possible “blind spots” behind or on either side of your trailer
- Plan ahead and check your mirrors carefully when changing lanes, stopping, or turning
- Always signal your intentions well in advance of a lane change or a turn
- Make very wide turns. Your trailer will not follow the path of your tow vehicle tires
- Stop periodically to check the condition of the trailer, boat, and tow vehicle



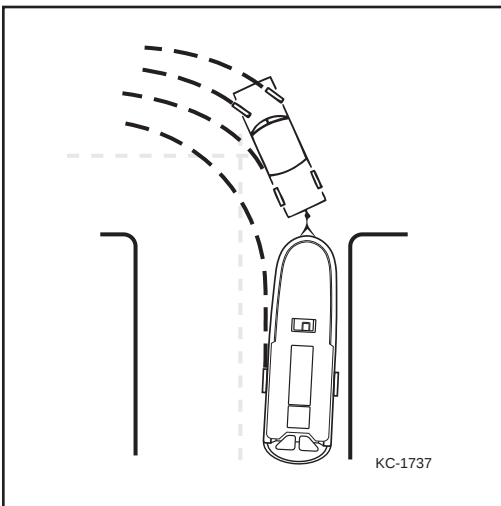


Backing

Backing a trailer requires experience and skill. Always operate a towing vehicle within the limits of your experience. If you do not have this experience, ask someone to instruct you or gain experience through experimentation under controlled conditions.

Follow these guidelines when backing your trailer:

- Have a spotter outside the vehicle to assist with instructions
- Check your mirrors constantly
- Always know where the boat is in relation to any fixed objects
- Never accelerate in reverse. Back up slowly!
- When the trailer is straight behind the tow vehicle, the rear of the trailer will move opposite the direction that you turn the steering wheel
- If you turn the steering wheel clockwise, the trailer will move to the left
- If you move the steering wheel counter-clockwise, the trailer will move to the right
- Half way through the turn, adjust the steering wheel to follow the trailer through its turn
- Do not allow the trailer to turn so sharply that the trailer or boat hits the tow vehicle



Lifting and Slinging

WARNING

Verify that the lifting equipment, spreader bars, slings, and attaching hardware are professionally certified to a working load of at least 17,500 pounds (7938 kg) with a safety factor of five. Failure of any lifting component could cause extensive damage to the boat, serious injury, or death.

DANGER

Never allow anyone to be in the boat or under the boat while you are lifting it. A mistake in the lifting procedure or a component failure could cause serious injury or death.

DANGER

Inspect all lifting equipment for signs of wear or fatigue each time you lift the boat. Re-certify or replace the lifting equipment annually. Failure of any lifting component could cause serious injury or death.

WARNING

Never use the boat's bow eye, stern eyes, Samson post, cleats, or railings as attachment points to lift this boat. Failure of these items during lifting could cause extensive damage to the boat, serious injury, or death.

CAUTION

Before you lift this boat, inspect the bottom to determine if there are any thru-hull transducers installed. Contact between lifting gear and a transducer will cause immediate, extensive damage to the transducer and the hull.

Slings

You can use a spreader bar and slings to lift your boat. The system must be professionally certified to a working load of at least 17,500 pounds (7938 kg) with a safety factor of five. The slings must be a wide, flat, belted design to distribute the load and protect the boat.

Sling details are located on the boat identifying the appropriate locations for slinging.

Position the spreader bar and slings to lift the boat evenly.

Attach at least two guide lines to control the boat while it is being moved.



DANGER

Never allow anyone to be in the boat or under the boat while you are lifting it. A mistake in the lifting procedure or a component failure could cause serious injury or death.

Move the boat slowly.

Forklift

You can use a large marine forklift to move your boat. The forklift must be professionally rated to a working load of at least 17,500 pounds (7938 kg) with a safety factor of five. Adjust the forks to lift the boat evenly. The forks must not contact any thru-hull fittings on the bottom of the boat.

This boat may be equipped with a thru-hull transducer. Generally, the thru-hull transducer is located 30 inches (76 cm) forward of the transom on the starboard side. If your boat has a factory-installed thru-hull transducer, it will have "SLING" decals on the gunwales to indicate the appropriate location for the sling.



DANGER

Never allow anyone to be in the boat or under the boat while you are lifting it. A mistake in the lifting procedure or a component failure could cause serious injury or death.

Move the boat slowly.

Operator's Notes

[illegible]



WARNING

Inspect the fuel system and fuel tank before each mission. Correct the cause of any gasoline or diesel leak immediately. Ventilate the area to eliminate vapors before energizing any electrical circuits, starting the generator, or starting the outboard engines.



WARNING

Leaking gasoline is a fire and explosion hazard. Gasoline vapor is extremely flammable and highly explosive under certain conditions. Correct the cause of any fuel leak immediately.



WARNING

This fuel system is not designed to support an automatic "hands free" fuel nozzle. Never use an automatic fuel nozzle to fill this tank and never leave a fueling process unattended.



WARNING

The components in the boat fuel system are designed to work with automotive gasoline containing up to 10% ethanol, by volume. Using automotive gasoline with higher concentrations of ethanol will damage boat fuel system components and may cause fuel leaks.



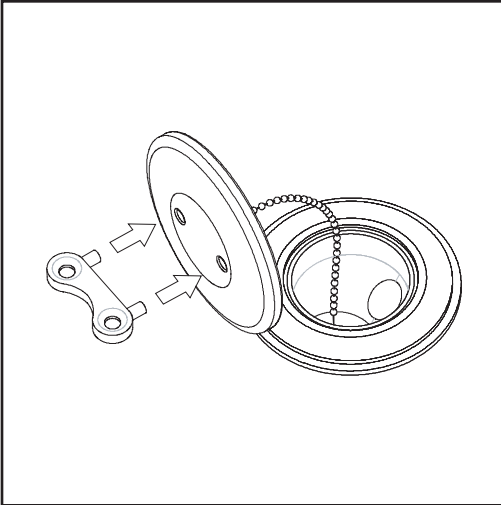
WARNING

Carefully follow the engine manufacturer's recommendations when selecting gasoline for your outboard engines. Using non-recommended fuels can cause serious engine damage and may void your engine warranty.



WARNING

Gasoline and oil spills are a safety hazard and can contaminate the marine environment. Never allow gasoline or oil to be discharged into the water.



General Description

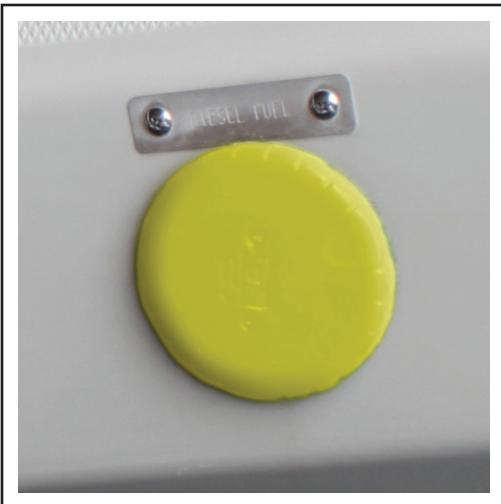
This boat is equipped with both a diesel fuel system for the generator and a gasoline fuel system to power the outboard engines. Please take time to read and understand all the fuel related information and warnings regarding gasoline and your boat, in the engine operator's packet and diesel relative to your generator's manual.

The gasoline fuel fill is located amidship on the port gunwale and is marked "GAS." The diesel fill for the generator is located on the starboard side of the transom and is labeled "DIESEL."

The fill caps can be opened by use of a special key that is included in operator's packet. Refer to the engine manufacturer's manual for recommended types of fuel to use.

WARNING

When recapping the fill inlets make sure that they are secure to prevent spills and to prevent the intrusion of water into the system.

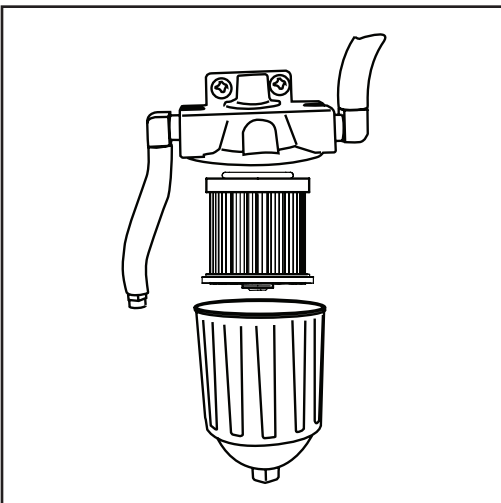


Generator Fuel System

The generator draws fuel from its own 20 gallon (75.7 L) tank located on the starboard aft side of the machinery compartment. The fuel system has its own fuel and water separating filters.

Generator Fuel Filter

A fuel filter located on the starboard wall of the bilge, forward of the diesel fuel tank provides clean fuel to the generator. A major cause of poor starting or power loss is the result of a clogged filter element or a fuel system air leak.



Gasoline Fuel System

The **Gasoline Fuel System Diagram** in this section shows locations of the fuel tank, fuel fill, fuel tank vent, fuel level sending unit, fuel withdrawal tubes, fuel shutoff valves, and the fuel filters.

This boat is equipped with a single, centerline gasoline fuel tank. The tank is manufactured using marine-grade aluminum. It is located under the cockpit and can be accessed by raising the equipment hatch in the aft cockpit deck. The fuel tank capacity is 450 gal. (1703 L).

The fuel level sensor can be accessed via the plate forward of the leaning post. The fuel lines for the tank can be accessed through the deck cover located at the center base aft of the leaning post.

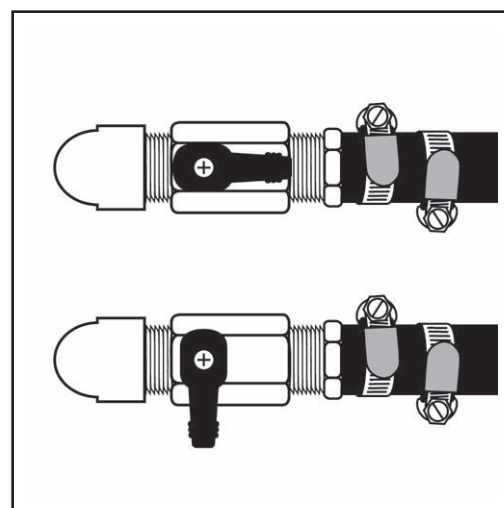
The fuel tank has an electric sending unit that sends fuel level readings to the Vessel View display at the helm station.

The fuel tank is vented through the fuel fill fitting and fuel cap.

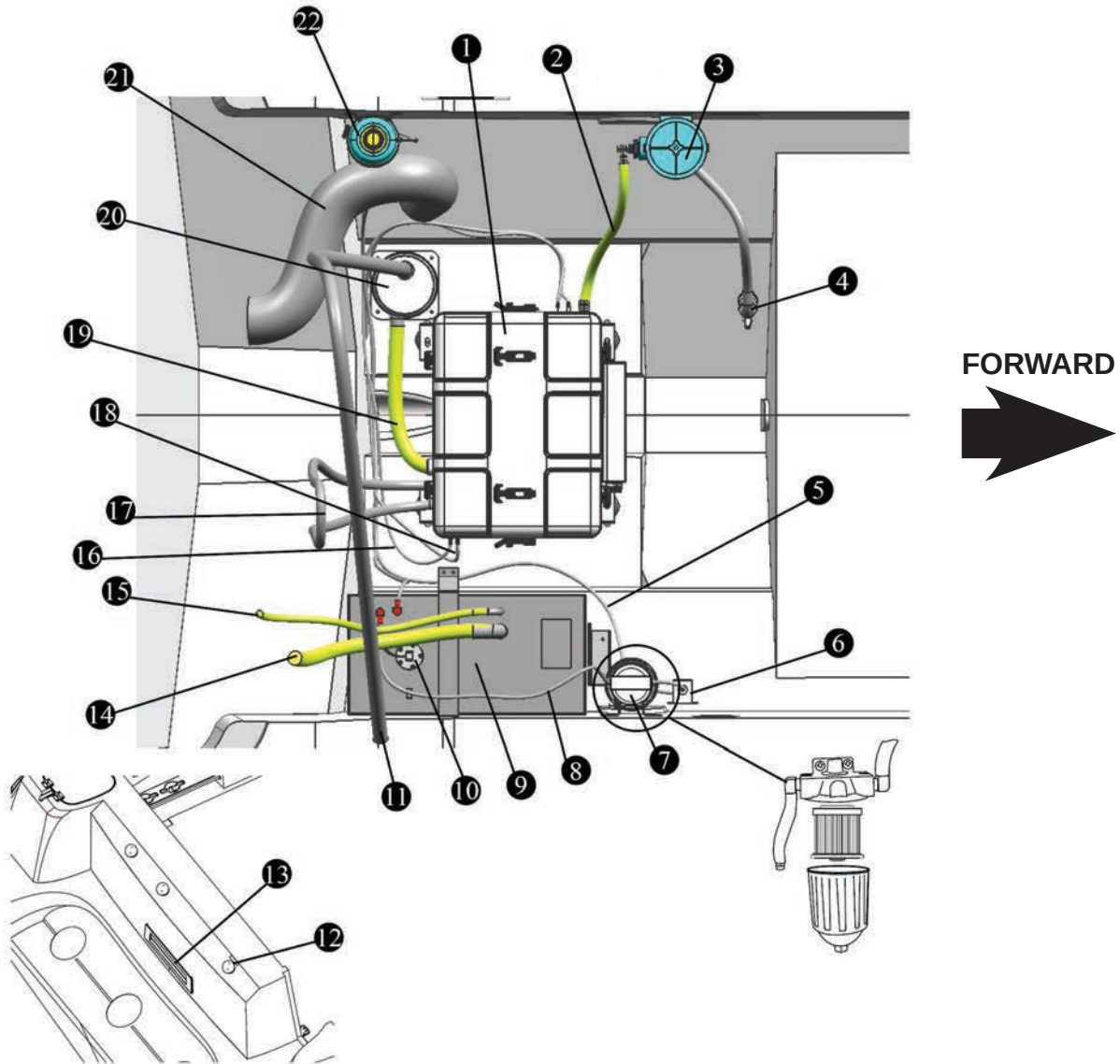
The fuel tank has a separate fuel withdrawal tube for each outboard engine. Each fuel withdrawal tube has a manual fuel shutoff valve. You can use these valves to stop fuel flow during storage, during fuel system servicing, or in the event of an on-board fire.

The fuel valve is in the **ON** position when the lever is parallel with the valve body and the fuel valve is in the **OFF** position when the black lever is perpendicular to the valve body.

The fuel tank has a manufacturer's compliance label next to the fuel withdrawal hoses. The compliance label includes information about tank capacity, construction materials, construction certification, and construction date.

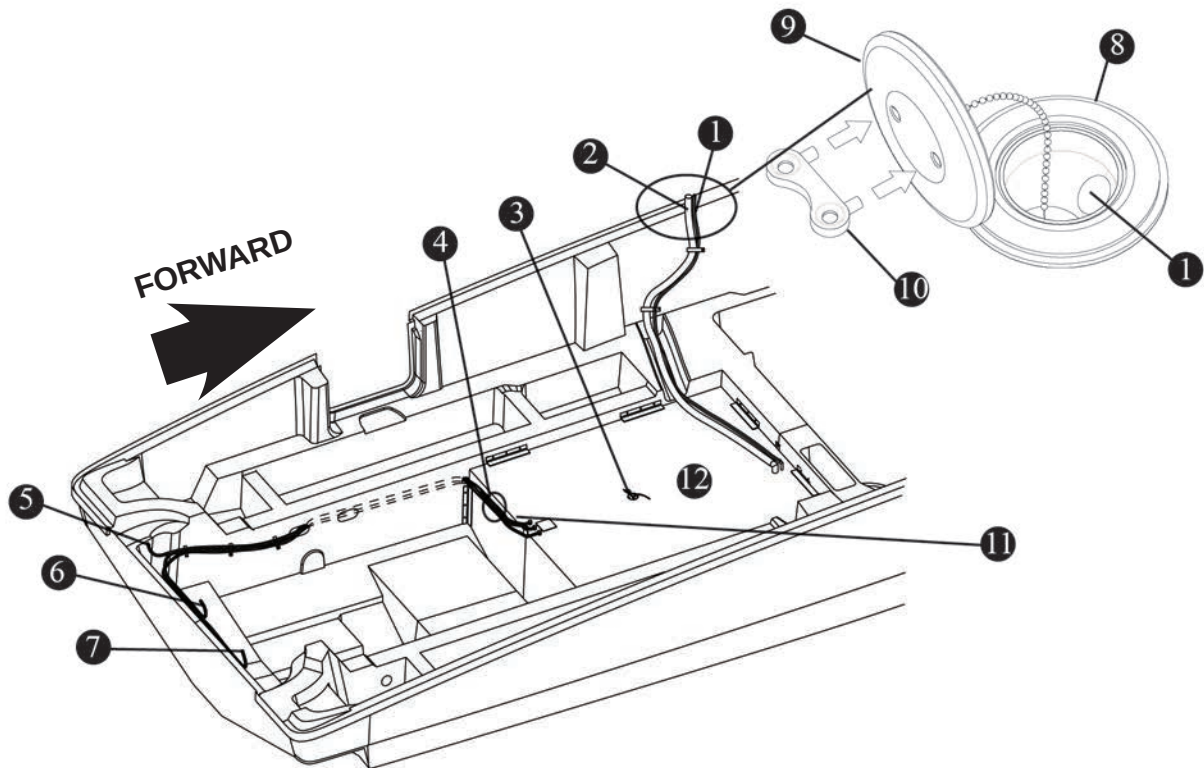


Diesel Fuel System Diagram



- | | |
|---|--|
| ① 8KW FISCHER PANDA GENERATOR | ⑫ DIESEL FUEL FILL DECK PLATE |
| ② FROM STRAINER TO GENERATOR | ⑬ BILGE BLOWER VENT |
| ③ RAW WATER STRAINER | ⑭ FUEL FILL HOSE |
| ④ RAW WATER INTAKE SEACOCK | ⑮ FUEL VENT HOSE |
| ⑤ FROM FUEL/WATER SEPARATOR TO GENERATOR | ⑯ FROM EXPANSION TANK TO GENERATOR |
| ⑥ FUEL PUMP | ⑰ SIPHON BREAK HOSE |
| ⑦ RACOR® FUEL/WATER SEPARATOR | ⑱ FROM GENERATOR TO EXPANSION TANK |
| ⑧ FROM FUEL TANK TO FUEL PUMP | ⑲ FROM GENERATOR TO MUFFLER |
| ⑨ 20 GAL (75.7 L) DIESEL FUEL TANK | ⑳ MUFFLER |
| ⑩ FUEL LEVEL SENSOR | ㉑ IN-LINE BILGE BLOWER TO TRANSOM VENT |
| ⑪ GENERATOR EXHAUST TO STARBOARD THRU HULL OUTLET | ㉒ EXPANSION TANK |

Gasoline Fuel System Diagram



- | | |
|---------------------------|------------------------------|
| ① FUEL TANK VENT HOSE | ⑦ STARBOARD ENGINE FUEL FEED |
| ② FUEL FILL HOSE | ⑧ FUEL FILL DECK PLATE |
| ③ FUEL SENSOR | ⑨ FUEL FILL CAP |
| ④ FUEL LINES | ⑩ FUEL FILL CAP KEY |
| ⑤ PORT ENGINE FUEL FEED | ⑪ FUEL SHUT OFF VALVES |
| ⑥ CENTER ENGINE FUEL FEED | ⑫ FUEL TANK (450 GALLONS) |

Fuel Tank Bonding System

 WARNING

Do not allow any liquid gasoline to enter the bilge. Liquid gasoline is a fire and explosion hazard. Gasoline vapor is extremely flammable and highly explosive under certain conditions.

The fuel tank is included in the boat's bonding system. All exposed metallic components that are served by the 12 VDC electrical system, but do not carry a current, are electrically connected to an internal bonding system. Design benefits of the bonding system include:

- Provide a low resistance electrical connection among isolated metal components, which might be subject to electrolytic corrosion caused by stray voltage
- Prevent the build-up of electrical potential on exposed metal parts, which might cause personal injury
- Provide a low resistance electrical connection to ground when components are exposed to voltage spikes such as a lightning strike
- Reduce radio frequency interference (RFI)

The common bonding conductor, a green #8 awg insulated copper wire, connects the fuel tank to a grounding plate located on the hull.

 DANGER

The boat's bonding system protects it from creating and discharging static electricity. Your boat must be in contact with the water or a land based grounding system while fueling.



DANGER

There is a danger that static electricity can ignite gasoline vapors that have not been ventilated outside an enclosed area. Use extreme caution when fueling your boat with gas or diesel from a source outside the regular venues (e.g. marinas, fuel service stations).



DANGER

Gasoline vapor is extremely flammable and highly explosive under certain conditions. Always stop the engines and never smoke or allow open flames or sparks within 50 feet (15 meters) of the fueling area when refueling.



WARNING

This fuel system is not designed to support an automatic "hands free" fuel nozzle. Never use an automatic fuel nozzle to fill this tank and never leave a fueling process unattended.



WARNING

The components in your boat fuel system are designed to work with automotive gasoline containing up to 10% ethanol, by volume. Using automotive gasoline with higher concentrations of ethanol will damage boat fuel system components and might cause fuel leaks.



DANGER

Carefully follow the engine manufacturer's recommendations when selecting gasoline for your outboard engines. Using non-recommended fuels can cause serious engine damage and might void your engine warranty.

Static Electricity

A discharge of static electricity can ignite gasoline vapor that has accumulated during the fueling process. Use extreme caution when fueling your boat under unusual circumstances such as when the boat is suspended in a boatlift.

Your boat has important safety features and systems that can be defeated by not following standard fueling practices. Under normal conditions, your boat's bonding system protects it from accumulating and discharging static electricity.

Here are some important guidelines to protect you from static electricity discharge while fueling:

- Always keep the boat in continuous contact with the water or a land-based grounding system during fueling.
- Always keep the fuel nozzle in contact with the fuel fill assembly or the edge of the fuel tank opening during the fueling process. This contact must be continuously maintained until fuel flow has stopped.
- Never fuel the boat under unsafe conditions that could increase the possibility of creating static electricity.
- Only fill portable fuel tanks while on land, never on-board the boat.
- Never use homemade containers as a source of gasoline to fill the tank.
- Only carry gasoline on-board in a UL-approved container or in a portable fuel tank such as those provided with outboard engines.
- Never store portable fuel tanks in living, engine, or mechanical spaces.

General Guidelines

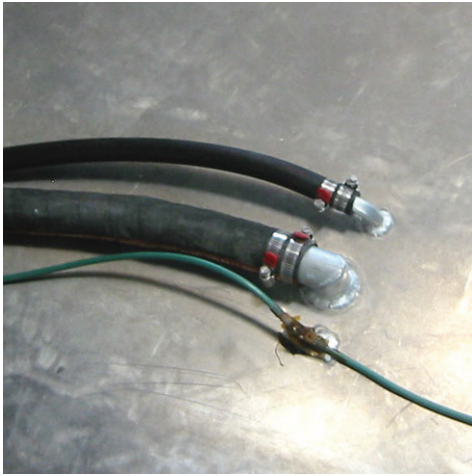
Also follow these important guidelines during fueling operations:



CAUTION

This fuel system is not designed to support an automatic hands free” fuel nozzle. Never use an automatic fuel nozzle to fill this tank and never leave a fueling process unattended.

- Shut down outboard engines, generators, motors, and fans before fueling. All possible sources of ignition must be OFF before you begin taking on gasoline.
- Close all ports, windows, doors, hatches, and compartments.
- Extinguish cigarettes, pipes, stoves, and all other flame-producing devices.
- Make sure all power is OFF. Do not operate any electrical switches.
- Never take on gasoline at night, except in well-lighted areas.
- Insert fuel nozzle and make sure nozzle is in contact with or grounded against fill pipe before you pump gasoline. This contact must be continuously maintained until gasoline flow has stopped.
- Never exceed a fill rate of 9 GPM (34 lpm). Slow the fill rate to 6 GPM (23 lpm) for the final ¼ of tank.
- DO NOT fill the tank completely. Allow a minimum of 2% of tank volume for temperature-related expansion. Allow for 6% expansion if the temperature of the gasoline taken on-board is 32°F (0°C) or lower.
- Tighten the deck fill cap completely after fueling.
- Wipe up any spillage completely and dispose of rags or waste on-shore following all state and federal regulations.
- Run the bilge blower for at least four minutes before energizing any other 12 VDC electrical circuits or starting the outboard engines.
- Ventilate the general area to eliminate any signs of gasoline vapor.



Hose Routing

The Fuel System Diagram in this section shows locations of the fuel tank, fuel fill, fuel tank vent, fuel level sending unit, fuel withdrawal tubes and the fuel shutoff valves.

Fill Hose Replacement

Removal

Loosen the two hose clamps and remove the fill hose from the elbow at the fuel tank. Remove the clamps from the fill hose.

Loosen the two hose clamps and remove the fill hose from the fuel fill and catch plate assembly. Remove the clamps from the fill hose. Pull the fill hose from under the deck slowly until it is completely free.

Installation

Route the new static-conductive fill hose under the fuel fill and catch plate assembly until it reaches the elbow on the fuel tank. Secure the fill hose to the tank elbow with two hose clamps.

Attach the other end of the fill hose to the fuel fill and catch plate assembly and secure with two hose clamps.



Check your work carefully. Fuel leaks can lead to fire or explosion.

Vent Hose Replacement

Removal

The fuel tank is vented through the fuel fill fitting and fuel cap.

Loosen the two hose clamps and remove the vent hose from the elbow at the fuel tank. Remove the clamps from the vent hose.

Loosen the two hose clamps and remove the vent hose from the fuel fill fitting. Remove the clamps from the vent hose. Pull the vent hose from under the deck slowly until it is completely free.

Installation

Route the vent hose under the deck until it reaches the elbow on the fuel tank. Secure the vent hose to the tank elbow with two hose clamps.

Attach the other end of the vent hose to the fuel fill fitting and secure with two hose clamps.



DANGER

Check your work carefully. Fuel leaks can lead to fire or explosion.

Contaminated Gasoline

Water from condensation and sediment from contaminated gasoline can collect in the fuel tank. Contaminated gasoline can damage boat fuel system components, corrode fuel tanks, clog fuel filters, and damage the engines' fuel systems.

Fuel filter inspection and servicing routine is directly related to the quality and quantity of gasoline that you take on-board. As a precaution, it is advisable to carry extra on-engine filters.

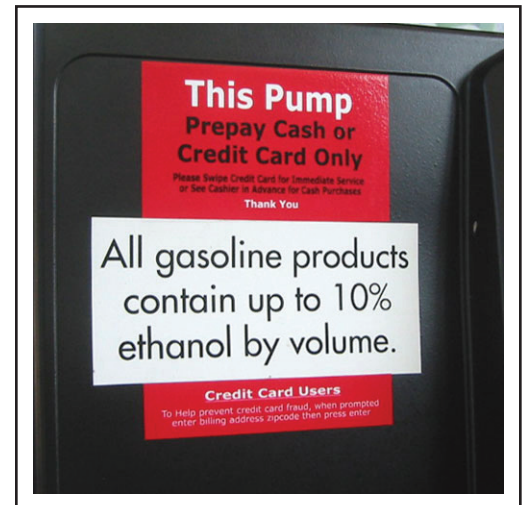
It is best to maintain a full tank of fuel between missions. This will reduce air flow in and out of the tank due to changes in temperature as well as limiting exposure of the ethanol in the fuel to humidity and condensation.

Ethanol-Blended Fuels

Ethanol is an oxygenated hydrocarbon compound that has a high octane rating and therefore is useful in increasing the octane level of unleaded gasoline. The fuel-system components of these engines have been tested to perform with the maximum level of ethanol-blended gasoline (10% ethanol) currently allowed for marine use by the EPA in the United States.

Special precautions should be considered with the use of fuel containing ethanol. Fuels with ethanol can attack some fuel-system components, such as tanks and lines, if they are not made from acceptable ethanol-compatible materials. This can lead to operational problems or safety issues such as clogged filters, leaks or engine damage.

The use of improper gasoline or additives can damage your fuel system and is considered misuse of the system. **Damage caused by improper gasoline or additives WILL NOT be covered under warranty.**



CAUTION

The components in this boat's fuel system are designed to work with automotive gasoline containing up to 10% ethanol, by volume. Using automotive gasoline with higher concentrations of ethanol will damage boat fuel system components and might cause fuel leaks.

Automotive gasoline has contained various oxygenated hydrocarbon compounds as replacements for lead since 1985. These compounds boost the octane rating of gasoline. Two familiar compounds are MTBE and ethanol. Ethanol is now the most common compound since MTBE was identified as a serious polluter of ground water.

Ethanol for gasoline is a highly refined grain alcohol rated at about 200 proof. The U.S. EPA currently allows automotive gasoline to contain up to 10% ethanol, by volume. While E-10 gasoline does not cause significant problems in road vehicles, it does require extra attention when used in your boat.

Follow these rules when using E-10 gasoline in this boat:

- Read and understand all of the fuel-related safety warnings and maintenance procedures outlined in this operator manual.
- Read and understand all of the fuel-related safety warnings and maintenance procedures outlined in your outboard engine operator's manual.
- Ethanol is hygroscopic meaning that it attracts and easily mixes with moisture. E-10 gasoline will corrode metal fuel system parts faster than gasoline without ethanol. If you are switching to E-10 gasoline, it can loosen scale and deposits in older fuel systems. Regularly inspect all fuel system components and fuel filters for signs of corrosion and particulate contamination.

- If E-10 gasoline absorbs enough moisture, it can suffer phase separation. The ethanol and water mixture will fall out of suspension and collect in the lowest parts of the fuel system. The ethanol and water mixture can damage engines, clog fuel filters, and corrode metal fuel system parts. Fuel tanks with E-10 gasoline should always be kept as full as possible to reduce exposure to moisture from condensation and humidity.
- Concentrations of ethanol greater than 10% can change the physical properties of some rubber and plastic fuel system parts such as gaskets, hoses, tanks, and filters. Regularly inspect all non-metal fuel system parts for signs of swelling or deterioration. In some extreme cases, rubber parts such as hoses and gaskets can actually sweat liquid gasoline. Be alert for the odor of gasoline or small droplets of gasoline near these parts.
- Always have fuel system repairs performed by a qualified marine technician.



Storage

Long periods of storage and/or non-use, common to boats, create unique problems. When preparing to store a boat for extended periods—two months or more—it is best to completely remove all fuel from the tank. If it is not possible to remove the fuel, maintaining a full tank of fuel with a fuel stabilizer added to provide fuel stability and corrosion protection is recommended.

- Add fuel stabilizer/treatment at manufacturer's recommended dosage.
- Run engines for 10 minutes.
- Shut OFF fuel valves.
- Top off fuel tank leaving space for expansion. DO NOT fill to point of overflow.
- DO NOT cap the tank vent.

A partially full tank is not recommended because the void above the fuel allows air movement that can bring in water through condensation as the air temperature moves up and down. This condensation could potentially become a problem.

Periodically inspect for the presence of water in the fuel tank. If any is found, all water must be removed and the tank completely dried before refilling the tank with any fuel containing ethanol.

Refer to the engine manufacturer's manual in the operator's packet for complete instructions and warranty information.

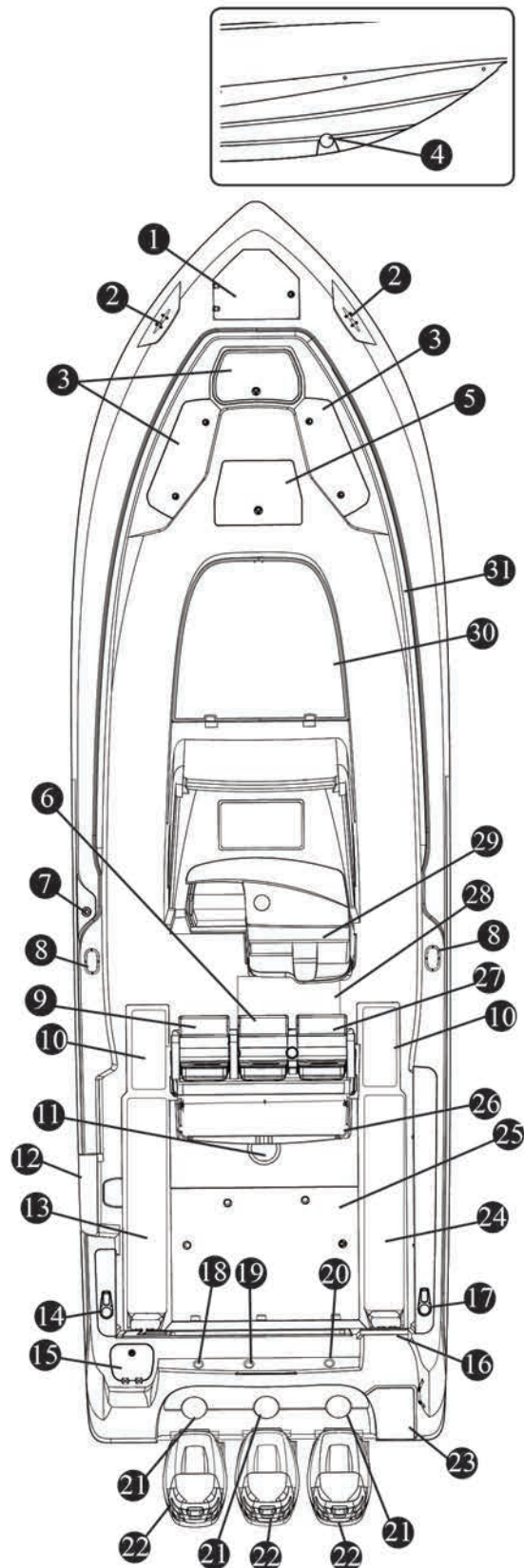
General Description

This section contains general theory and functional information about the boat systems. This information is intended to give you an idea about how each boat system is configured and how it should be used.

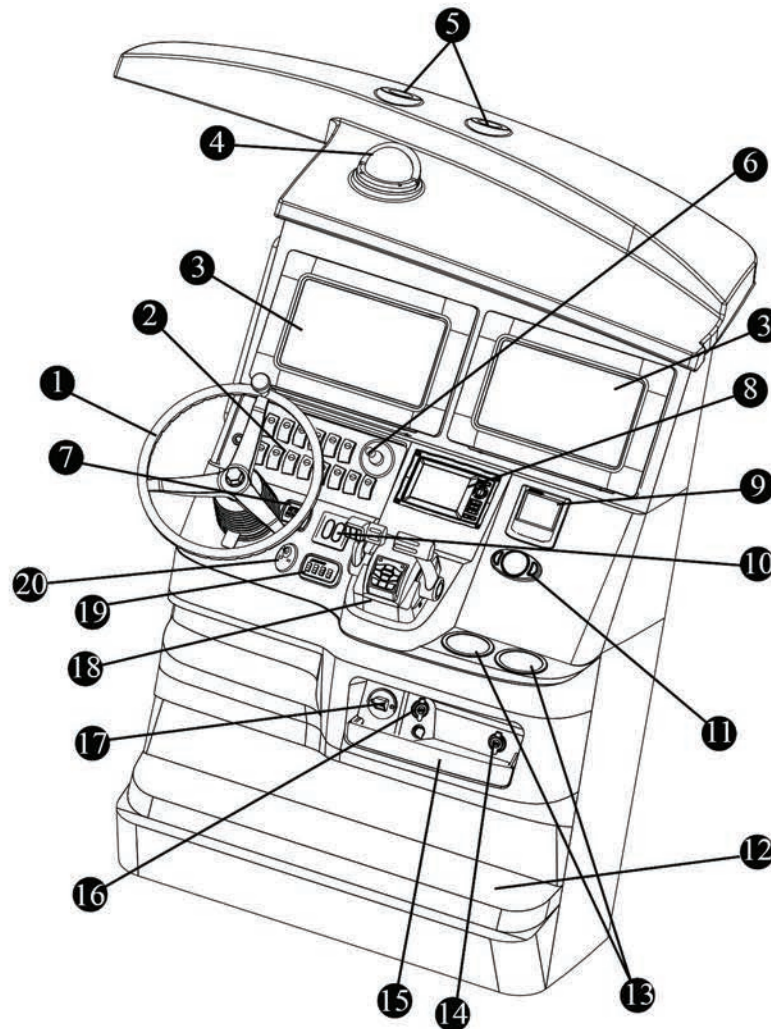
The information in this section is not meant to be a detailed service manual. This boat and its systems should be maintained by an experienced marine technician.

The content of this section is based on the most current design and assembly information available at the time of publication. The information and illustrations are general representations of the boat systems and might show optional items not included on your boat.

Specific troubleshooting and parts information for each accessory component might be included in the OEM literature contained in the operator's bag.

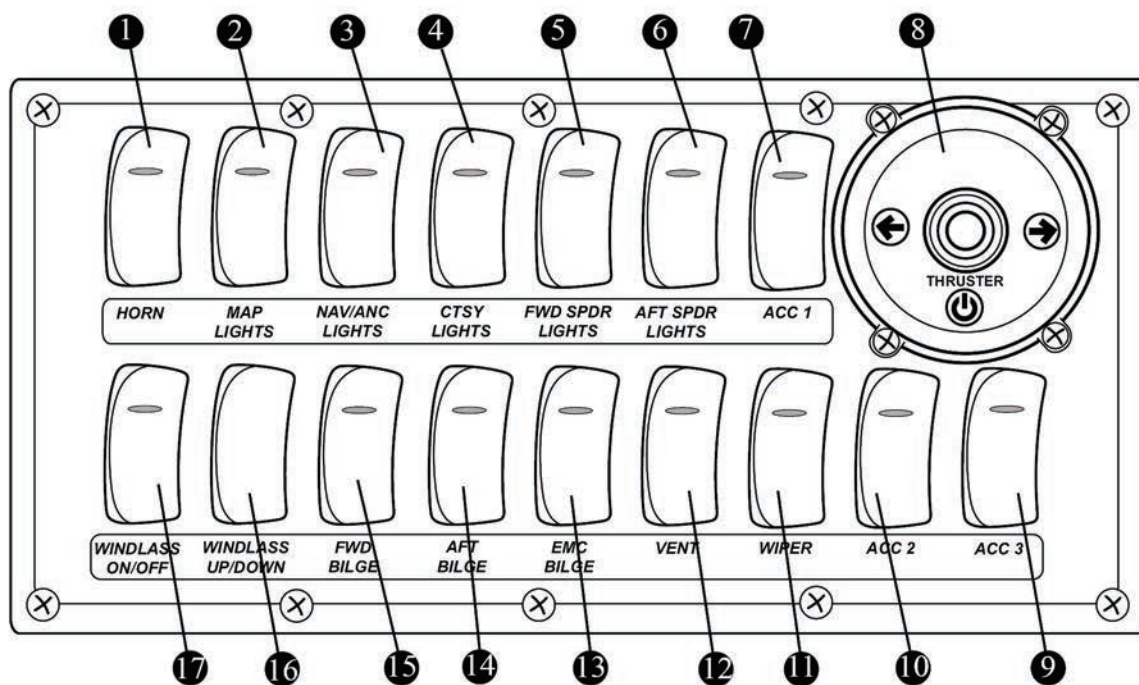


- 1 ANCHOR LOCKER W/THRU HULL ANCHOR ROLLER
- 2 BOW CLEATS (P&S)
- 3 BOW, UNDER STEP STORAGE
- 4 BOW THRUSTER
- 5 INSULATED FORWARD FISHBOX W/PUMPOUT
- 6 ADJUSTABLE HELM SEAT
- 7 FUEL FILL
- 8 HAWSE PIPE W/SPRING CLEAT UNDER (P&S)
- 9 PORT COMPANION SEAT
- 10 INSULATED IN DECK STORAGE (P&S)
- 11 DECK ACCESS TO FUEL TANK FITTINGS
- 12 DIVE/BOARDING DOOR W/REMOVABLE LADDER
- 13 IN-DECK STORAGE W/PUMPOUT (PORT)
- 14 HAWSE PIPE W/AFT CLEAT UNDER (PORT)
- 15 TRANSOM STORAGE COMPARTMENT
- 16 TRANSOM DOOR WITH STAINLESS STEEL LATCH
- 17 HAWSE PIPE W/AFT CLEAT UNDER (STARBOARD)
- 18 WASTE DOCKSIDE PUMPOUT
- 19 FRESH WATER FILL
- 20 DIESEL FUEL FILL (GENERATOR)
- 21 TWIST-OFF MOTORWELL ACCESS PLATE
- 22 TRIPLE ENGINES: MINIMUM HORSEPOWER 750,
MAXIMUM COMBINED HORSEPOWER 900
- 23 EXPANDABLE SWIM LADDER WITH COVER
- 24 IN-DECK STORAGE W/PUMPOUT (STARBOARD)
- 25 MECHANICAL EQUIPMENT HATCH
- 26 LEANING POST
- 27 STARBOARD COMPANION SEAT
- 28 FOLD DOWN HELM STANDING PLATFORM
- 29 CONSOLE
- 30 FORWARD CONSOLE STORAGE
- 31 LOW PROFILE INTERIOR RAIL



- | | |
|--|--|
| 1 STAINLESS STEEL STEERING WHEEL W/KNOB | 11 SPOTLIGHT REMOTE (OPTION) |
| 2 SWITCH PANEL W/CIRCUIT BREAKERS | 12 FOOTREST |
| 3 ELECTRONICS MOUNTING AREA (ROOM FOR TWO 15" DISPLAYS OR SINGLE DISPLAY AND MULTIPLE VHF/HF RADIOS) | 13 CUPHOLDERS |
| 4 MAGNETIC COMPASS | 14 12V ACCESSORY RECEPTACLE |
| 5 WINDSHIELD DEFOGGER VENTS | 15 CONSOLE STORAGE |
| 6 BOW THRUSTER CONTROL | 16 12V ACCESSORY RECEPTACLE |
| 7 ENGINES START/STOP SWITCH | 17 EMERGENCY SHUT DOWN SWITCH |
| 8 SMARTCRAFT™ VESSELVIEW DISPLAY (OPTION) | 18 GEAR SHIFT/THROTTLE CONTROL |
| 9 ACR BATTERY DISPLAY | 19 TRIPLE ENGINE TRIM PAD |
| 10 TRIM TAB CONTROL PAD | 20 FIREBOY ENGINE SHUTDOWN OVERRIDE SWITCH |

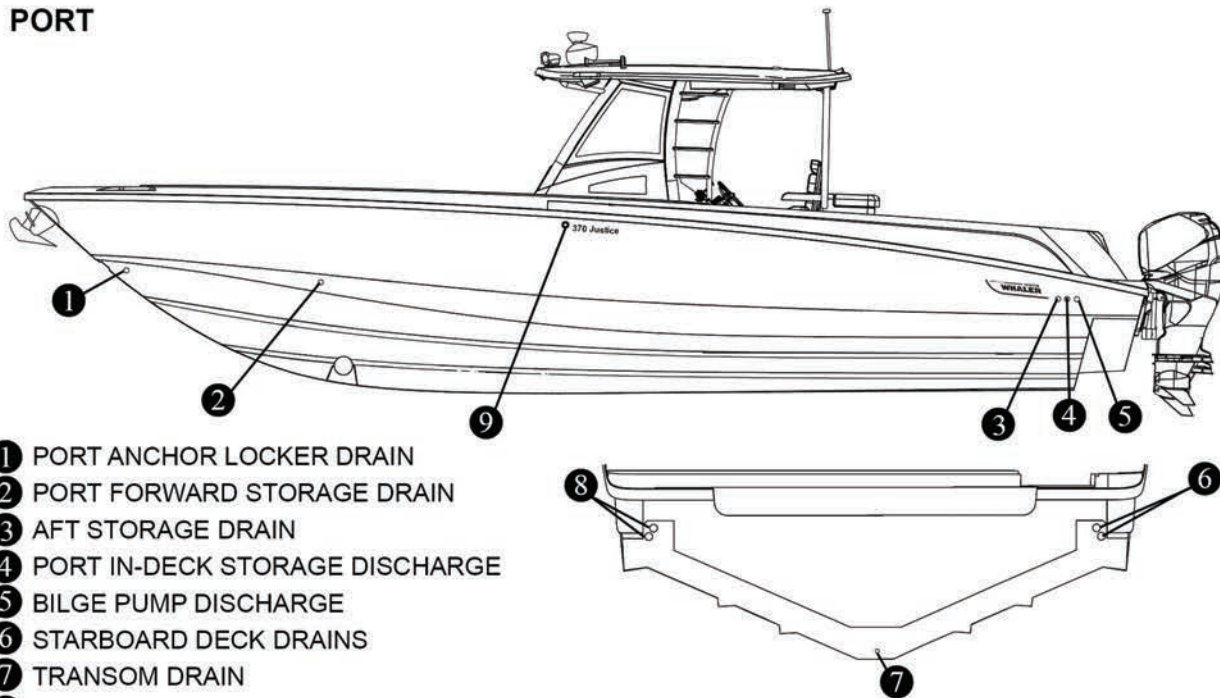
REFER TO THE MANUFACTURER'S MANUALS IN THE OPERATOR'S PACKET FOR COMPLETE INSTRUCTIONS AND WARRANTY INFORMATION ON THE ELECTRONIC EQUIPMENT INSTALLED ON THIS BOAT.



- | | | |
|---------------------------|----------------|----------------------|
| ① HORN | ⑦ ACCESSORY 1 | ⑫ VENT |
| ② MAP LIGHTS | ⑧ BOW THRUSTER | ⑬ EMC BILGE |
| ③ NAV / ANC LIGHTS | CONTROLLER | ⑭ AFT BILGE PUMP |
| ④ COURTESY LIGHTS | ⑨ ACCESSORY 3 | ⑮ FORWARD BILGE PUMP |
| ⑤ FORWARD SPREADER LIGHTS | ⑩ ACCESSORY 2 | ⑯ WINDLASS UP / DOWN |
| ⑥ AFT SPREADER LIGHTS | ⑪ WIPER | ⑰ WINDLASS ON / OFF |

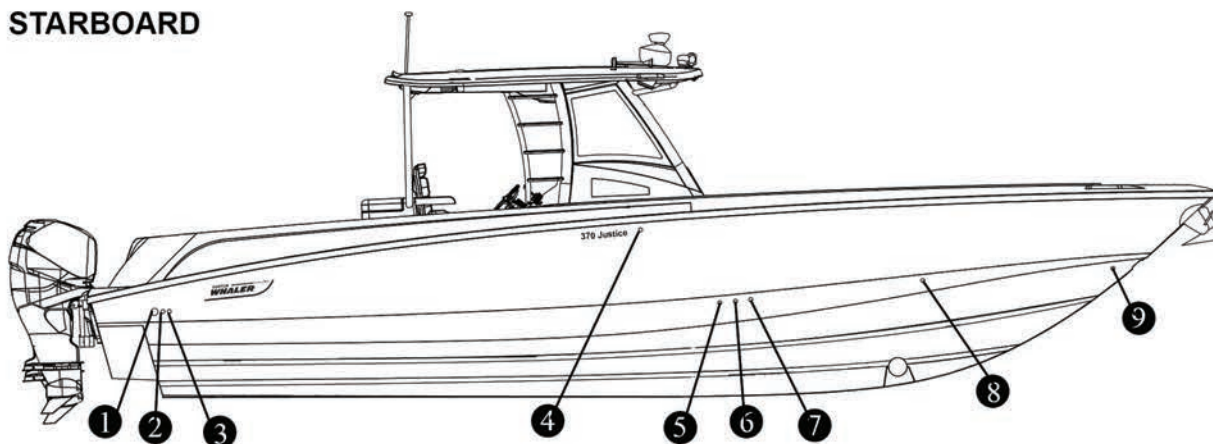
Location of Thru-Hull Fittings

PORT



- 1 PORT ANCHOR LOCKER DRAIN
- 2 PORT FORWARD STORAGE DRAIN
- 3 AFT STORAGE DRAIN
- 4 PORT IN-DECK STORAGE DISCHARGE
- 5 BILGE PUMP DISCHARGE
- 6 STARBOARD DECK DRAINS
- 7 TRANSOM DRAIN
- 8 PORT DECK DRAINS
- 9 FUEL FILL VENT

STARBOARD



- 1 GENERATOR EXHAUST
- 2 STARBOARD STORAGE PUMP DRAIN
- 3 HIGH WATER BILGE PUMP DISCHARGE
- 4 HEAD SYSTEM VENT
- 5 WATER HEATER AND A/C DISCHARGE
- 6 SHOWER SUMP, FORWARD STORAGE PUMPOUT AND VANITY DRAIN
- 7 FORWARD BILGE DISCHARGE
- 8 FORWARD STORAGE DRAIN
- 9 STARBOARD ANCHOR LOCKER DRAIN

Bow Thruster

This boat is equipped with a 4kW bow thruster with a dedicated battery bank and charging system. The electrically driven bow thruster gives the operator more maneuverability of the bow when docking or maneuvering the vessel in narrow channels or where space is at a premium.

The bow thruster joystick located on the control station switch panel is used to operate the thruster and maneuver the bow of the boat. The bow thruster motor, batteries and battery charger can be accessed by lifting the forward hatch under the cabin bunk. The battery switch is accessed through the aft hatch under the cabin bunk.

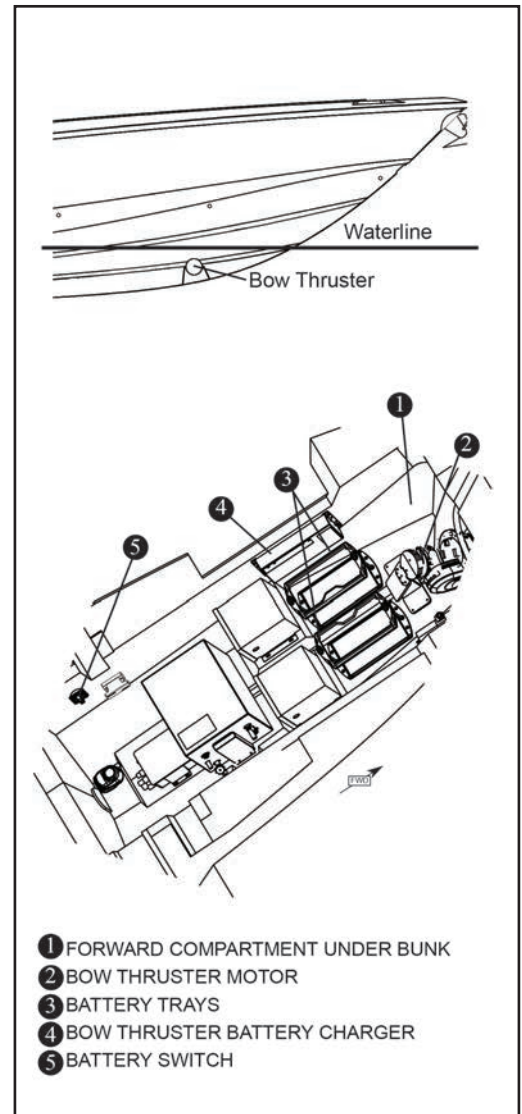
The bow thruster batteries have a dedicated charger that is powered by shore power or by the generator. The breaker on the main distribution panel must be turned on to enable charging.

To Operate The Bow Thruster:

1. Turn ON battery switch .
2. Press the activation button for one second.
3. Push the joystick and move it in the direction you wish to move the bow.

When the desired boat movement has been achieved return the joystick to the center position (spring return).

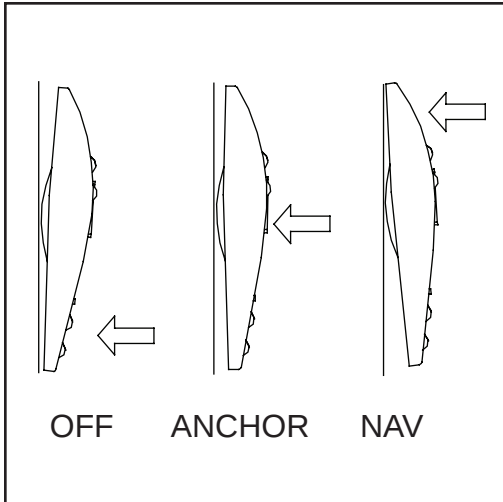
The bow thruster motor is equipped with an internal thermally activated breaker. The thermal breaker protects the motor from overheating. To avoid damage to the thruster, if the thermal breaker trips allow the unit to cool down before continuing operation.



CAUTION

DO NOT move the joystick port to starboard in quick succession as this could damage the motor.

Refer to the manufacturer's manual in the operator's packet for complete instructions and warranty information.



Navigation Lights



CAUTION

Installing after-market accessories such as radar domes, arches, and strobe lights can obstruct the navigation lights and decrease their effectiveness. It is your responsibility to comply with regulations regarding the normal operation of the navigation lights.

This boat is equipped with navigation lights for your safety. Regulations state that all boats, regardless of size, must display navigation lights at night.

The navigation lights let people operating other vessels know the approximate size of your boat and the direction your boat is traveling. Depending on which lights are displayed, they let people operating other vessels know your position while you are underway or anchored. Your navigation lights must be displayed at night or in low visibility conditions. It is your responsibility to verify that the navigation lights are in working condition and that proper lighting is displayed.

Operation

Operate your navigation lights using the three-position toggle switch located on the helm station switch panel.

- To activate the navigation lights while the boat is underway, fully depress the top of the switch to the NAV LIGHTS position. The red, green, and 360° white lights will be lighted for night operations.
- To activate the anchor light, move the toggle switch to the ANCHOR position. The 360° white light will be lighted for anchoring at night or in low-visibility conditions.
- No lights are lighted when the toggle switch is in the OFF position with the bottom depressed.

Magnetic Compass



WARNING

All magnetic compasses are subject to magnetic interference, which can produce errors called deviation. Compass deviation can contribute to inaccurate course plotting and position fixes, placing your crew, your boat, and others at risk.

Deviation

The location of your compass has been selected to minimize deviation caused by other equipment installed on the boat. Magnets, ferrous metals, and alternating devices are common causes of deviation. The compass is also located just below the operator's line of sight so it can be easily read during normal operation.

Periodically check the alignment of the compass to verify that it is installed properly and compensated. Compensation is the act of correcting for deviation.

Refer to the manufacturer's literature for detailed information about the compensation procedure.

Variation

It is important to understand that magnetic compasses point toward magnetic north. There is a difference between magnetic north and true north. That difference is called variation. Variation differs depending on your geographical location and can be determined by referring to a local chart.





Signal Horn

This boat is equipped with a signal horn. The signal horn is mounted on the hard top. The horn button is on the control console, to the left of the steering wheel on the helm switch panel. This signal horn satisfies United States Coast Guard Navigation Rule 36 for signals to attract attention.

Turning the house battery OFF-ON switch to the OFF position at the end of your mission will cut power to the signal horn circuit.

Spotlight

If equipped, the optional spotlight is mounted forward on the hardtop. The 2-speed spotlight with Directional Flexibility is controlled by a remote located at the helm station which gives the operator a full 360 degree horizontal rotation and vertical tilt with fingertip control.



ALWAYS ensure lens cover is removed before operation.

Programming the Transmitter

The light has been pre-programmed at the factory, and it is not necessary to re-program the transmitter, unless you experience outside interference.

Refer to the manufacturer's manual for complete instructions.

Map Lights

There are two dual lamp (red & white) map lights directly above the console. The map lights are powered by the "MAP LIGHTS" switch on the helm switch panel and are protected by the "MAP LIGHTS" breaker on the helm breaker panel located on the port side of the control station. The switch on the helm switch panel is a three position switch which allows for red or white lighting selection.

Blue Aesthetic Lighting

The standard hardtop of this boat has eight (8) blue aesthetic lights, two (2), dual lamp (red & white) map lights and three (3) cockpit spreader lights.

The blue lights are located around the underside perimeter of the hardtop. They are powered by the "CTSY LIGHTS" switch on the helm switch panel when in the blue light position. The lights are protected by the "COURTESY LIGHTS" breaker on the helm breaker panel located on the port side of the control station.

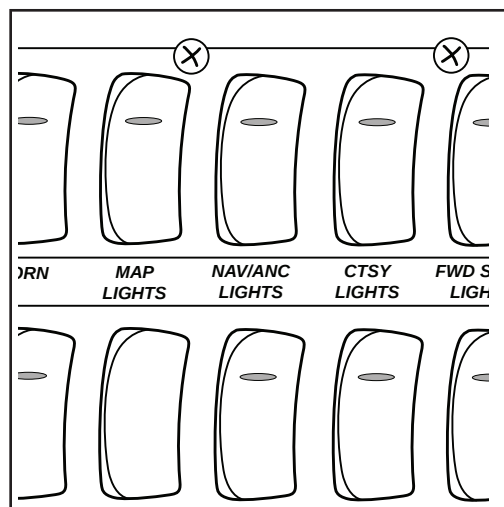
Cockpit Lighting

The courtesy lights placed around the cockpit, forward and aft, are dual lamp (white & blue) lights which are powered by the "CTSY LIGHTS" switch on the helm switch panel. The lights are protected by the "COURTESY LIGHTS" breaker on the helm breaker panel located on the port side of the control station. The switch on the helm switch panel is a three position switch which allows for blue or white lighting selection.

Cabin Lighting

The cabin can be illuminated by courtesy lighting strategically placed around the cabin. The lights are dual lamp lights which can be switched between red and white for maximum or minimal illumination.

There is also an adjustable task light on the forward wall of the head.

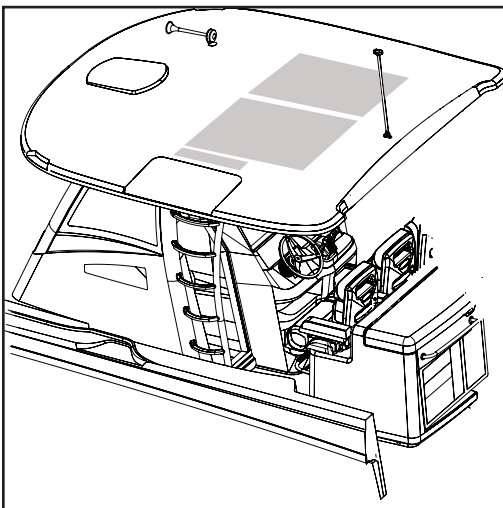




Spreader Lights

The aft spreader lights are powered by the “AFT SPDR LIGHTS” switch on the helm switch panel. They are protected by the “SPREADER LIGHTS” breaker on the helm breaker panel located on the port side of the control station.

The forward spreader light is powered by the “FWD SPDR LIGHT” switch on the helm switch panel. It is protected by the “SPREADER LIGHTS” breaker on the helm breaker panel located on the port side of the control station.



Hardtop Access

A hatch on the port side of the hardtop can be accessed via a ladder integrated into the hardtop frame, providing easy access to the surface of the hardtop for maintenance or repair of hardtop mounted equipment.

The hatch is secured by rotating the latch handle on the aft underside of the hatch. ALWAYS ensure that the hatch is secured while boat is underway.

The surface of the hardtop has non-skid areas to provide a better foothold while standing and walking. While occupying the hardtop surface, it is best to remain on these areas.



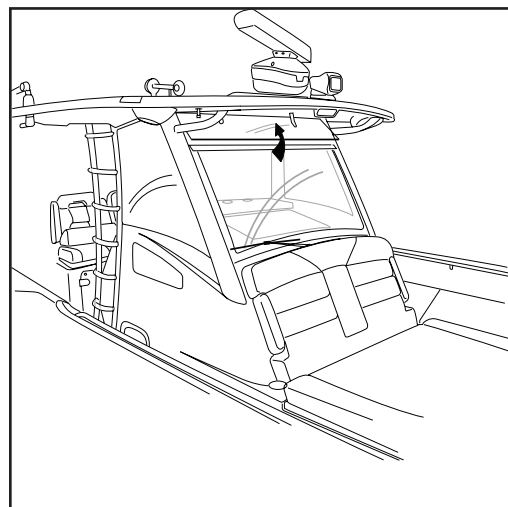
DANGER

To avoid risk of injury or death, DO NOT occupy hardtop while boat is in motion.

Electric Windshield Vent

The windshield vent at the top of the windshield is electrically actuated. A switch labeled "VENT" is located on the helm switch panel.

By depressing the top of the switch, you can open the vent. To close the vent, depress the bottom of the switch. The vent switch is a momentary switch which means that it must be depressed and held in position for the vent to open or close completely. Once it achieves full open or closed, it will stop.

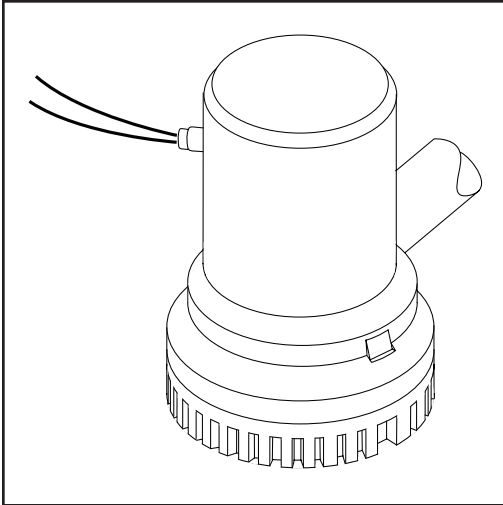


Windshield Wiper/Washer

The wiper/washer is controlled by a toggle switch on the helm switch panel. The switch is protected by a reset breaker located on the helm breaker panel.

The washer is activated by momentarily pushing the top of the switch. The switch will return to the center (wiper ON) position when released. Push the bottom of the switch to turn the wiper OFF.

Recommended Blade replacement:
ANCO wiper blades - 28 inches



Bilge Pumps

This boat is equipped with three (3) automatic bilge pumps: one forward (750 GPH / 2,839 LPH), one aft (2000 GPH / 7,571 LPH) and one high water emergency pump (2000 GPH / 7,571 LPH).

Each pump is activated automatically by a mercury-free float switch when the water in the bilge reaches a predetermined level.

By depressing the switch on the control station switch panel labeled FWD BILGE or AFT BILGE the operator can energize the pumps regardless of the position of the float switches.

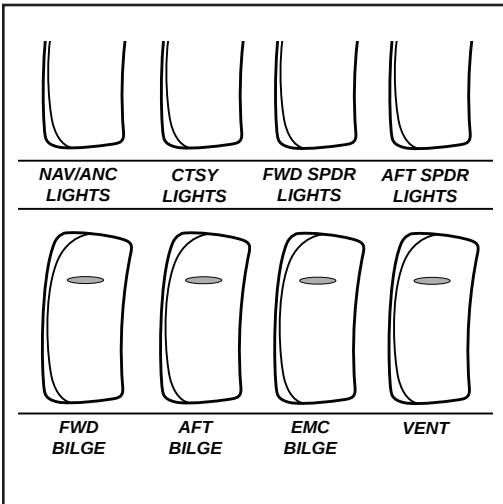
Inspect the bilge pump intakes frequently and keep them free of dirt or material which may impede the flow of water through the pump.

The aft pump discharges water overboard by way of a thru-hull fitting on the aft port hull. The forward pump discharges water overboard by way of a thru-hull fitting on the midship starboard hull.

In the event that water has risen in the bilge sufficiently to activate the high water float switch, the **emergency high water bilge pump** will automatically begin to pump water out of the bilge through a thru hull fitting on the aft starboard side of the hull, an audible alarm (loud buzzer) will sound at the helm and the "HIGH WATER INDICATOR" light on the DC distribution panel will be ON.

Take immediate action:

- Switch all bilge pumps ON.
- Turn OFF all AC and DC breakers before stepping into the water in the bilge.
- If the generator is in danger of ingesting water, turn it off unless it is powering critical systems.
- Determine the problem and take necessary action to stop the inflow of water.



Access to the Pumps

The aft pump and high water pump can be accessed through the equipment hatch in the aft cockpit floor. The forward pump can be accessed through a hatch under the cushion on the aft berth.

Maintenance

To clean the pump strainer, depress the lock tabs on both sides of the pump and lift the motor.

If water does not come out of the discharge hose:

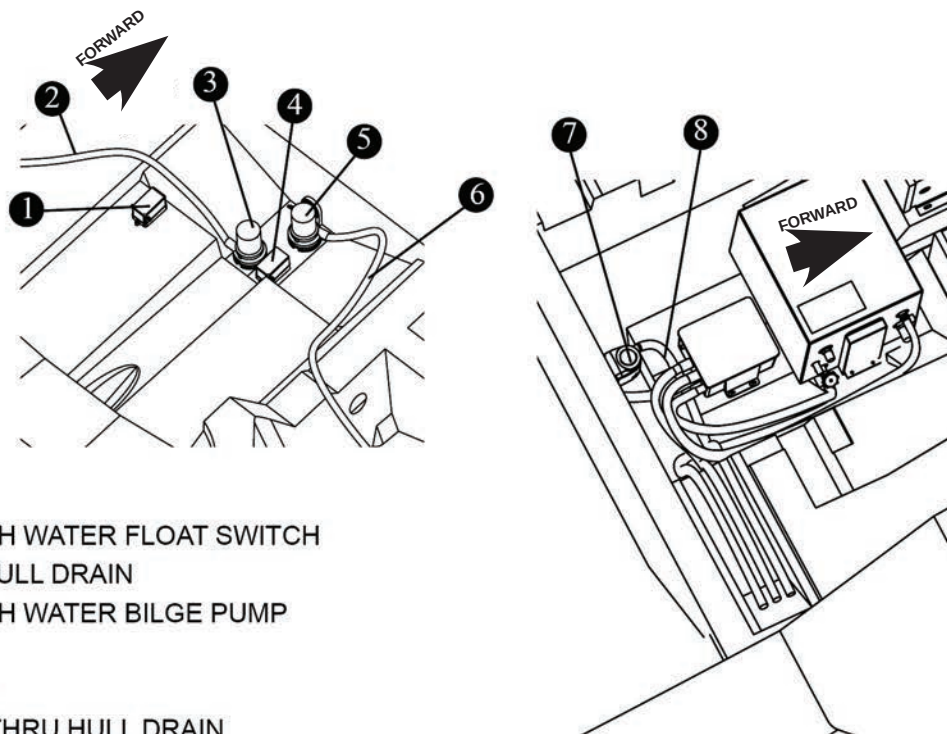
1. Remove the motor module to see if the impeller rotates with the power on.
2. Remove any debris that may have accumulated in the impeller section or strainer base.
3. Check hose and connection on hull side for debris and proper connections.

Float Switch

Frequently inspect the area under the float switches to ensure they are free from debris and oil.

To clean:

- Soak in heavy duty bilge cleaner for 10 minutes, agitating several times.
- Check for unrestricted operation of the float.
- Repeat the cleaning procedure if necessary.



- 1 EMERGENCY HIGH WATER FLOAT SWITCH
- 2 TO PORT THRU HULL DRAIN
- 3 EMERGENCY HIGH WATER BILGE PUMP
- 4 FLOAT SWITCH
- 5 AFT BILGE PUMP
- 6 TO STARBOARD THRU HULL DRAIN
- 7 FORWARD BILGE PUMP
- 8 TO STARBOARD THRU HULL DRAIN

Fuel & Oil Spillage

Regulations prohibit discharging fuel or oily waste in navigable waters. Discharge is defined as any action which causes a film, sheen or discoloration on the water surface, or a sludge or emulsion beneath the water surface. A common violation is bilge discharge.

Use rags or sponges to soak up fuel or oily waste, then dispose of them properly ashore. Never pump contaminated bilge discharge overboard.

Fresh Water System



WARNING

Be sure to fill the water tank from a source known to provide safe, pure drinking water.



CAUTION

If you do not use the freshwater system for long periods of time or only use it seasonally it is recommended that you follow the disinfecting practice before using it.

The freshwater system on this boat includes: one pump, a 60 gal/227 L fresh water tank, plumbing connections for water service to the head, sink, cabin shower, transom shower, dive door shower and anchor locker.

Filling the Tank

The water tank can be filled through the water fill deck plate located on the transom.

Fill the tank only from a source known to provide safe, pure drinking water. Use only a plastic hose to fill the water tank. Using a rubber hose can give the water a disagreeable taste.

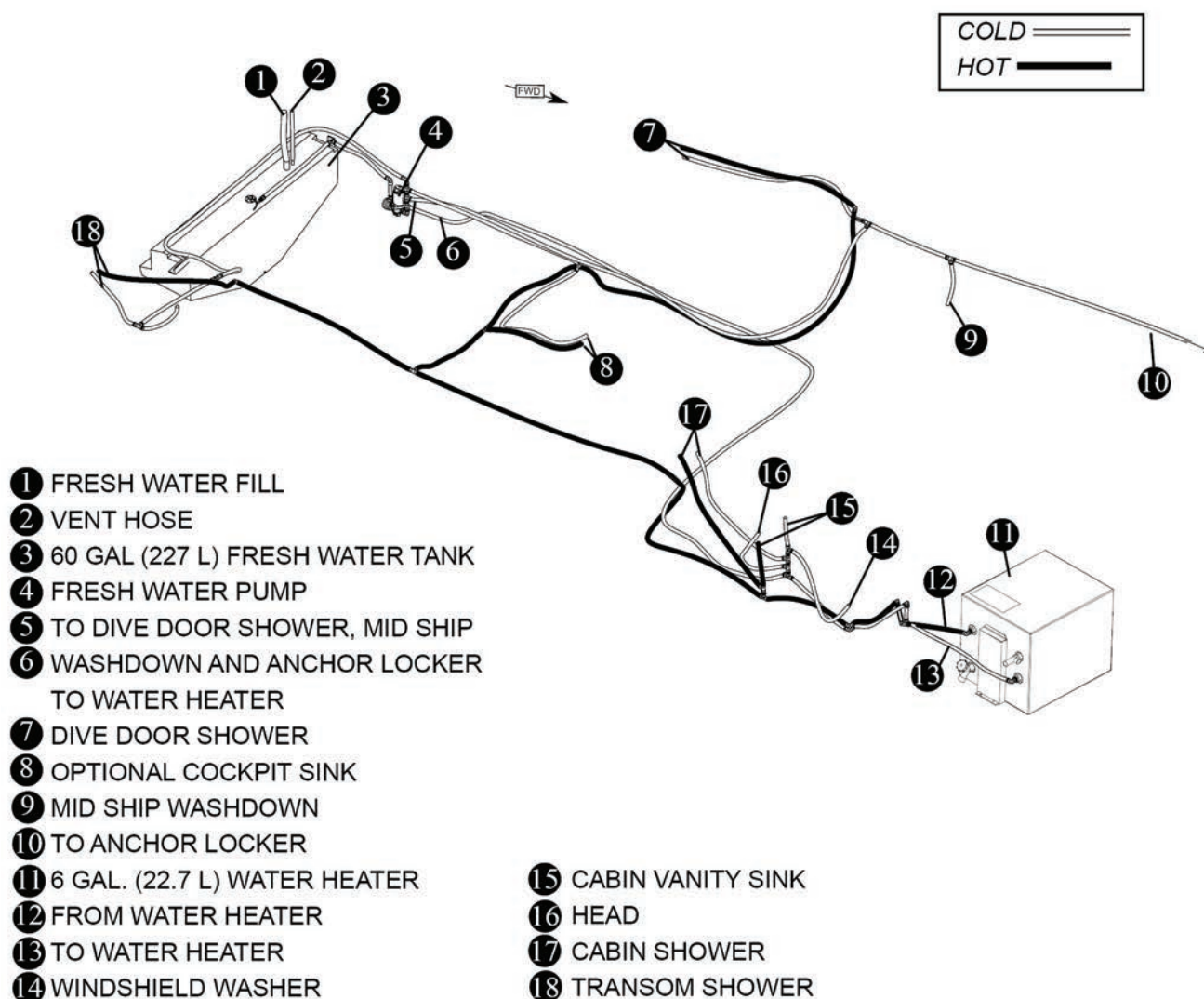
The hose should be dedicated to filling use only and should be stored in a clean, dry place. It is a good practice to cover the ends of the hose to ensure the inside stays clean.

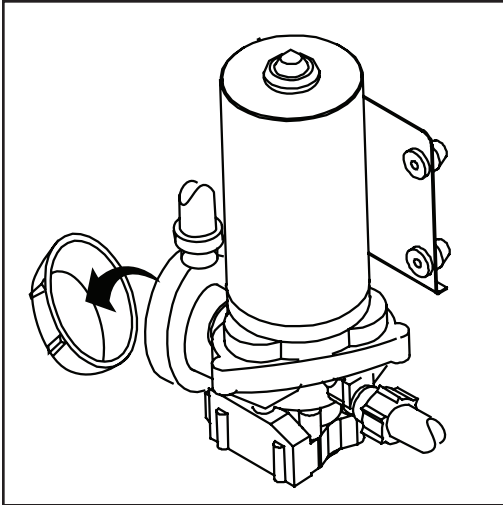
Before you fill the freshwater system for the first time, it is vital that it be properly disinfected.

The following procedure is recommended to disinfect the freshwater system:

1. Flush the entire system thoroughly by allowing potable water to flow through it.
2. Drain the system completely.
3. Fill the entire system with an approved disinfecting solution and follow the method prescribed by the manufacturer.
4. After disinfecting, drain the entire system.
5. Flush the entire system thoroughly several more times with potable water.
6. Now the system is ready for use; fill with potable water.

See **Section 6** for maintenance procedures and storage.





Fresh Water System Maintenance

Very little maintenance is required for the fresh water system, other than annual disinfecting and winterizing. Periodically check the entire system to assure that the hose connections, tube fittings, electrical connections and mounting bolts are properly secured, and free of chafing.

Periodically check the in-line strainer attached to the pump, and clean, if necessary.

The system should be run at least every other month to maintain the pump's impeller in a stable operating condition.

Freshwater Pump

This vessel has a fresh water pump located in the port side bilge area aft of the battery trays. To access the pump, lift the equipment hatch in the aft overhead deck.

To operate the system, turn ON the "FRESHWATER" breaker located on the DC Breaker Panel located on the starboard wall of the cabin.

When activated, the freshwater pump draws water from the water tank and provides pressure to the entire freshwater system.

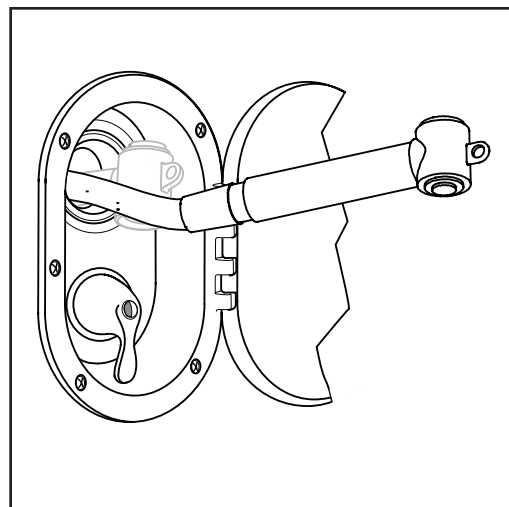
Periodically check the hoses and connections for leaks and/or loose fittings. A loss of pressure will result in low water flow.

Deck Showers

This boat is equipped with two deck showers: one is located on the starboard side, aft of the transom door and the other is located forward of the dive door on the port side of the cockpit.

The showers are supplied by the fresh water system and each has a hose which extends approximately 6 feet (1,82M). Both units feature a control handle to adjust the temperature of the supplied water.

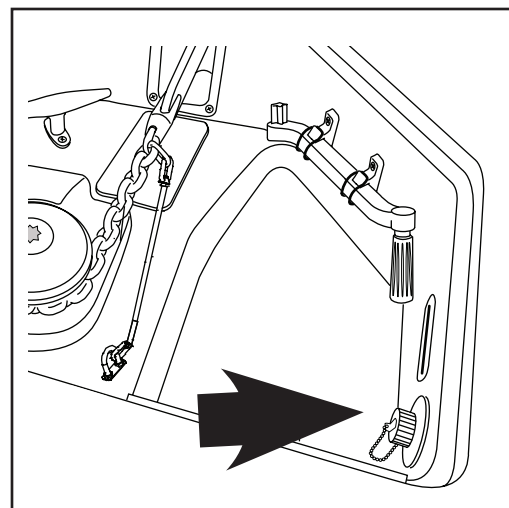
The shower unit is pressurized by the fresh water pump and the spray head is activated by depressing the button on the back of the unit.

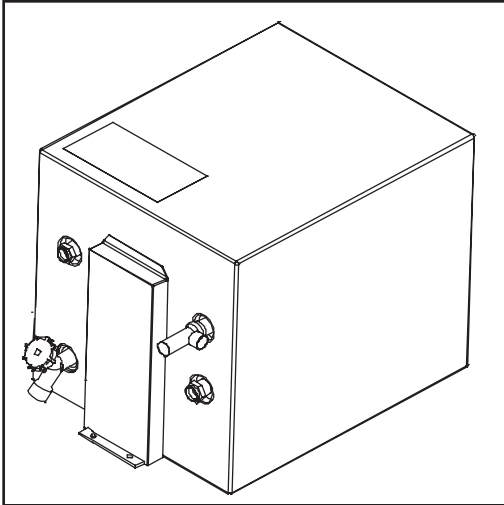


Anchor Locker Washdown

For convenience, there is a fitting located at the bow in the anchor locker which allows for the connection of a common garden hose. This connection allows for the use of fresh water at the bow of the boat. It is important that the pump hose is tethered to the connection be secured onto the fitting when it is not being used.

The “FRESHWATER PUMP” breaker located on the DC Breaker Panel in the cabin must be ON to operate the freshwater washdown.





Water Heater



CAUTION

Make sure the fresh water tank is full before operating the water heater. Operating the water heater empty will cause damage to the system.

1. Make sure the “FRESH WATER” breaker is “ON” before energizing the water heater.
2. Turn “ON” the “WATER HEATER” switch located on the AC Main Distribution Panel.
3. Once both the “FRESH WATER” switch and the “WATER HEATER” breakers are “ON,” the system can be utilized.

NOTE: If the water heater has not been used for some time it will take approximately 20 minutes for the water to heat.

The water heater is equipped with a temperature and pressure relief valve that complies with the standard for Relief Valves & Automatic Gas Shut off Devices for Hot Water Systems, ANSI Z 21.22

Hydrogen gas may form in the tank if the system has not been used for more than two weeks. DO NOT smoke or have any flame near an open faucet.

Maintenance

Inspect water heater connections regularly. Access to the water heater is through the back panel under the bunk openings.

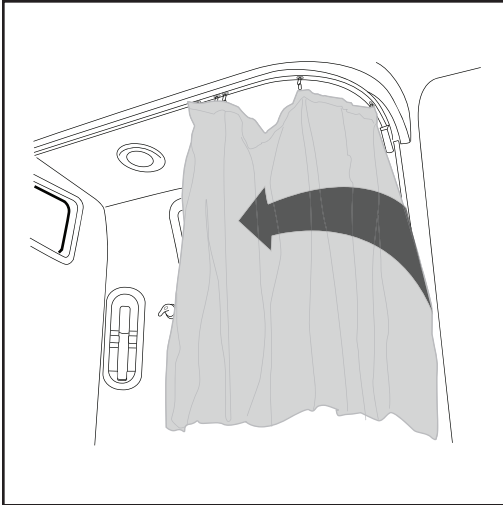
Manually operate the pressure relief valve at least once a year. This must be done when the water in the storage tank is cold.

Flush the system several times per year to prolong the life of the system. There may be times that you will notice an odor coming from the water system. There is a protective coating in the tank that protects it from corrosion. The electro-galvanic action of the coating material releases hydrogen from the water. If sulfur or any of its combinations are present in the water the two will combine and produce hydrogen sulfide. This compound will produce a "Rotten Egg Odor." Hydrogen sulfide can also be present in your freshwater supply. It is the product of the decay of animal matter and as little as 1 mg/liter can cause a perceptible odor.



DANGER

Hydrogen gas might form in the tank if the system has not been used for more than two weeks. DO NOT smoke or have any flame near an open faucet.



Turn off the water heater, wait for the water to cool then make certain that the system is completely drained before laying up for the winter season. **Drain and flush the freshwater tank with a non-toxic anti-freeze before winter storage.**



CAUTION

AVOID SCALDING INJURY - Turn OFF the water heater and wait for the water in the storage tank to cool before opening the drain valve to flush the tank.

Refer to the manufacturer's manual in the operator's packet for complete instructions and warranty information.

Cabin Shower

The cabin shower is located on the aft starboard wall of the cabin interior. The shower is pressurized by the freshwater pump. The spray head is attached to a hose which can be extended approximately 6 feet (1.82 m) and is activated by a faucet handle next to the unit.

Shower Curtain

The full length shower curtain is affixed to an overhead track and can be pulled around the entire head area to protect the remaining cabin area from getting wet while the shower is in operation.

Before activating the shower wand, pull the curtain around the full length of the track. When finished, return the curtain to the back wall of the cabin and secure with the velcro fabric wraps.

Vanity

The vanity in the a bin features a large sink and fresh water faucet. Additional amenities include a toothbrush holder and storage shelf. On the forward side of the a binet is task lighting, a 120V GFI receptacle and a 12V receptacle.

The vanity also includes the microwave, trash can and a small storage compartment in the bottom a binet.

Coffee Maker

When not in use the coffee pot should be stored in the a binet drawer below the a bin refrigerator. ALWAYS stow the coffee pot while underway. Use of this device requires shore power or generator.

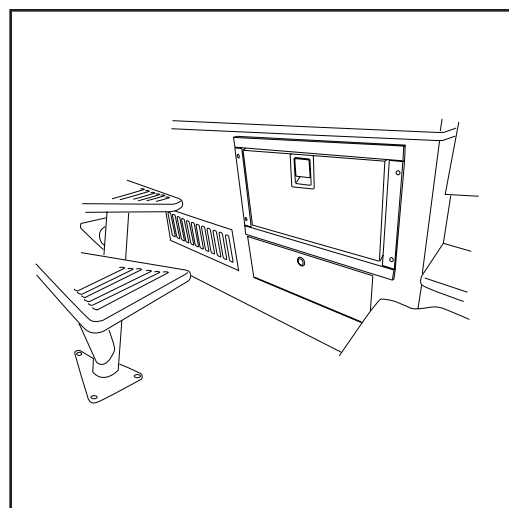
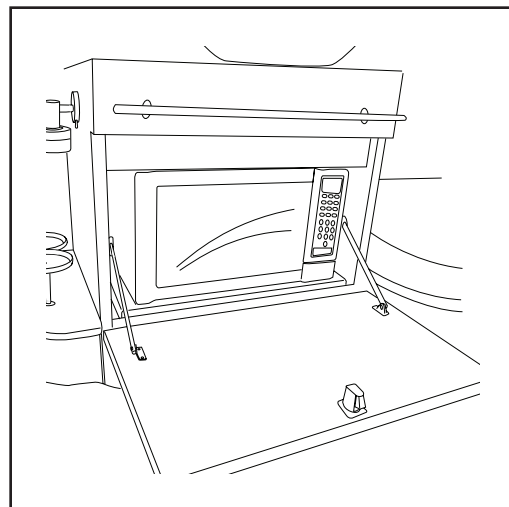
Microwave

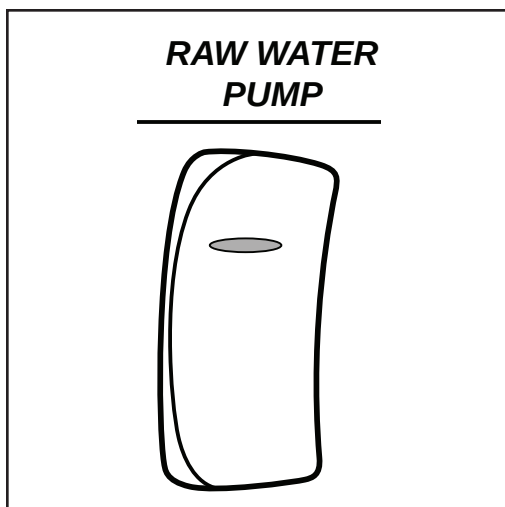
The microwave is located in a a binet under the vanity sink. The unit is protected by the "MICROWAVE" breaker on the AC distribution panel which must be ON for the microwave to function. Use of this device requires shore power or generator.

Cabin Refrigerator

The a bin refrigerator on this boat is a 1.3 cubic ft. drawer type unit located on the port side of the a bin. The unit is protected by the "CABIN REFRIGERATOR" breaker on the AC distribution panel. The breaker must be ON for the refrigerator to function. Use of this device requires shore power or generator.

Refer to the appropriate appliance manufacturer's manual in the operator's packet for complete instructions and warranty information for these items.





Sky Lights

The cabin on this boat has a set of skylights in the aft ceiling. The skylights have retractable shades which allow for the adjustment of sunlight into the cabin.

Hanging Locker & Storage Cabinet

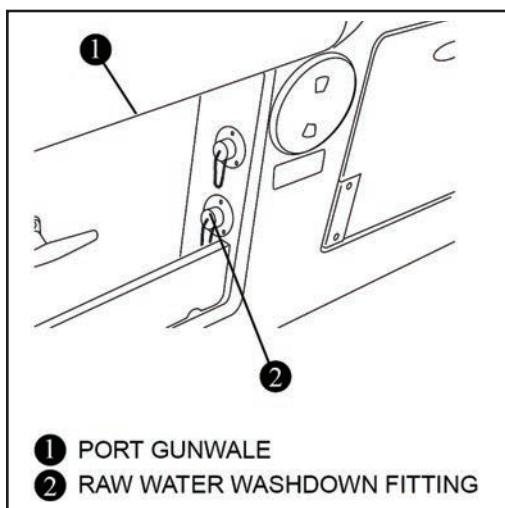
The hanging locker and storage cabinet is on the port side aft of the cabin. The locker has several pull out hooks for clothing or hangers and the forward side of the unit has shelving.

Raw Water System

The raw water system includes a pump, one seacock and a raw water hose connection.

The seacock must be set in the OPEN position for the raw water system to function. The seacock and raw water pump can be accessed through the equipment hatch in the aft cockpit deck.

Make sure that the hull seacock is set in the open position and turn ON the "RAW WATER" switch on the leaning post switch panel by pushing on the top of the switch. The raw water pump will be activated and the system will become functional.



Raw Water Washdown

The raw water washdown hose connection is located on the port midship wall of the cockpit. The fitting allows for connection of a common garden hose. It is important that the appliance is tethered to the connection be secured onto the fitting when it is not being used. The raw water washdown is supplied by a pump activated by the "RAW WATER" switch on the leaning post switch panel.

Maintenance

Maintenance of the raw water system requires periodic inspection of the raw water intake strainer and all fittings and hoses for system integrity to prevent leaks. Clean away debris and/or tighten hose connections as required. The system should be run at least every other month to keep the pump's impeller in good condition. See **Section 6** for details.

Head System

- This boat is equipped with a direct overboard discharge valve. Discharging of sewage directly overboard is for use where approved only.
- Damage to the system could occur if the discharge seacock is not open during operation.
- Severe state and federal penalties are levied for discharging raw sewage and solid waste in waters where it is not permitted.
- Demonstrating that you have disabled the macerator by locking the system and/or removing the seacock handle may avoid a fine.
- It is illegal for any vessel to dump plastic trash anywhere in the ocean or navigable waters of the United States.

This vessel is equipped with a waste disposal system located in the head in the aft bin. The system is protected by the "VACUUM FLUSH" breaker on the DC Breaker Panel in the aft starboard side of the aft bin. The breaker must be ON for the system to function.

The waste system includes a Vava -Flush® toilet, a 10 gallon (37.8 L) holding tank with vacuum pump and a thru-hull vent.

Waste from the head is directed into the 10 gal. (37.8 L) holding tank located in the bilge. A holding tank fluid level indicator is located on the overboard discharge panel which is located on the starboard wall of the cabin. When the FULL light is on, the holding tank must be emptied before the head can be reused. However, it would be a good practice to empty the tank when the 3/4 light is on to avoid damage to the system.



CAUTION

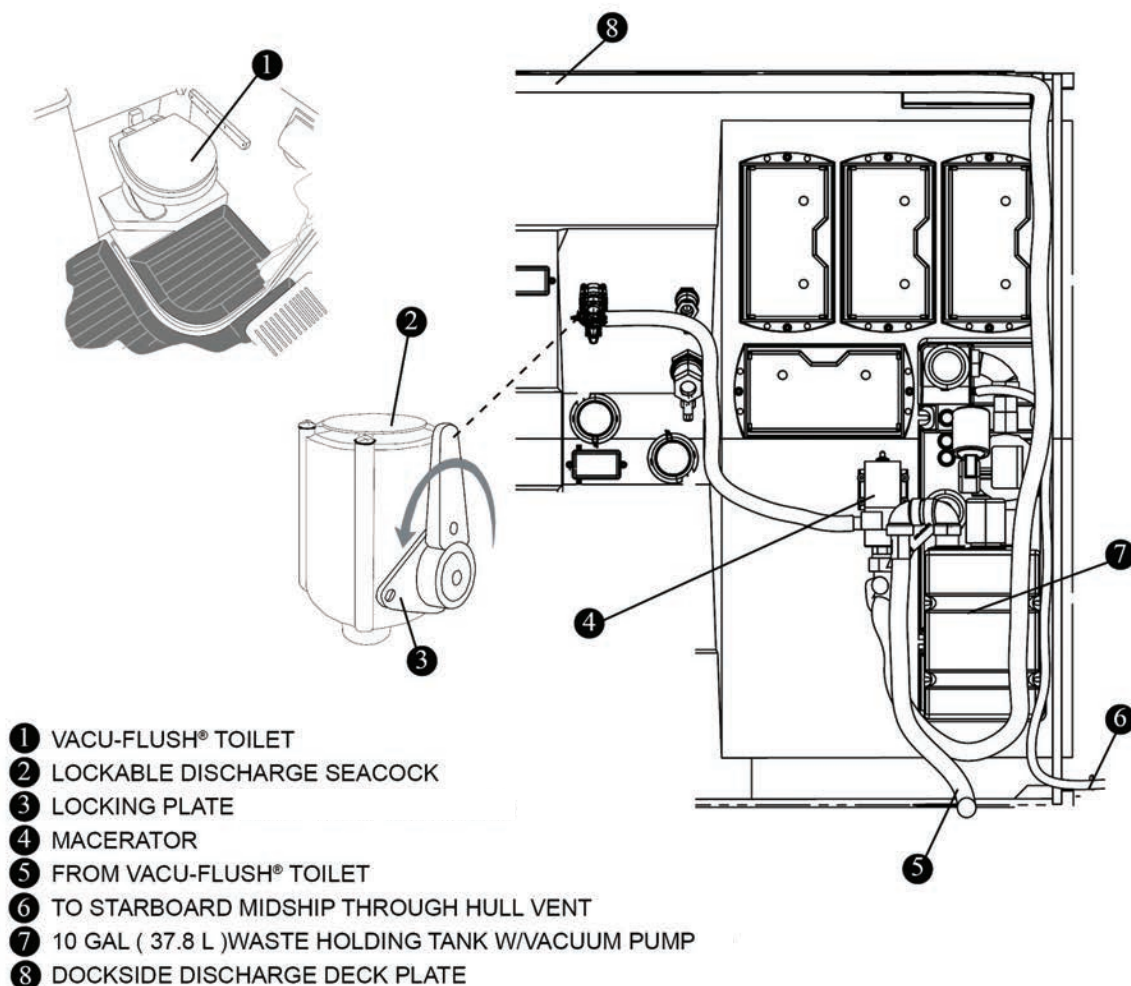
ONLY use marine grade tissue paper in your marine waste system. Household tissue will clog the system.

Vacu-Flush® Head

The foot pedal at the base of the toilet opens a mechanical seal which allows a vacuum to force waste through the opening in the bowl to the vacuum generator, through the vacuum pump and then to the holding tank.

Operation

- Turn ON the FRESH WATER PUMP breaker on the 12V DC panel.
- Turn ON the VACUUM FLUSH breaker on the 12V DC panel.
- If there is no water in the bowl, lift the foot pedal to add sufficient water.
- To flush, depress the foot pedal until bowl is clear.



Macerator & Dockside Discharge

The system can be emptied by two methods:

- The preferred method is via dockside pumpout through the "Waste" deck plate on the port transom.
- Alternatively, the system also provides for overboard discharge by way of a macerator & lockable discharge seacock

Severe state and federal penalties are levied for discharging raw sewage and solid waste in waters where it is not permitted.

Demonstrating that you have disabled the macerator by locking the system and/or removing the seacock handle may avoid a fine.

To lock the discharge seacock rotate the handle until the hole in the handle is aligned with the hole in the locking plate and insert a padlock (not supplied).

Overboard Discharge

Environmental Considerations

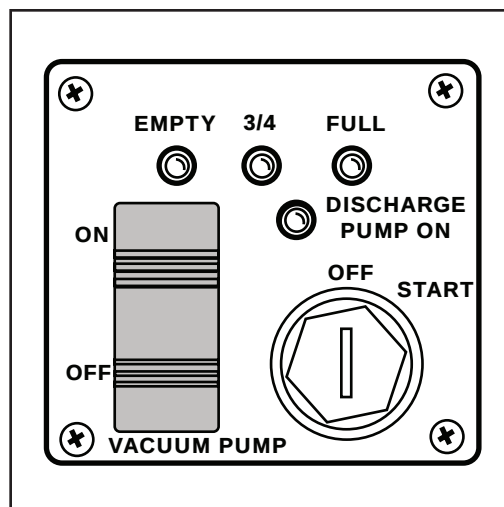
*The Environmental Protection Agency (EPA) standards state that in freshwater lakes, reservoirs, impoundments whose inlets or outlets are such as to prevent the ingress or egress by vessel traffic subject to this regulation, or in rivers not capable of navigation by interstate traffic subject to this regulation, marine sanitation certified by the United States Coast Guard (U.S.C.G.) installed on vessels **shall be designed and operated to prevent the overboard discharge of sewage, treated or untreated or any other waste derived from sewage.***

The EPA standards further state that this shall not be construed to prohibit the carriage of Coast Guard certified flow through treatment devices which have been secured so as to prevent such discharges. They also state that the waters where a Coast Guard certified marine sanitation device permitting discharge is allowed include: Coastal waters, estuaries, The Great

Lakes and Intercoastal waterways, freshwater lakes and impoundments accessible through locks and other flowing waters that are navigable interstate by vessels subject to this regulation. (40CFR 140.3)

The macerator discharge pump draws solid and liquid waste from the holding tank and processes it prior to discharging it overboard through the discharge seacock located in the bilge aft of the battery trays.

There is a control panel located on the DC distribution panel on the starboard side of the cabin. If the "FULL" light is on you MUST empty the holding tank before the system will function properly.



- Ensure that the MACERATOR breaker located on the DC Breaker Panel is ON.
- Make sure the discharge seacock in the aft bilge is in the open position.
- Insert the macerator key, which is included in the operator's packet, into the panel.
- De-energize the Vacuum Pump by depressing the bottom of the rocker switch.
- Depress the lever on the toilet to deplete the vacuum.
- Turn the key clockwise to "START" and hold it there.
- When you are satisfied that the tank has been emptied, return the key to the upright position.
- Energize the system by depressing the top of the rocker switch.

Upon completion, return the rocker switch to the ON position. The rocker switch must remain ON for the system to function properly.

Maintenance

After long periods of non-use, the macerator pump may not turn freely. Regular use of the system will reduce the chances of this occurring. Because this waste system is a low water use device, there is special paper which must be used to prevent clogs.

Refer to the manufacturer's manual in the operator's packet for complete instructions and warranty information.

Waste System Vent

The waste system vents odors associated with waste operations through the starboard midship thru hull fitting.

Avoid overflowing the holding tank. If the “FULL” light is lit on the discharge control panel located in the head, you **MUST** empty the holding tank before the system will function properly. However, it is good practice to empty the tank when the 3/4 light is lit.

Dockside Pump-Out

Dockside discharge is the preferred method of waste disposal.

To empty the holding tank the service of a dockside pump-out station is required. The dockside facility will have a connection to fit the boat. Follow instructions at the station and make sure the pump out hose is inserted into the deck plate marked “WASTE” located on the port transom. Access is gained by use of a special key that is included in the operator’s packet.

NOTE: Prior to using either method of discharging sewage:

- De-energize the vacuum pump by depressing the bottom of the rocker switch to the OFF position.
- Depress the lever on the toilet to deplete the vacuum.
- After completion of the discharge, energize the vacuum pump by returning the switch to the ON position.

Following pump-out, the rocker switch must remain in the ON position for the system to function properly.

Gray Water Sump

Your boat is equipped with a gray water sump located under a hatch beneath the cushion of the berth in the cabin. Gray water from the shower, vanity, water heater drain and the forward console storage compartment drain collect in the sump.

The sump contains its own automatic pump. When there is enough water in the sump to raise the float switch, the pump will engage and the water will be discharged through the thru hull drain.

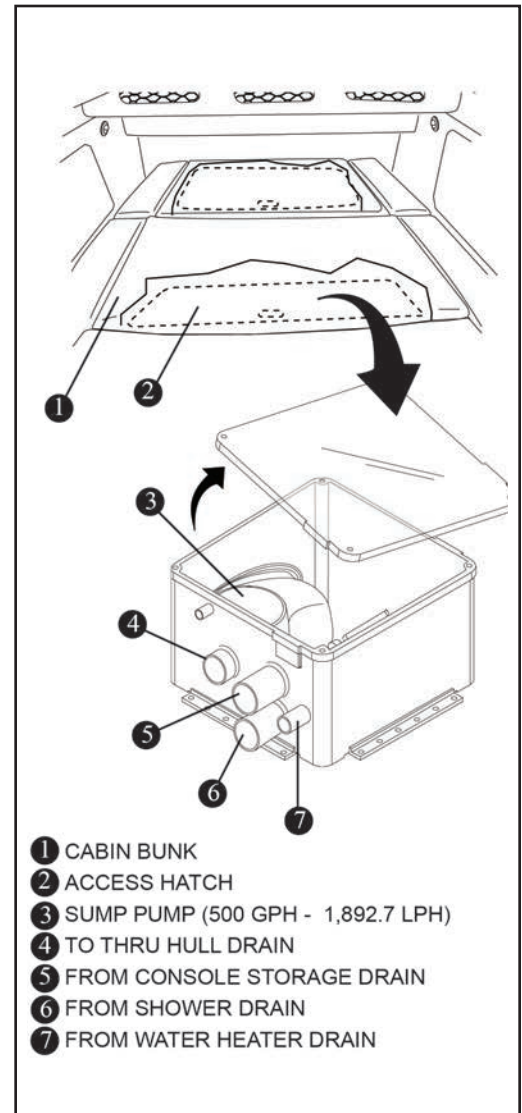
Maintenance

Periodically remove the cover and check the pump and float switch for proper working order. Clean out any obstructions which may inhibit the pump from performing correctly.

Thru Hull Discharge Hoses

Access

- The port and starboard aft thru hull drains can be accessed through the aft cockpit deck hatch.
- The starboard midship thru hull drains can be accessed by removing the microwave from the vanity in the cabin and removing the panel on the back wall of the vanity.



Air Conditioning

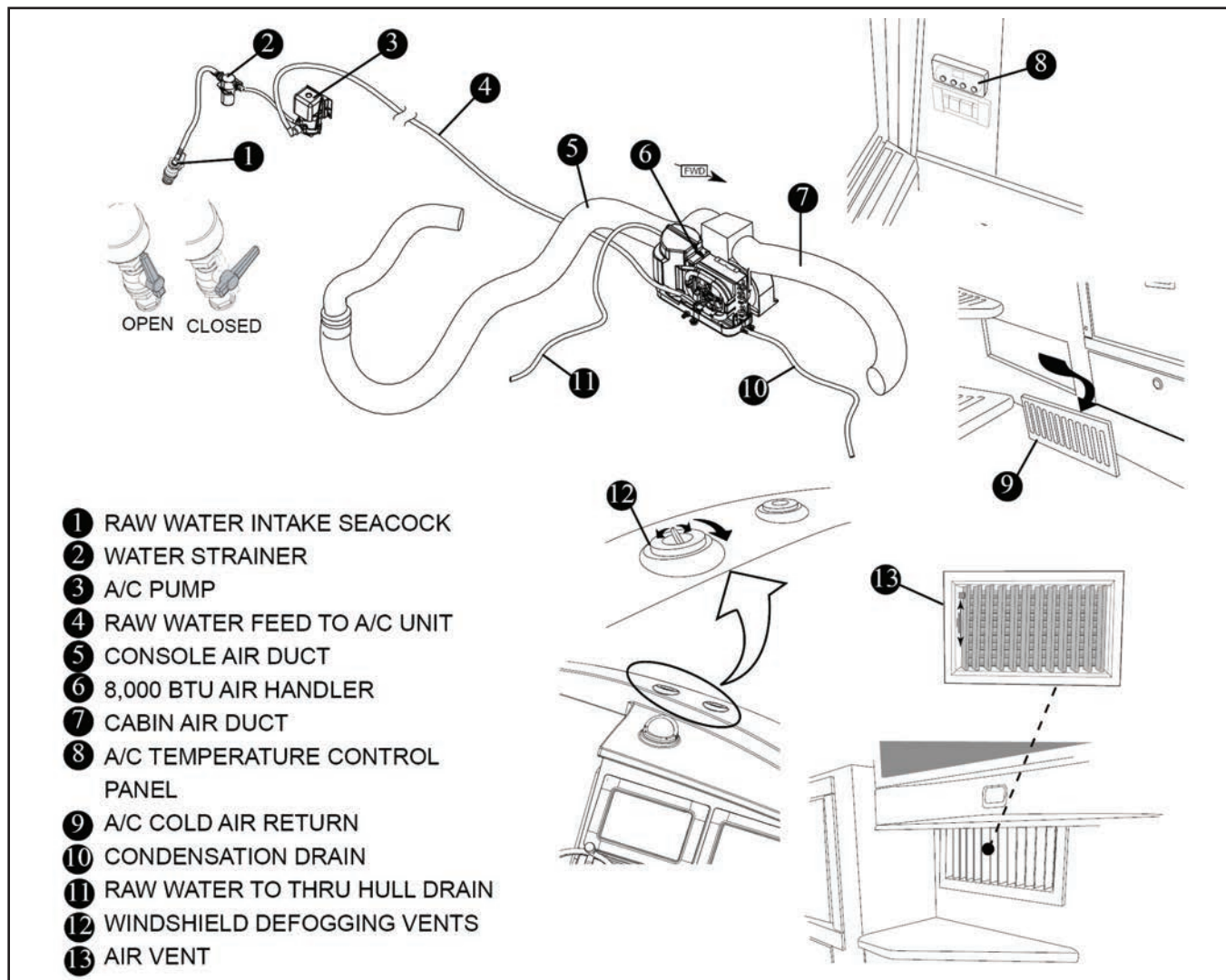
This boat is equipped with an 8,000 BTU air conditioner which supplies cool air and heat to the cabin. The system can be regulated by a control panel on the aft port side of the cabin.

The unit can be accessed through the overhead air return panel on the aft port side of the cabin.

Operation

The unit is powered by either shore power or by the onboard generator. The seacock and A/C pump can be accessed by lifting the equipment hatch in the aft cockpit deck. The control panel for the air handler is located on the aft port cabin wall.

- The A/C breaker on the AC Distribution Panel must be ON for the system to function.
- OPEN the raw water seacock located in the bilge.
- The variable controls allow the operator to turn the system on & off and adjust the air temperature.



Windshield Defogging Vents

The A/C vents located on the top of the console visor can be rotated 360 degrees and opened to direct air flow to the occupants or to defog the windshield of condensation accumulation.

Maintenance

The air conditioning unit requires very simple maintenance. Periodically check and clean the raw water intake on the exterior of the hull, the water strainer at the pump and the air filter. Operation in areas with grass or seaweed can obstruct water flow and impede function.

- The seacock and A/C pump can be accessed by lifting the equipment hatch in the aft cockpit deck.
- If needed, access to the A/C unit can be achieved by removing the panel on the lower back of the hanging locker in the port aft of the cabin.
- To access the air filter on the front of the A/C unit for cleaning, remove the cold air return, reach into the space and retrieve the filter.

Refer to the manufacturer's manual in the operator's packet for complete instructions and warranty information.



Generator

The Fisher Panda 8KW diesel generator on this boat provides 120 Volt Alternating Current, (AC) to the boat's electrical system through the AC Main Breaker Panel. Connections to the AC electrical system are made through the slide selector switch on the AC panel. There is a remote operation panel also located on the AC panel.

It is recommended that you read and understand the information in the manufacturer's operators manual before operating the generator.

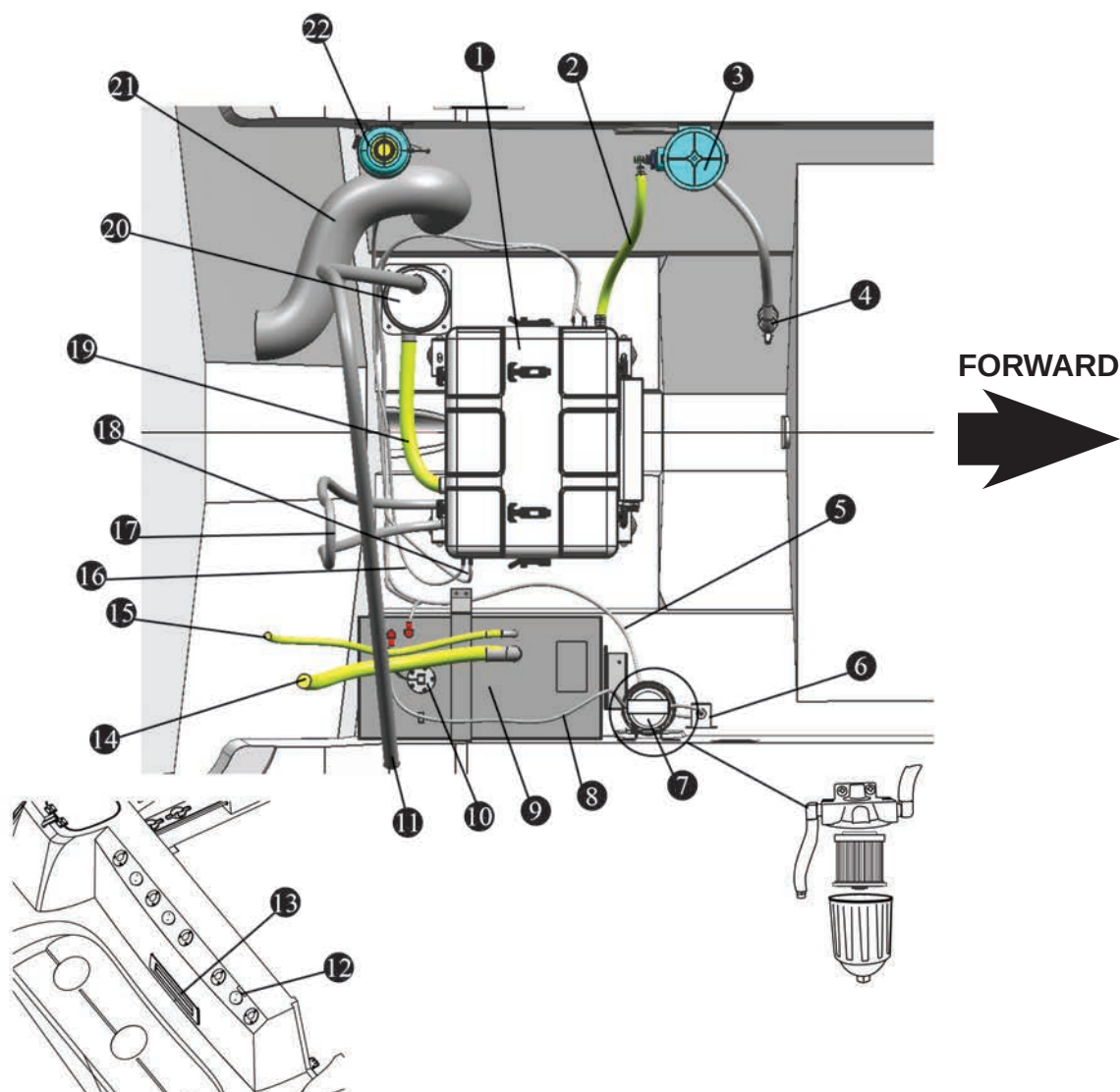
The generator has a built in cooling pump which draws cooling water through a seacock located in the aft machinery compartment. The raw water passes through a strainer before entering the engine cooling manifold. The seacock **MUST** be open in order for the generator to function.

Inspect the strainer before each use and clean if necessary.

Fuel

Use a clean, good quality diesel fuel with a cetane number of 45 or greater. Clean fuel prevents the fuel injectors and pumps from clogging. Avoid storing the fuel for more than a month. Take care to keep all dirt, water and other contaminants out of the fuel to prevent the growth of microbes. Microbes form slime that clogs the fuel filter and lines.

Fuel Recommendation: #2 Diesel



- | | |
|---|--|
| ① 8KW FISCHER PANDA GENERATOR | ⑫ DIESEL FUEL FILL DECK PLATE (YELLOW) |
| ② FROM STRAINER TO GENERATOR | ⑬ BILGE BLOWER VENT |
| ③ RAW WATER STRAINER | ⑭ FUEL FILL HOSE |
| ④ RAW WATER INTAKE SEACOCK | ⑮ FUEL VENT HOSE |
| ⑤ FROM FUEL/WATER SEPARATOR TO GENERATOR | ⑯ FROM EXPANSION TANK TO GENERATOR |
| ⑥ FUEL PUMP | ⑰ SIPHON BREAK HOSE |
| ⑦ RACOR® FUEL/WATER SEPARATOR | ⑱ FROM GENERATOR TO EXPANSION TANK |
| ⑧ FROM FUEL TANK TO FUEL PUMP | ⑲ FROM GENERATOR TO MUFFLER |
| ⑨ 20 GAL (75.7 L) DIESEL FUEL TANK | ⑳ MUFFLER |
| ⑩ FUEL LEVEL SENSOR | ㉑ IN-LINE BILGE BLOWER TO TRANSOM VENT |
| ⑪ GENERATOR EXHAUST TO STARBOARD THRU HULL OUTLET | ㉒ EXPANSION TANK |

The generator draws fuel from its own tank located on the starboard aft side of the machinery compartment. The fuel system has its own fuel and water separating filters.

The exhaust from the generator passes through a high efficiency marine lift type water cooled muffler and is discharged by a flexible hose via an aft starboard through hull fitting.

The generator operates as protected and a sound shield. It can be removed by pulling latches located on the bottom of the housing.

**CAUTION**

NEVER store diesel fuel in galvanized containers; the galvanized coating reacts chemically to produce flaking that quickly clogs filters or causes fuel pump or injector failure.

**DANGER**

CARBON MONOXIDE can cause severe NAUSEA, FAINTING or DEATH. The exhaust system must be leakproof and routinely inspected.

**DANGER**

FIRE can cause SEVERE INJURY or DEATH. Do not smoke or permit flames or sparks near fuels or the fuel system.



WARNING

EXPLOSIVE FUEL VAPORS can cause **SEVERE INJURY** or **DEATH**. Use extreme care when handling, storing and using fuels.



WARNING

MOVING PARTS can cause **SEVERE INJURY** or **DEATH**. Operate the generator set only when all guards, screens and covers are in place.

Starting The Generator



WARNING

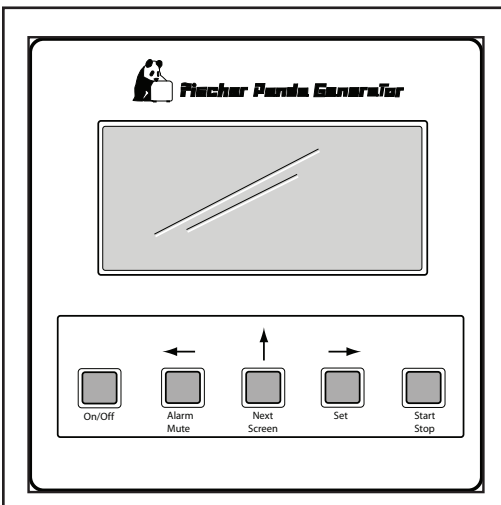
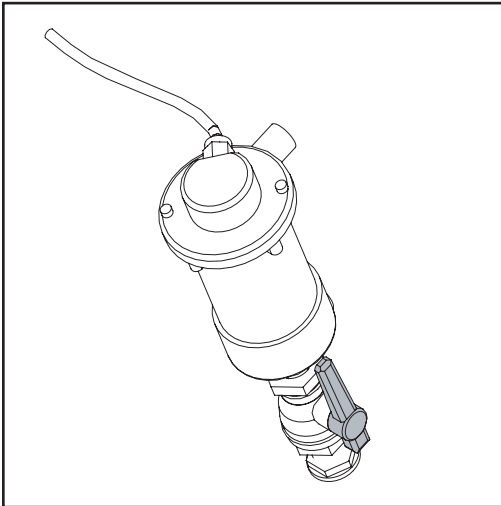
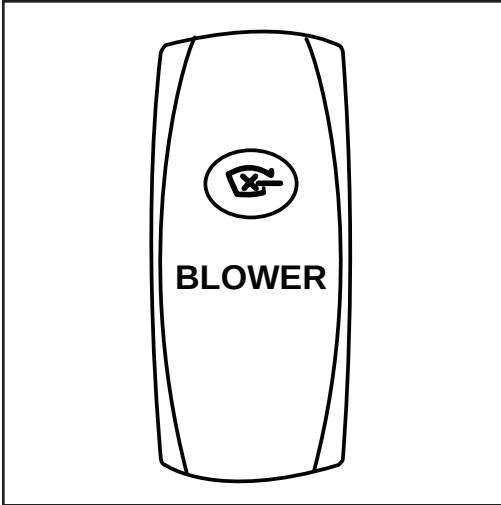
DO NOT start the generator if water has accumulated beneath the generator.



CAUTION

DO NOT run the generator set out of fuel because the fuel lines will draw in air and necessitate bleeding the system before restarting the unit. The operations manual included in the operator's packet will have complete instructions on bleeding the fuel system should it be needed.

The operator's manual packet will have the complete operations manual for the generator. Be sure to read the manual before operating the generator.



Several key points are indicated below:

- Locate the blower switch on the AC Breaker Panel and operate the blower for four minutes. Manually bleed the bilge for fuel or fuel vapor.
- Refer to the manufacturer's operations manual for a pre-start checklist.
- OPEN the generator seawater
- Ensure the sea water strainer is clear.
- Make sure that ALL breakers on the AC Panel are switched OFF.
- Slide the selector on the AC Panel to expose the GENERATOR & BRIDGE switches.
- Switch the line breakers ON.
- Press the On/Off button on the remote start panel. The indicator light will illuminate and the fuel gauge will be activated.
- Press and release the START button ONLY ONCE. The light will begin blinking and the generator will start.
- After a successful start, accessory breakers can be switched ON.

DO NOT press the button more than once. Allow for a 60 second cool down period between cranking attempts.

If the generator fails to start after the first attempt, ensure adequate fuel flow and attempt start sequence again. A major cause of poor starting or power loss is the result of a clogged filter element or a fuel system air leak.



DANGER

ALWAYS run the blower when operating below cruising speed.



CAUTION

Under no circumstances override the source select system.

Stopping The Generator

- Make sure that ALL breakers on the AC Panel are switched OFF.
- To STOP the generator, press the Start/Stop button.
- Press the On/Off button to deactivate the panel.



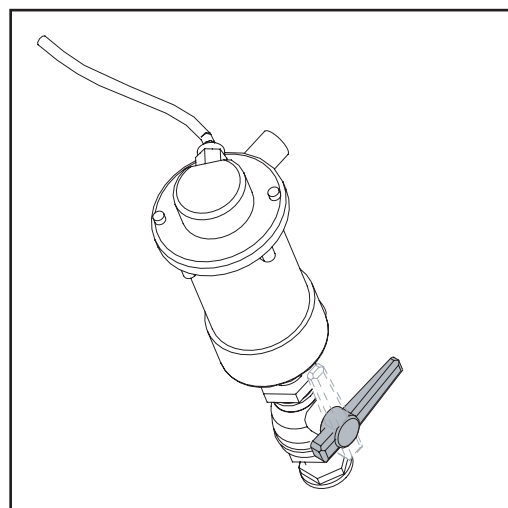
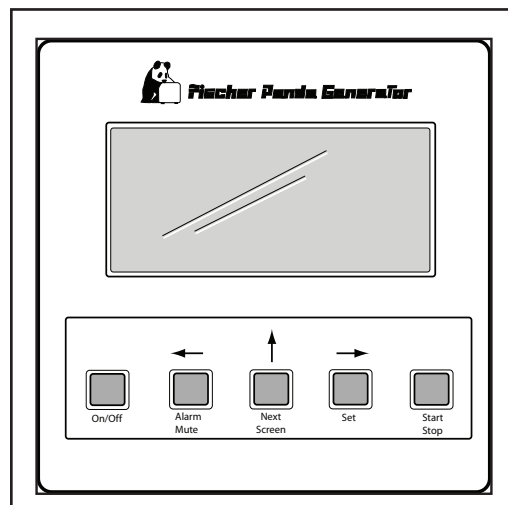
CAUTION

If the electrical load has been operating at more than 70% OR if the ambient temperature is higher than 77 degrees the generator temperatures should be stabilized by turning OFF the breakers at the AC panel and letting the generator run for a minimum of five minutes before shutting down.



DANGER

ACCIDENTAL STARTING can cause severe injury or death. Disconnect the battery cables before working on the generator set. Disconnect the negative, (-) cable first when removing and reconnect it last when replacing.



The Fisher Panda operations manual has a complete maintenance schedule to keep the generator in peak operating condition.

Inspect the parts often and perform required service at the prescribed intervals. Maintenance work must be performed by appropriately skilled and suitably trained maintenance personnel familiar with generator set operation and service.

**CAUTION**

The first maintenance is required at 35 hours, by a qualified technician, at which time a maintenance checklist must be completed. Failure to comply will invalidate the generator warranty.

Operating the generator in European Union Member Countries

This generator set is specifically intended and approved for operation below the deck in the engine compartment. Operation above the deck and/or outdoors would constitute a violation of European Union Directive 2000/14/EC noise emission standard.

Generator Fuel Filter

A fuel filter located on the starboard wall of the bilge, forward of the diesel fuel tank provides clean fuel to the generator. A major cause of poor starting or power loss is the result of a clogged filter element or a fuel system air leak.

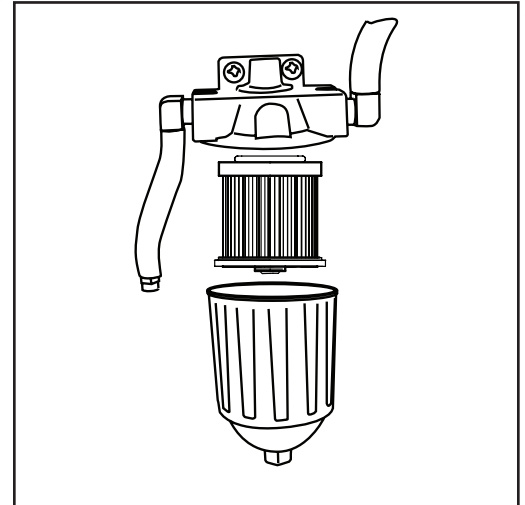
Fuel Filter Maintenance

Replacing the Filter

Replace the filter according to manufacturer's recommendations or if a power loss is detected.

1. Ensure engine is not running.
2. Remove bottom plug.
3. Remove the filter by slowly pulling upward with a twisting motion.
4. Insert the new filter with a slow downward twisting motion.
5. Fill the filter with clean fuel.
6. Replace the bottom plug. DO NOT overtighten.

Always carry spare filters aboard as contaminated fuel can easily clog a filter.

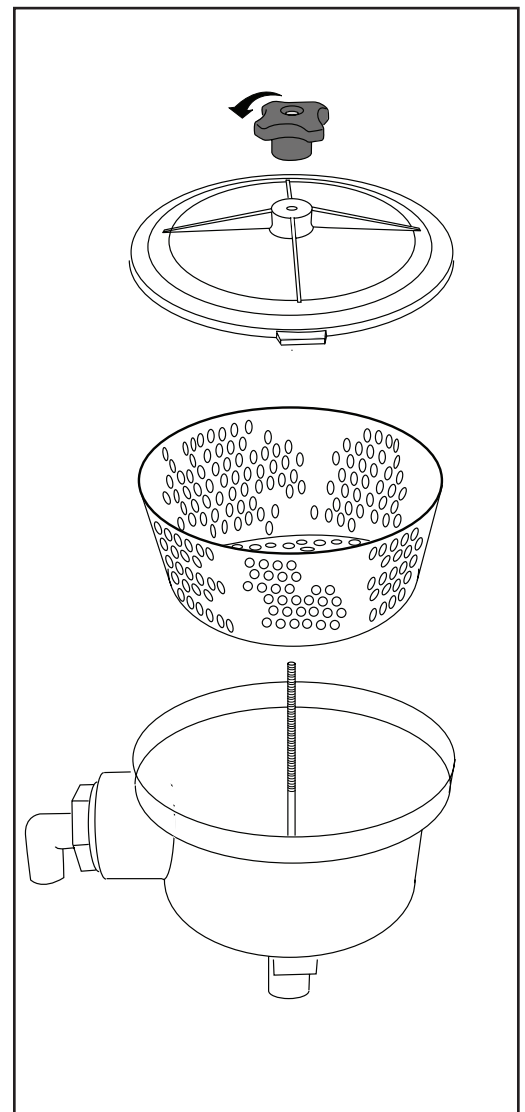


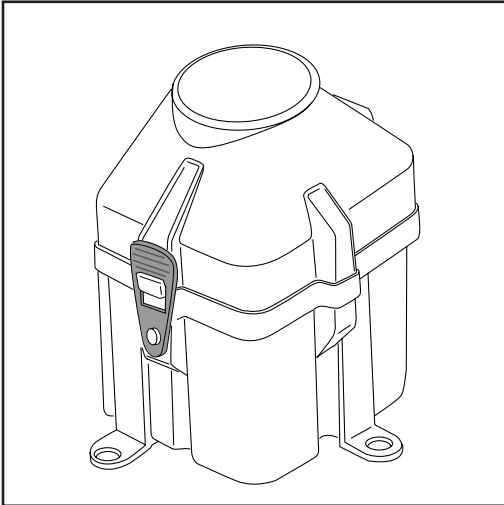
Raw Water Strainer Maintenance

Periodically check the raw water strainer for debris and clean as necessary.

1. Ensure generator is not running.
2. Remove the sea ring knob and the bearing lid.
3. Remove the strainer and clean it of debris.
4. Replace the strainer.
5. Replace the lid.
6. Replace and hand tighten the sea ring knob.

Refer to the manufacturer's manual in the operator's packet for complete instructions and warranty information.





Power Steering

The Verado four-stroke engine option uses an enclosed hydraulic pump unit. The pump is electrically operated to provide hydraulic pressure to the steering system.

The pump is located in the aft portside of the bilge and can be accessed by lifting the equipment hatch in the aft cockpit deck.

Filling

The system is virtually maintenance free, aside from regular fluid checks and visually inspecting the outside of the unit for signs of leaks or damage.

- Remove the pump cover by pulling up and out on the locking tabs on the sides of the unit.
- Unscrew the cap and check the fluid level in the reservoir, fill ONLY with Mercury Marine SAE 0W-30 Full Synthetic Power Steering Fluid if necessary.
- Replace cap and cover.

Check the fluid level before each trip.



CAUTION

Ensure that cover is properly seated to prevent intrusion of water into the pump enclosure.

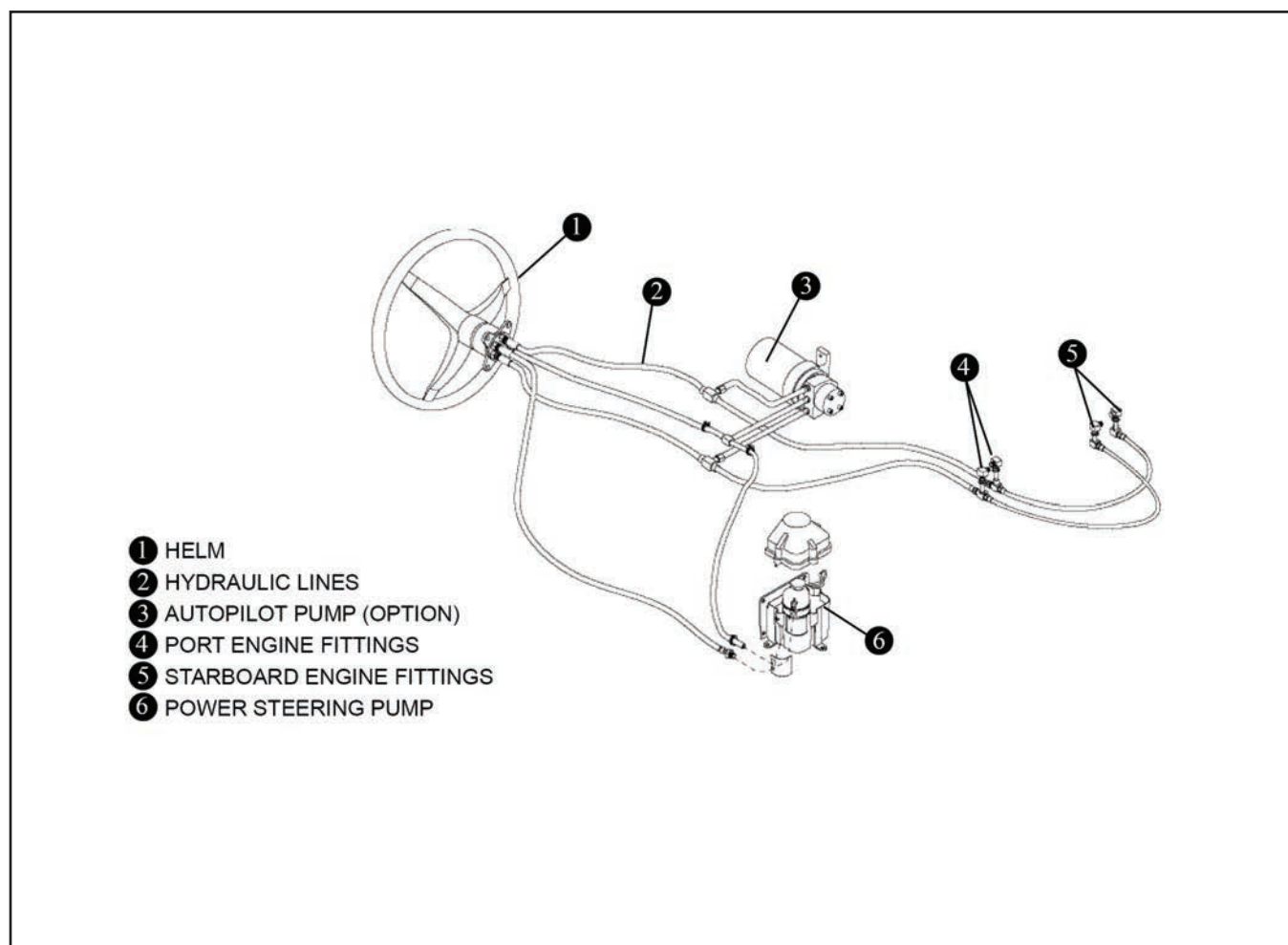
Maintenance

Proper maintenance of this system will ensure worry-free usage for the life of this vessel. Steering system integrity is imperative. Special care and attention must be taken to ensure proper performance of the steering system and should include the following:

- After the first few hours of operation and at regular intervals, check all fasteners and the complete steering system for security and integrity.
- Inspect for corrosion. Any part affected by corrosion must be replaced.
- When replacing parts, self-locking hardware must be used.
- Check the fluid level in the helm pump unit.
- Lubricate slides on the engine cylinders.

All steering systems, whether mechanical or hydraulic require regular inspections, periodic adjustment and occasional replacement which should only be conducted by a qualified marine technician.

Refer to the manufacturer's manual in the operator's packet for complete instructions and warranty information.





Shore Power

The dual 120v/30a shore power system provides dock side power to operate all of the boat's electrical system and to charge the boat's batteries. Use the supplied 50 ft. power cords to connect your boat to a dockside power source. The on board receptacles are located under the starboard gunwale midships. The AC main breaker panel for the shore power system is located on the portside wall in the cabin.



DANGER

EXTREME HAZARD - Swimming near a boat operating on an AC electrical system can lead to severe shock and/or death. Avoid dive operations/swimming when AC system is in use.



ELCI (Equipment Leakage Circuit Interrupter)

The shore power system on this boat includes an ELCI (Equipment Leakage Circuit Interrupter) located under the starboard gunwale next to the shore power receptacles.

The ELCI is designed to protect people from line-to-ground shock hazards which may occur from defective, misused or neglected electrical equipment. The ELCI will not prevent line-to-ground electrical shock but does limit the time of exposure to a period considered safe for normal healthy persons. If an imbalance of current is sensed, the ELCI will trip when the ground fault exceeds 0.030 amps. This tripping action will occur within a fraction of a second to prevent serious injury.



DANGER

The receptacle will not protect against line-to-line or line-to-neutral faults, short circuits or overloads.

Testing and Troubleshooting Before Each Use

Normal Operating State - Sensing device GREEN LED is ON and circuit breaker is at ON position.

1. Press TEST button. GREEN LED should go OUT and RED LED should come ON and circuit breaker should trigger to OFF position.
2. If sensing device LED or breaker does not trip or change state DO NOT USE. Consult an electrician for assistance.
3. Press RESET button. The RED LED should turn OFF and the GREEN LED should turn ON.
4. MANUALLY RESET (SWITCH) CIRCUIT BREAKER to ON position to restore circuit power.



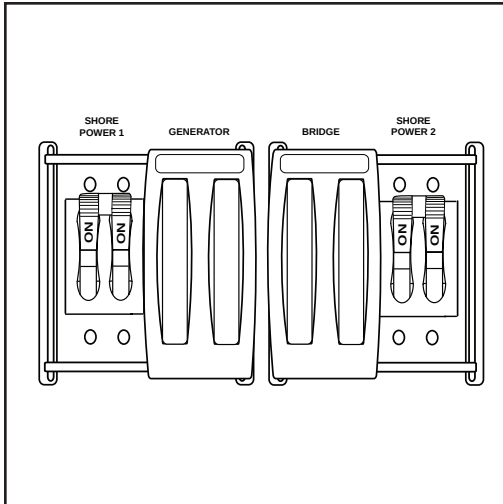
WARNING

If above test fails, DO NOT USE. CONSULT A QUALIFIED ELECTRICIAN for repair or replacement.



CAUTION

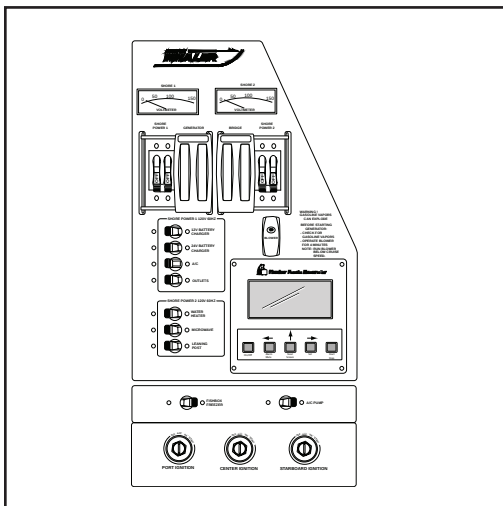
Be certain that the shore power main switch is turned OFF before connecting the power cord cordset. Connect the cordset to the boat inlet first, then to the shore inlet. NEVER alter the cordset connectors.



Dual Shore Power

Before making shore power connections, make sure your boat is properly moored.

1. Slide the covers on the panel to expose SHORE POWER # 1 & SHORE POWER #2 breakers.
2. Make sure the breakers are OFF.
3. Ensure that ALL component breakers are OFF.
4. Using the shore cords, (supplied) connect the female plugs to the boat receptacles first.
5. Next connect the male plugs to the dockside panel.
6. Turn dockside panel breakers ON.
7. Switch the boat side shore power breaker(s) ON.
8. It is now safe to turn on component breakers.



CAUTION

Shore power cords should be secured or routed to avoid laying or falling into water and to avoid stress on shore power plug and inlet.



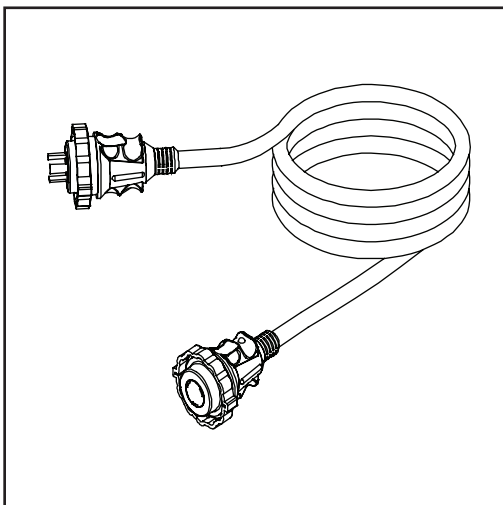
CAUTION

The use of extension power cords is not recommended. Excessive power cord extensions can cause a voltage drop and may prevent some electronic devices from operating properly.



WARNING

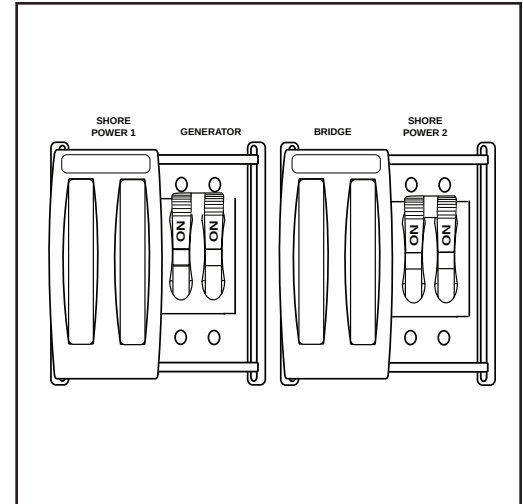
It is imperative that the shore power outlet is dry before plugging into the dock power outlet.



Single Cord Shore Power with Generator

In some cases you may be limited to operating your boat's equipment using only a single shore power cord. The following procedure will provide the most efficient power to the boat.

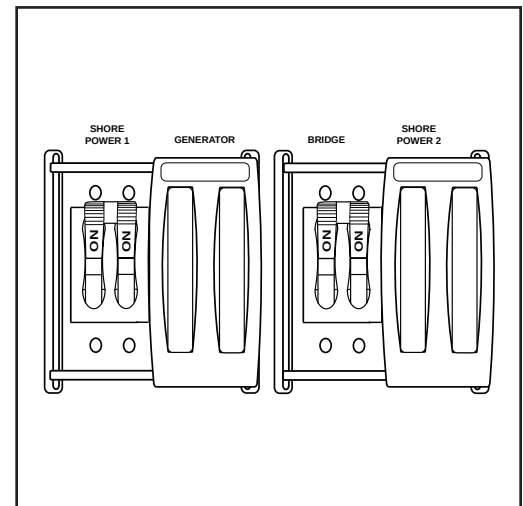
1. Slide the covers on the panel to expose the GENERATOR & SHORE POWER #2 breakers.
2. Make sure the breakers are OFF.
3. Ensure that ALL component breakers are OFF.
4. Using the shore cord (supplied), connect the female plug to the boat receptacle first.
5. Next, connect the male plug to the dockside panel.
6. Follow procedures to start the generator (allow the generator to warm up before applying load). Remember to run the blower prior to operation.



Single Cord Shore Power, No Generator

The single cord shore power scenario described previously utilizes the generator to supplement power. Although this setup provides maximum voltage to your boat, it requires use of the generator. By monitoring your load, you can still power your boat sufficiently without the generator and a single cord by applying the breakers as follows:

1. Slide the covers on the panel to expose the SHORE POWER #1 & BRIDGE breakers.
2. Make sure the breakers are OFF.
3. Ensure that ALL component breakers are OFF.
4. Using the shore cord, (supplied) connect the female plug to the boat receptacle first.
5. Next connect the male plug to the dockside panel.
6. Turn dockside panel breakers ON.
7. Switch the boat side shore power breaker(s) ON.
8. It is now safe to turn on component breakers.



Prolonged exposure to carbon monoxide can cause serious injury or death. Always ensure that confined spaces in your boat have an adequate supply of fresh air.

Battery Charging

In addition to supplying AC power to your boat, shore power hookups give you the ability to charge your batteries without running the engines.

The 12V charger is located in the mechanical compartment near the engine starting batteries while the 24V charger is under the cabin berth near the 24V batteries. The breakers for the chargers are located on the AC distribution panel.

These systems are automatic and little or no maintenance is required.

Shore Power Load Management

Your boat is equipped with many devices that require AC power for their operation. While many of these devices are continuous use items, others are not. The design of the electrical system has been optimized to support the most commonly used equipment. However, there may be situations where the operator will need to power off certain appliances based on load requirements, shore power connections and/or generator operation.

To obtain the most power for your appliances, it is best to use the “GENERATOR” and “SHORE POWER 2” combination which will deliver a higher load capability.

Isolation Transformers

This boat is equipped with isolation transformers. The boat's electrical system and grounding conductors are not electrically connected to the dock's electrical system.

The isolation transformers transfer power from the dock's electrical system to the boat's electrical system by magnetic coupling. This means there is no direct electrical connection between the earth-grounded shore AC power and the boat AC power. Isolating the power this way eliminates shock hazards to people swimming around the boat and also mitigates the galvanic corrosion caused by current flow in hard wired systems.



DANGER

Other boat systems may or may not provide shock protection to swimmers. NEVER ALLOW SWIMMING in close proximity to other boats which may be running AC electrical systems.

Refer to the manufacturer's manual in the operator's packet for complete instructions and warranty information.



Fire Suppression System



DANGER

DO NOT handle the extinguisher actuator. The fire suppression system is under pressure (195 psi.). Accidental discharge may result in death or serious injury.

This boat's USCG approved automatic fire suppression system is located in the port bilge by the battery trays and can be accessed by lifting the hatch in the aft of the deck.

- The system will activate when the temperature in the enclosed area reaches 165°F (74°C).
- When activated, there will be a bang, (similar to small arms fire) followed by a rushing air sound.
- Once activated, the generator and blower will shut down automatically.

The chemical contained in this unit is CHLOROTETRAFLUORATHANE. None of the components in this material is listed by major health associations as a carcinogen. Toxic by-products are produced when this agent extinguishes fire. Avoid breathing these fumes.



DANGER

Inhalation of high concentrations of the contents of the fire suppression tank may cause sudden death without warning.



WARNING

Skin contact will require flushing of the area with water for at least 15 minutes. Seek immediate medical assistance.

**DANGER**

NEVER attempt to modify or disassemble any components of this system. If the system has been discharged, have a qualified technician replace it.

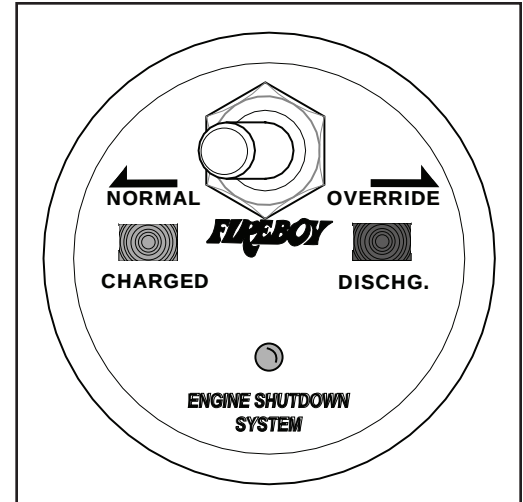
There is an engine shutdown/override switch located on the control station, below the steering wheel which indicates the condition of the system.

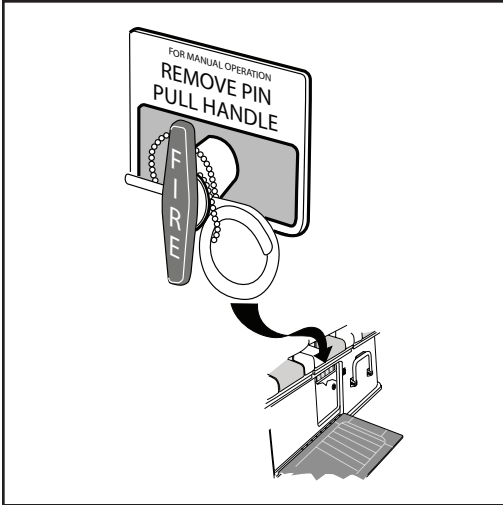
The switch has two indicator lights that need to be monitored. When the system is operating normally and is fully charged, the GREEN light will be lit. When the system has been discharged, the RED light will be lit and all precautions must be made to safeguard the boat against the possibility of fire spreading beyond the compartment.

If no fire is indicated and the discharge light is lit, there may be a leak in the system. It is recommended that the gauge be checked daily to ensure normal operation.

In The Event of Discharge:

- Shut down all electrical systems, engines and extinguish all smoking materials.
- Allow the agent to "soak" the compartment for at least 15 minutes.
- DO NOT open the machinery access compartment hatch.
- DO NOT breathe the fumes or vapors caused by fire as they are hazardous and toxic.
- When opening the hatch, have a portable fire extinguisher at hand and ready for use.
- High concentrations of the agent may cause DEATH without warning. The vapor reduces available oxygen for breathing.
- If possible, allow the compartment's vapor to dissipate before opening the hatch.





Once the system has been disarmed, the power to the diesel generator and the blower fan will be on. This ensures that the compartment will be "soaked" with extinguishant. Once the danger of fire has been extinguished, the toggle switch can be moved from "NORMAL" to "OVERRIDE." This will allow power to the diesel generator and the blower fan.

It is recommended that the fire suppression tank be weighed on an annual basis every six (6) months. There is a chart in the manufacturer's operation manual that lists the weight of the anister and contents.

Manual Override System

The automatic fire extinguisher can be activated manually by pulling the manual override handle located next to the leaning post breaker panel below the helm seat.

Early detection and use of the manual override system will reduce fire damage by eliminating the time necessary for heat in the bilge to rise sufficiently to activate the automatic fire system.

To Operate

1. Pull pin securing the handle.
2. Pull red FIRE handle quickly and briskly.

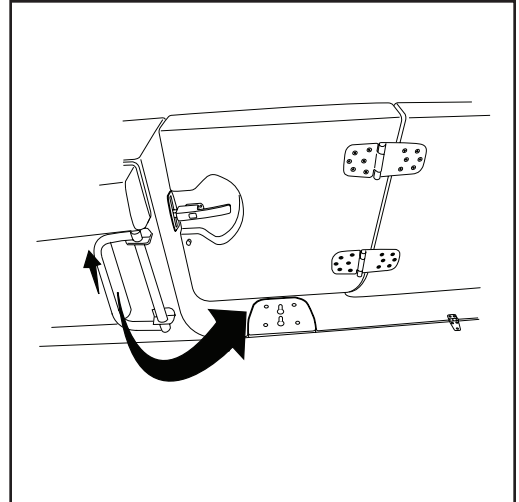
Refer to the manufacturer's manual in the operator's packet for complete instructions and warranty information.

Dive Door

This boat has a portside door for ease of transition to and from the water or dock. The door opens wide and features a swivel grab handle to assist persons entering or exiting the water.

To use the grab handle, lift up and swivel into place.

The stainless steel deck bracket also accommodates a removable ladder which can be stowed under the starboard gunwale when not in use. (When the stern seat option is selected, the ladder is stored beneath the stern bench.)



Dive Ladder



DANGER

The dive ladder should **NEVER** be deployed when boat is in motion or the engines are running.

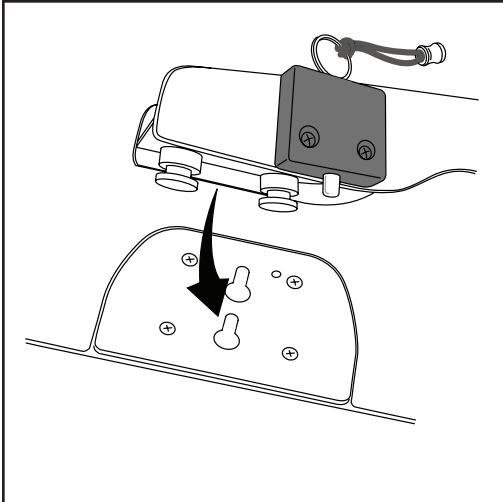


DANGER

Never start or operate the engines when people are in the water near this boat. Contact with the boat, engines or rotating propellers can cause serious injury or death.

To install the dive ladder:

1. Remove the ladder from its stowed position.
2. Rotate the bracket at the top of the ladder so that it is perpendicular to the shaft.
3. Insert the two pegs on the bracket into the deck bracket.
4. Secure the ladder into place by pushing the bracket outboard until it seats firmly into the bracket and the locking pin has snapped into place.



To remove the dive ladder from the bracket:

1. Pull up and hold the release ring.
2. Pull dive ladder brae inboard and lift up out of the dek brake t.
3. Sea re the ladder into pla e .

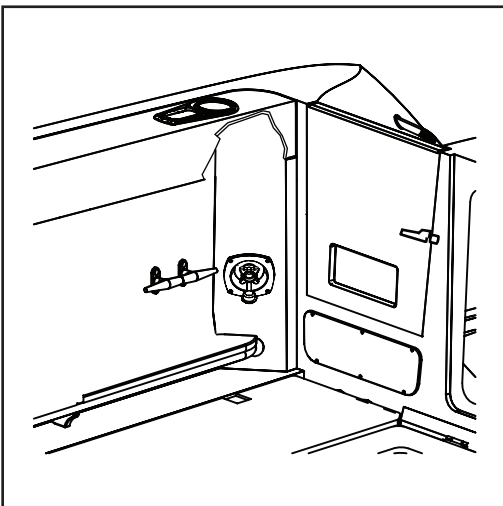
ALWAYS use bungee straps to secure the dive ladder.

Transom Door

The transom door includes a stainless steel self-locking latch and a cockpit overflow relief door which, in conjunction with the standard o p it drains, increases the purge rate of sea water from the o p it which may accumulate during heavy seas. The overflow door functions automatically and requires little or no maintenance .

Do not allow gear, lines, shore power cords, etc to obstruct the overflow door.

The transom door should be closed and secured when the engines are running and the boat is under way.

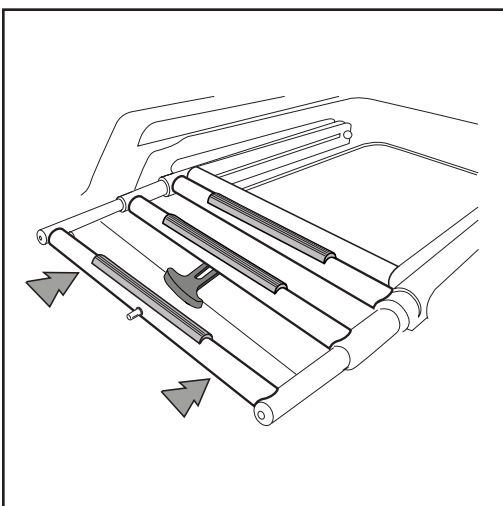


Swim Ladder

When not in use your swim ladder should be retracted and secured.

To Secure the Swim Ladder:

1. Lift the ladder and fold (push) it into itself.
2. Secure the ladder by attaching the strap to the pin on the first rung of the ladder.
3. Close the cover



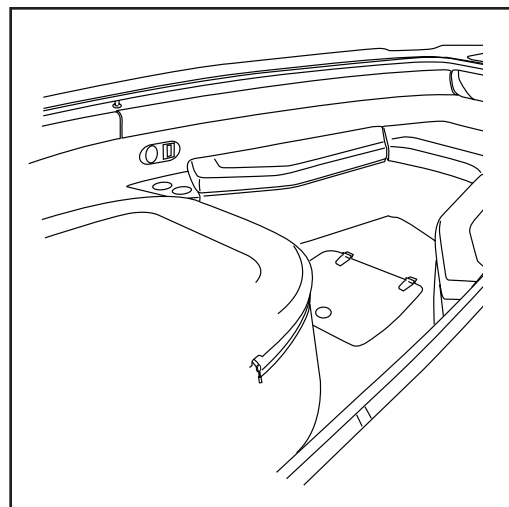
In-Deck Storage with Pump Out

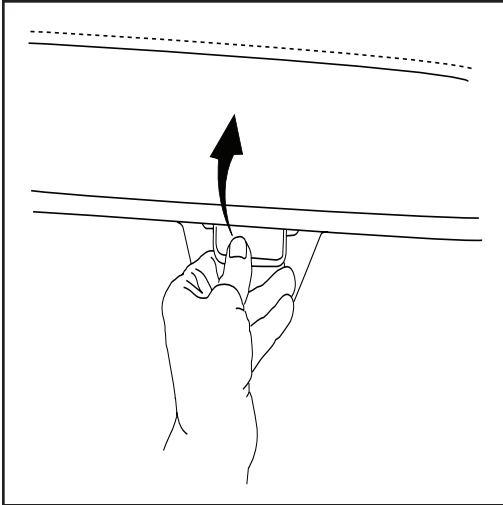
This boat has five (5) deep insulated storage compartments for equipment. There are two compartments to port, two to starboard, and one (1) in the forward deck. The boxes have gasketed lids and draw latches for a more secure seal.

In the event of water intrusion, these compartments utilize an electrical pump system to discharge water overboard by way of thru-hull fittings port and starboard. The cockpit discharge pumps are located in the bilge and accessed through the hatch in the aft cockpit deck. The forward discharge pump can be accessed through the forward hatch under the bunk cushion in the cabin.

The pumps are independently activated by switches on the helm seat switch panel and are protected by breakers located on the back of the helm seat. Check these breakers first and reset if a problem arises with the pumps failing to activate when the switches are depressed.

Water from the forward cockpit compartment (port and starboard) drains into the aft compartments where it is then discharged through the thru hull fitting.



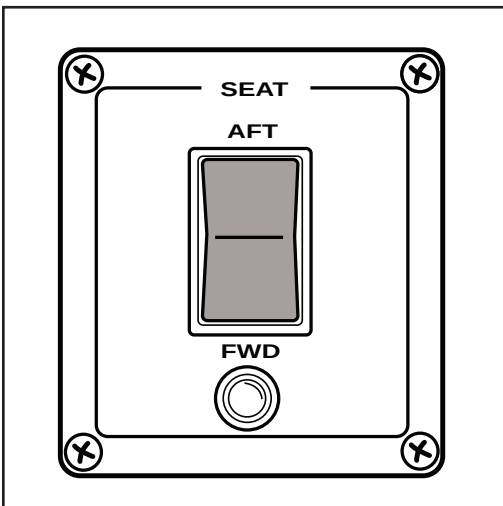


Forward Console Storage

Within the console storage compartment there is a large, lockable, lighted area for storage of equipment and personal gear.

Storage Compartment Lock

The manual push/pull knob located on the forward wall of the DC distribution cabinet in the starboardabin is linked directly to the locking pin in the console storage compartment. By pulling the knob out, the compartment is unlocked. To lock the compartment, push the knob in.



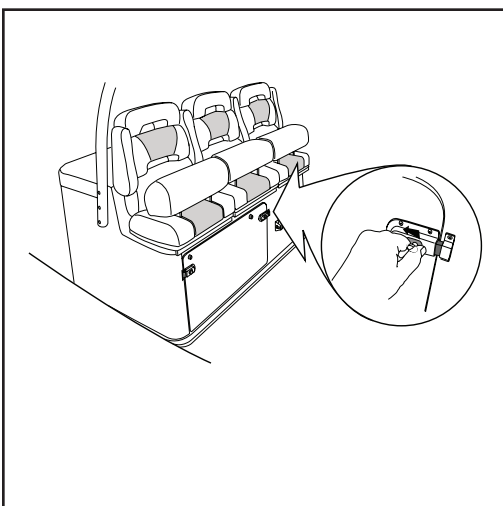
Adjustable Helm Seat

The captain's chair (seat) can be adjusted forward and aft by depressing the switch located on the leaning post between the port companion chair and the helm chair.

The switch is protected by the "HELM SEAT" breaker on the leaning post breaker panel. The chair slide should be checked periodically and lubricated to provide smooth action and easy adjustment.

Fold Down Visibility Platform

The leaning post incorporates a foldaway platform which can be lowered to provide improved visibility when conditions mandate.



Anchoring

This boat is equipped with a windlass, anchor, rode and an anchor roller davit. Stow the anchor in the davit when not in use.

NOTE: Before using the anchor, be sure the safety hook is removed and the anchor is secured to the windlass bracket.

To anchor, bring the bow into the wind or current and put the engines in neutral. When the vessel comes to a stop, lower the anchor from the bow.

Considerations:

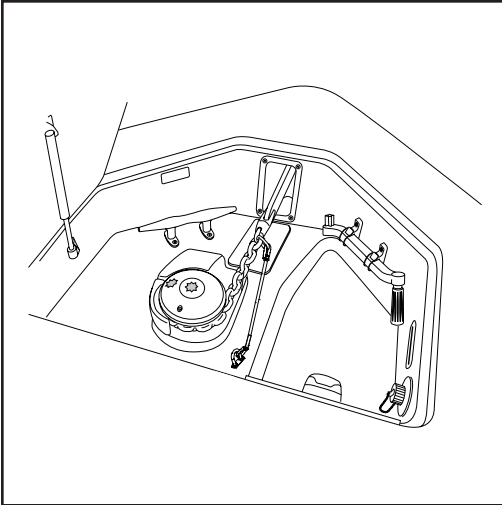
- Wind and sea conditions can affect the boat.
- Be sure the boat is not moving through the water, there is no control.
- Be sure that the anchor will hold under all circumstances if you are leaving the boat.
- Understand the principles of rode and scope and their effect on anchor performance.

Proper anchoring requires knowledge of RODE and SCOPE and understanding the relationship between rode, scope and anchor performance. Under normal conditions, the ratio is 7 to 1 (deploy seven feet of rode for every one foot of depth).

Lowering the Anchor

- Be sure there is adequate rode.
- Secure rode to both the anchor and the boat.
- Stop the boat completely before lowering the anchor.
- Keep feet clear of lines.
- Turn on the anchor light when at anchor or drifting (not under power) at night or in low visibility.

NOTE: If using the windlass, refer to the windlass operator's manual for anchoring instructions.



Anchor Windlass

The anchor windlass located at the bow gives you a mechanical means of raising and lowering the anchor.

- The anchor windlass is controlled by switches located on the helm switch panel or by a hand held remote located in the bow locker.
- A safety hook secures the anchor when stowed and the boat is underway.
- **ALWAYS SECURE THE LANYARD WHEN UNDERWAY.** Failure to do so may allow accidental deployment of the anchor.

The ON/OFF switch on the helm switch panel controls power to the windlass. The operation switch is a momentary type switch which means that there must be constant pressure applied to the switch to operate the anchor windlass.

Use the windlass switch on the helm whenever possible. Use care when operating the anchor windlass with the handheld remote.

Operation

Before operating the windlass be sure that the safety hook is removed from the anchor chain and is clear of the rode as it pays out or is retrieved.

The windlass is protected by a 100-amp circuit breaker located on the battery switch panel. If there is a loss of power to the windlass, check the "WINDLASS" circuit breaker. If the breaker is tripped, reset the breaker. If the breaker continues to trip, have the anchor windlass system checked by a qualified marine electrician.

Operating from the Helm

- LOWERING- Pushing the top part of the switch down will power the anchor windlass DOWN. Make certain that the safety lanyard is detached from the chain and is clear of any moving parts of the anchor windlass.
- RAISING- Pushing the lower part of the switch will power the anchor windlass UP. Once the anchor and rode is secure in the UP position, the safety lanyard can be re-attached to the rode.

Operating from the Bow

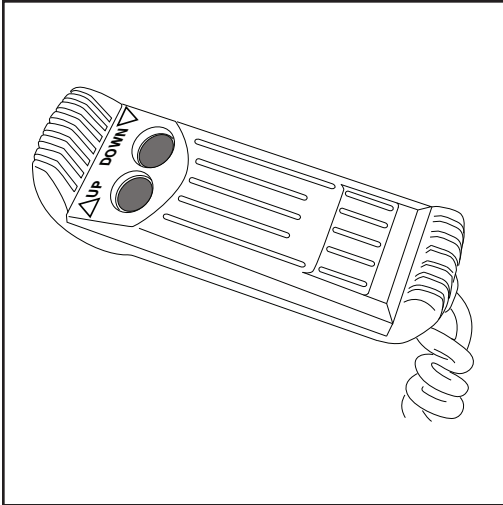
The anchor windlass can be operated from the bow with the use of the windlass remote which is stowed in the bow locker.

Use the anchor windlass switch on the helm when possible. Use care when operating the anchor windlass with the hand-held remote.



WARNING

Keep hands, feet, hair and loose clothing clear of moving parts. Entanglement may cause severe bodily injury.



Windlass Remote

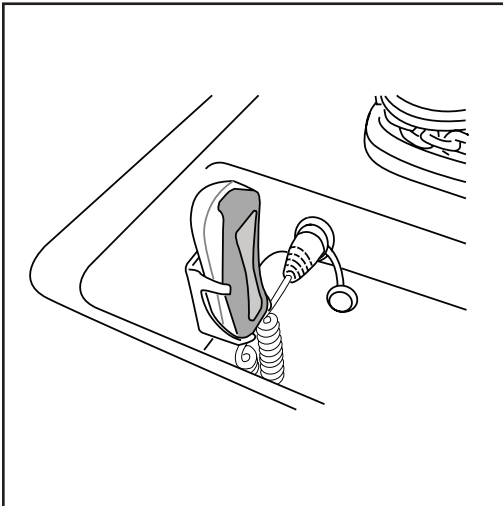
The windlass remote is protected by a 10-amp manual reset breaker located on the battery switch panel. If there is a loss of power to the windlass remote, check the “WINDLASS CONTROL” breaker. If the breaker is tripped, reset the breaker.

The power source for the remote is located on the starboard side of the locker. Plug the power cable into the power receptacle on the aft of the bow locker.

- Turn the forward portion of the plug clockwise to lock.
- To raise the anchor, press and hold the “UP” button of the remote.
- To lower the anchor, press and hold the “DOWN” button on the remote.

When not in use, the remote can be stored in the aft bulkhead of the bow locker.

Refer to the manufacturer's manual in the operator's packet for complete instructions and warranty information.

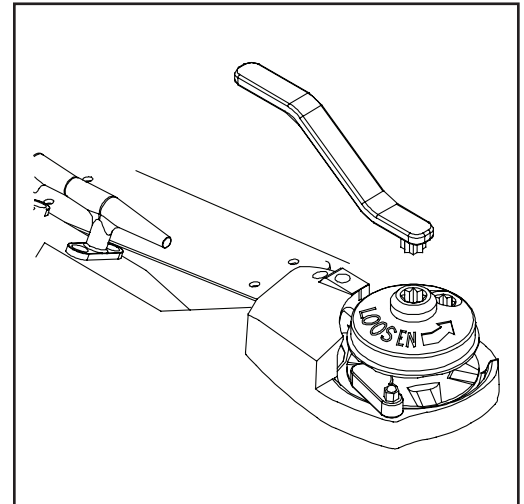


Operating The Windlass Manually

In the event that there is a loss of power to the windlass, the anchor can be raised and/or lowered manually by using the emergency handle located in the anchor locker.

There are two star sockets on the top of the windlass used for manual deployment of the anchor. Inserting the emergency handle into the center socket and turning it counter-clockwise will loosen the anchor windlass chainwheel. The star socket located off-center is used for retrieving and lowering the anchor.

- Turning the handle counter-clockwise will allow you to lower the anchor.
- Turning the handle clockwise will raise it.



CAUTION

When operation is complete, insert the handle into the center star socket and tighten the windlass chainwheel by rotating the handle clockwise. Be sure to attach the safety lanyard when the anchor is stowed in the anchor davit.

Operator's Notes

[illegible]

General Description

This boat includes both DC and AC electrical systems.

DC Overview

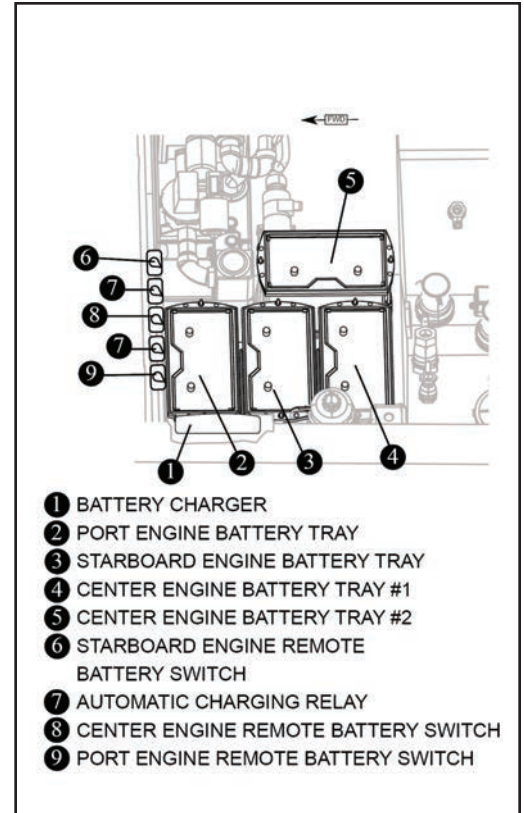
This boat's DC electrical system operates on 12/24V power supplied by four marine batteries in the aft machinery compartment.

The DC distribution panel is located in a cabinet on the starboard side of the cabin. The 12 VDC electrical system provides power to all DC electrical loads on the boat (except for the bow thruster which is 24 VDC).

All 12 VDC wiring in this boat conforms to SAE J128 and is premium-grade tinned copper marine cable, designed to minimize voltage drop and resist corrosion. The termination of each 12 VDC electrical circuit is protected from moisture intrusion by self-sealing heat shrink insulation on each connection.

BCGP recommends for the standard configuration you use four group 31 heavy-duty marine batteries rated at 1000 SAE marine cranking amps.

Refer to the engine manufacturer's manual in the operator's packet for specific marine battery requirements for this boat's engine package.





Batteries



CAUTION

Batteries should always be secured in the battery trays provided with this boat. The trays will contain any spilled acid and will protect the battery terminals from damage or shorting due to contact with metal objects. The batteries should always be secured using the retaining brackets provided while the boat is underway, reducing the possibility of damage to the batteries and other equipment in the storage area.



DANGER

Never use an open flame in the battery storage area. Avoid striking sparks near the batteries. A battery can explode if a flame or spark ignites the free hydrogen gas vented during charging. Disconnect the battery cables before doing any work on the 12 VDC electrical systems.



WARNING

Always wear eye protection when servicing batteries. Batteries contain sulfuric acid, which can cause serious injury. Avoid contact with skin, eyes, and clothing. If contact occurs, immediately flush the affected area with water and call for medical assistance.



Battery Maintenance

Periodic battery maintenance is important to ensure that this boat will be ready for operation when needed. Battery maintenance should include:

- Inspect the batteries and charging systems before each mission for loose or corroded connections and damaged wiring.
- Check and maintain the electrolyte level in all wet-cell batteries. Add distilled water only, as necessary.
- Coat the battery terminals and all cable connections with heavy grease to reduce corrosion.
- Keep the batteries dry and clean.

Battery Charger

All four house/starting batteries are charged when any one or all outboard engines are running above idle speed, regardless of battery OFF-ON switch position.

All four batteries are charged when the boat is connected to shore power and the AC battery charger is activated, regardless of battery OFF-ON switch position.

A battery charger located on the forward bulkhead of the battery compartment facilitates the charging of these batteries when using shore power or the generator.

The battery charger automatically increases current output when there is a drop in battery voltage. When the batteries are charged, the unit maintains a small current flow to keep the batteries fully charged and ready for service without overcharging.



Maintenance

The charger is fully automatic and requires no maintenance. However, the battery terminals should be cleaned periodically with baking soda and all connections tightened to provide trouble free operation.

Overload Protection

If an electrical short or overload occurs in the electrical system the charger will reduce its output voltage to avoid internal damage. When an electrical short occurs, the red LED on the front panel of the unit will be illuminated. The overload or short must be removed in order for the charger to resume charging batteries.

Battery Switches

This boat uses battery switches (one for each engine) to control delivery of DC power from the batteries. These battery switches are advanced electric relay switches located on the forward port bulkhead in the bilge above the battery bank and are actuated via a rocker switch on the DC distribution panel. The DC distribution panel is located behind an access door on the starboard gunwale opposite the control station.

When the engines are shut down or not providing a charge, the boat's systems will draw power from the center battery. This will allow you to run all the boat's functions without affecting the port or starboard batteries.

Remote Battery Switches

Each battery switch on the panel is wired to a remote switch located above the battery bank in the bilge.

Automatic Charging Relays (ACR)

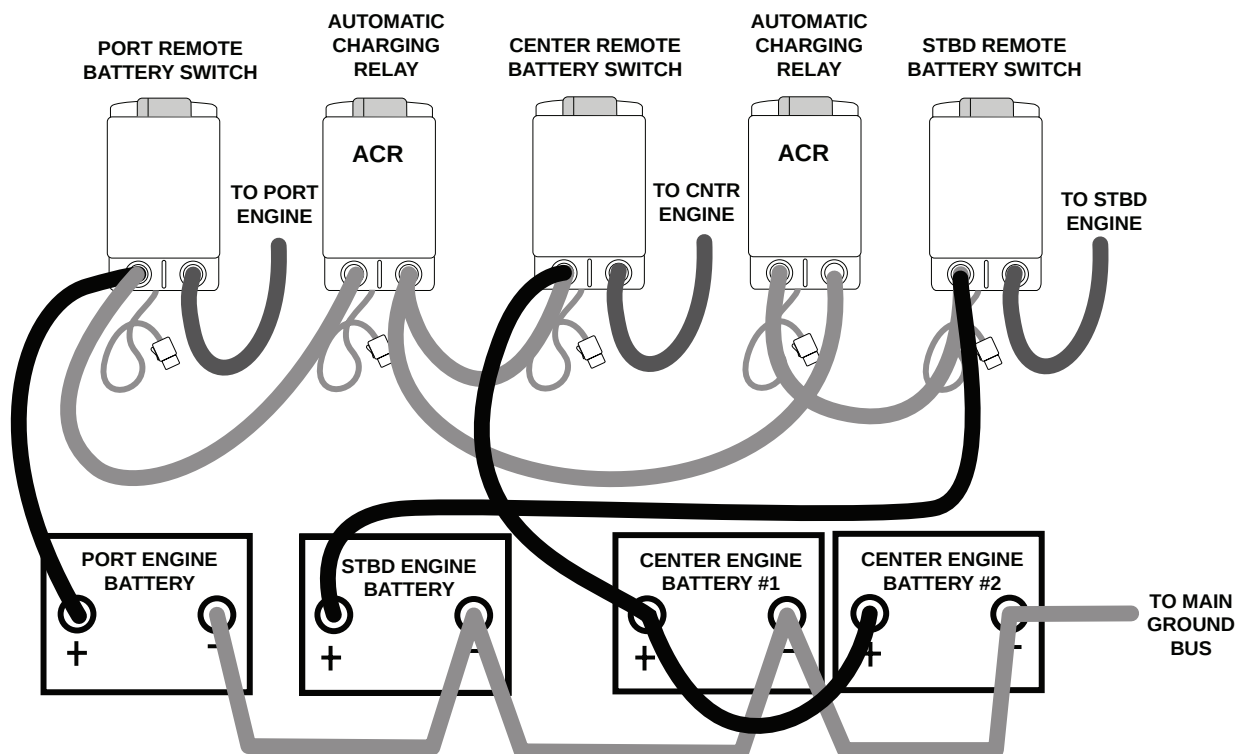
The three battery banks on this boat are automatically connected in parallel through the use of ACRs (Automatic Charging Relay) when a sufficient charging source is present. The battery banks are automatically separated when the charging source falls below a certain voltage level for a predetermined amount of time. The ACRs are mounted on the forward bulkhead of the mechanical equipment compartment.

The use of ACRs eliminates the need for the operator to monitor battery voltage and decide whether or not it is okay to parallel the battery banks. It also eliminates the danger of a dead battery bank if a paralleling switch were left in the "Combined" position without a sufficient charging source present.

The operation of the ACRs can be manually overridden by use of the knob on the top of the ACR.

Manual Control Override

Each of the remote battery switches and ACR units has a manual override knob on the top of the unit as an added level of safety that allows manual ON-OFF control with or without power and provides LOCK OFF for servicing the electrical system. Refer to the manufacturer's manual in the operator's packet for complete instructions, safety considerations and warranty information.



Grounding and Bonding

Definitions

The terms grounding and bonding are often incorrectly used interchangeably. They are different systems that can work together to provide solutions to common problems and risks on the water.

Bonding is the process of connecting various metal components in the boat to a common electrical point. This helps to reduce the chance of sparks and other metal objects carrying dangerous electrical charges.

Grounding is defined as the method in which any electrical potential is connected to the surrounding water for the purpose of energy dissipation.

Properly designed grounding and bonding systems incorporating zinc or aluminum anodes and bronze plates will also help control corrosion of aluminum and stainless steel parts.

Grounding

The negative terminals of all batteries and the negative cables from the outboard engines are all connected together at two negative buss bars located inside the control console. These negative buss bars serve as the negative return points for the entire 12 VDC electrical system.

The helm station switch panel uses a #6 awg black wire and the engine breaker panel uses a #4 awg black wire to connect to the negative side of the 12 VDC electrical system at a buss bar.

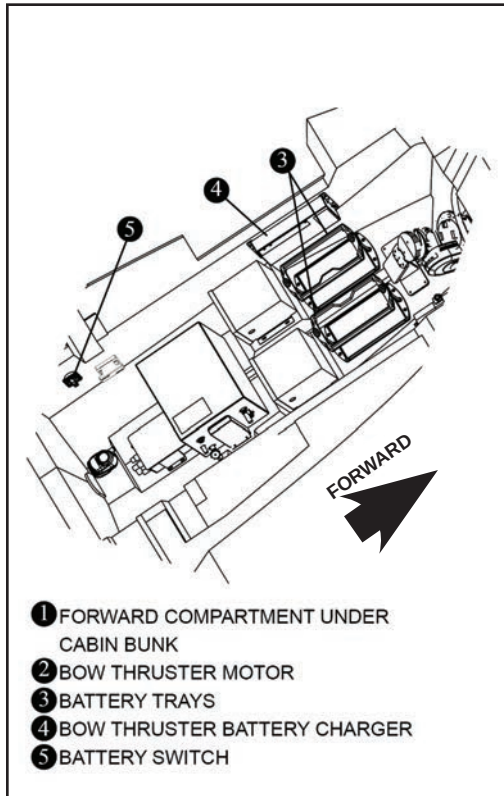
Note: All grounding wires and cables are **black**.

Bonding

This boat's bonding system is connected to the grounding system of the boat. Items such as the fuel tank, fuel fill, forward Sampson post, control console, engine crash rail, leaning post, transom plate, and engine bracket are also connected to the grounding system with #8 awg green cables.

Also directly connected to the bonding system are any shielded cables from electronic devices. This helps dissipate radio frequency interference generated by various electronic devices.

Note: All bonding wires and cables are **green**.



Bow Thruster Batteries

There are battery trays for the two (2) batteries which provide the 24 volts necessary to operate the bow thruster, along with a battery switch, located under the bunk in the forward cabin. Access to the bow thruster, batteries and battery charger can be made through the forward hatch under the bunk divisions. The battery switch can be found under the aft hatch of the bunk.



WARNING

BOW THRUSTER BATTERIES MUST BE OF A DEEP-CYCLE, SEALED DESIGN. Failure to do so will result in an increased and dangerous presence of battery discharge gases accumulating in the forward cabin.

Bow Thruster Battery Maintenance

Before use, check each battery and the charging system for loose connections or wiring. Normal maintenance should include:

- Coat the terminals with dielectric grease
- Keep the batteries dry
- Remove the batteries from the boat during cold weather or long term storage.

The most life shortening experience for a battery is to be drained to zero charge before recharging. When a battery discharges, the active material on both positive and negative plates converts to lead sulfate, causing the plates to become more alike in an electrical charge. The electrolyte conducting battery acid becomes weaker and the voltage drops. As the battery remains discharged, the process continues until recharging the battery becomes impossible.

Bow Thruster Battery Charging

If the bow thruster batteries become run down be sure to recharge them as soon as possible. Overcharging a battery can be just as detrimental to its life as running it down too far.

- To engage the battery charger, you must be hooked up to shore power or running the generator.
- Turn on the dedicated breaker for the Bow Thruster Battery Charger on the main AC distribution panel.

12V Receptacles

This boat is equipped with five (5) 12 volt receptacles. There are two receptacles located below the throttle control at the helm, another is located on the switch panel on the leaning post, a fourth is adjacent to the forward storage garage and the fifth receptacle can be found on the forward wall of the starboard cabin in the cabin.

Each receptacle is made of corrosion resistant marine grade materials and has a moisture proof cap.

There is a 15 amp reset breaker button located on the helm breaker panel on the port side of the control station which protects the receptacles at the helm. The cabin and forward area receptacles are protected by a 15 amp breaker on the DC breaker panel. The receptacle at the leaning post is protected by a 15 amp breaker on the panel immediately above it on the aft side of the leaning post.

Be sure to use accessories that DO NOT EXCEED the rated capacity of the circuit (15 amps).





120 Volt Receptacles

This boat is equipped with three (3) 120 volt receptacles which can be used while the generator is running or while connected to shore power.

The first in the series is a GFI outlet found on the interior aft wall of the forward console storage compartment.

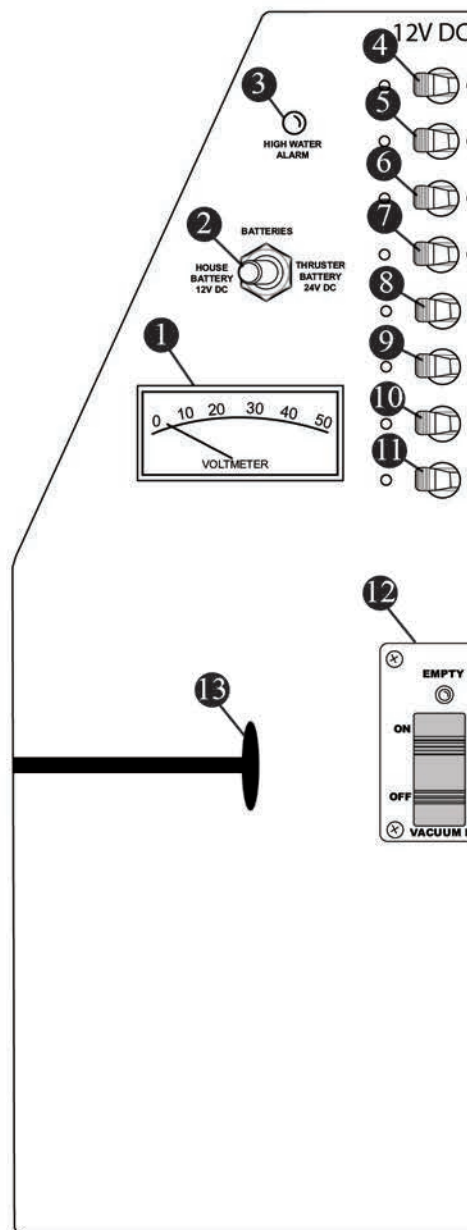
A second receptacle is located on the aft side of the leaning post. A third is located on the forward wall of the cabin vanity cabinet.

If receptacles two and three do not have power, check the GFI outlet in the console storage compartment and re-set it if tripped.

The outlets are protected by a breaker on the 120V AC Distribution Panel located in the cabin.

Main DC Breaker Panel

- 1 VOLTAGE METER
- 2 VOLTAGE CHECK SWITCH
- 3 HIGH WATER ALARM
- 4 MACERATOR 20 AMPS
- 5 LIGHTING 20 AMPS
- 6 12V RECEPTACLE 15 AMPS
- 7 FRESH WATER PUMP 15 AMPS
- 8 CABIN REFRIGERATOR 10 AMPS
- 9 HEAD 10 AMPS
- 10 BILGE BLOWER 7 AMPS
- 11 STEREO/DVD/TV 13 AMPS
- 12 OVERBOARD DISCHARGE CONTROL PANEL
- 13 CONSOLE STORAGE LOCKING HANDLE

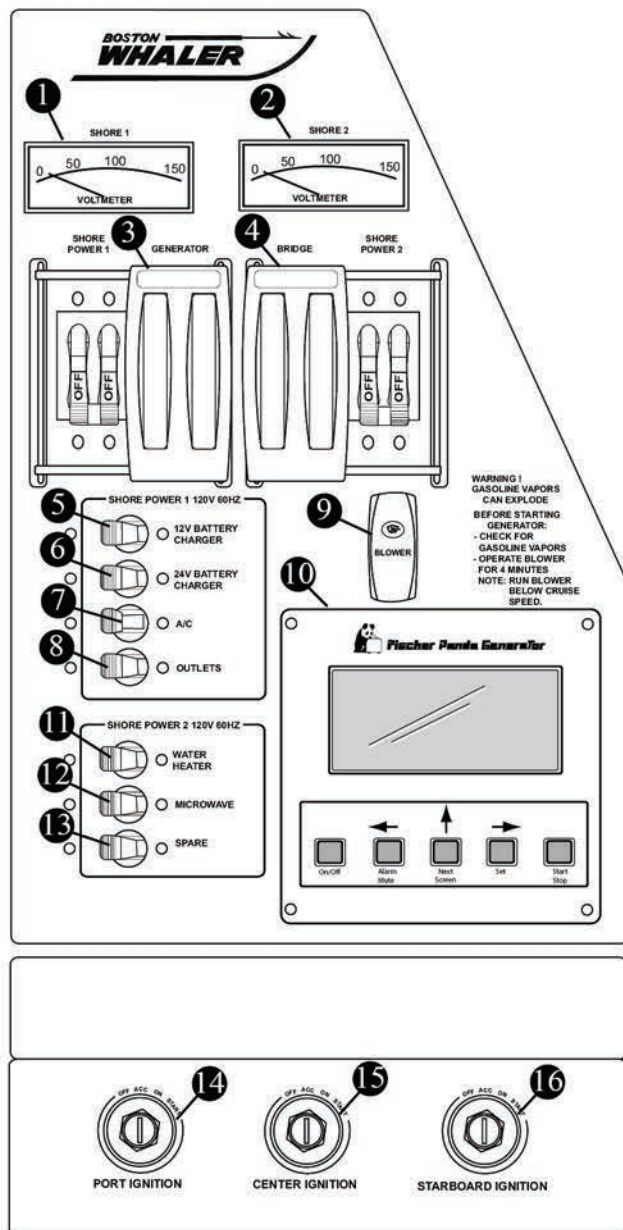


DC Distribution Panel

This boat's 12 VDC electrical system is powered by the center engine. It is isolated and confined to the forward cabin. The DC distribution panel is located in a cabinet on the starboard side of the cabin.

Main AC Breaker Panel

- 1 LINE 1 VOLTAGE METER
- 2 LINE 2 VOLTAGE METER
- 3 LINE 1 SOURCE SELECTOR
- 4 LINE 2 SOURCE SELECTOR
- 5 12V BATTERY CHARGER 10 AMPS
- 6 24V BATTERY CHARGER 10 AMPS
- 7 A/C 15 AMPS
- 8 OUTLETS 15 AMPS
- 9 BLOWER SWITCH
- 10 GENERATOR CONTROL PANEL
- 11 WATER HEATER 15 AMPS
- 12 MICROWAVE 15 AMPS
- 13 SPARE 20 AMPS
- 14 PORT ENGINE IGNITION SWITCH
- 15 CENTER ENGINE IGNITION SWITCH
- 16 STARBOARD ENGINE IGNITION SWITCH



AC Electrical System

This boat's AC electrical system operates on dual 120/30A power from the generator or shore power. The AC distribution panel is located in a cabinet on the port side of the cabin.

Component Breakers

This boat utilizes manual reset breakers for the various components aboard the boat. The breakers can be found on panels located in various places throughout the vessel.

If a component breaker trips, determine and correct the problem before resetting the breaker. Should a circuit breaker trip repeatedly, have a qualified marine electrician determine and correct the cause of the trip.

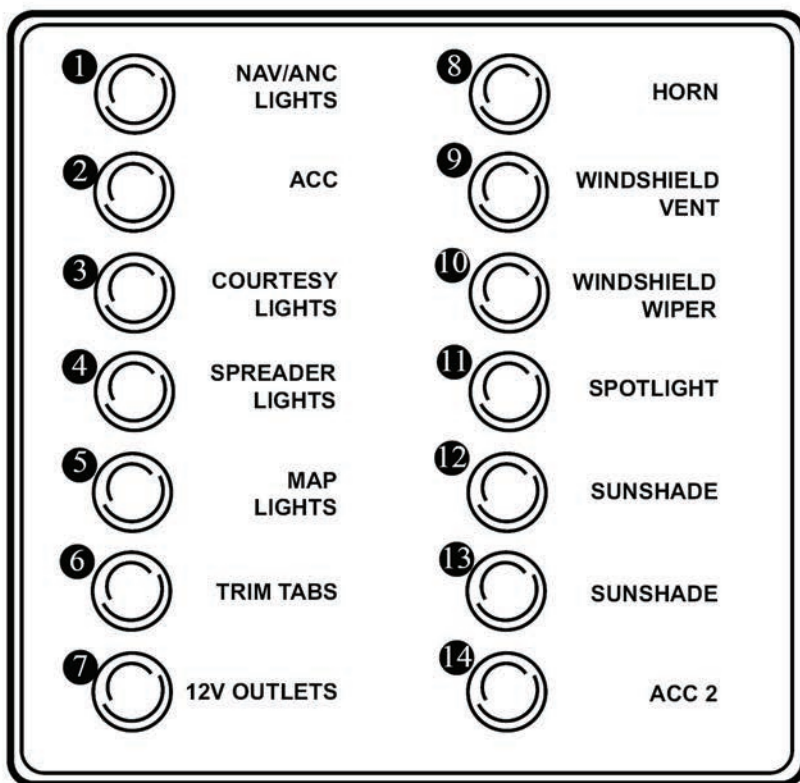
In the event it is necessary to replace a breaker, use only the same amperage as the original. If a breaker is replaced with one of lower amperage, it will not be sufficient to carry the electrical load of the equipment it is connected to and will cause nuisance breaker tripping. Conversely, if a breaker is replaced with one of higher amperage, it will not provide adequate protection against an electrical malfunction and will create a fire hazard.



CAUTION

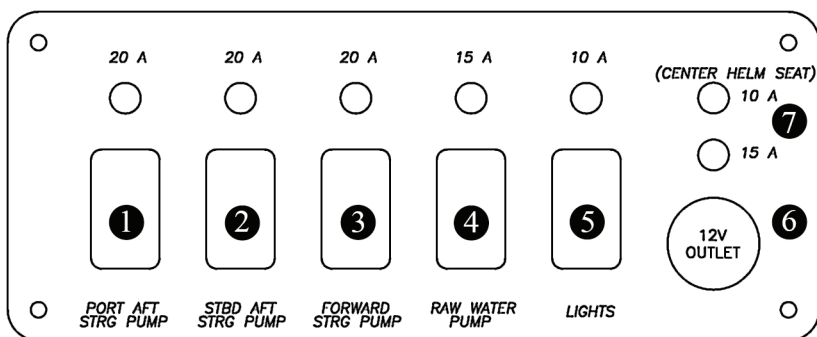
Use of higher amperage fuses or breakers is a fire hazard.

Helm Breaker Panel



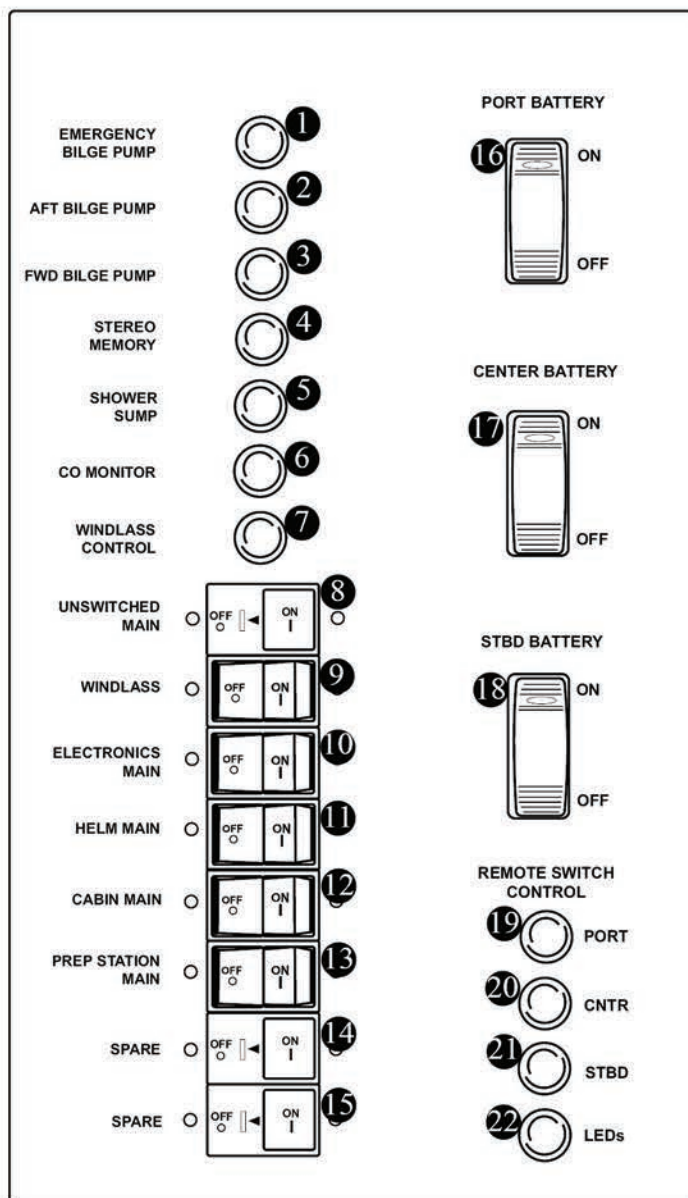
1 NAV/ANC LIGHTS.....	5 AMPS	8 HORN	10 AMPS
2 ACC (UNDERWATER LIGHTS OPTION)	10 AMPS	9 WINDSHIELD VENT	10 AMPS
3 CTSY LIGHTS.....	10 AMPS	10 WINDSHIELD WIPER.....	10 AMPS
4 SPREADER LIGHTS.....	15 AMPS	11 SPOTLIGHT (OPTION).....	10 AMPS
5 MAP LIGHTS.....	10 AMPS	12 SUNSHADE (OPTION).....	10 AMPS
6 TRIM TABS	30 AMPS	13 SUNSHADE (OPTION).....	5 AMPS
7 12V OUTLETS.....	15 AMPS	14 ACC 2	15 AMPS

Leaning Post Breaker Panel



- ① PORT STORAGE PUMP 20 AMPS
- ② STARBOARD STORAGE PUMP 20 AMPS
- ③ FORWARD STORAGE PUMP 20 AMPS
- ④ RAW WATER PUMP 15 AMPS
- ⑤ LIGHTS 10 AMPS
- ⑥ 12V OUTLET 15 AMPS
- ⑦ HELM SEAT 10 AMPS

Battery Switch Breaker Panel



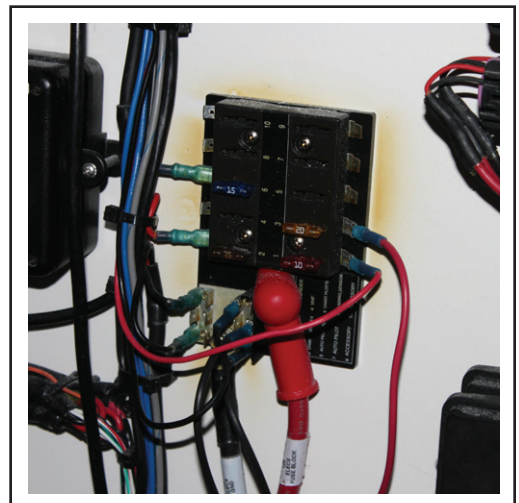
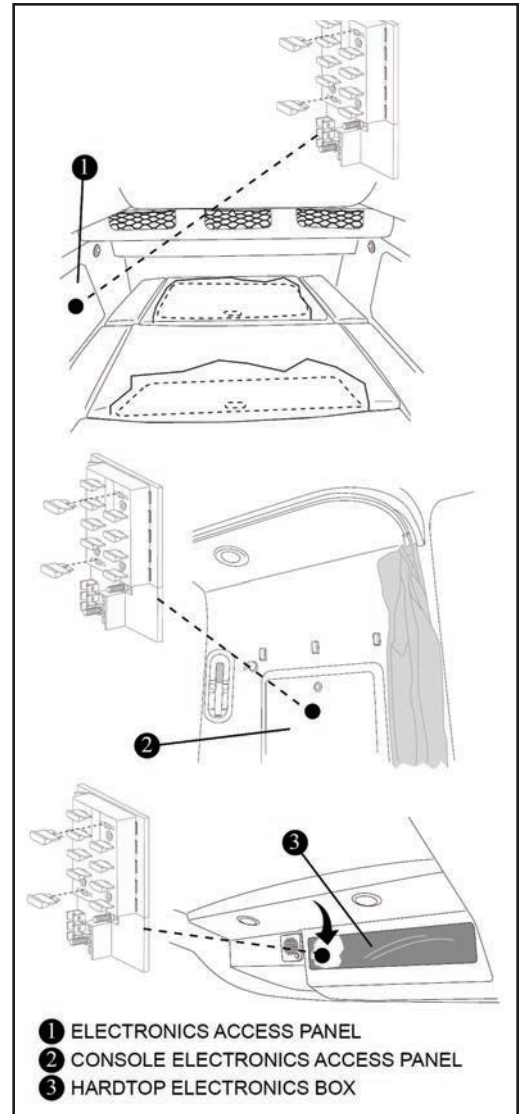
1 EMERGENCY BILGE PUMP	15 AMPS	12 CABIN MAIN	50 AMPS
2 AFT BILGE PUMP	15 AMPS	13 PREP STATION MAIN	50 AMPS
3 FORWARD BILGE PUMP	5 AMPS	14 SPARE	60 AMPS
4 STEREO MEMORY	15 AMPS	15 SPARE	60 AMPS
5 SHOWER SUMP	3 AMPS	16 PORT ENGINE BATTERY ACTUATOR SWITCH	
6 CO MONITOR	5 AMPS	17 CENTER ENGINE BATTERY ACTUATOR SWITCH	
7 WINDLASS CONTROL	10 AMPS	18 STARBOARD ENGINE BATTERY ACTUATOR SWITCH	
8 UNSWITCHED MAIN	60 AMPS	19 PORT REMOTE BATTERY SWITCH	8 AMPS
9 WINDLASS	100 AMPS	20 CNTR REMOTE BATTERY SWITCH	8 AMPS
10 ELECTRONICS MAIN	50 AMPS	21 STBD REMOTE BATTERY SWITCH	8 AMPS
11 HELM MAIN	50 AMPS	22 LED LIGHTING REMOTE SWITCH	5 AMPS

Fuse Blocks

There are up to three (3) fuse blocks for accessories on this boat. These are for non-standard electronics options specific to the vessel.

One fuse block is located behind the access panel on the port side of the forward cabin. Another can be accessed through the panel at the top of the aft wall of the cabin shower. The third fuse block is located on the port wall of the interior of the electronics box in the hardtop.

In the event you need to replace a fuse, use only the same amperage as the original. It is recommended that you carry spare fuses. If a fuse is replaced with one of lower amperage, it will not be sufficient to carry the electrical load of the equipment it is connected to and will cause nuisance fuse failure or breaker tripping. If a fuse is replaced with one of higher amperage, it will not provide adequate protection against an electrical malfunction and will create a fire hazard.





Ground Fault Interrupter Receptacle (GFI)

This boat is equipped with a Ground Fault Interrupter (GFI) receptacle located on the aft wall of the forward console storage compartment. The GFI outlet also protects the outlets on the forward wall of the vanity in the cabin and the outlet at the helm directly below the port companion bair.

The GFI receptacle is designed to reduce the risk associated with line-to-ground shock hazards which could occur from defective tools or appliances operating from the receptacle, or from down-line outlets protected by it. Although it does not completely prevent line-to-ground electric shock it does limit the time of exposure to a period considered safe for normal healthy persons. The receptacle will not protect people against line-to-line or line-to-neutral faults, short circuits or overloads.

Testing

The GFI outlet has a TEST and RESET button that you can use to regularly test the outlet for proper operation. Before testing the outlet, push the RESET button in. Plug an appliance into the outlet (such as a lamp) and turn it on. Push the TEST button, the appliance should shut OFF. If it does, the circuit was interrupted and it is working properly. Push the RESET button to return the power to the outlet. If the power to the appliance was not interrupted, have a qualified marine electrician check the system to find the problem.



WARNING

People with heart problems or other conditions which may make them susceptible to electric shock may still be injured by ground faults on circuits protected by the GFI receptacle. No safety devices yet designed will protect against all hazards or carelessly handled or misused electrical equipment or wiring.

Rigging

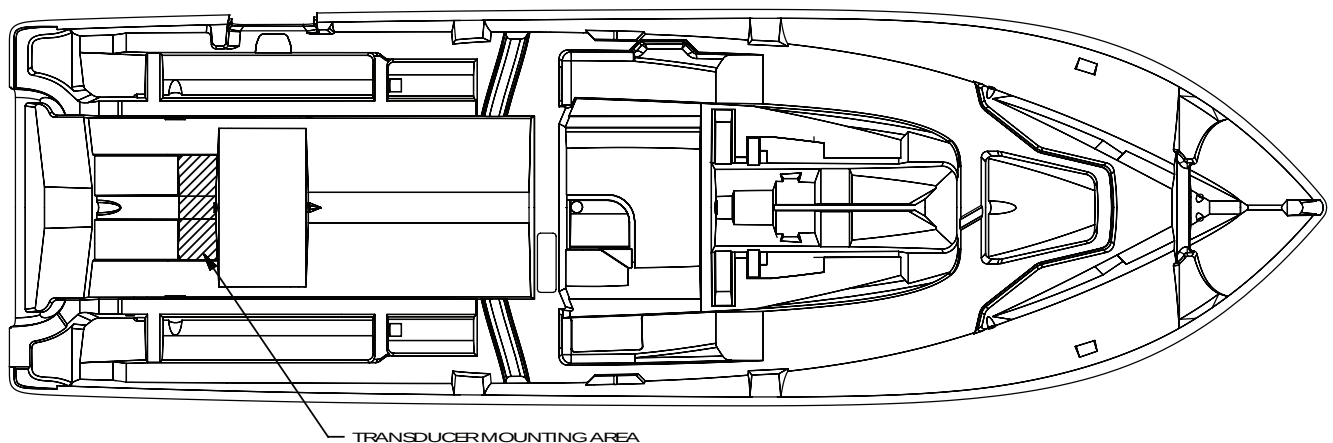
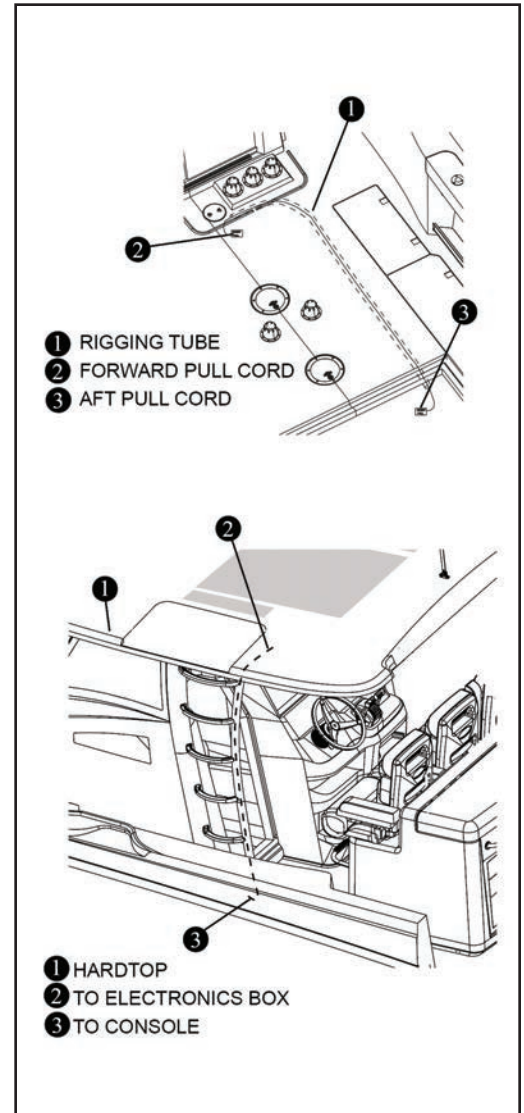
This boat has a rigging tube above the fuel tank and below the floor to allow the user to run new wiring for electronics. There is a pull cord installed in the tube with the ends bundled and tied at either end of the tube. The ends are located in the aft bilge, starboard upper corner of the main cabin bulkhead and inside the console below the fuel fill access plate.

There is also a cord located in the port frame of the hardtop which terminates in the console at one end and the electronics box at the other.

Tie another piece of nylon cord to the current accessory wiring being run and use that for later runs.

Transducer Mounting Area

BCGP has molded a special area into the hull of this boat to accommodate installation of a thru-hull transducer either by the factory or later by the end-user. This location ensures optimal transducer performance and facilitates installation given the nature of the Boston Whaler foam core construction.



Electrical Schematics & Harnesses

The following pages contain schematics pertaining to the electrical system in this boat. These schematics were generated by electrical engineers and are for reference and to be used by qualified electrical service technicians. Because of the custom nature of BCGP boats, these diagrams may vary depending on the customer specific requirements. Any electrical work should be conducted by a trained marine electrician.

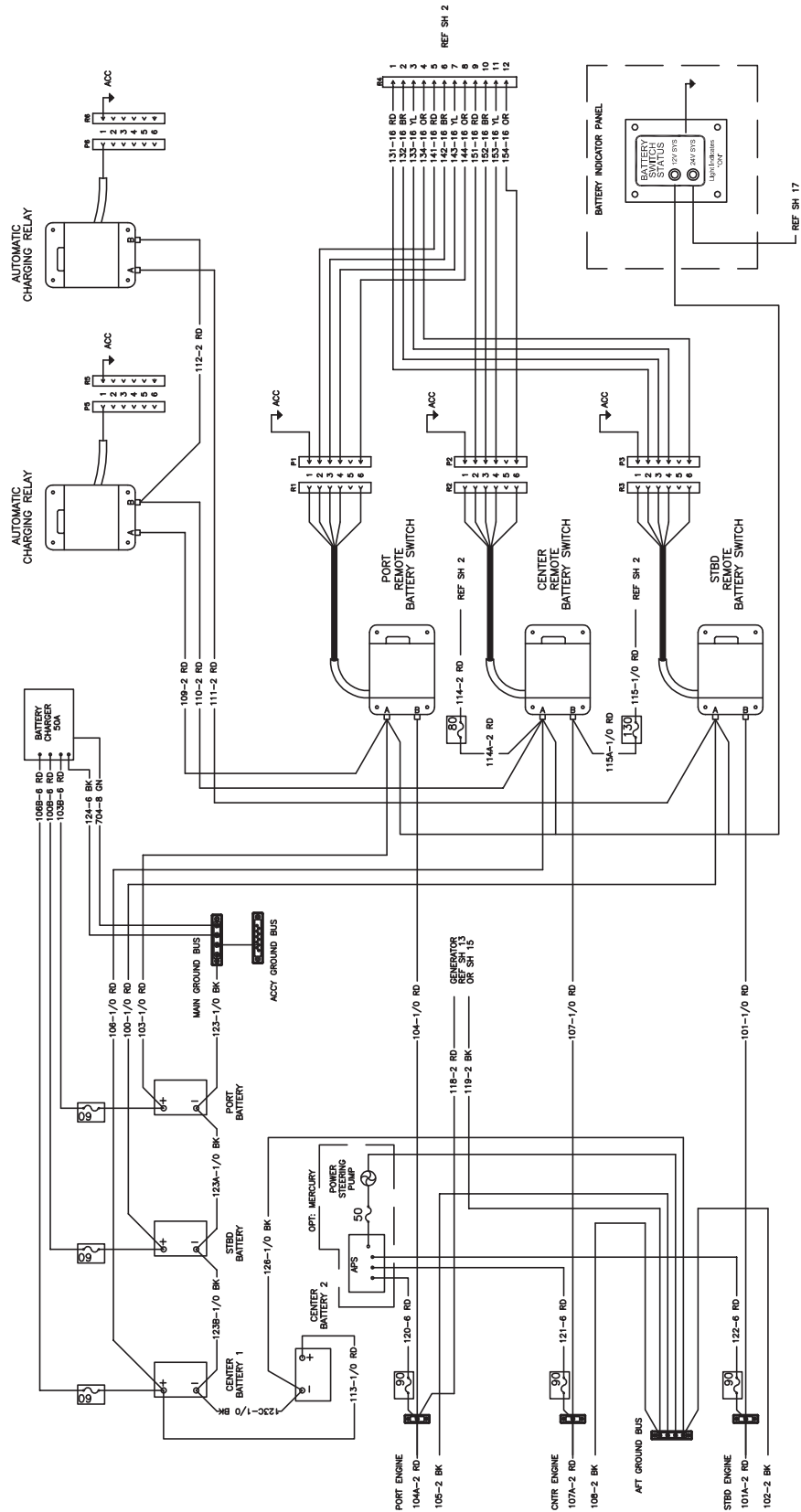
Wiring Identification Chart

BCGP adheres to electrical wiring requirements which meet all the ABYC E-11 standards. The following chart outlines the gauge, color and function of the wiring used.

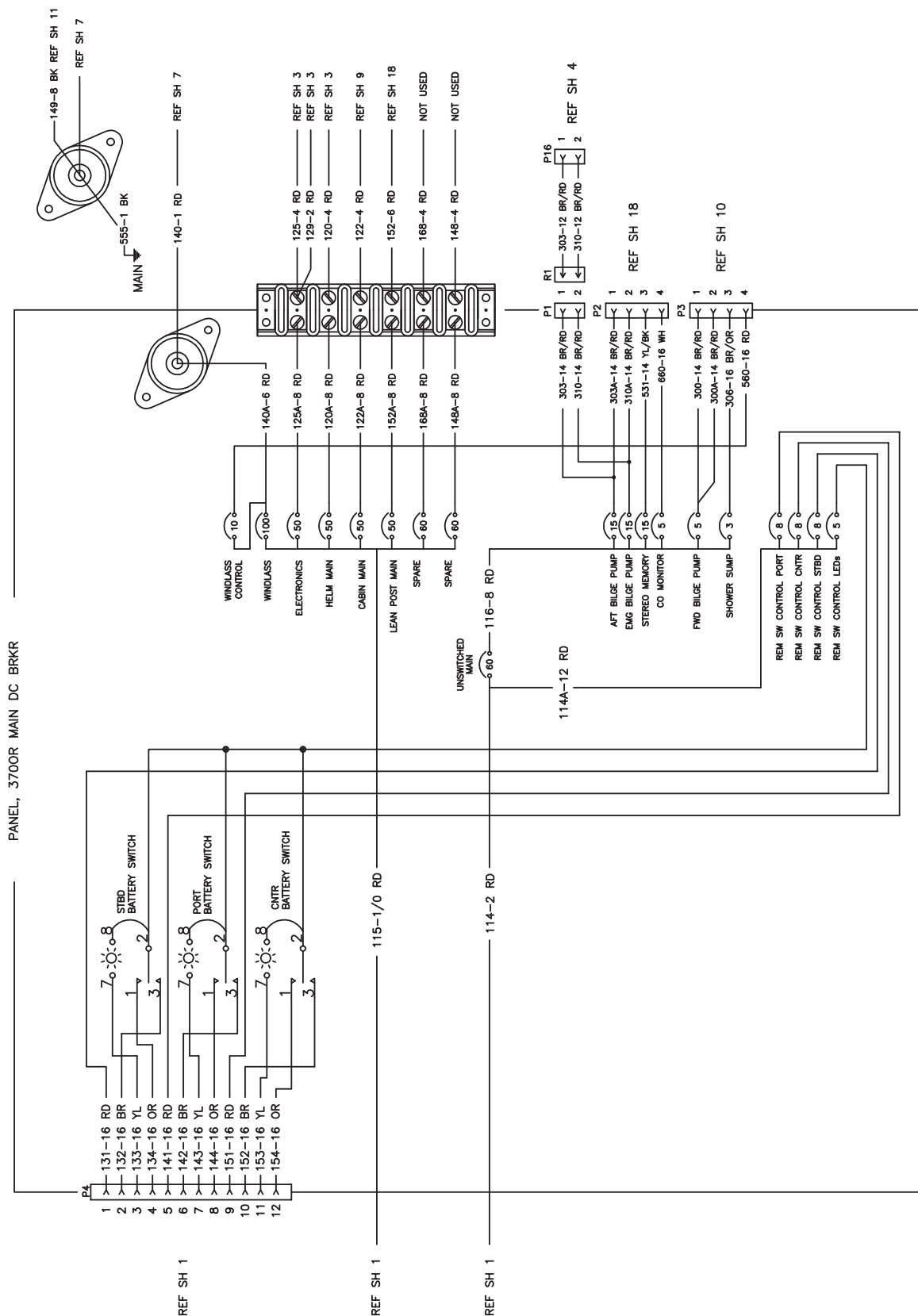
Wire Color Chart for DC and Special Circuit

COLOR	FUNCTION	COLOR	FUNCTION
GRN	GROUNDING MAIN/TOWER & ALUMINUM FUEL TANKS	BRN/GRN	FRESH WATER
GRN	GROUNDING	BRN/ORN	SUMP PUMP
ORN	STARBOARD 30 AMP RECEPTACLE	BRN/RED	BILGE PUMP (UNSWITCHED)
RED	MAIN FEEDS/PORT 30 AMP RECEPTACLE	BRN/WHT	MACERATOR
BRN/BLK	STARBOARD STORAGE PUMP	GRY	RUNNING LIGHTS
BRN/VIO	FORWARD STORAGE PUMP	GRY/BLK	ACC 1
BRN/YEL	OPTIONAL PUMP (HIGH CURRENT)	GRY/BLU	ACC 2
BRN/BLU	PORT STORAGE PUMP	GRY/GRN	ACC 3
BLK	GROUND	GRY/RED	AFT MAST/ACC 4
RED	+12V MAIN	GRY/WHT	ALL ROUND/FWD MAST LIGHT
BLK	GROUND	GRN	GROUNDING
BLK/YEL	STOP CIRCUIT	ORN	REFRIGERATOR or CENTER WIPER
BLK/WHT	GEN SHUTDOWN	ORN/BLU	HORN
BLU	COMPASS	ORN/BRN	STARBOARD WIPER PARK
BLU/BLK	DOME LIGHT	ORN/GRN	STARBOARD WIPER
BLU/GRN	SPREADER LIGHT	ORN/RED	PORT WIPER
BLU/ORN	OPTIONAL LIGHT	ORN/VIO	VACUUM PUMP
BLU/RED	COURTESY LIGHTS	ORN/WHT	CENTER WIPER
BLU/VIO	CABIN LIGHTS	PINK	FUEL SENDER
BRN	BILGE PUMP (SWITCHED)	RED	12V RECEPTACLE
BRN/BLU	PORT STORAGE PUMP	VIO	IGNITION
BRN/GRY	RAW WATER	WHT	CO MONITOR/ELECTRIC TRIM TAB (SWITCHED)
		YLW	BLOWER/STEREO MEMORY
		YLW/RED	START

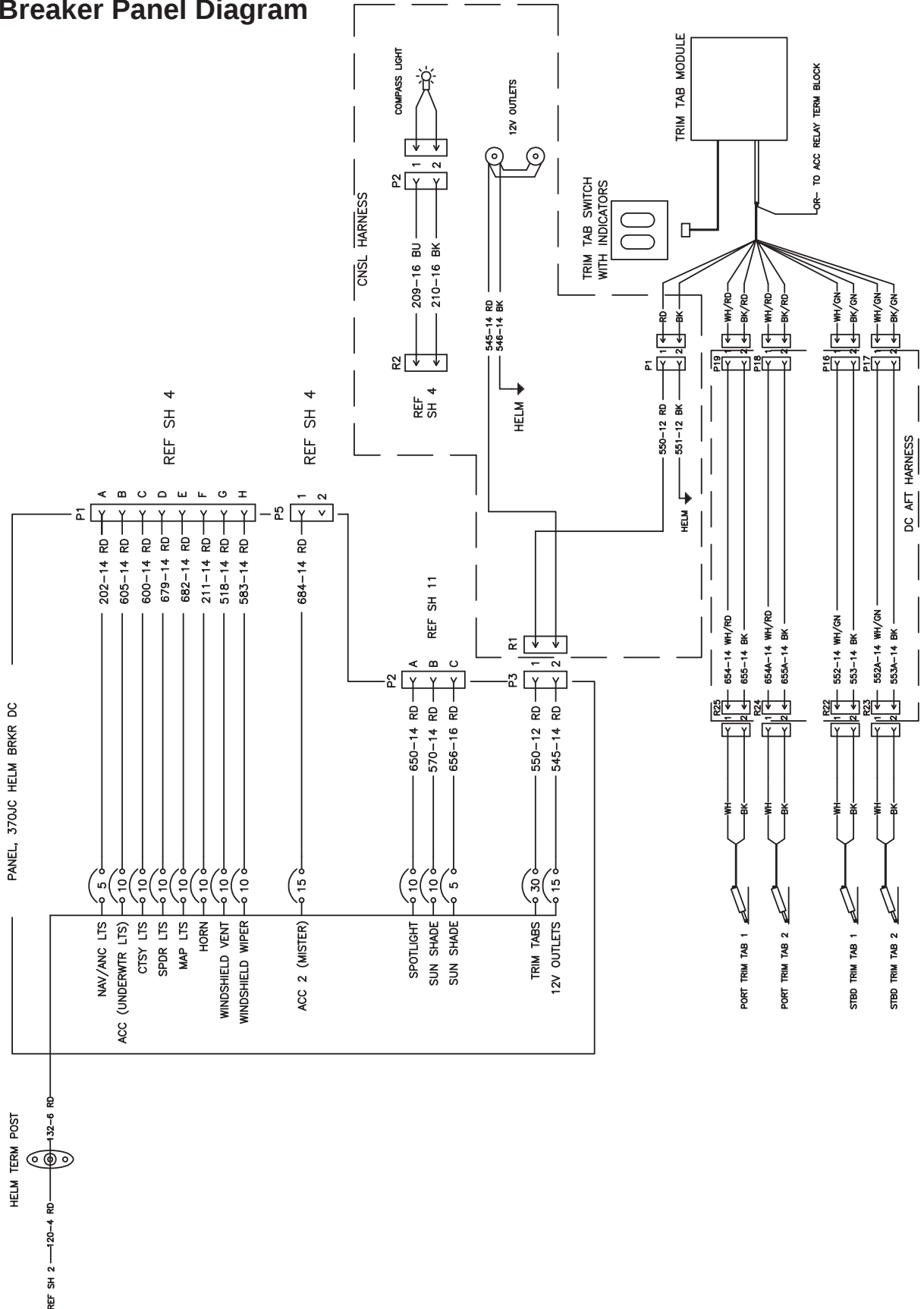
Battery System Diagram



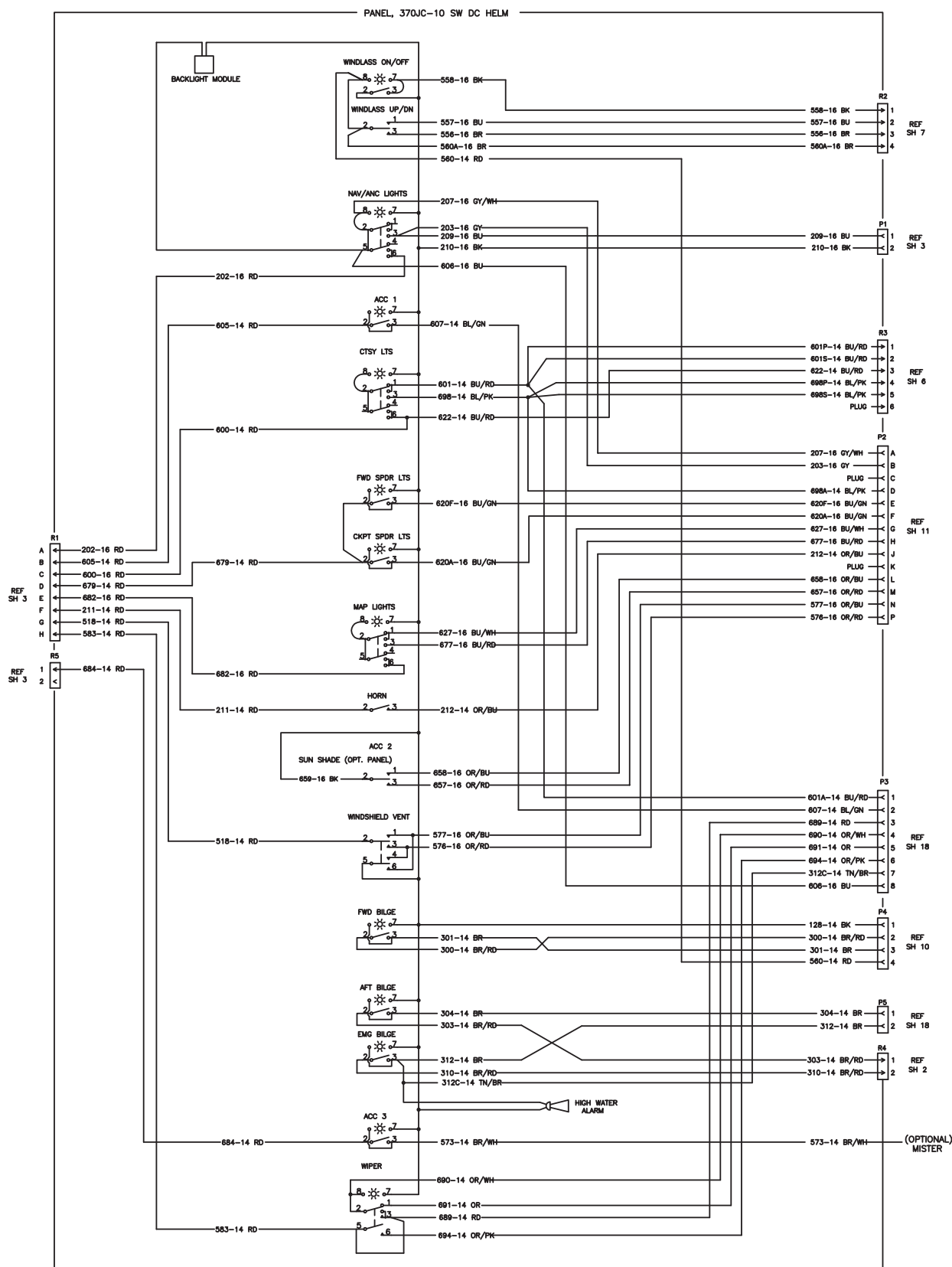
Battery Switch Panel Diagram



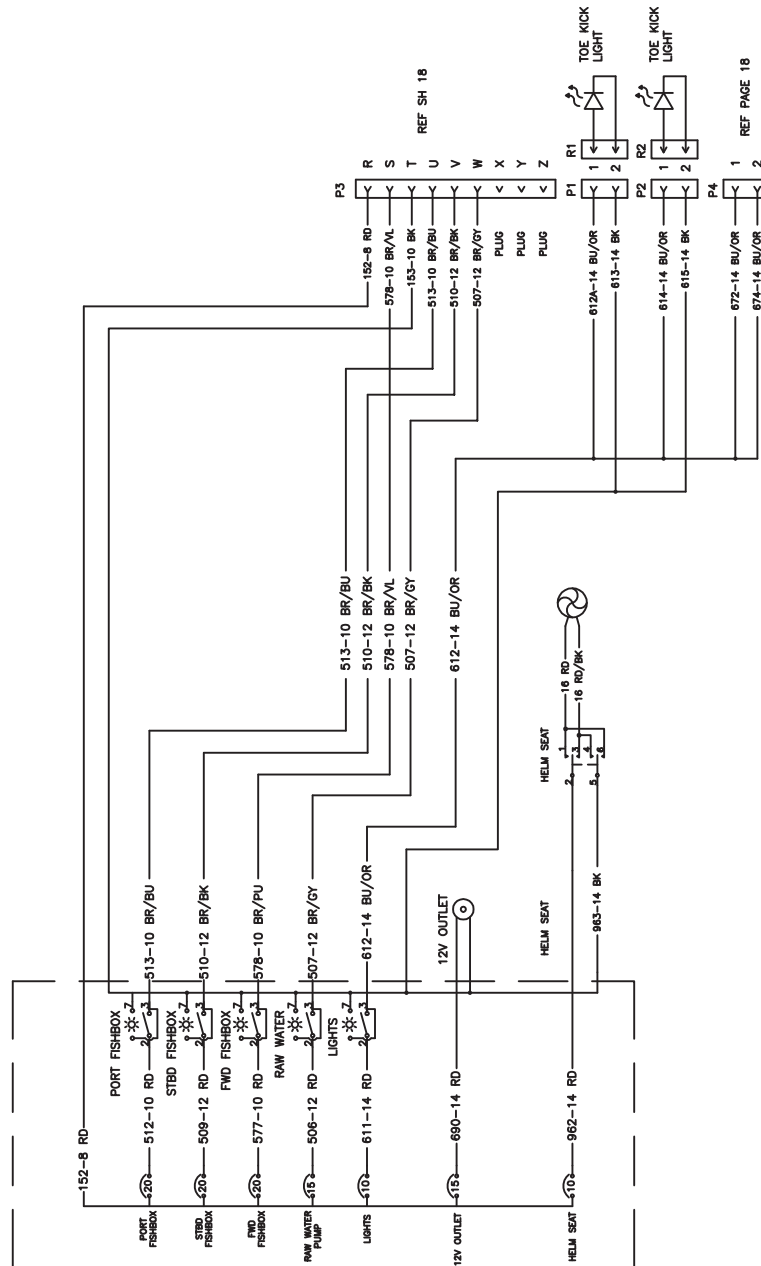
Helm Breaker Panel Diagram

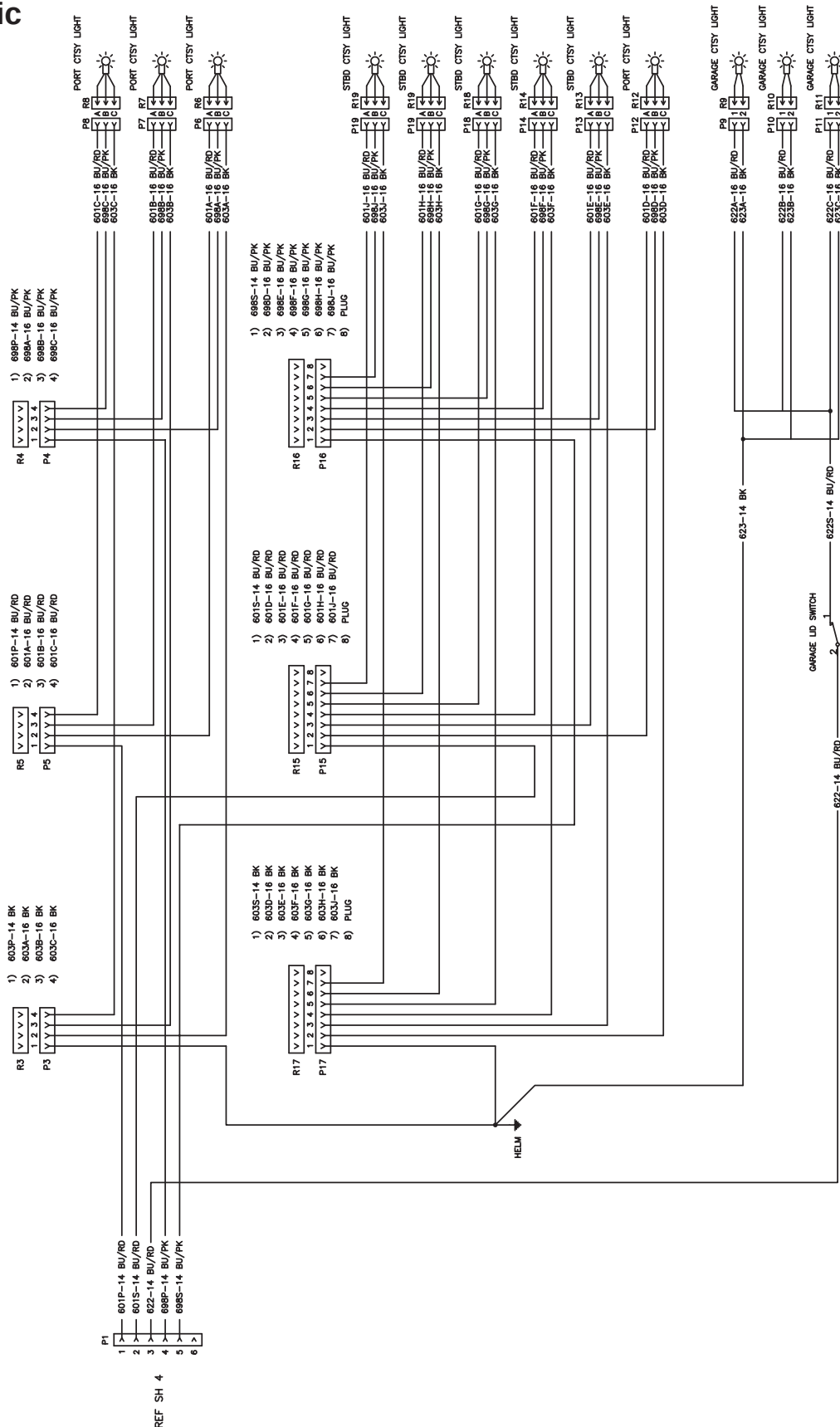


Helm Switch Panel Diagram

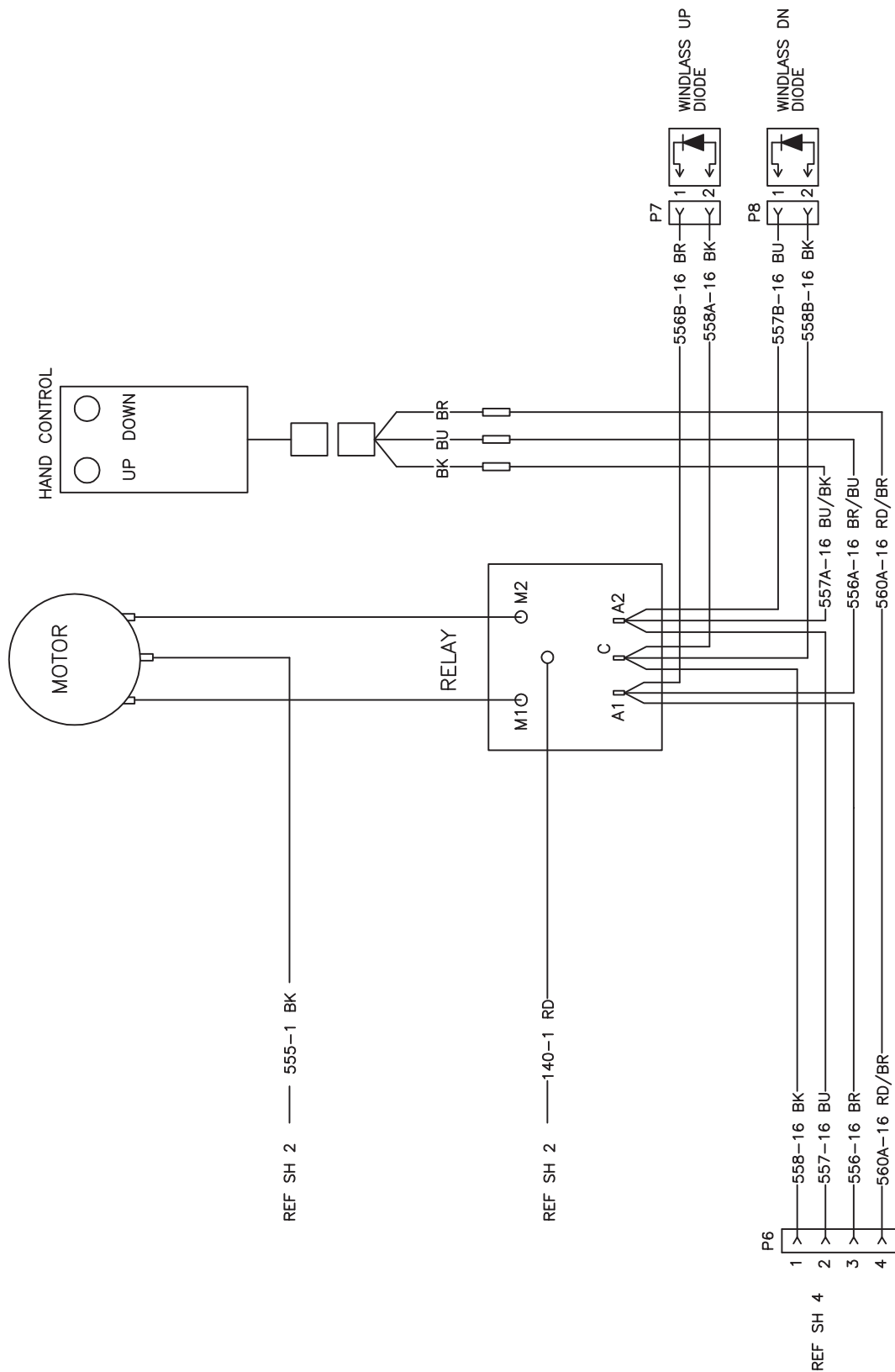


Leaning Post Switch Panel Diagram

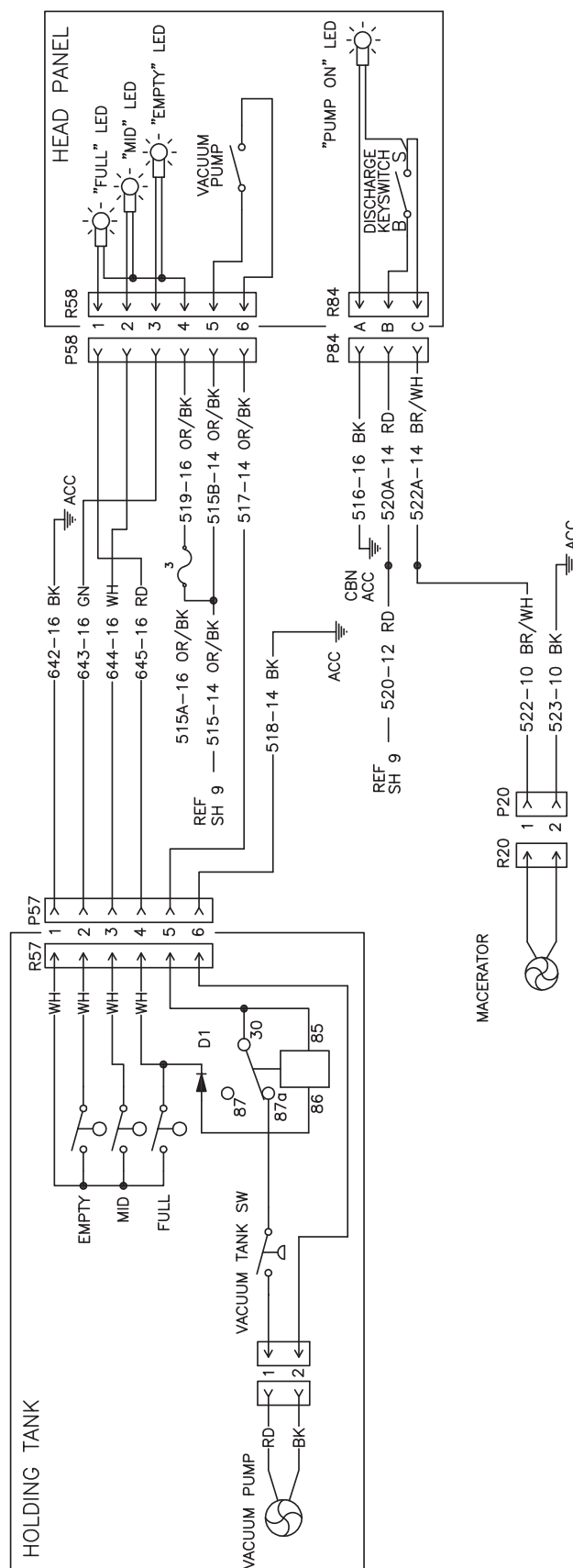


Lighting Schematic
(Deck)

Windlass Schematic



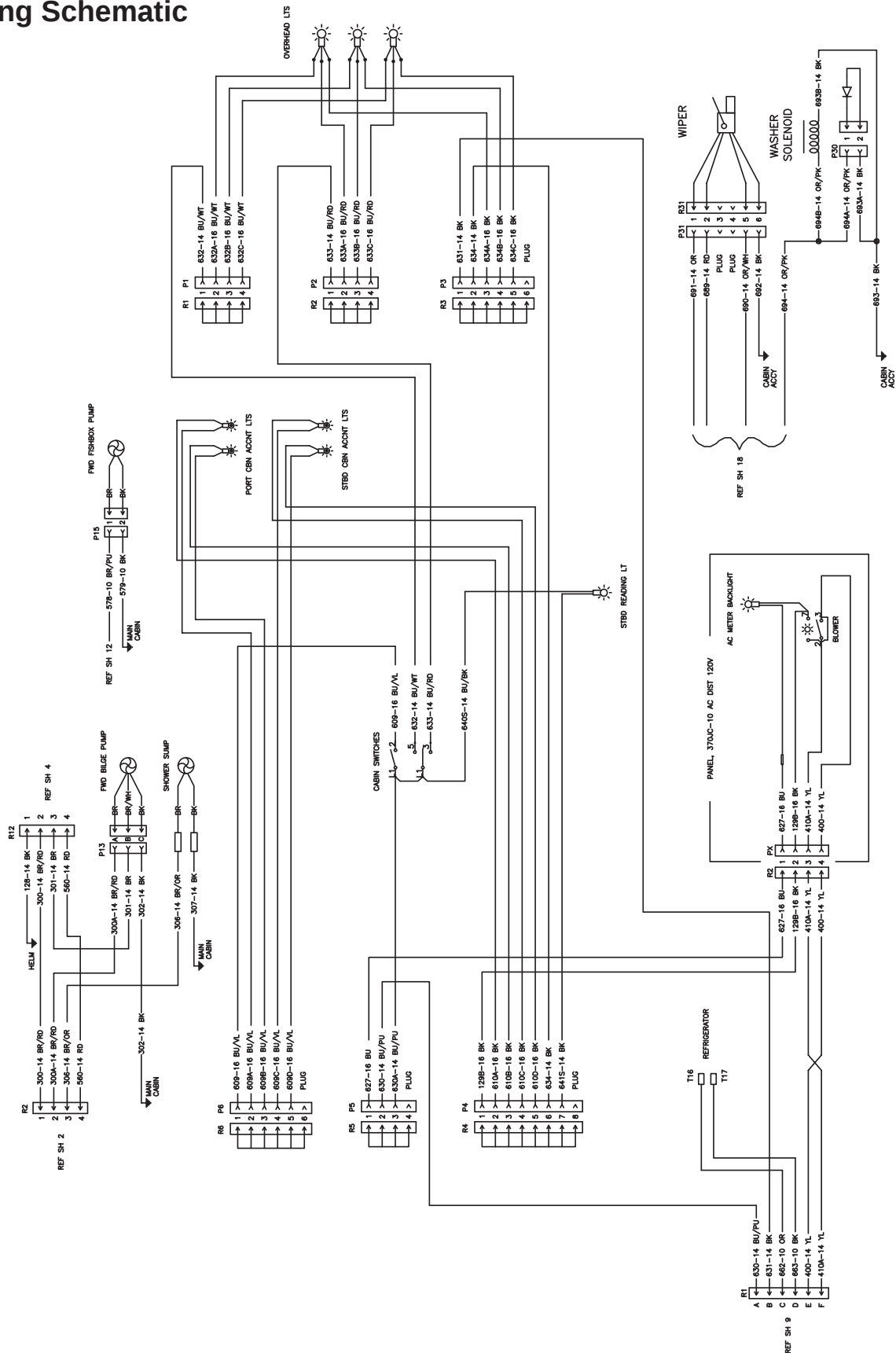
Overboard Discharge Panel and Holding Tank Schematic



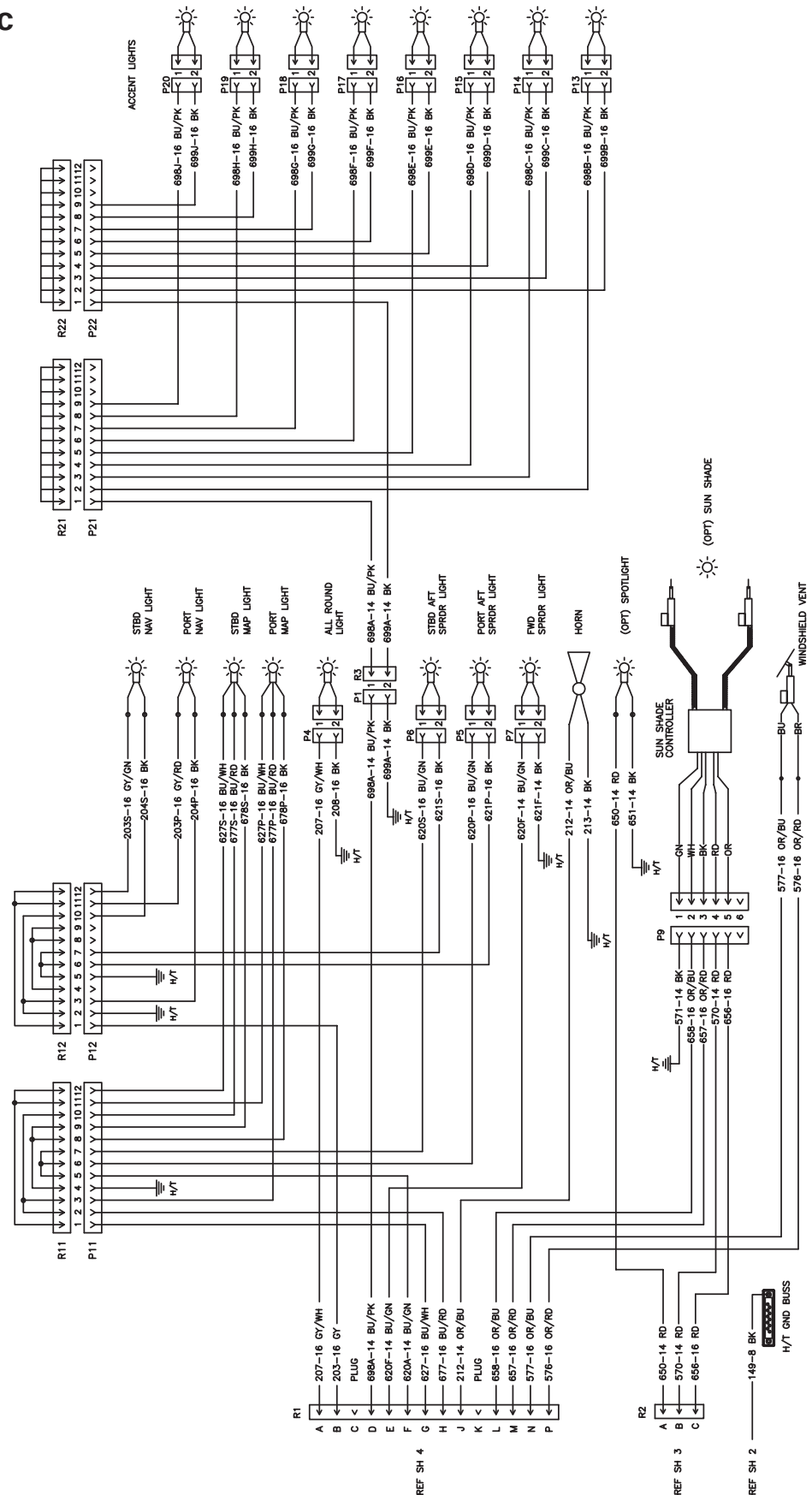
5-29



DC Wiring Schematic (Cabin)

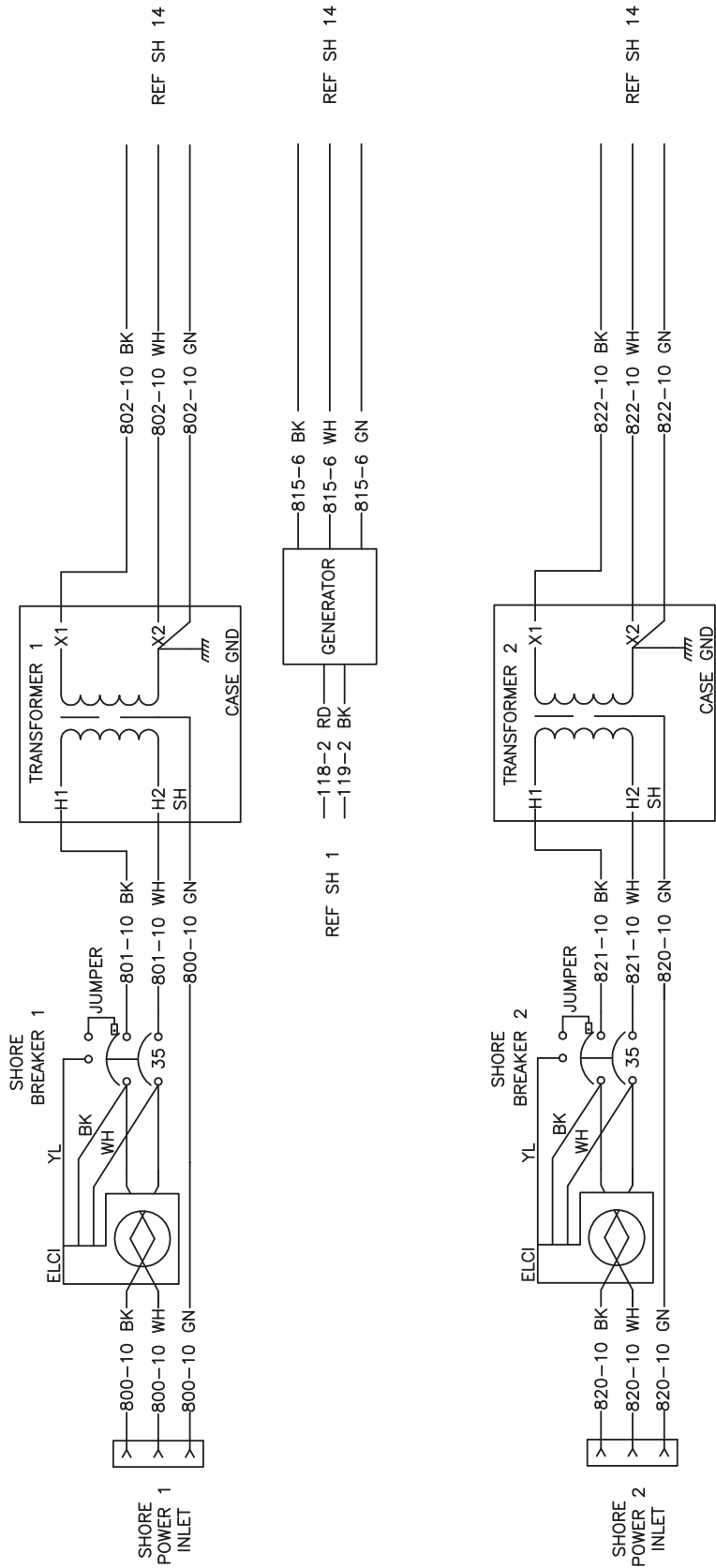


Hardtop Schematic

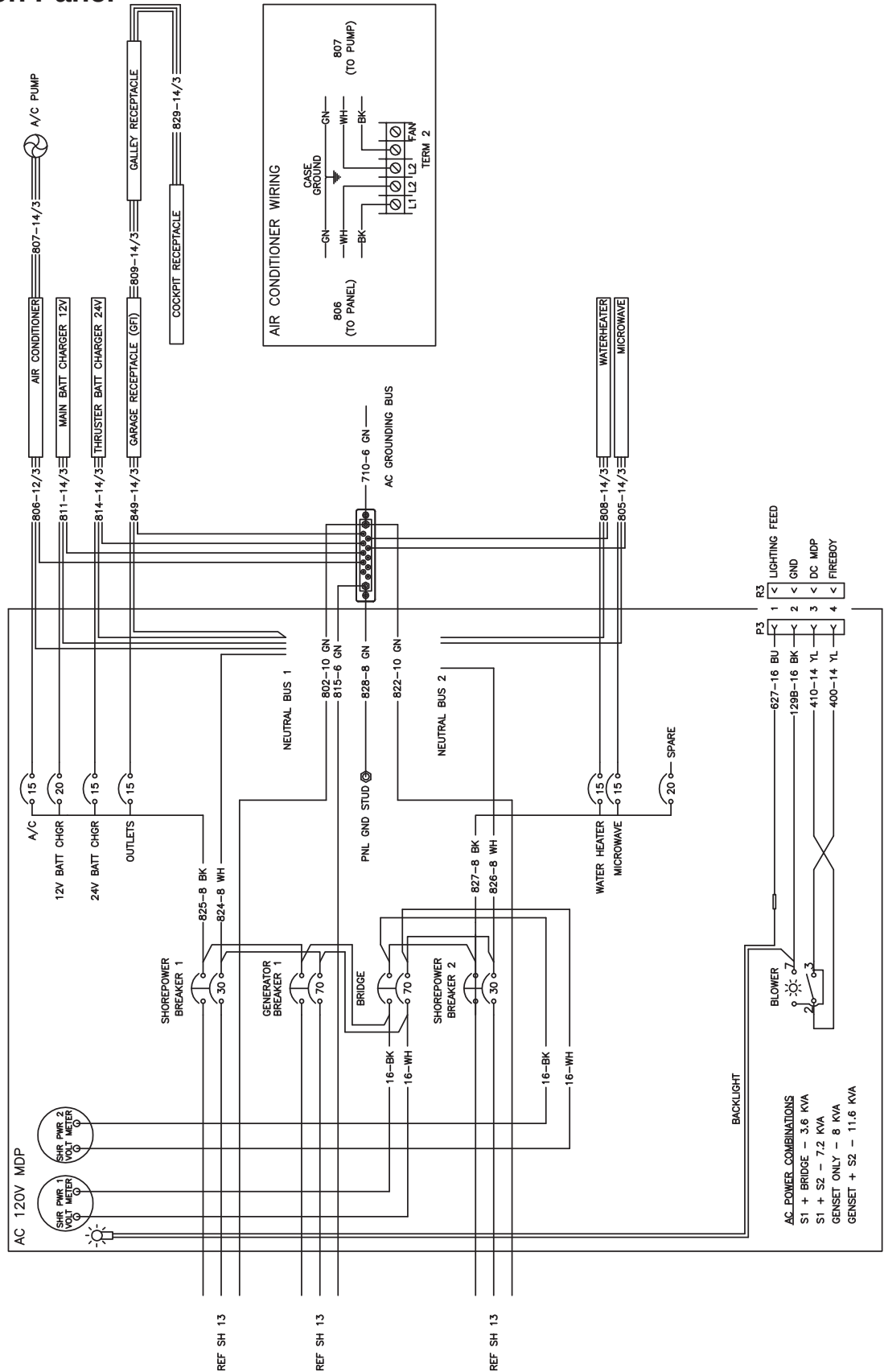


120V/60Hz Shore Power Schematic

120V/60HZ

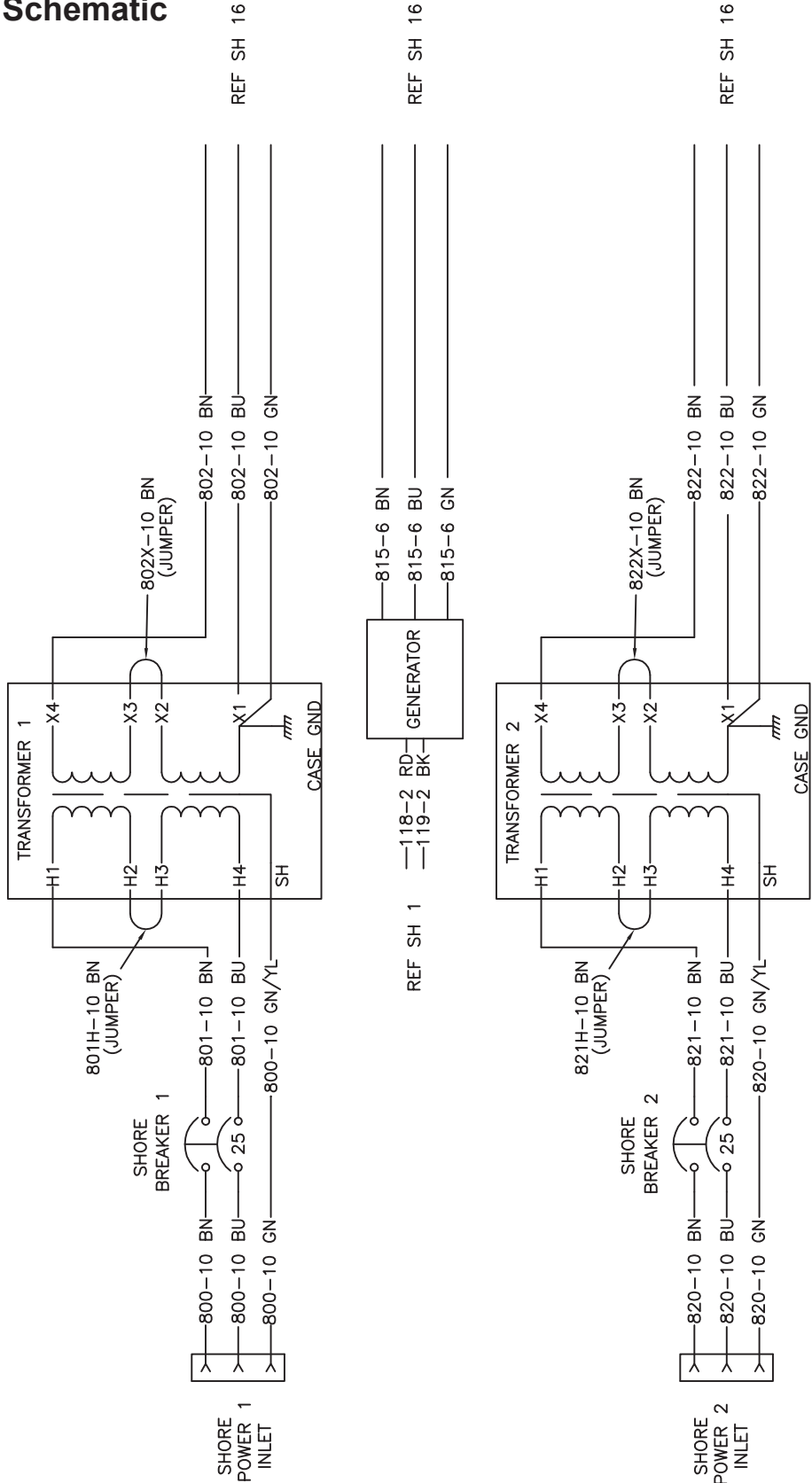


AC Distribution Panel (120V/60Hz)

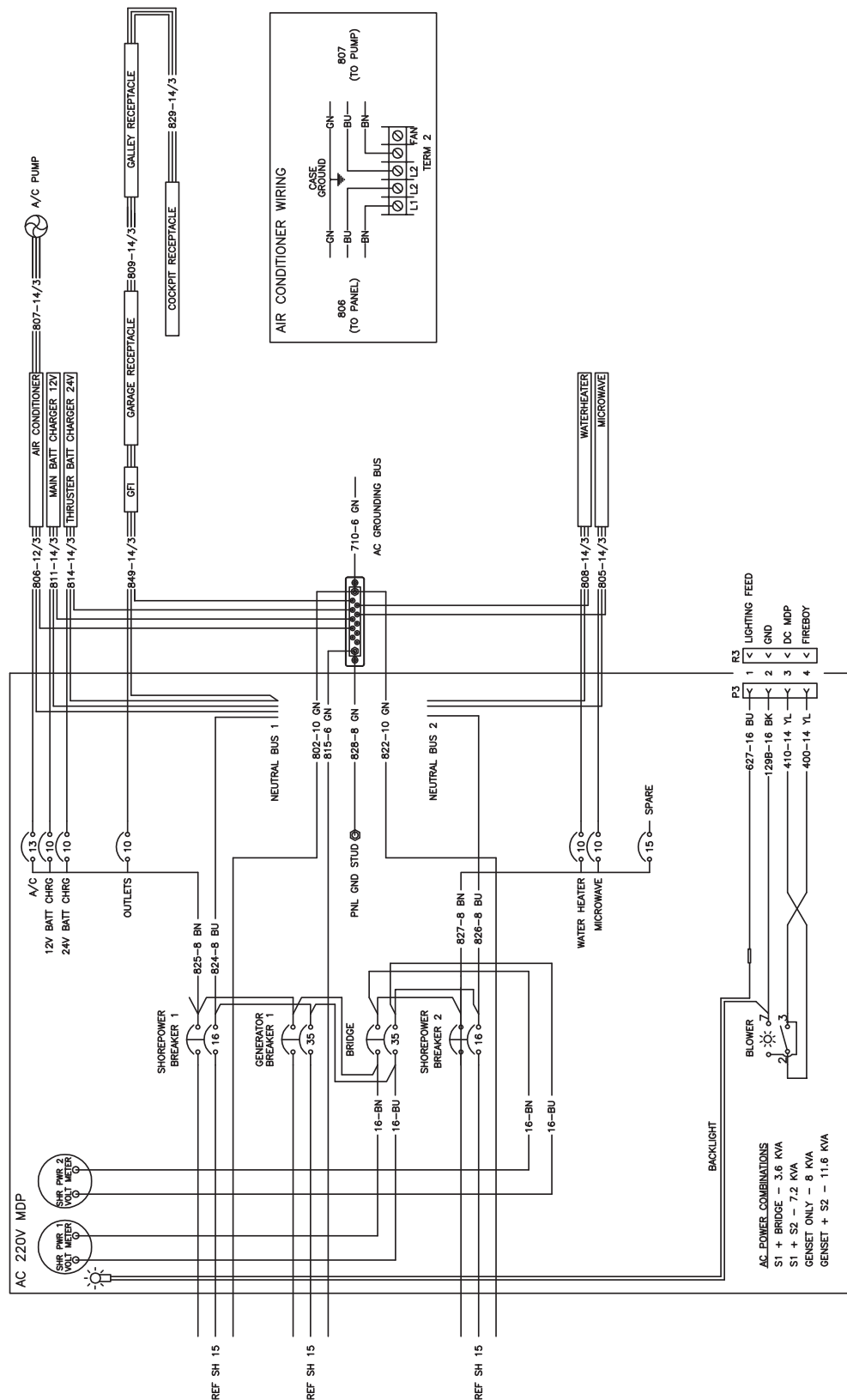


220V/50Hz Shore Power Schematic

220V/50HZ

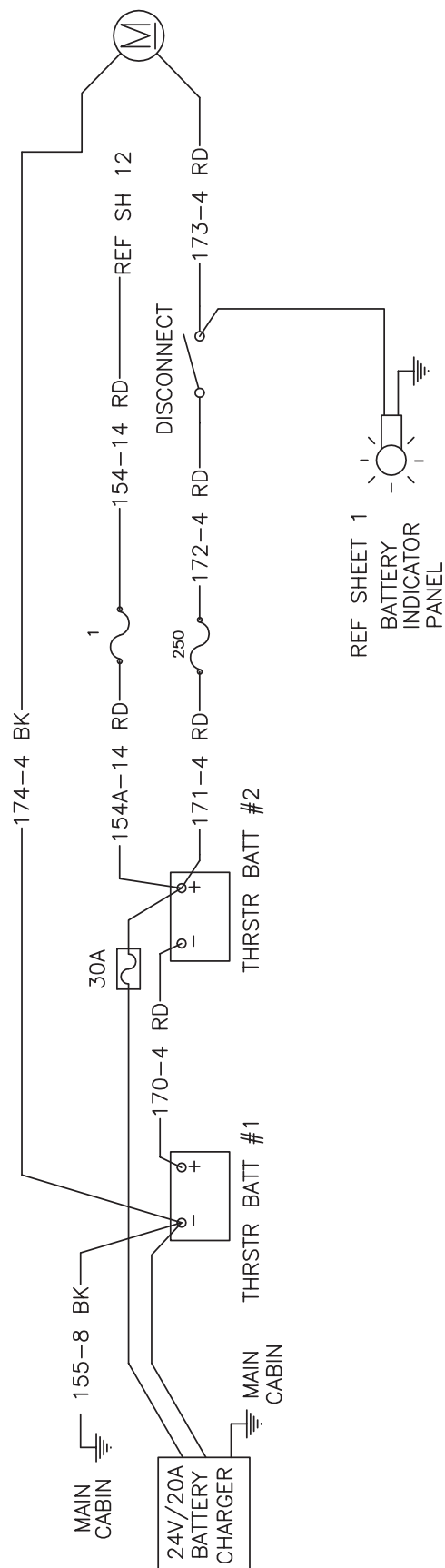


AC Distribution Panel (220V/50Hz)

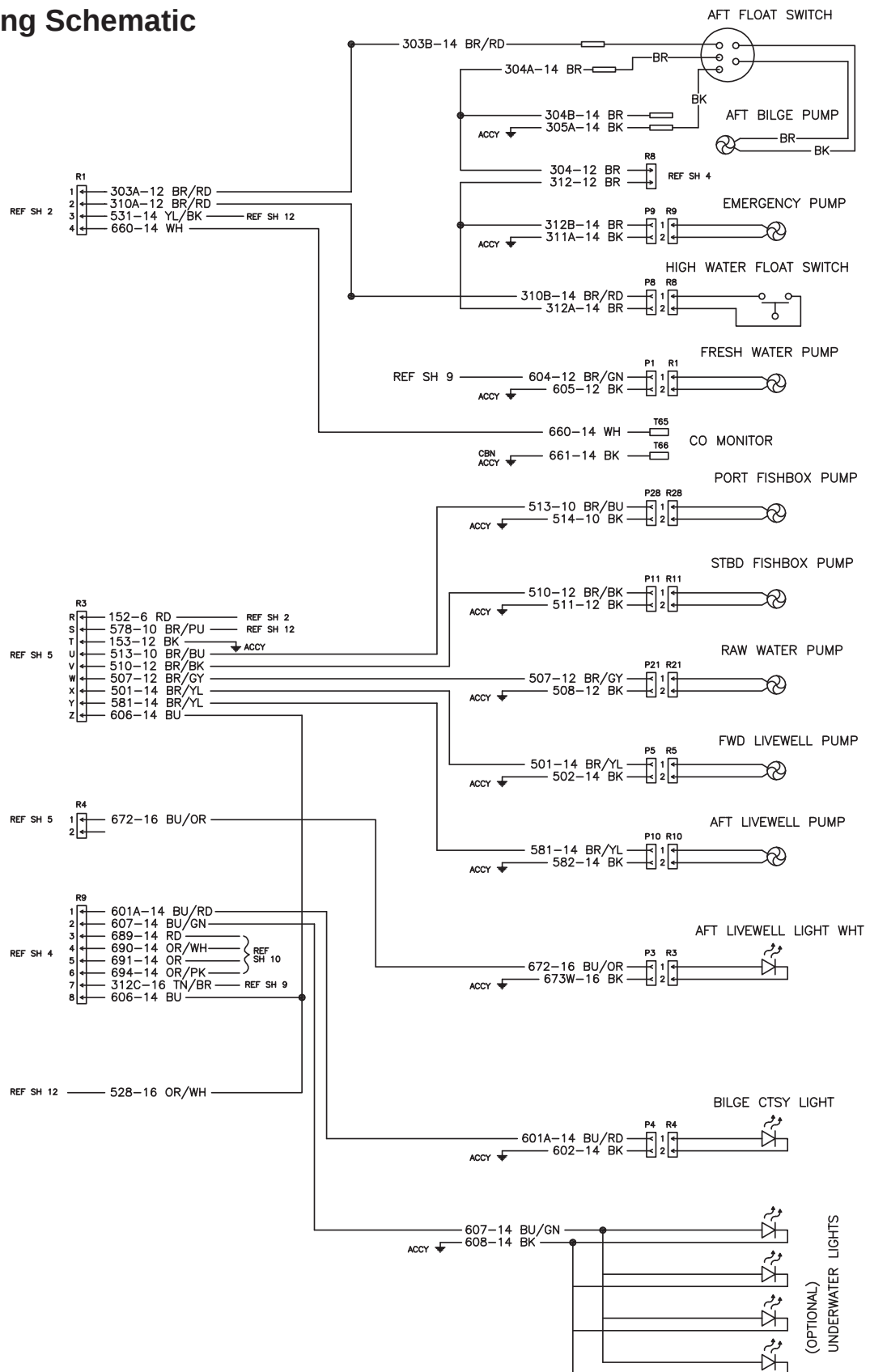


Bow Thruster Schematic

24V BOW THRUSTER SYSTEM



Bilge Wiring Schematic



The diagram illustrates the wiring for a vehicle stereo system. It shows the connection of a 'FENDER SUPPLIED JUMPER HARNESS' to a 'STEREO' unit. The diagram includes terminals for various speakers (FRONT, REAR, STBD, PORT), subwoofers (BU, BK), and other inputs (USB, AUX, MP3). It also shows optional components like an antenna and a head unit. The diagram is labeled with 'R12 P12', 'R12 P18', 'R13 P13', and 'R35 P35'.

STEREO UNIT TERMINALS:

- 1: 531-14 YL/BK (REF SH 18)
- 2: 530-16 RD (REF SH 9)
- 3: 532-14 BK
- 4: 544-16 BU
- 5: 538+ 16/2 SPKR (STBD CABIN)
- 6: 538- 16/2 SPKR (PORT CABIN)
- 7: 537- 16/2 SPKR (NOT USED)
- 8: 537+ 16/2 SPKR
- 9: PLUG
- 10: PLUG
- 11: PLUG
- 12: PLUG

OPTIONAL COMPONENTS:

- ANTENNA
- SAT RADIO MODULE
- TO HEAD UNIT

WIRING CONNECTIONS:

- STEREO 1 to 15: YL (REF SH 18)
- STEREO 2 to 16: RD (REF SH 9)
- STEREO 3 to 17: BK
- STEREO 4 to 18: BU
- STEREO 5 to 19: SPKR (STBD CABIN)
- STEREO 6 to 20: SPKR (PORT CABIN)
- STEREO 7 to 21: SPKR (NOT USED)
- STEREO 8 to 22: SPKR
- STEREO 9 to 23: PLUG
- STEREO 10 to 24: PLUG
- STEREO 11 to 25: PLUG
- STEREO 12 to 26: PLUG

TERMINAL BLOCKS:

- R12 P12: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
- R12 P18: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
- R13 P13: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
- R35 P35: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

WIRING DETAILS:

- STEREO 1 to 15: YL (REF SH 18)
- STEREO 2 to 16: RD (REF SH 9)
- STEREO 3 to 17: BK
- STEREO 4 to 18: BU
- STEREO 5 to 19: SPKR (STBD CABIN)
- STEREO 6 to 20: SPKR (PORT CABIN)
- STEREO 7 to 21: SPKR (NOT USED)
- STEREO 8 to 22: SPKR
- STEREO 9 to 23: PLUG
- STEREO 10 to 24: PLUG
- STEREO 11 to 25: PLUG
- STEREO 12 to 26: PLUG

WIRING CONNECTIONS:

- STEREO 1 to 15: YL (REF SH 18)
- STEREO 2 to 16: RD (REF SH 9)
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- STEREO 9 to 23: PLUG
- STEREO 10 to 24: PLUG
- STEREO 11 to 25: PLUG
- STEREO 12 to 26: PLUG

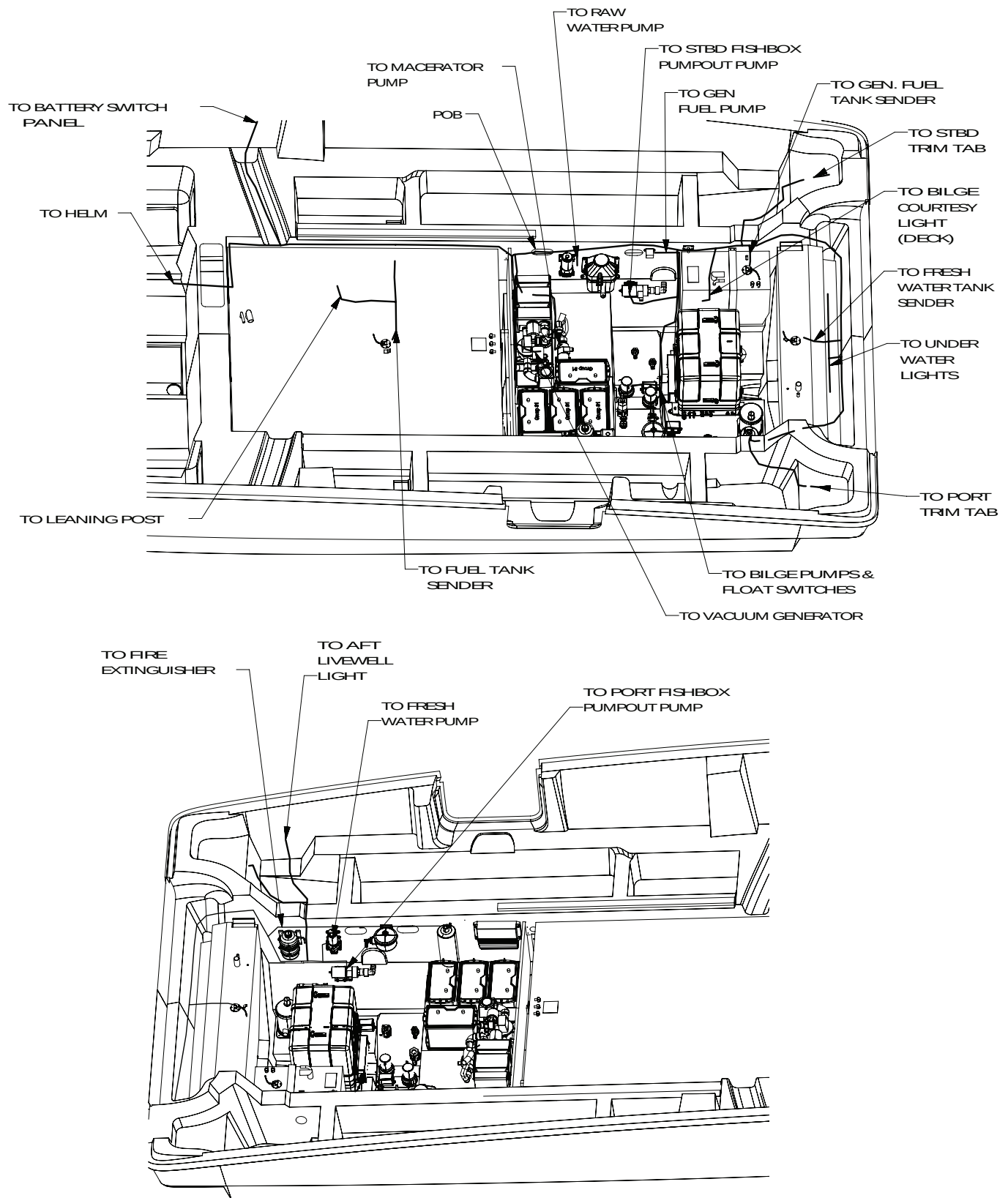
TERMINAL BLOCKS:

- R12 P12: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
- R12 P18: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
- R13 P13: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
- R35 P35: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

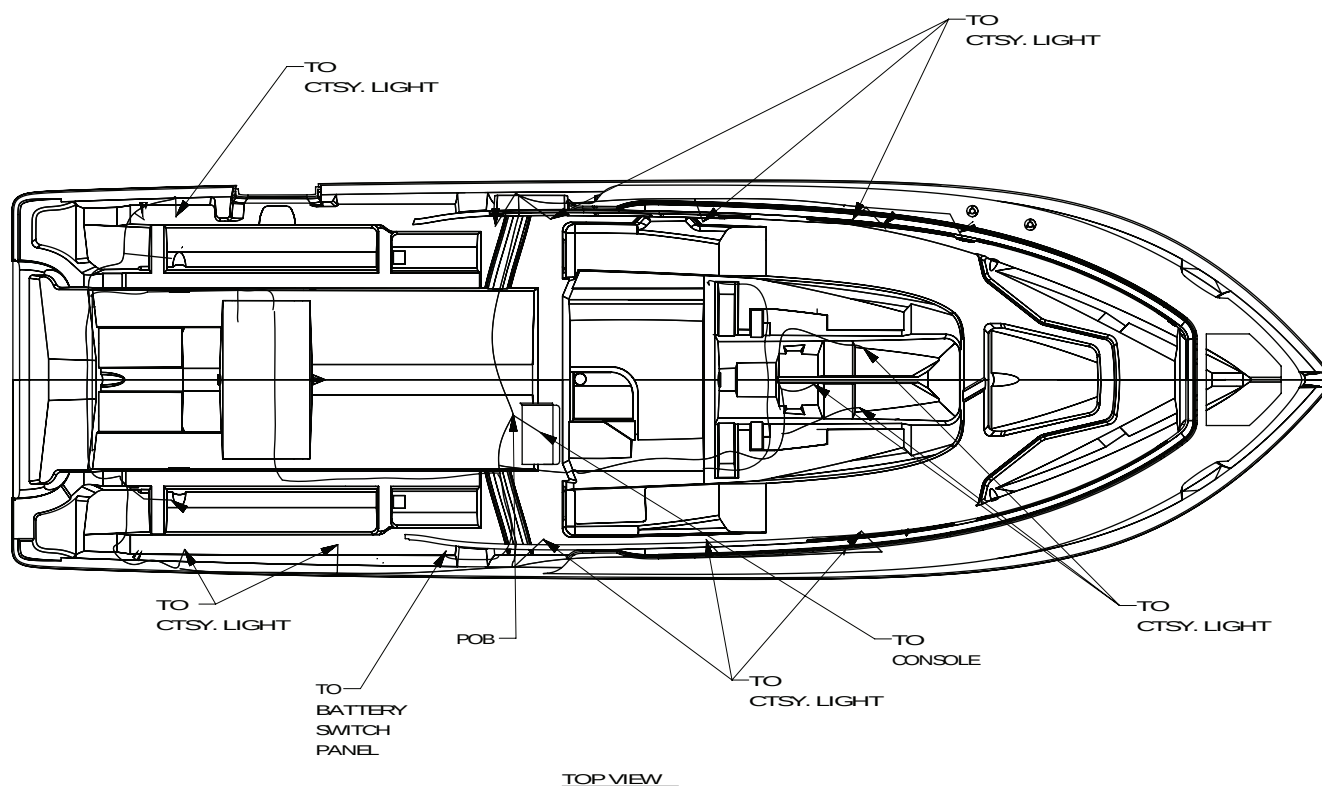
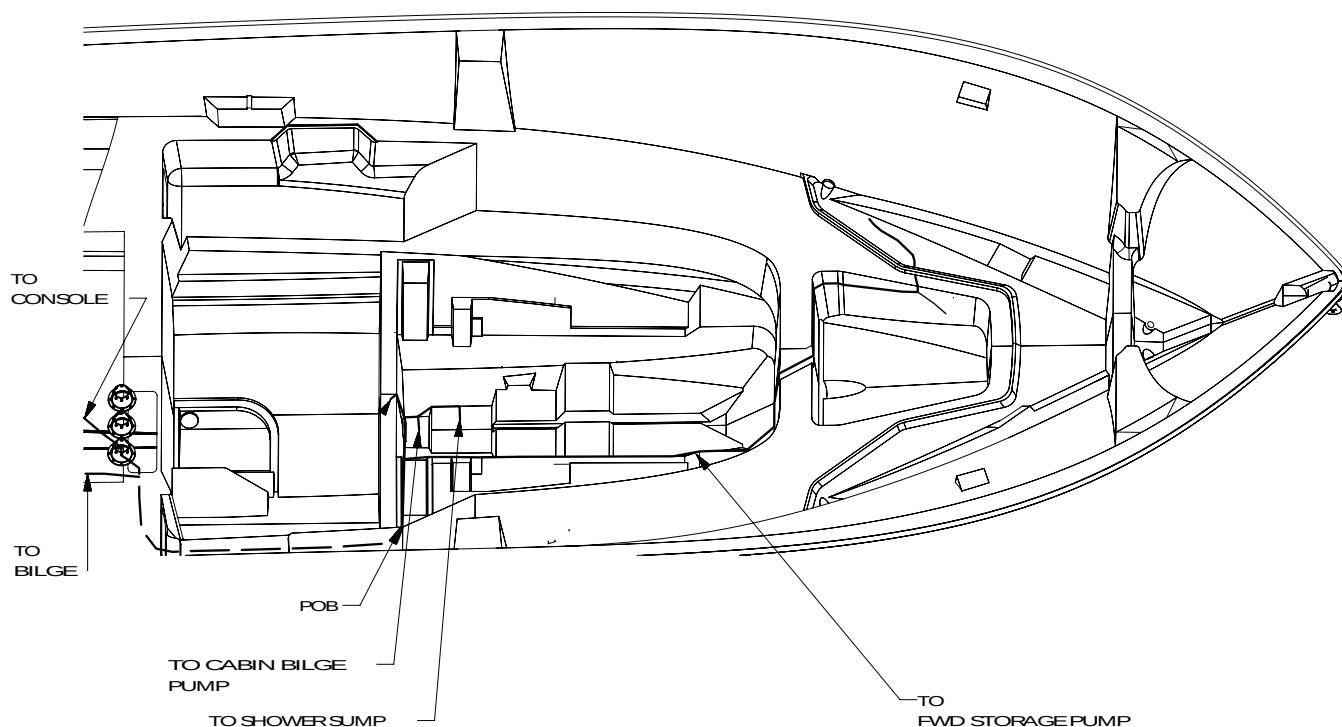
WIRING DETAILS:

- STEREO 1 to 15: YL (REF SH 18)
- STEREO 2 to 16: RD (REF SH 9)
- STEREO 3 to 17: BK
- STEREO 4 to 18: BU
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- STEREO 11 to 25: PLUG
- STEREO 12 to 26: PLUG

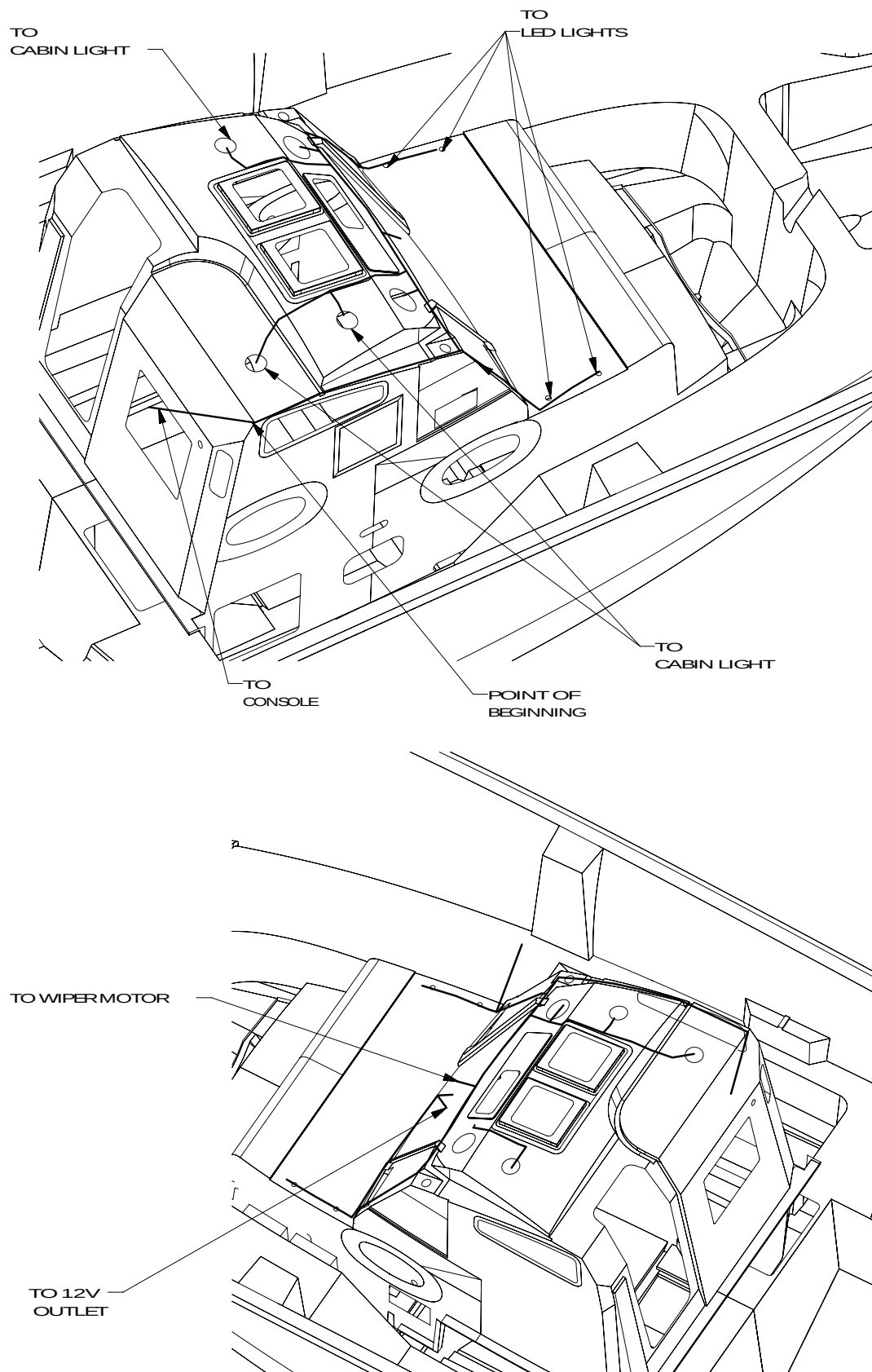
DC Wiring Harness



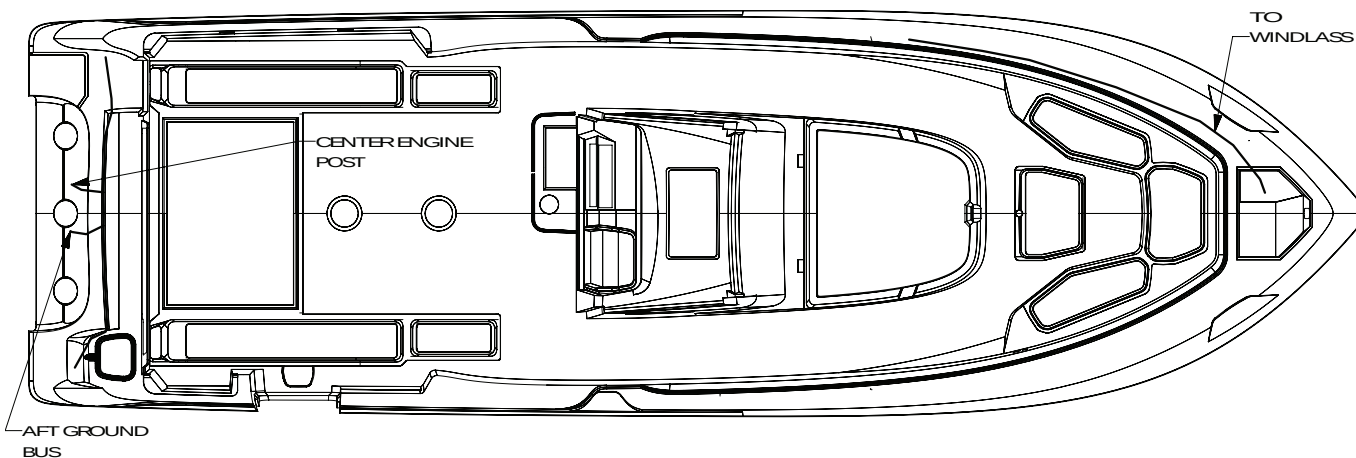
DC Wiring Harness (continued)



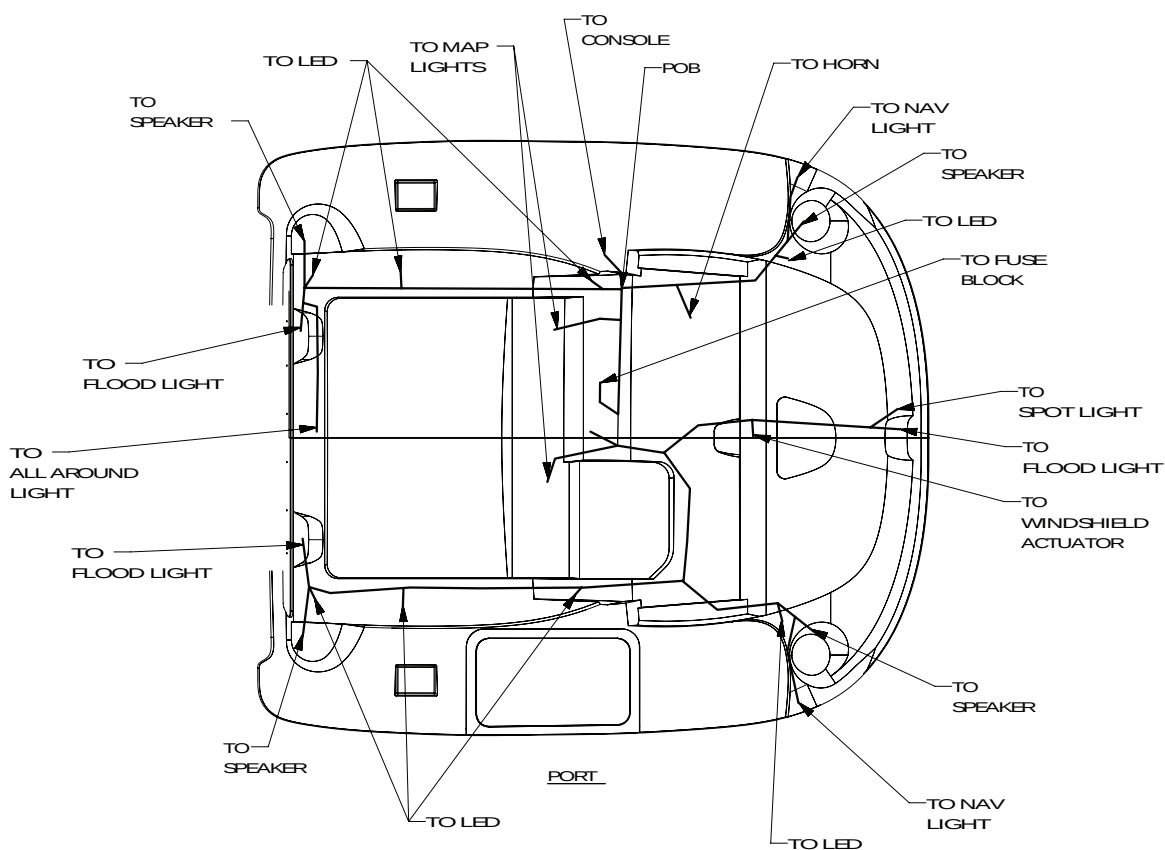
DC Wiring Harness (continued)



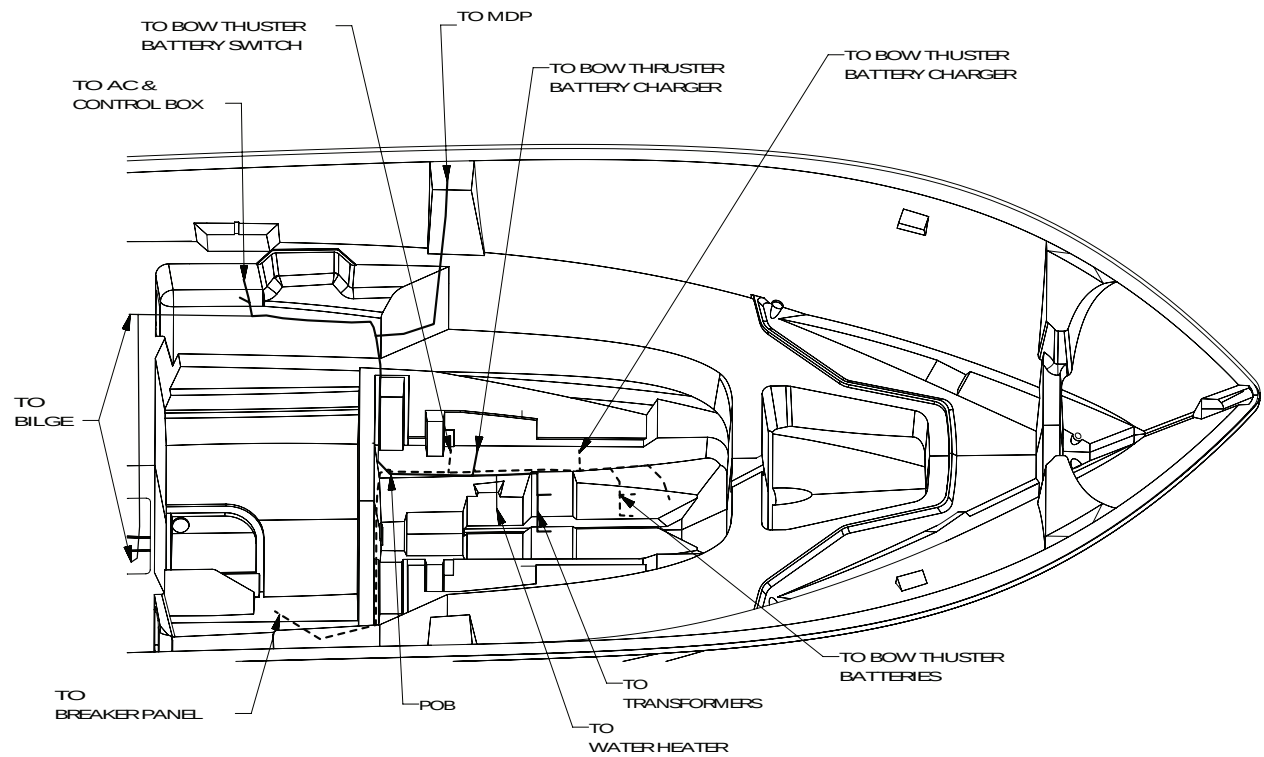
DC Wiring Harness (continued)



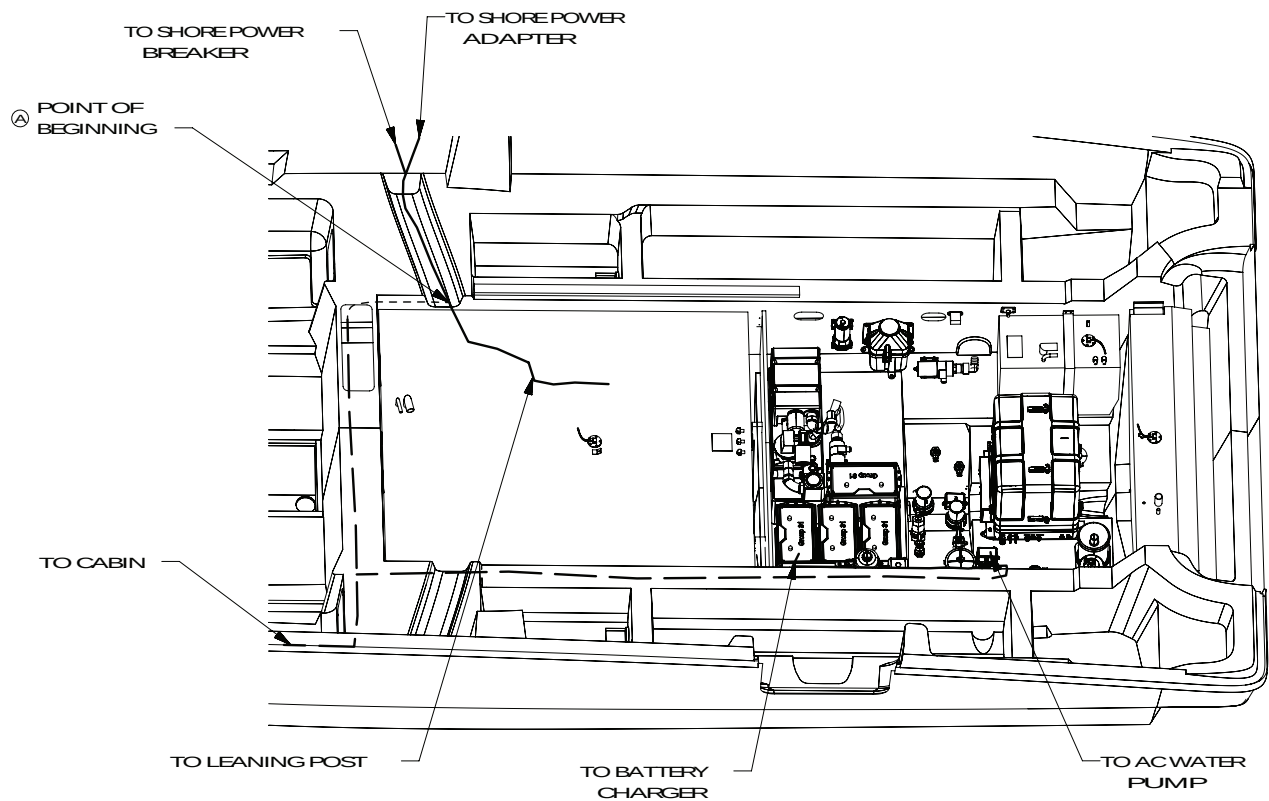
Hardtop Wiring Harness



AC Wiring Harness



AC HARNESS INSTALLATION (SOLID LINE)
24V THRUSTER HARNESS (DOTTED LINE)



Operator's Notes

[illegible]

37 Justice Specifications

Overall boat length	37 ft. 6 in.	11,4 m
Beam	11 ft. 6 in.	3,5 m
Boat weight, dry, no engines	13,500 lbs.	6123 kg
Bridge clearance, with hardtop	189 in.	480 cm
Bridge clearance, hardtop and radar option	10 ft. 4 in.	2,8 m
Draft, engines tilted	23.5 in.	60 cm
Swamped capacity	5200 lbs.	2359 kg
Maximum capacity (people, engines, gear)	8600 lbs.	3900 kg
Maximum engine weight	2100 lbs.	952 kg
Maximum engine horsepower	900 HP	671 kW
Minimum engine horsepower	750 HP	559 kW
Fuel tank capacity, standard centerline	450 gallons	1703 L
Generator fuel capacity (diesel)	20 gal	75,7 L
Person capacity	14	14
Waste capacity	10 gal	37,8 L
Water capacity	60 gal	227 L

These specifications reflect only the base boat, not notable options which may increase the weights and/or dimensions. Specified measurements are approximations and subject to change.

Hull Identification Number

The Hull Identification Number (HIN) is located on the starboard outboard side of the transom. This is the most important form of boat identification and it must be included in all correspondence related to your boat.

The engine and electronics model and serial numbers are also important when obtaining parts or service for these items. Record all significant numbers for HIN, keys, engines, capital equipment, and electronics on this page for quick reference and keep a copy somewhere safe on shore.

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Options

Brunswick Commercial & Government Products (BCGP) designs, engineers, and manufactures each boat for your specific mission. We add extra Phenolic plate, aluminum plate, and fiberglass material during the molding process to reinforce attachment points for the various options. For this reason, many options cannot be added after the boat leaves the factory. If you want to add options or accessories to the boat, you must contact Brunswick Commercial & Government Products Customer Service Department at 386-423-2900, for advice.



WARNING

Installing certain options and accessories on the hull and deck can lead to structural failure or boat instability. Improper installations can cause property damage and serious injury. Improper installations might void portions of your hull warranty.



Hull Maintenance

Regularly scheduled maintenance will help keep your boat mission-ready and help protect it from deterioration caused by its working environment. Your experience with your particular working environment will help determine the appropriate time intervals between significant system inspections.

Washing

Exterior and interior laminated fiberglass parts, metal hardware, and the collar should be washed frequently using fresh water, a mild soap, and clean cloths or a sponge. DO NOT use abrasive cleaners, abrasive pads, steel or bronze wool, or alkaline cleaners. After washing, rinse thoroughly with fresh water. Dry the boat to prevent water spots from forming on the hull and powder-coated hardware.



Waxing



WARNING

Gelcoat surfaces are always slippery when wet. Use extreme caution when walking on wet surfaces to avoid slipping or falling. Never wax portions of the boat that have a non-skid pattern.

The interior and exterior fiberglass parts of the hull should be waxed a minimum of twice per year to protect the gelcoat from salt, dirt, and ultraviolet degradation. Use a wax that is formulated for fiberglass and gelcoat surfaces. DO NOT wax the boat in direct sunlight. The gelcoat could “haze” over if waxed in direct sunlight or extreme heat. DO NOT wax the non-skid surfaces on the decks.

Compounding

It may be necessary to compound the hull and interior fiberglass components to remove stains, light scratches, and hazed film on the gelcoat. Compounding should only be done after the boat has been thoroughly cleaned to remove all dirt and oil. Use a fine grade compound formulated for gelcoat and fiberglass parts. Follow the manufacturer’s instructions carefully. After compounding, re-wax all surfaces following the above steps.

Gelcoat & Fiberglass Repair

The interior and exterior of your hull might sustain damage that cannot be compounded or waxed out. Typical damage would be cracks, gouges, holes, and chips. They can be caused from dropping heavy items inside your boat, or hard impacts with other things such as docks, other boats, and submerged objects. If you strike an underwater object while underway, the boat should be hauled and thoroughly inspected for damage.

Fiberglass repairs should only be done by an experienced fiberglass repair facility. If the damage penetrates the hull, call Brunswick Commercial & Government Products Customer Service Department for the correct repair procedures. The repair must be done following BCGP's recommendations. Improper repairs can lead to hull failure and might void portions of your warranty.

Trim Care

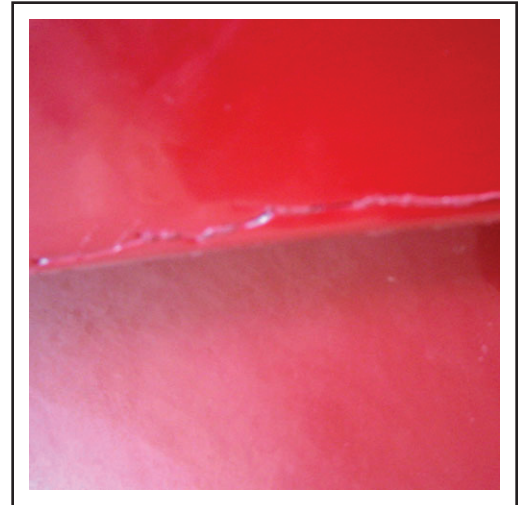
All trim on your boat must be regularly maintained to extend its life and service. Most items can be cleaned with a mild soap, fresh water, and a soft cloth or sponge.

Aluminum

Wash aluminum parts with fresh water and a mild soap. Protect surface with liquid cleaner or wax. DO NOT use harsh chemicals or abrasives. To minimize corrosion from contact between dissimilar metals, use a high quality marine grade caulking compound when mounting non-aluminum hardware. Also ensure all electrical equipment is insulated from the aluminum hardware.

Deck Hardware

Clean deck hardware frequently with fresh water and a mild soap. DO NOT use harsh chemicals or abrasives. A glass cleaner is usually safe for stainless hardware. Remove rust spots as soon as possible with a brass, silver, or chrome cleaner. Never use a dry abrasive such as sandpaper or steel wool on stainless steel parts.





Cutwater & Chafe Plates

This option helps protect the fiberglass keel against debris while underway and reduces the risk of possible damage while beaching.

If the boat is equipped with an optional cutwater, inspect the cutwater monthly for tears, large gaps, or other signs of damage. Repair the tears or gaps as soon as they appear to avoid collateral damage.

- Clean away any debris and degrease the repair area with denatured alcohol
- Allow the denatured alcohol to air dry
- Attach the cutwater to the hull using black Bostik 920 sealant



Similarly this boat may be equipped with optional transom corner chafe plates. All chafe plates are powder-coated to give them a longer service life, but sometimes the powder-coat might be worn or chipped away. If the powder-coat gets chipped away, touch up the part with a high quality, acrylic enamel.

Drains & Scuppers

Check all compartment drains, scuppers, and bilge discharge drains at least once a month. Inspect for gaps in sealant, tightness, cracks, and UV damage. Inspect scupper flaps for deterioration. If any drains or thru-hull fittings are damaged, have them serviced or replaced immediately.



CAUTION

Failure to properly maintain thru-hull fittings might lead to serious hull damage and could void portions of your hull warranty.



Hull Blistering

The chemical and physical structure of all fiberglass boats is somewhat porous. Water can permeate through gelcoat and fiberglass during long periods of immersion in water. This process is referred to as hydrolysis.

The effect of hydrolysis over time allows water to enter the gelcoat and substrate, forming a blister. Blistering is caused by the deterioration of certain water-soluble materials in the hull laminate. Blisters can form in near-surface layers of gelcoat or very deep in the fiberglass substrate.

The damage can range from cosmetic to structural, although structural damage is a rare occurrence. Studies point to long-term immersion of a boat in warm water as a primary cause of hull blisters. Stress cracks on the hull below the waterline can also contribute to the formation of blisters.



Damage caused by blistering is not covered under your hull warranty.

There are a number of important things that you can do to avert hull blistering. They include:

Storage

Store your boat out of the water when not in use. Store your boat on a trailer, in a boatlift, or on a cradle. Be sure to use a bunk style design that supports the boat well.

Inspection

Inspect the entire surface of the boat bottom on a frequent basis. Address any structural or cosmetic issues immediately. Even a minor scratch or scrape might allow water to enter the hull laminate.

Waxing

Applying a high-quality wax formulated for marine use can slow the hydrolysis process. Be sure the boat bottom is clean and follow all of the wax manufacturer's recommendations.

Bottom Painting

Painting the bottom of your boat slows the formation of blisters and controls marine growth. Bottom coatings fall into two general categories, barrier coating and conventional bottom painting.

**CAUTION**

Some compound of copper is the active ingredient in most conventional bottom paints. Do not apply any copper-based bottom paints to the engine bracket or the engines. Severe damage resulting from galvanic corrosion will occur.

**WARNING**

There are risks and dangers associated with using paints and solvents. Follow all the manufacturer's guidelines and precautions while painting your boat. Dispose of all painting supplies following all local regulations.

Barrier coating is a process where a vinylester resin is applied to the boat's bottom. This process is complicated and very lengthy, including a long "drying out" phase. The vinylester resin barrier coat is then covered by conventional bottom paint. This process should only be done by a professional fiberglass repair facility.

The second process is **conventional bottom painting** using a high-quality product. Bottom painting slows the process of hydrolysis and protects your boat from most types of marine growth. If the boat has never had bottom paint, consider using one of the newer formulations of paint that does not contain copper compounds.

To determine the waterline, place the boat in the water with a full load of fuel and gear and mark the waterline. Measure above the marked line about 2 inches (5 cm) for placement of the tapeline. Use a vinyl/rubber masking tape such as 3M® 471.



Preparation is the key to successful hull painting. If the hull is bare, the gelcoat will have to be de-waxed before sanding can begin. After de-waxing is complete, light sanding with 80 grit sandpaper is recommended.

Proper ventilation and dust collection is essential. The dust created from sanding is toxic and should not be breathed. A properly fitted respirator must be used. DO NOT use a paper filter mask.

The bottom paint can be applied after sanding and cleaning is complete. Follow the manufacturer's recommendations for applying the paint. Always use the etching primer called for by the paint manufacturer. Humidity and weather will play a role in how and when the paint is applied. Several thin layers are better than one thick layer. Make sure there is enough paint left to cover areas that were not accessible during painting because of slings or jack stands.

Follow the manufacturer's recommendations for periodic maintenance after the painting is complete. If the hull bottom is already painted, you must be sure to test the new paint's adhesion to the old paint. If the paints are incompatible, the new paint will "lift" the old paint. Never apply paint without first preparing the old painted surface.



Fuel System

This boat is equipped with two below-deck aluminum fuel tanks (one for the boat and one for the generator) that require little maintenance. You should visually inspect the fuel tanks and all associated hoses and fittings for leaks or deterioration before each mission. If you suspect a leak, you should have the boat serviced immediately by an experienced marine technician.



WARNING

Leaking gasoline is a fire and explosion hazard. Gasoline vapor is extremely flammable and highly explosive under certain conditions. Correct the cause of any gasoline leak immediately.

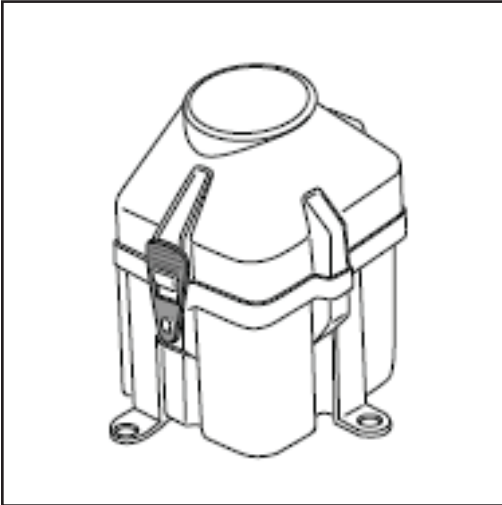
This boat is equipped with a standard fuel water separator for the generator and may have optional filters for the engines. Check the fuel water separators before and after every mission for signs of moisture and particulate contamination.

Your filter servicing routine will be directly related to the quality and quantity of gasoline that you take on-board. The filter elements should be changed at least annually.

To reduce the amount of condensation build-up in the tank, you should keep the fuel system full whenever possible.

For more information on your fuel tank, refer to the **Fuel System** section in this manual.





Steering System

This boat is equipped with a hydraulic steering system that is associated with the engine package option selected.

The Verado four-stroke engine option uses an enclosed hydraulic pump unit. The pump is electrically operated to provide hydraulic pressure to the steering system. The pump is located in the aft starboard side of the bilge and can be accessed by lifting the equipment hatch in the aft cockpit deck.



WARNING

Follow the manufacturer's maintenance recommendations exactly. Improper maintenance might cause loss of steering, which could cause property damage or serious injury.

Filling & Maintenance

The system is virtually maintenance free, aside from regular fluid checks and visually inspecting the outside of the unit for signs of leaks or damage.

- Remove the pump cover by pulling up and out on the locking tabs on the sides of the unit.
- Unscrew the cap and check the fluid level in the reservoir, For Mercury Verado engines, fill **ONLY** with Mercury Marine SAE 0W-30 Full Synthetic Power Steering Fluid (consult the operator's manual for fluid specifications if your vessel is not equipped with the Verado engine package).
- Replace cap and cover



CAUTION

Ensure that cover is properly seated to prevent intrusion of water into the pump enclosure.

Check the operation of the steering system before each mission. Turn the steering wheel from hard port to hard starboard while watching the engines for any unusual movement. If any unusual movement is detected, have the steering system serviced before operating the boat. It is good boating practice to rinse off your steering cylinder thoroughly with fresh, clean water after each use.

Every six months, a qualified marine technician should check the following items in addition to the specific manufacturer requirements:

- Check the fluid level in the helm pump unit.
- Check outboard engine tilt tube for salt deposits or signs of corrosion. Clean and grease as required.
- Check and grease slider assembly on front of the engine steering cylinder assemblies.
- Check mechanical linkage and connections.
- Check all fasteners and the complete steering system for security and integrity.
- Inspect for corrosion. Any part affected by corrosion must be replaced.
- Tighten loose parts and replace any worn items. When replacing parts, self locking hardware must be used.
- Check all self-locking fasteners and locking tabs for tightness.
- Check system for hydraulic fluid leaks. Refill and purge system as necessary.
- Check steering hoses for signs of chafing, cuts, and leaks. Replace any steering hose that shows signs of damage.
- Inspect the bilge, console interior, and splashwell for signs of leaking hydraulic fluid.





Bilge Pumps

The bilge pumps and water level sensors are sealed units and do not require any periodic maintenance. Check the bilge regularly to make sure there is no debris or sludge that could foul the water level sensors or clog the pumps.



CAUTION

Test your bilge pumps and water level sensors before each mission. Clear away any debris that might restrict pump or water level sensor operation.

Periodically check the condition of the pumps by turning the pumps on manually. You should see water pump out the through-hull fittings if there is water in the bilge, or you will hear the pump motor running if no water is present.

Access to the Pumps

The aft pump and high water pump can be accessed through the equipment hatch in the aft cockpit deck. The forward pump can be accessed through a hatch under the cushion on the cabin berth.

Maintenance

To clean the pump strainer, depress the lock tabs on both sides of the pump and lift the pump motor.

If water does not come out of the discharge hose:

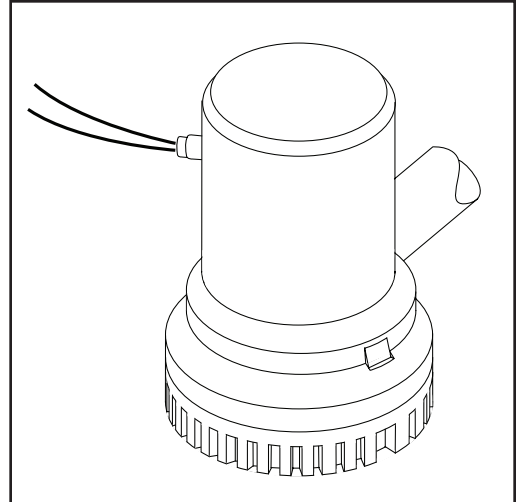
- Remove the motor module to see if the impeller rotates with the power on.
- Remove any debris that may have accumulated in the impeller section or strainer base.
- Check hose and connection on hull side for debris and proper connections.

Float Switches

Frequently inspect the area under the float switches to ensure they are free from debris and bilge oil.

To clean:

- Soak in heavy duty bilge cleaner for 10 minutes, agitating several times.
- Check for unrestricted operation of the float.
- Repeat the cleaning procedure if necessary.
- Rinse thoroughly with fresh water.





Batteries



CAUTION

Batteries should always be secured in the battery trays provided with this boat. The trays will contain any spilled acid and will protect the battery terminals from damage or shorting due to contact with metal objects. The batteries should always be secured using the retaining brackets provided while the boat is underway, reducing the possibility of damage to the batteries and other equipment in the storage area.



DANGER

Never use an open flame in the battery storage area. Avoid striking sparks near the batteries. A battery can explode if a flame or spark ignites the free hydrogen gas vented during charging. Always disconnect the batteries before doing any work on the 12 VDC electrical systems.



WARNING

Always wear eye protection when servicing batteries. Batteries contain sulfuric acid, which can cause serious injury. Avoid contact with skin, eyes, and clothing. If contact occurs, immediately flush the affected area with water and call for medical assistance.



WARNING

BOW THRUSTER BATTERIES MUST BE OF A DEEP-CYCLE, SEALED DESIGN. Failure to do so will result in an increased and dangerous presence of battery discharge gases accumulating in the forward cabin.

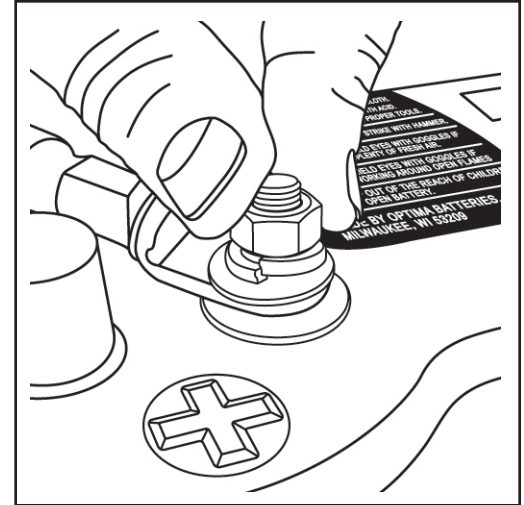


Capacities

BCGP recommends for the standard engine/house batteries you use four group 31 heavy-duty marine batteries rated at 1000 SAE marine cranking amps.

THE TWO BOW THRUSTER BATTERIES MUST BE OF A DEEP-CYCLE, SEALED DESIGN. Failure to do so will result in an increased and dangerous presence of battery discharge gases accumulating in the forward cabin.

Refer to the appropriate manufacturer's manual in the operator's packet for specific marine battery requirements for the engines and bow thruster.



Battery Maintenance

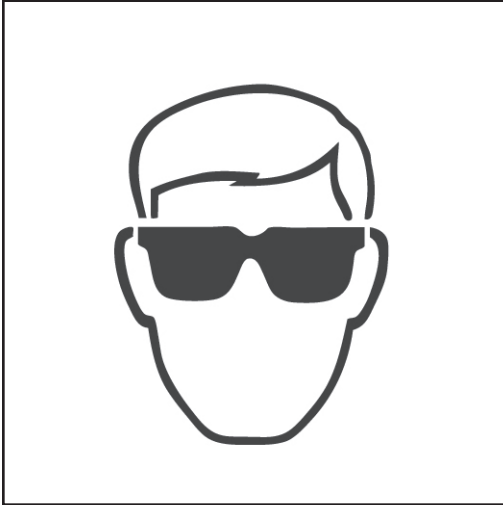
Periodic battery maintenance is important to ensure that this boat will be ready for operation when needed. Battery maintenance should include:

- Inspect the batteries and charging systems before each mission for loose or corroded connections and damaged wiring.
- Check and maintain the electrolyte level in all wet-cell batteries. Add distilled water only, as necessary.
- Coat the battery terminals and cable connections with heavy grease to reduce corrosion.
- Keep the batteries dry and clean.

Only use **elastic lock nuts** with flat washers or standard hex nuts with split lock washers and flat washers to secure cables to the battery terminals. DO NOT use wing nuts to secure cables to the battery terminals.

Storage

Remove the batteries from the boat during cold weather or off-season storage. **Always protect the batteries from freezing temperatures.**



You must not allow your batteries to become completely discharged. As a battery discharges, the active material on both positive and negative plates changes to lead sulfate, causing the plates to become similar in chemical composition. The battery electrolyte becomes weaker and the voltage drops. As the battery remains discharged, this process continues until recharging the battery becomes impossible.

If the battery does become discharged, be sure to recharge it as soon as possible. Overcharging a battery can also reduce its effective life.

Cleaning

WARNING

Always wear eye protection when servicing batteries. Batteries contain sulfuric acid, which can cause serious injury. Avoid contact with skin, eyes, and clothing. If contact occurs, immediately flush the affected area with water and call for medical assistance.



At least once a year, or when they have dirt or corrosion on the terminals, the batteries should be cleaned.

To clean the batteries:

- Turn the battery OFF-ON switches to the OFF position.
- Disconnect the battery cables from the terminals.
- Remove the negative (black) cable first.
- Remove the battery from the plastic battery box. Clean the terminals and casing with a solution of baking soda and water.
- Use a soft wire brush on the terminals.
- Do not allow the cleaning solution to enter the battery cells.
- Wipe the battery and terminals dry with a clean cloth.
- Clean the battery cable ends in the same manner.
- Connect the cables to the appropriate terminals and recoat the cable connections with heavy grease.
- Connect the positive (red) cable first.

Battery Charging

In addition to supplying AC power to your boat, shore power hookup gives you the ability to charge your batteries without running the engines.

The system is automatic and little or no maintenance is required. However, the breakers must be in the ON position in order for the systems to automatically charge.

The engine/house battery charger can be accessed through the equipment hatch in the aft cockpit deck. The 24 VDC charger for the bow thruster is in the forward compartment under the berth cushion.



Trim Tabs

The Lenco electro-mechanical trim tab actuators are sealed units and do not require any periodic maintenance. Check the general condition of the actuators and trim planes once a month. Remove any marine growth from the actuators, actuator shafts, and trim planes with a pressure washer.

Cold temperatures do not affect this trim tab system. No special preparation for off-season storage is necessary.

An anode is attached to each trim plane to control galvanic corrosion in salt or brackish water. The anode must make direct, electrical contact with the stainless steel trim plane to protect it. Regularly check the contact area for corrosion and to ensure a tight contact. Do not paint the anode contact area. Do not ground or bond the trim planes to any other underwater metal objects.

Replace the anode when it becomes one-half its original size.

Refer to the manufacturer's manual in the operator's packet for additional instructions and warranty information.





Off-Season Storage

All boat and engine systems must be carefully prepared for long periods of non-use. This preparation is particularly important in regions where you experience extreme changes in temperature or where the temperature is consistently below freezing.

Outboards

You must protect your outboard engines from freeze damage and from internal corrosion caused by extreme changes in temperature. Store your outboards in the vertical, operating position to avoid trapping water in the cooling system passageways. Trapped water can freeze and cause extensive damage.

Internal engine parts can be damaged by corrosion due to lack of proper storage lubrication. Your outboard engine operator's manual has a detailed procedure for adding extra internal lubrication just before the engines are stored.

Follow all the storage and winterization recommendations in the outboard operator's manual.

Hull Drainage

Remove the boat's main hull drain plug. Open any internal seacocks and verify that there is no debris plugging any drain, seacock, or limber hole.

Store the boat with the bow higher than the stern to promote adequate drainage.

Secure the main drain plug to the steering wheel to alert personnel that the boat is in storage configuration.

Fuel System

You must take appropriate steps to protect your boat's fuel system and engines during periods of non-use. Situations where fuel isn't being consumed and exposure to extreme changes in temperature will cause condensation to accumulate in your fuel system. This moisture can compromise your fuel, your fuel system, and your engines.

Use a high-quality fuel stabilizer formulated for gasoline containing ethanol when you perform these steps. Review the storage information contained in your engine operator's manual.

Follow these suggestions to minimize the possibility of damage to your fuel system and engines during storage:

- If possible, use fuel that does not contain ethanol on a regular basis, or just before storing your boat
- Store your boat with the fuel tank **full** to avoid exposing the fuel to moisture in the atmosphere
- Refer to **Fueling Procedures** in Section 3 of this manual for fueling information
- Add a high-quality fuel stabilizer to the fuel following the additive manufacturer's recommendations
- Run each engine at idle for at least ten minutes to pump stabilized fuel through the engine's fuel system
- If possible, store your boat where it will not be exposed to extreme changes in temperature

Refer to **Blended Fuels** in Section 3 of this manual for more information about moisture and gasoline.

Raw Water System

The raw water system includes a pump, one seacock and a raw water hose connection. The seacock and raw water pump can be accessed through the equipment hatch in the aft cockpit deck.

Inspect the raw water strainer regularly and remove any debris.

Exercise the raw water seacock periodically to ensure functionality. Ensure all water is drained from the system per manufacturer's instructions.

Maintenance

Maintenance of the raw water system requires periodic inspection of the raw water intake strainer and all fittings and hoses for system integrity to prevent leaks.

Clean away debris and/or tighten hose connections as required. The system should be run at least every other month to keep the pump's impeller in good condition.

Raw Water Washdown Pump

You must protect the raw water washdown pump and its system components from freezing temperatures. Use the following procedure to prepare this system for off-season storage:

- Remove the cap from the hose outlet fitting (the connection is located on the port midship wall of the cockpit)
- Verify that the inlet seacock is in the OPEN position
- Run the washdown pump for approximately five seconds or until water stops flowing
- Leave the seacock OPEN and the hose outlet cap off during storage

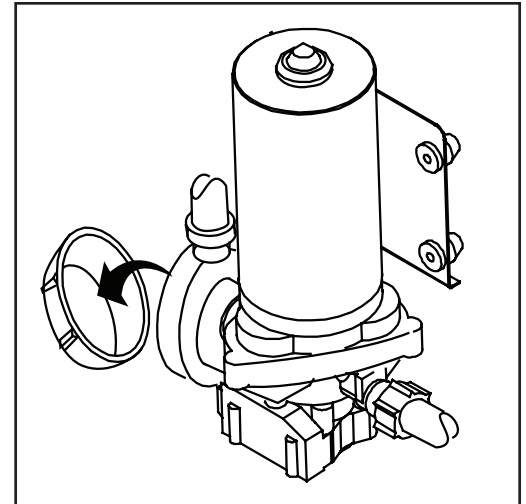
Fresh Water System

Be sure to fill the water tank from a source known to provide safe, pure drinking water. If you do not use the freshwater system for long periods of time or only use it seasonally it is recommended that you follow the disinfecting practice before using it.

Very little maintenance is required for the fresh water system, other than annual disinfecting and winterizing. Periodically check the entire system to assure that the hose connections, tube fittings, electrical connections and mounting bolts are properly secured, and free of chafing.

Periodically check the in-line strainer attached to the pump, and clean if necessary.

The system should be run at least every other month to maintain the pump's impeller in a stable operating condition.



Winterization

Before laying up for the winter season, the freshwater system must be drained and flushed with a non-toxic anti-freeze before winter storage.

Refer to the manufacturer's manual in the operator's packet for complete instructions and warranty information.

Filling the Tank

The water tank can be filled through the water fill deck plate located on the transom.

Fill the tank only from a source known to provide safe, pure drinking water. Use only a plastic hose to fill the water tank. Using a rubber hose can give the water a disagreeable taste.

The hose should be dedicated to filling use only and should be stored in a clean, dry place. Cover the ends of the hose to ensure the inside stays clean.

Before you fill the freshwater system, it is vital that it be properly disinfected.

The following procedure is recommended to disinfect the freshwater system:

- Flush the entire system thoroughly by allowing potable water to flow through it.
- Drain the system completely.
- Fill the entire system with an approved disinfecting solution and follow the method prescribed by the manufacturer.
- After disinfecting, drain the entire system.
- Flush the entire system thoroughly several more times with potable water.
- Now the system is ready for use; fill with potable water.

This should be done annually or before using the system if it has been laid up for an extended amount of time.

As a precaution against accidental flooding, remove the hose when leaving the boat for an extended period of time.

Water Heater



CAUTION

Make sure the fresh water tank is full before operating the water heater. Operating the water heater empty will cause damage to the system.



DANGER

Hydrogen gas may form in the tank if the system has not been used for more than two weeks. DO NOT smoke or have any flame near an open faucet.

Maintenance

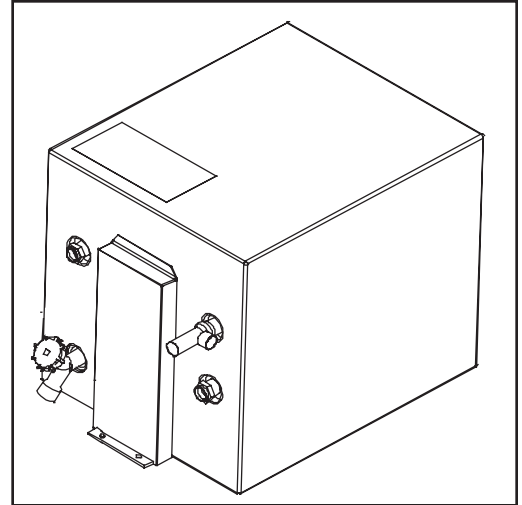
Inspect the water heater connections regularly. Access the water heater through a plate on the starboard wall of the mid cabin bunk.

Manually operate the pressure relief valve at least once a year. This must be done when the water in the storage tank is cool.

The system must be flushed several times per year to prolong the life of the system.

There may be times that you will notice an odor coming from the water system. There is a protective cladding in the tank that protects it from corrosion. The electro-galvanic action of the cladding material releases hydrogen from the water. If sulfur or any of its combinations are present in the water the two will combine and produce hydrogen sulfide. This compound will produce a "Rotten Egg Odor." Hydrogen sulfide can also be present in your freshwater supply. It is the product of the decay of animal matter and as little as 1 mg/liter can cause a perceptible odor.

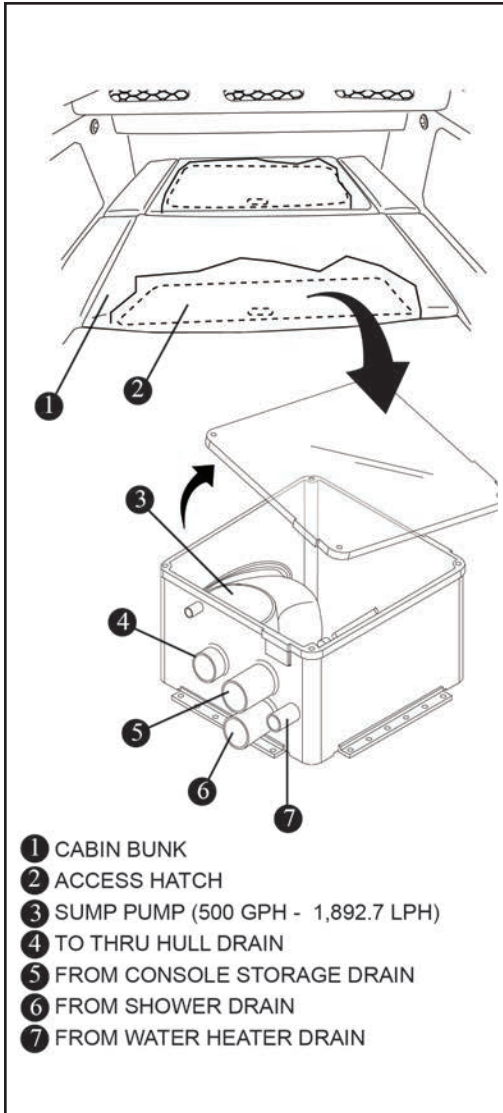
Turn off the water heater, wait for the water to cool then **make certain that the system is completely drained before laying up for the winter season.** The freshwater tank will have to be drained and flushed with a non-toxic anti-freeze before winter storage.



WARNING

SCALDING INJURY - Turn OFF the water heater and wait for the water in the storage tank to cool before opening the drain valve to flush the tank.

Refer to the manufacturer's manual in the operator's packet for complete instructions and warranty information.



Vacu-Flush® Head

Waste from the head is directed into the 10 gal. (37.8 L) holding tank located in the bilge. A holding tank fluid level indicator is located on the overboard discharge panel which is located on the starboard wall of the cabin. When the FULL light is on, the holding tank must be emptied before the head can be reused. However, it would be a good practice to empty the tank when the 3/4 light is on to avoid damage to the system.

Periodically inspect the head system for seal and hose leaks that would reduce functionality. Replace items as directed in the manufacturer's literature.

Macerator Maintenance

After long periods of non-use, the macerator pump may not turn freely. Regular use of the system will reduce the chances of this occurring. Because this waste system is a low water use device, there is special paper which must be used to prevent clogs.

Refer to the manufacturer's manual in the operator's packet for complete instructions and warranty information.

Gray Water Sump Maintenance

Periodically remove the clear cover and check the pump and float switch for proper working order. Clean out any obstructions which may inhibit the pump from performing correctly.

Thru Hull Discharge Hose Access

The port and starboard aft thru hull drains can be accessed through the aft cockpit deck hatch.

The starboard midship thru hull drains can be accessed by removing the microwave from the vanity in the cabin and removing the panel on the back wall of the vanity.

Air Conditioning Maintenance

The air conditioning unit requires very simple maintenance. Periodically check and clean the raw water intake on the exterior of the hull, the water strainer at the pump, and the air filter.

- The seacock and A/C pump can be accessed by lifting the equipment hatch in the aft cockpit deck.
- If needed, access to the A/C unit can be achieved by removing the panel on the lower back of the hanging locker in the port aft of the cabin.
- To access the air filter on the front of the A/C unit for cleaning, remove the cold air return, reach into the space and retrieve the filter.

Refer to the manufacturer's manual in the operator's packet for complete instructions and warranty information.



Generator

The generator has a built in cooling pump which draws cooling water through a seacock located in the aft machinery compartment. The raw water passes through a strainer before entering the engine cooling manifold. The seacock **MUST** be open in order for the generator to function. Inspect the strainer frequently and clean as necessary.

The generator draws fuel from its own tank located on the starboard aft side of the machinery compartment. The fuel system has its own fuel and water separating filters. Use a clean, good quality diesel fuel with a cetane number of 45 or higher.

Recommended fuel: #2 diesel.

The exhaust from the generator passes through a high efficiency marine lift type water cooled muffler and is discharged by a flexible hose via an aft starboard through hull fitting.

The generator cover acts as protection and a sound shield. It can be removed by pulling latches located on the bottom of the housing.

It is recommended that you read and understand the information in the manufacturer's operators manual.



WARNING

MOVING PARTS can cause **SEVERE INJURY** or **DEATH**. Operate the generator set only when all guards, screens and covers are in place.



WARNING

ACCIDENTAL STARTING can cause severe injury or death. Disconnect the battery cables before working on the generator set. Disconnect the negative, (-) cable first when removing and reconnect it last when replacing.

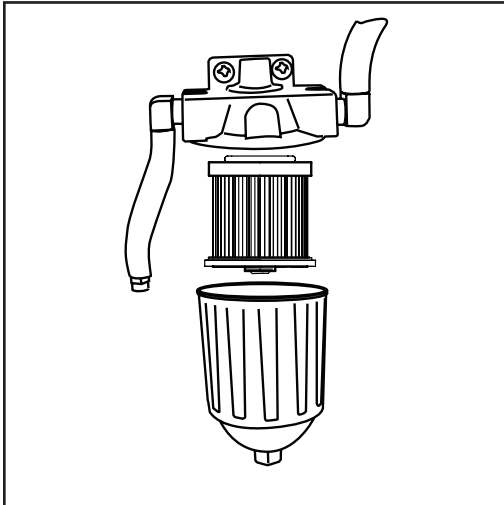
Your Fischer Panda operations manual has a complete maintenance schedule that you must follow to keep your generator in peak operating condition.

Inspect the parts often and perform required service at the prescribed intervals. Maintenance work must be performed by appropriately skilled and Fischer Panda-trained maintenance personnel familiar with generator set operation and service.



CAUTION

The first maintenance is required at 35 hours by a Fischer Panda-trained technician, at which time a maintenance checklist must be completed. Failure to comply will invalidate the generator warranty.



Generator Fuel Filter

A fuel filter located on the starboard wall of the bilge, forward of the diesel fuel tank provides clean fuel to the generator. A major cause of poor starting or power loss is the result of a clogged filter element or a fuel system air leak.

Replacing the Filter

Replace the filter according to manufacturer's recommendations or if a power loss is detected.

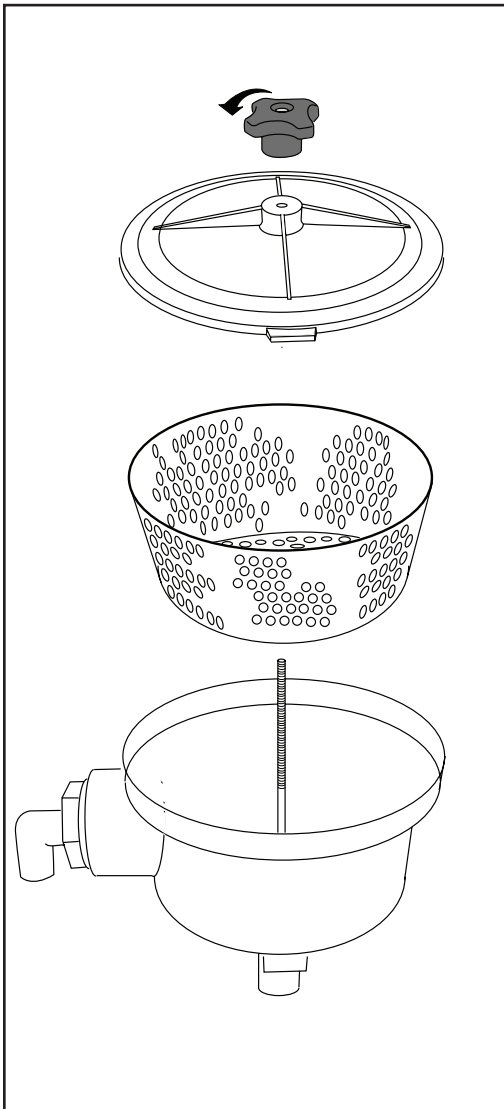
- Ensure engine is not running
- Remove bottom casing.
- Remove the filter by slowly pulling upward with a twisting motion.
- Insert the new filter with a slow downward twisting motion
- Fill the filter with clean fuel.
- Replace the bottom casing. DO NOT overtighten.

It is recommended that spare filters are carried aboard as contaminated fuel can easily clog a filter.

Generator Raw Water Strainer Maintenance

Periodically check the raw water strainer for debris and clean as necessary.

- Ensure generator is not running.
- Remove the securing knob and the clear lid.
- Remove the strainer and clean it of debris.
- Replace the strainer.
- Replace the lid.
- Replace and hand tighten the securing knob.



Shore Power

The dual 120v/30a shore power system provides dockside power to operate all of the boat's electrical system and to charge the boat's batteries.

Testing and Troubleshooting Before Each Use

Normal Operating State - Sensing device GREEN LED is ON and circuit breaker is at ON position.

1. Press TEST button. GREEN LED should go OUT and RED LED should come ON and circuit breaker should trigger to OFF position.
2. If sensing device LED or breaker does not trip or change state DO NOT USE. Consult an electrician for assistance.
3. Press RESET button. The RED LED should turn OFF and the GREEN LED should turn ON.
4. MANUALLY RESET (SWITCH) CIRCUIT BREAKER to ON position to restore circuit power.



WARNING

If above test fails, DO NOT USE. CONSULT A QUALIFIED ELECTRICIAN for repair or replacement.



CAUTION

Be certain that the shore power main switch is turned OFF before connecting the power cord cordset. Connect the cordset to the boat inlet first, then to the shore inlet. NEVER alter the cordset connectors.



Fire Suppression System

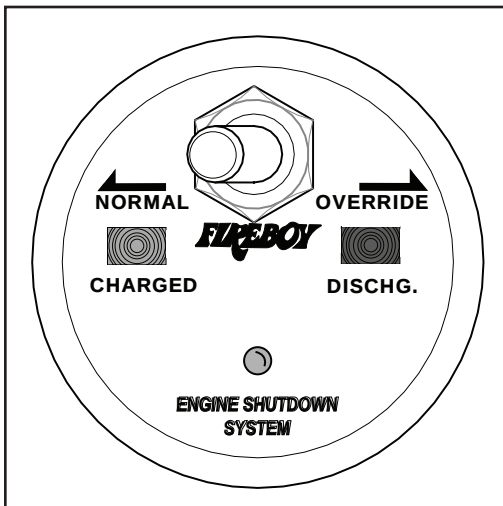
There is an engine shutdown/override switch located on the control station, below the steering wheel which indicates the condition of the system.

The switch has two indicator lights that need to be monitored. When the system is operating normally and is fully charged, the GREEN light will be lit. When the system has been discharged, the RED light will be lit and all precautions must be made to safeguard the boat against the possibility of fire spreading beyond the compartment.

If no fire is indicated and the discharge light is lit, there may be a leak in the system. It is recommended that the gauge be checked daily to ensure normal operation.

It is recommended that the fire suppression tank be weighed on an accurate scale every six (6) months. There is a chart in the manufacturer's operation manual that lists the weight of the canister and contents.

The chemical contained in this unit is CHLOROTETRAFLUORATHANE. Toxic by-products are produced when this agent extinguishes fire. Avoid breathing these fumes.





DANGER

Inhalation of high concentrates of the contents of the fire suppression tank may cause sudden death without warning.



WARNING

Skin contact will require flushing of the area with water for at least 15 minutes. Seek immediate medical assistance.



DANGER

NEVER attempt to modify or disassemble any components of this system. If the system has been discharged, have a qualified technician replace it.

Refer to the manufacturer's manual in the operator's packet for complete instructions, warranty and safety information.

Operator's Notes

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Boston Whaler® Products

Limited Commercial Warranty

Brunswick Commercial & Government Products (BCGP) warrants that each Boston Whaler hull manufactured by **BCGP** will be free from structural defects due to substandard material or workmanship, under conditions of reasonable commercial or government service, for a period of ten years from the date of manufacture. The following stipulations apply to this warranty:

- The hull warranty is offered on a pro-rata basis. Available reimbursement will be reduced each month by a percentage, which will be the number of months from date of manufacture divided by 120. As an example, if the repair occurs 72 months after date of manufacture ($72 \div 120 = 0.6$), 60% of the pro-rata warranty has expired. **BCGP** will pay 40% of the authorized warranty repair or replacement cost.
- All warranty repairs must be authorized in advance by **BCGP**. Any structural defects will be repaired at a service agent chosen by **BCGP** or at the **BCGP** repair facility in Edgewater, Florida.
- Expenses for towing, hauling out, transportation to and from the **BCGP** service agent, or to and from the **BCGP** repair facility in Edgewater, Florida are the responsibility of the boat owner.
- Damage resulting from abuse, misuse, accidents, improper storage, sub-freezing temperatures, lack of reasonable and proper maintenance, overloading or overpowering, and modification or alteration of the hull is not covered.
- Damage resulting from a war, police action, or armed conflict is not covered.
- This warranty is not transferable from the original owner.
- Specifically excluded from this warranty are gelcoat issues such as fading, color shifting, chalking, blistering, cracking, crazing, and stress lines.

Accessories manufactured and installed by **BCGP** are warranted for 12 months from date of installation against defective material or workmanship. Specifically excluded from this accessory warranty are windshield breakage or leakage, engines, engine components, batteries, propellers, controls, control cables, steering systems, electronics, and any other accessory covered by a separate OEM warranty. This accessory warranty is not transferable from the original owner.

None of these warranties applies to any Boston Whaler hull, accessory, or part that has been structurally altered or subjected to unreasonable use, improper storage, lack of reasonable and proper maintenance, negligence, or accident.

The obligation of **BCGP** under this warranty is limited to the pro-rata cost to repair or replace a hull or part that has, within the warranty period, been determined by **BCGP** to be defective in material or workmanship. The decision to repair or replace a hull or part shall be solely at the election of **BCGP**. If a warranted defect is determined to exist, **BCGP** will provide written authorization for exactly what repair will be made. **No work of any kind may be performed without this written authorization.** **BCGP** makes no other express warranties, and intends no implied warranties. Implied warranties of fitness and merchantability are specifically excluded. **BCGP** also disclaims any liability for product failure or other economic loss arising from claims of negligence, defective design, manufacturing defect, failure to warn or instruct, lack of seaworthiness, and any other theory of liability not expressly covered by this warranty. If any implied warranties are found to exist, sub-implied warranties will be subject to the time limits in this warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation might not apply to you. **BCGP** will not be liable for incidental or consequential damages including, but not limited to, loss of profits, rental of substitute equipment, or other commercial loss. Some states do not allow the exclusion or limitation of incidental or consequential damages, so this limitation or exclusion might not apply to you. **BCGP** will not be liable for any warranty expressed by a third party, if sub-warranty is not also expressed in writing by **BCGP**.

BCGP reserves the right to improve its products through ongoing changes in design and materials without obligation to incorporate such changes on existing boats. Speed, boat weight, fuel consumption, and other boat performance characteristics are estimates and cannot be guaranteed.

To initiate a warranty claim, it is the responsibility of the boat owner to contact **BCGP** or an authorized **BCGP** service agent immediately after discovering a defect. The boat owner must supply details of the problem, hull identification number, date of purchase, and selling dealer name, if applicable. **BCGP** will be solely responsible for determining and authorizing warranty repairs.

This warranty gives you specific rights and you might have other rights that vary from state to state. Other **BCGP** products might have warranties that are different from this one.

