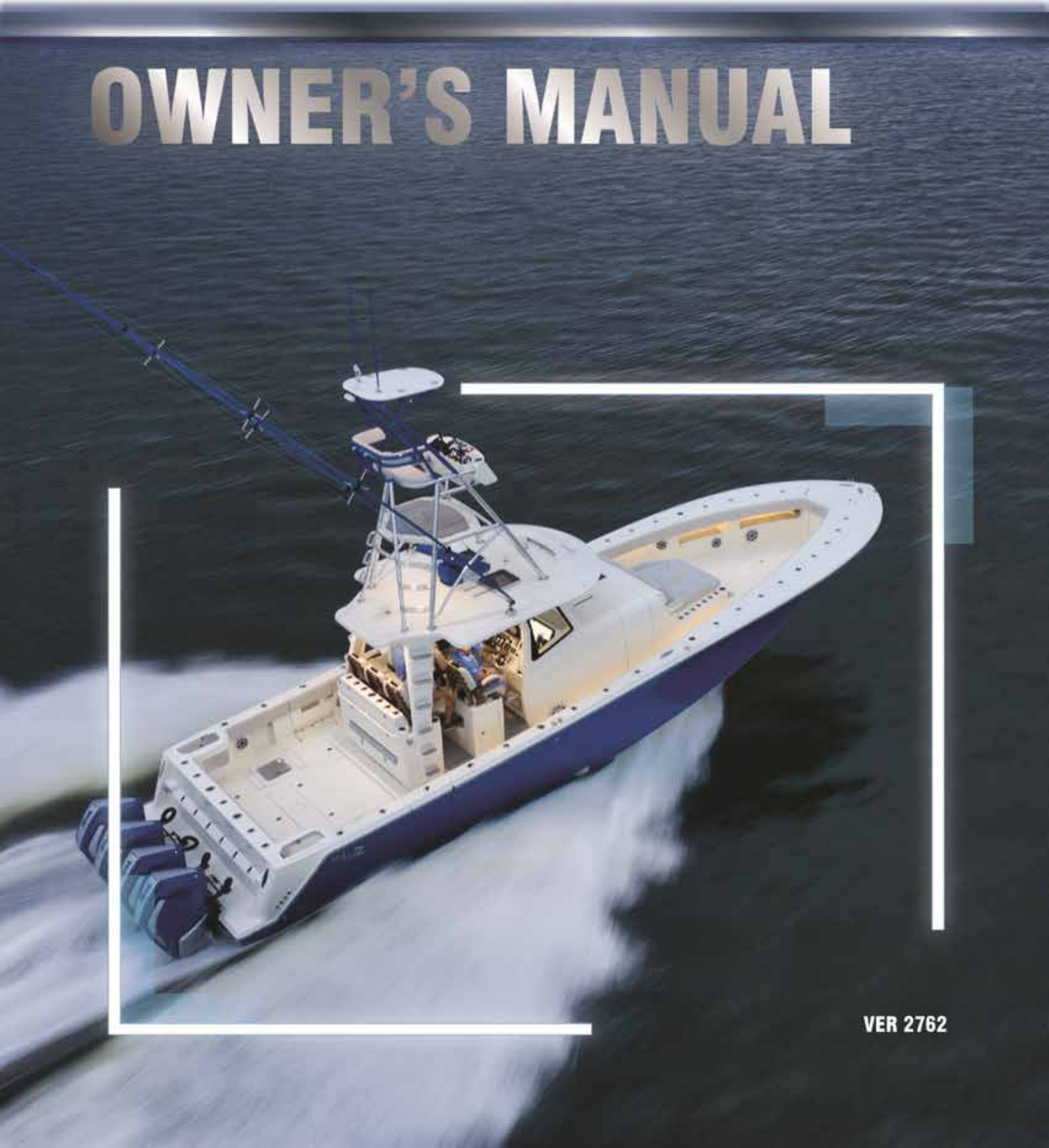
450Z

SEA VEE Boats
LEAD THE WAY

OWNER'S MANUAL



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Lead the Way!

Congratulations on the purchase of your SEAVEE®. It was built for you with fine craftsmanship and attention to detail, making it a SEAVEE®.

Before operating your vessel, please take some time to carefully review your owner's manual and any other literature that may accompany it in the owner's documents bag. The owner's manual provides a broad overview of your new SEAVEE® systems and information on how to operate your new vessel safely.

Specific information regarding some onboard components manufactured or otherwise supplied by companies other than Sea Vee is also included in your owner's document bag for your convenience. Additional information may be obtained by visiting the manufacturers' website if required.

This owner's manual and accompanying literature is provided to assist in familiarizing you with the numerous products and systems that might be found onboard your new Sea Vee. Due to their complexity, variety, and possible specification changes after printing, such material may not cover every circumstance that could arise in owning and operating your vessel. Contact our factory customer Service Department at 305-762-5600 if you have any questions or require assistance.

Much work went into the design and construction of your vessel to ensure first-rate performance, longevity, and safety. Whether you go out fishing, diving, or take family and friends cruising, we hope you get many years of enjoyment from your new boat.

Welcome to the SEAVEE® family!

PLEASE KEEP THIS OWNER'S MANUAL PACKET IN A SECURE PLACE,
AND BE SURE TO PROVIDE IT TO THE NEW OWNER IF YOU SELL THE BOAT

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Please fill out the following information and leave it in your SEAVEE® Owner's Manual. This information will be essential for you and SEAVEE® service personnel to know if and when you may need to call SEAVEE® for technical assistance or service.

YOUR SEAVEE® BOAT INFORMATION

MODEL:	
HULL IDENTIFICATION NUMBER:	
NEW BOAT DELIVERY DATE:	

ENGINES

PORT ENGINE	CENTER ENGINE PORT	CENTER ENGINE STARBOARD	STARBOARD ENGINE
MANUFACTURER:	MANUFACTURER:	MANUFACTURER:	MANUFACTURER:
MODEL:	MODEL:	MODEL:	MODEL:
ENGINE SERIAL NUMBER:	ENGINE SERIAL NUMBER:	ENGINE SERIAL NUMBER:	ENGINE SERIAL NUMBER:
LOWER UNIT SERIAL NUMBER:	LOWER UNIT SERIAL NUMBER:	LOWER UNIT SERIAL NUMBER:	LOWER UNIT SERIAL NUMBER:
PROPELLERS	**PROPELLERS**	**PROPELLERS**	**PROPELLERS**
MANUFACTURER:	MANUFACTURER:	MANUFACTURER:	MANUFACTURER:
DIAMETER/PITCH:	DIAMETER/PITCH:	DIAMETER/PITCH:	DIAMETER/PITCH:
MODEL:	MODEL:	MODEL:	MODEL:
BLADES #:	BLADES #:	BLADES #:	BLADES #:

IGNITION KEYS NUMBERS

PORT	CENTER PORT	CENTER STARBOARD	STARBOARD

GENERATOR

MANUFACTURER:	MODEL:
SERIAL NUMBER:	KW:

SEAVEE® Boats reserves the right to make changes and improvements in equipment, design, and vendor-supplied equipment at any time without notification.

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Preface

This owner's manual has been written to provide specific information about your boat and should be read carefully. Keep this booklet with the Manuals in the owner's manual BAG.

The owner's manual BAG has been compiled to help you operate your boat with safety and pleasure. It contains details of the boat, the equipment supplied or fitted, its systems, and its operation and maintenance information. Please familiarize yourself with the boat and its operation before using it. If this is your first boat, or you are changing to a type of boat you are not familiar with, for your comfort and safety, please ensure that you obtain handling and operating experience before "assuming command" of your boat. SEAVEE® will be pleased to advise you of marine safety classes and safe boating classes in your area.

SEAVEE® BOATS, INC. RESERVES THE RIGHT TO MAKE CHANGES AT ANY TIME WITHOUT NOTICE IN THE COLORS, EQUIPMENT, SPECIFICATIONS, MATERIALS, AND PRICES OF ALL MODELS OR TO DISCONTINUE MODELS. INFORMATION IN THIS PUBLICATION IS BASED ON THE LATEST PRODUCT SPECIFICATIONS AVAILABLE AT PRINTING. SHOULD CHANGES OR MODIFICATIONS TO THE MODELS BE MADE, SEAVEE® IS NOT OBLIGATED TO MAKE SIMILAR CHANGES OR MODIFICATIONS TO MODELS SOLD AND/OR MANUFACTURED BEFORE THE DATE OF SUCH CHANGES.

SPECIFICATIONS AND STANDARD EQUIPMENT ARE SUBJECT TO CHANGE. SEAVEE IS NOT RESPONSIBLE FOR CHANGES TO PARTS OR ACCESSORIES MANUFACTURED BY COMPANIES OTHER THAN SEAVEE®.

Product Changes

At SEAVEE®, we are committed to the continuous improvement of our boats. As a result, some of the equipment described in this manual may change or be unavailable.
SEAVEE® RESERVES THE RIGHT TO CHANGE STANDARD EQUIPMENT, OPTIONAL EQUIPMENT, AND SPECIFICATIONS WITHOUT NOTICE OR OBLIGATION.

For questions about the equipment on your SEAVEE®, please contact SEAVEE® Services.

SEAVEE® Limited Warranty

Refer to the ten-year limited warranty included in the original closing documents at the time of your new boat delivery

Warranties

In addition to the SEAVEE® Limited Warranty, each component and/or system on your boat has its own warranty that will be found with the specific information and manual for that component. The manuals are included in your Owner's Manual bag. Locate and read the individual warranties, then keep them together for easy future reference.

Owner's Manual

The material here and in the rest of the Owner's Manual Packet/Bag:

- Provides basic safety information.

- Describes the features of your boat.
- Describes the equipment on your boat.
- Describes the fundamentals of boat use.
- Contains service and maintenance information.

You must learn to operate this boat as well as read, understand, and use this manual.
This manual does not give you a course in boating safety or how to navigate, anchor, or dock your boat.

Your Responsibilities

For your safety and the safety of your passengers, other boaters, and people in the water, you should:

- Take a boating safety course.
- Get instruction in the safe and proper handling of your boat.
- Understand and follow the “rules of the road.
- Learn how to navigate.

Federal law requires all undocumented vessels equipped with propulsion machinery to be registered in the state of principal use. or documented with the U.S Coast Guard

State Registration

A registration certificate will be issued upon registration with the state. These registration numbers must be displayed on your boat. The owner/operator of a vessel must carry a valid certificate of registration whenever the boat is in use. When moved to a new state of principal use, the certificate is valid for 60 days. To be valid, the numbers must be installed to the proper specifications.
Check with the applicable state boating authority for numbering requirements.

Documentation

Documentation is a type of federal registration that the U.S Coast Guard administers.

It is proof of vessel nationality and is evidenced by a singular certificate of documentation (COD).
COD serves the dual purpose of a renewable registration while at the same time providing evidence of title. It is often referred to as a Federal Title.

In most states, the Certificate of Documentation is all that is required; however, some states (Florida being one of them) require even documented vessels to have state registration.

You do not get registration numbers with the registration - it refers to the Coast Guard 'official number' instead and is noted on the registration as "DO 1234, etc.," meaning documented. Instead of numbers being posted on the bow, an issued decal is posted in a window or on the side of the console.

The requirements for federal documentation of vessels are outlined in the Code of Federal Regulations (CFR) in section 46 CFR 67.

US coast guard requires all documented vessels to be marked with the number installed to the proper specifications, location, and other requirements.

The COD is usually valid for one year and is renewable for multiple years. For more information about a certificate of documentation or renewal, please refer to www.uscg.mil.

Insurance

Responsible boaters carry adequate liability and property damage insurance for their boat. The boat owner is legally liable for damages or injuries the boat causes in most states. You should also protect the boat against physical damage and theft.

Some states have laws requiring minimum insurance coverage.

Contact the applicable state boating authority for information on the insurance requirements in your boating area.

Reporting Boating Accidents

All boating accidents must be reported by the owner or operator of the boat to the proper marine law enforcement authority for the state where the accident occurred.

Immediate notification is required. If a person dies or there are injuries requiring more than first aid, a mortal report must be filed within 48 hours. A formal report must be made within ten days for accidents involving more than $500.00 damage or the complete loss of a boat.

A "Boating Accident Report" form is located near the back of this manual to assist you in reporting an accident. If you need additional information regarding accident reporting, please call the Boating Safety Hotline at 800-368-5647 or inform yourself at www.uscgboating.org.

Education

If you are not an experienced boater, we recommend that the boat operator and other people who usually accompany the operator enroll in a boating safety course.

Organizations such as the U.S. Power Squadrons, The United States Coast Guard Auxiliary, State Boating Authorities, and the American Red Cross offer excellent boating educational programs. These courses are worthwhile even for experienced boaters to sharpen their skills or update you on current rules and regulations. They can also help provide local navigational information when moving to a new boating area.

Contact the State Boating Authority or the Boating Safety Hotline at 800-368-5647 or www.uscgboating.org for further information on boating safety courses.

Required Equipment

U.S. Coast Guard regulations require specific equipment on each boat. The Coast Guard also sets minimum safety standards for vessels and associated equipment.

Some of the equipment must be Coast Guard approved to meet these standards. "Coast Guard Approved Equipment" has been determined to comply with USCG specifications and regulations relating to performance, construction, or materials.

The equipment requirements vary according to the boat's length, type, and propulsion system.

Some of the Coast Guard equipment is described in the Safety Equipment Section of this manual.

For a more detailed description, obtain "*Federal Requirements and Safety Tips for Recreational Boats*" by contacting the Boating Safety Hotline at 800-368-5647 or www.uscgboating.org.

Some state and local agencies go beyond USCG regulations and impose similar equipment requirements on waters that do not fall under Coast Guard jurisdiction. Contact the local boating authority to provide additional information on the equipment requirements for that boating area.

EPA Compliant Fuel System

EPA (Environmental Protection Agency) regulations require emissions-related components for the fuel tank, fuel fill, and fuel vent systems. It is unlawful to remove or intentionally defeat these emission-related components.

Contact Information

SEAVEE® BOATS
Phone.....305-759-6419
Internet .....www.seaveeboats.com

United States Coast Guard
Phone.....1-800-368-5647
Internet .....www.uscgboating.org

Boat US Foundation
Phone.....1-800-336-2628
Internet ..... www.boatus.com/foundation

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Section 1 • Safety

Explanation of Safety Labels

The most important aspect of boating is safety. Although every effort is made to address the numerous issues regarding the safe usage of your boat, it is strongly recommended that you avail yourself of the training and knowledge available through boating safety courses, etc.

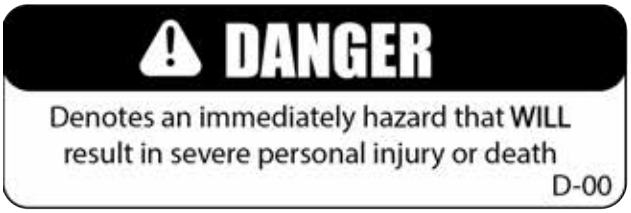
Warning Labels

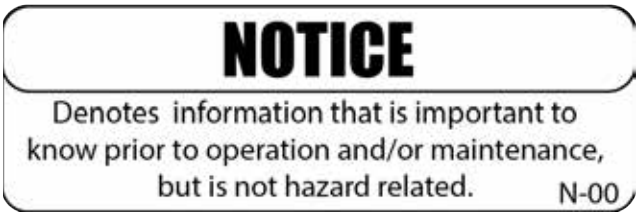
At key locations throughout your boat are warning labels that advise the owner/operator of imperative safety precautions to follow when operating and/or servicing equipment.

The examples below indicate the level of hazard by color and explanation.

Safety Precautions

The precautions below appear throughout this manual and must be observed when operating or servicing your boat. Learn to recognize the degree of precaution and understand safety explanations before reading this manual. These precautions are not all-inclusive. Always use common sense in the operation of your boat.





Safe Boating Means:

Knowing the limitations of your boat.

- Following the "RULES OF THE ROAD."
- Keeping a sharp lookout for people and objects in the water.
- Not boating in water or weather conditions beyond the boat and operator's capability.
- Never operate the boat while under the influence of drugs or alcohol.
- Be constantly aware of your passenger's safety.
- Reducing speed when there are limited visibility, rough water, and people in the water nearby, boats, or structures.

Boating in beautiful weather and calm water conditions can be a wonderful experience. Boating, however, requires more skill than operating a land vehicle.

To Obtain These Skills:

- Take a Coast Guard, U.S. Power Squadron, or equivalent boating safety course. (Call the Boat/U.S. Foundation at 1-800 336-2628 for information on available classes or go to "www.boatus.com/foundation" on the internet.)
- Get hands-on training on how to operate your boat correctly.

In Addition:

- Maintain your boat, safety, and other systems as this manual recommend.
- Have the boat inspected by a qualified mechanic or SEAVEE© Service annually.
- Ensure that the Coast Guard required safety equipment is on board and functioning.

Safe Boating Checklist

Before Departure

- ☐ Update checklists when equipment is added or modified.
- ☐ Check the Weather-forecast.
- ☐ Required documents-on board.
- ☐ Navigation charts & equipment-on board.
- ☐ Safety equipment on board.
- ☐ Safety training-passengers & crew instructed on procedures, location, and use of safety equipment.
- ☐ Drain plugs installed.
- ☐ Bilge pumps-working & clean.
- ☐ Blower-working.
- ☐ Navigation lights-working
- ☐ Horn-working.
- ☐ Fuel system-no leaks or fumes.
- ☐ Fuel filter-tight & clean.
- ☐ Power steering fluid-filled (if applicable).
- ☐ Steering system-working smoothly & properly.
- ☐ Float plan filed with friend or relative.

Trailering (if applicable)

Your SEAVEE® has the option of being fitted with a trailer. Your trailer is best suited for the length and width of your boat. If you have a trailer or are considering buying a trailer separately, please keep in mind:

- Trailers equipped with rollers can damage the foam sandwich hull of your boat and should never be used.
- Bunks provided the best even weight distribution.

- The center Roller and the keel guards are the best support for the keel, forward and aft.

Trailering Check List

☐ Boat position-secure on the trailer.

☐ Tiedowns-tight.

☐ Winch-locked.

☐ The trailer hitch connected.

☐ Engine clearance-in trailering position.

☐ Safety chains are attached.

☐ Electrical-Lights, brake lights, turn signals working.

☐ Mirrors adjusted for trailering.

☐ The console door closed and latched shut.

☐ All Hatches were closed and locked shut.

☐ Antennas, outriggers, and other equipment loft lowered and secured.

Check the width and height requirements of your local roads. Special Signage, restrictions, Escorts, and other conditions may apply.

Loading and Unloading

Take the time to make sure everything is ready and aligned before you start loading or unloading. Inspect the ramp's conditions. Ensure your trailer and boat are ready to be moved. Line everything up carefully to ensure a smooth and safe process.

- Only back your trailer in as far as necessary. Backing it in too far may mean getting into the algae with your vehicle and making it more difficult to properly seat your boat on the rollers or bunkers as you drive back up the ramp.
- Be aware of conditions. Make a note of the tide, wind speeds, and current. If you're fighting rougher conditions, it can be challenging to align the vessel properly. Try handy little tips like facing the trailer ever-so-slightly downstream to make things a little easier.

After Return

☐ PFDs & other safety gear dry & stowed for subsequent use.

☐ Fuel tanks- filled (allow for expansion) to prevent condensation.

☐ Fuel system-no leaks.

☐ Bilge pump-operating properly Bilge-clean, no leaks.

☐ Float plan-notify the person with whom you filed the plan.

Maintain Control

High-performance boats require intimate knowledge of their handling characteristics for safe, high-speed operation.

- Learn the effects of trim, steering, and throttle changes, gradually increasing speed levels.
- Approach full throttle while adjusting trim for safe handling of the vessel.

No marked traffic lanes, signs, or lights exist, and boats have no turn signals on the water. The boat operator must focus on what is ahead and, on the left, right, and behind the boat.

The operator must always be alerted to approaching boats (from the rear, right and left sides, and those ahead). There can be people in the water, partially submerged debris, and other navigational hazards such as rocks, sand bars, or dangerous currents, to name a few.

Your passengers rely on you to operate and maneuver the boat safely, so they are not in danger of going overboard if you turn too quickly and increase or decrease speed abruptly; your passenger's risk of being thrown overboard or about the boat.

When visibility becomes impaired because of weather, time of day, or high bow angle, you must slow down to have sufficient time to react if an emergency occurs. Nearby boats face similar risks in avoiding a collision with you.

Boarding

- Board only one person at a time.
- Never jump into the boat. Step or climb into the cockpit.
- Load gear after you are aboard. Carrying gear while boarding can cause you to lose balance.
- Distribute weight evenly.
- Instruct passengers where to sit during on-plane operations to reduce the possibility of falling overboard during high-speed maneuvers.
- If the gear is not immediately needed, stow it in secure areas before operating at planning speeds.
- Safety gear must be immediately accessible at all times. Do not stow gear in the way of access to safety gear.

Unassisted Reboarding from the Water

- Use the pullout swim ladder on the transom's port side to reboard from the water.
- The ladder may be deployed from the water by lifting the retaining pin and pulling the ladder aft. Extend each ladder rung by pulling each down and perpendicular to the ladder. Pull the ladder out completely and allow the ladder to fold down into the water.
- If planning to go overboard, open your telescopic ladder before going into the water
- Shut off engines when conducting reboarding if possible.
- Do not use the propeller propulsion system while reboarding.
- Use the trim tabs and the stern eyes to provide additional handholds to Assist in reboarding.
- Make sure to approach the stern of the boat only while the engines are off,
- Be aware of carbon monoxide effects, swimming to a ventilated area if you feel nauseous or drowsy.

Impaired Operation

Give special attention to the effects of alcohol and drugs while boating.

The detrimental effects of alcohol and drugs are increased by wind, waves, and Sun and will decrease your response time and ability to act in critical situations

Death or severe injury and damage to personal and private property can result from being impaired while operating a boat.

⚠WARNING

STABILITY HAZARD
Load boat properly. Adjust downward if weather, water or other conditions are adverse.

• Allow passengers to ride only in areas that do not pose hazard to themselves or the boat.

•DO NOT allow passengers to ride on the bow of a closed bow boat.

•DO NOT allow several passengers to ride in the bow of a small open-bow boat, causing the boat to "plow" into the water.

•DO NOT allow passengers to ride on stern cushions without backrest or gunwale.

•DO NOT overload the stern.

•Passengers should remain seated while boat is moving.

PERSONAL INJURY HAZARD
Stay alert. Use of drugs, alcohol, or other substances which impair judgment poses a serious threat to yourself and others.
The boat operator is responsible for the behavior of passengers.

DROWNING HAZARD
Boats must carry one wearable personal flotation device (PFD) for every passenger on board.
Boats must have at the least one throw able life preserver.

SLIPPING HAZARD
-Wet decks are slippery. Wear proper footwear and use extreme caution on wet surfaces.
W-33

⚠WARNING

CONTROL HAZARD
Federal laws prohibit operating a boat while under the influence of alcohol or drugs. These laws are vigorously enforced.
W-37

Legally Mandated Equipment

(*Minimum Required*)

Due to the length of the SEAVEE® 450Z, the following equipment is the minimum required by the U.S. Coast Guard for a boat over 40 ft. (12.2) in length but less than 65 ft. (19.8M).

Personal Flotation Devices (PFDs)

- One (1) Coast Guard Approved Type I, II, III is mandatory for each person aboard or being towed.
- One (1) throwable Type IV device must also be on board.
- A Type V device is acceptable (*See pg. 24, Figure 2*), but it must be worn whenever the vessel is underway, and the person is not in the cabin or other enclosed area.

⚠WARNING

There is rarely time to reach stowed life jackets in time of emergency. Boaters should always wear a properly fitting, approved life jacket when on the water. Children Must wear PFD's at all times when aboard,except inside the cabin
W-08

NOTICE

Depending on the state or country of operation, the operator of a vessel may be fined for failure to comply with local or national rules regarding PFD usage. N-61

Fire Extinguishers (Portable)

For the SEAVEE® 450Z, the Coast Guard requires two (2) Type B-I and one (1) B-II fire extinguisher(s) to be on board.

The American Boat & Yacht Council (ABYC) recommends that you carry three (3) A, B, or C Type fire extinguishers on board and located within easy reach of the helm, Engine(s), galley, or passenger cockpit.

Your SEAVEE® 450Z includes a fixed fire extinguishing system installed in the auxiliary machinery space with the generator, as required by ABYC. (*See pg. 44, Diagram 5*)

Whistle, Horn

You must have onboard; some means of making a loud sound signal. Navigation rules require that a sound made by any audible device be capable of a four (4) second blast and be audible for 1/2 mi. (.80 Km).

Visual distress Signals

If you operate your boat in coastal waters or on the Great Lakes, you must have a visual distress signal for day and night use on board. At least three (3) U.S.C.G. approved pyrotechnic devices marked with the date showing service life must be carried, be readily accessible, in serviceable condition, and not be expired.

Store all pyrotechnic signals in a well-marked, waterproof container.

Additional Recommended equipment for safe operation

In addition to the legally mandated equipment, the following items are recommended for safe boating, especially if your boat is out of sight of land.

- ☐ First Aid kit
- ☐ Compass
- ☐ Charts/Maps
- ☐ Manual bilge pump
- ☐ Visual distress signals
- ☐ GPS
- ☐ Spare keys
- ☐ Marine VHF radio
- ☐ EPIRB-Emergency Positioning Indicating Radio Beacon
- ☐ Mooring Lines
- ☐ Fender
- ☐ Boat hook
- ☐ Waterproof flashlights
- ☐ Extra batteries
- ☐ High power spotlight
- ☐ Instruction manuals
- ☐ Spare propeller
- ☐ Spanner wrench
- ☐ Lubricating oil
- ☐ Anchor
- ☐ Tool kit:
  - ☐ Screwdrivers (Philips & flat)
  - ☐ Pliers (regular, vise-grip, tongue & groove)
  - ☐ Wrenches (box, open-end, Allen & adjustable)
  - ☐ Socket set (metric or U.S.)
  - ☐ Electrical tape & duct tape
  - ☐ Hammer
  - ☐ Spare parts kit (spark plugs, fuses, etc.)

Carbon Monoxide (CO)

Carbon Monoxide is an odorless, colorless, extremely toxic gas that is the product of any combustion produced by engines, heaters, stoves, or generators. When inhaled, it combines with hemoglobin in the blood, preventing oxygen absorption and resulting in

asphyxiation and death.
Symptoms of Carbon Monoxide poisoning include:

- Dizziness
- Headaches
- Ringing in the ears
- Nausea
- Unconsciousness

GET MEDICAL ATTENTION AS SOON AS POSSIBLE.

The poisoning victim's skin often turns cherry red. Carbon Monoxide is colorless, odorless, and tasteless; it is unlikely to be noticed until the person is overcome.

⚠ DANGER

Fumes from engines(s), Generator(s) and other equipment and appliances that burn fuel contain Carbon Monoxide. Carbon Monoxide can kill you. Open all doors, hatches, curtains and windows to allow fresh air to circulate and dissipate the amounts of Carbon Monoxide present in enclosed spaces, especially when the boat is moored or anchored.

Proper ventilation must be mantained, even during inclement weather to prevent dangerus levels of Carbon Monoxide buil- up.

Sleeping aboard a boat requires a working Carbon Monoxide detection system. D-04

If carbon monoxide poisoning is suspected, have the victim breathe fresh air deeply. If breathing stops, resuscitate.

OPEN ALL HATCHES, PORTLIGHTS, OR CANVAS OPENINGS TO LET FRESH AIR CIRCULATE.

A victim often revives, then relapses because organs are damaged by lack of oxygen. Seek immediate medical attention.

Dangerous concentrations of Carbon Monoxide will be present if the engine(s) exhaust system leaks OR insufficient fresh air is circulating.

To minimize the danger of Carbon Monoxide accumulation when the Engine(s) and/or Generator are running (or by use of fuel-burning equipment.):

- Be sure to have sufficient ventilation when using a canvas enclosure.
- Open all forward hatches and leave the cabin door open.
- Operate all fuel-burning appliances, such as charcoal, propane, LPG, CNG, or alcohol cooking devices, in areas where fresh air can circulate.
- Do not idle the engine(s) without moving the boat for more than 15 minutes at a time.
- Inspect the bilge blower, located aft of the generator in the bilge.

⚠ DANGER

Even in rainy cold weather, ventilation must be maintained to avoid Carbon Monoxide poisoning. You will get wet and/or cold. D-07

Carbon Monoxide Detector

Your SEAVEE® is equipped with a Carbon Monoxide Alarm system inside the cabin (*See pg. 47, Diagram 11*).

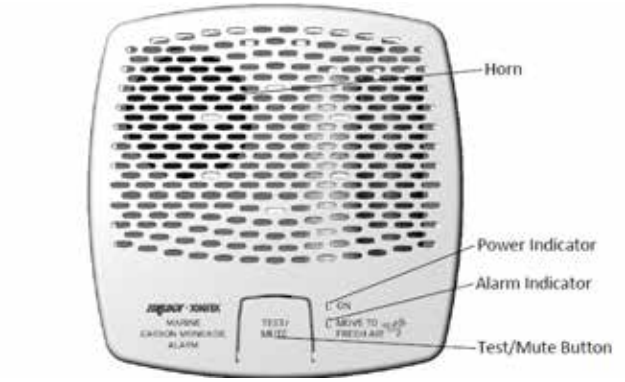


Figure 1 -carbon monoxide detector

For Activating the System:

1. Hold the "Test/Mute" button for 10 seconds. The Green LED will turn on.

2. Press the "Test/Mute" button five times. The Green and Red LEDs will flash, and the horn will sound.

The CO Alarm is now activated. The Green LED will flash once every 180 seconds.

If the alarm is activated, follow the guidance below:

- Immediately move to fresh air – outdoors.
- Check that all persons are present.
- Do not re-enter the area until it is aired, and the alarm remains in its normal condition.

After following steps 1-3, if the alarm reactivates within 24 hours, repeat steps 1-3 and call SEAVEE® to investigate sources of carbon monoxide from fuel-burning equipment and appliances and inspect for proper equipment operation. If problems are identified during this inspection, have the equipment serviced immediately

Check your system weekly for any malfunction and consult the manufacturer's instructions or contact the manufacturers directly for more information about co-safety and this equipment.

Lifesaving Equipment

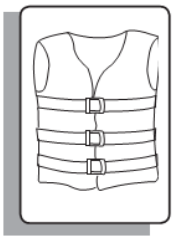
PFD Requirement

Strong swimmers can tire quickly in the water and drown due to exhaustion, hypothermia, or both. The buoyancy provided by a personal floatation device (PFD) will allow the person who has fallen overboard to remain afloat with far less effort and body heat loss, extending the survival time necessary to find and retrieve them.

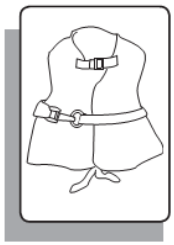
USCG requires one (1) wearable personal floatation device (PFD, Type I, II, III, or V) for every person on board and at least one (1) throwable device (Type IV).

The law requires that PFDs must be readily accessible if not worn. "Readily Accessible" means removed from storage bags and unbuckled. Children and non-swimmers must always wear PFDs when aboard.

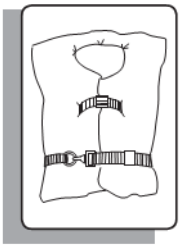
Listed below are several different types of PFDs; each life jacket type has a specific purpose; choose one that will suit your purpose.



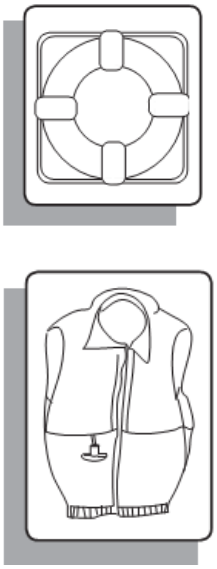
Type I, Off-shore Life Jacket, is considered the most buoyant, designed to turn an unconscious person face-up. Use in all types of waters where rescue may be slow, particularly in cold or rough water conditions.



Type II, Near-shore Life Vest, a "keyhole" vest with flotation-filled head and neck support, is designed to turn a person face-up, but the turning action is not as pronounced. Use in calm inland waters or where quick rescue is likely.



Type III Flotation-aid Life vest is designed so conscious wearers



can turn face-up.
They are designed for comfort while water skiing or other water activities.

Type IV, Throwable Devices, horseshoe buoys, ring buoys, and buoyant cushions are designed to be grasped, not worn.

Type V, Special-Use devices, sailboat harnesses, white water vests, float coats, and hybrid vests with minimum inherent buoyancy and an inflatable chamber.

Figure 2- PFD types

Before purchasing PFDs, ensure an attached tag indicating they are approved by the U.S. Coast Guard or your National Boating Law Enforcement Agency.

The operator is responsible for instructing everyone onboard on the location and use of the PFD. The best precaution is always to wear the PFD.
Children under thirteen years old must always wear a PFD when aboard unless they are not inside the cabin.

All passengers and crew should wear them since an unworn PFD is often useless. The law requires that PFDs, if not worn, must be readily accessible, that is, removed from storage bags and unbuckled. Throwable devices must be readily available, that is, right at hand.

General Considerations

- Know how your boat handles under different conditions. Recognize your limitations and the boat's limitations. Modify speed in keeping with weather, sea, and traffic conditions.

- Instruct passengers on location and use of safety equipment and procedures.

- Instruct passengers on the fundamentals of operating your boat if you cannot do so.

- You are responsible for the passenger's actions. If they place themselves or the boat in danger, immediately correct them.

Per the United States Code, Title 46, The owner, or operator of a boat is required by law to render assistance to any individual or vessel/boat in distress, as long as the assisting boat is not endangered in the process

⚠WARNING

Death or serous injury can result if you fail to observe these safety rules:

Anyone who controls the boat should have taken a boating safety course and have trained in the proper operation of the boat.

Always operate the boat at speeds that will not put the people or property in danger.

Be constantly aware of conditions in all directions when underway and before turning.

Reduce speed, use a look out to identify possible hazards or difficulties, and turn on navigation lights when:
•Visibility is impaired.
•In rough water.
•In congested water ways.
Watch your wake. It can capsize a small boat or damage moored boats or other property. You are responsible for damage caused by your wake.

W-04

⚠WARNING

• Allow passengers to ride only in areas that do not pose a hazard to themselves or the boat.

DO NOT allow passengers to ride on the bow of a closed bow boat at speeds over 5 mph .

DO NOT allow several passengers to ride in the bow of a small open-bow boat, causing the boat to "plow" into the water.

DO NOT allow passengers to ride on the stern cushion or gunwales.

DO NOT overload the stern.

• Passengers should remain seated while boat is moving.

PERSONAL INJURY HAZARD
Stay alert. Use of drugs, alcohol, or other substances which impair judgment poses a serious threat to yourself and others. The boat operator is responsible for the behavior of passengers.

DROWNING HAZARD
Boats must carry one wearable personal flotation device (PFD) for every passenger on board. Boats must have at least one throwable life preserver.

SLIPPING HAZARD
Wet decks are slippery. Wear proper footwear and use extreme caution on wet surfaces.
W-11

⚠WARNING

A qualified operator must be in control of the boat at all times. Do not operate the boat while under the influence of alcohol or drugs. Never operate your boat at speeds which exceed the operator's ability to react if an emergency develops. At night, turn on the appropriate navigation lights and cruise at a reduced speed that will allow you plenty of time to avoid dangerous situations W-06

Emergency

Prevention is the safest approach. We hope you are never involved in an emergency, but you must react if you are.

NOTICE

The law requires the owner/operator to assist any person or boat in distress as long as rendering assistance does not endanger the owner/operator, the passengers or the boat.
N-03

Medical Emergency

You may be far from professional medical help when you are boating. At least two (2) persons on board your boat should be CPR certified and have taken a first aid course. Your boat should have a well-stocked first-aid kit on board.

Your radio will be your only link to reaching medical assistance in many situations. Keep the radio in working order and understand which channels are used for emergencies; these channels are constantly monitored and will be helpful when situations arise.

Cell phones are becoming more common and can help in some areas, but they are limited and unreliable and should not be used in the place of a good VHF radio.

Water Rescue

In most situations, a person who has fallen overboard will succumb to hypothermia if not rescued immediately. Life expectancy decreases as rescue time increases in water temperatures below 70° (21.1°C).

There are three (3) steps that must be taken when a person has fallen overboard:

Returning To the Victim:

- Immediately make everyone onboard aware that someone is overboard and keep the victim in sight.
- Slow the boat and keep pointing toward the person overboard. Point to the best available light source at night or in low light at the person.
- Throw a life ring/preserver to the victim; even if they wear one, it will serve as another marker.

Making Contact

- Stop or slow the boat and circle toward the person overboard.
- Try to approach heading into the wind or the waves.
- Keep the person overboard constantly in sight.
- When almost alongside, turn off the engine gear to prevent the propeller from "windmilling."

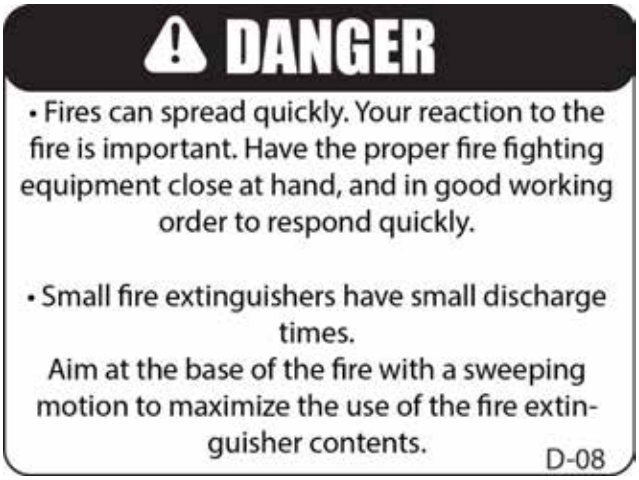
Getting Back Aboard

- Try to reach the person overboard with a pole or throw a life preserver. NEVER swim to them except as a last resort.
- Assist the person in boarding. Boarding should be done at the stern of the boat.
- If the person is injured or incapable of boarding by themselves, a rescuer should don a life preserver with a safety line and enter the water to assist the person onto the boat.
- Handle the person carefully; spinal injuries might have occurred and could have been worsened by rough handling.
- Check for other injuries and render medical assistance immediately.

Fire

Fire is a severe boating hazard. Boats will burn quickly. Do not remain on board and fight a fire for more than a few minutes. If the fire is out of control and cannot be put out with the fire suppression equipment onboard, abandon the ship immediately.

The fumes released during a fire are toxic and should be avoided. Even after the fire has been extinguished, proper area ventilation is required to minimize exposure to harmful fumes.



To Lessen the Danger of Fire

- Extinguish all smoking materials, shut off blowers, stoves, engine(s), and generator(s).
- Keep the bilge area clean; oil and fuel spills should be cleaned immediately.
- If possible, throw burning materials overboard.
- If the fire is accessible, release the contents of the

fire extinguisher(s) into the base of the fire.

- Have an extinguisher handy in case of a flare-up. If the fire is in an enclosed compartment, and you have an automatic extinguisher for the compartment, wait 15 min before opening the compartment.
- You must assist any boater requesting help. If possible, signal for help. Radio, visual, and audible signals should be used as needed.
- If a fire is out of control, grab all necessary survival gear and distress signals, don your PFD, and prepare to abandon the ship.
- If you do abandon the ship, make sure the passengers have PFDs. Before entering the water, take another head count when in the water, and take another head count. STAY TOGETHER.

Fixed Fire Extinguishing System

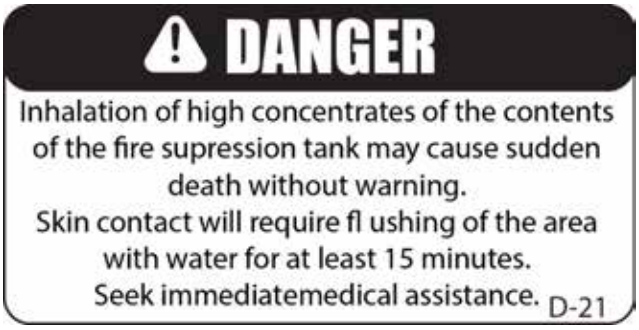
The boat has a fixed fire extinguishing system in the auxiliary machinery space (*See pg. 44, Diagram 5*). This system is designed to automatically discharge whenever the temperature in the room reaches the 175°F (79.4°C).

Figure 3 - Engine Shutdown System.

In The Event of Discharge

In case of fire, the complete system will discharge in less than 10 seconds. The LED panel in the helm will automatically blink (*See pg. 51, Diagram 16*), showing the signal for an empty extinguisher, and the generator system and blower will automatically switch off.

- Shut down all electrical systems and 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 compartments' vapor to dissipate before opening the hatch.



If the fire system discharged without a fire, or in some other case where the generator can be run again after discharge safely, press the override bottom to permit the blower and generator to be restarted.
If the automatic fire extinguisher system does not activate and you detect a fire inside the bilge, pull the manual fire system on the left side of your helm.

Replace any expired or empty extinguishers and monitor the expiration dates periodically.

After a discharge, ensures that the compartment will be "soaked" with extinguishant.

Figure 4 - manual pull & engine shut down system at the helm.

CAUTION

NEVER attempt to modify or disassemble any Components of the fired extinguisher system. If the system has been discharged, have a qualified technician to replace it. C-15

Flooding, Swamping, and Capsizing

Flooding

- Always wear your PFD or have it within reach.
- If the bilge pump(s) have not automatically turned ON, switch them ON immediately.
- Find the source of the flooding and determine the best fix.
- Keep the bilge pumps running until the flooding is under control.
- Call for assistance if the source of the flooding cannot be controlled.
- Head back to port if possible.

Swamping

- Always wear your PFD or have it within reach.
- Swamping is usually a result of wave action; immediately get control of the helm and turn the boat into the waves.
- Swamping can also be caused by an overloaded boat.
- If the bilge pump(s) have not automatically turned ON, switch them ON immediately.
- The deck scuppers on your boat are designed to drain the deck of water.
- Keep the bilge pumps running until the flooding is under control.
- Take a head count of all passengers.

Capsizing

- "Capsized" is when a boat is on its side or completely upside-down (usually due to wave action, improper loading, or load shifting).
- Always wear your PFD or have it within reach.
- If the boat will not right itself, get out of the water and climb onto the exposed hull.
- Do a head count for all passengers.

Stay Together

- Usually, capsizing will happen quickly and without warning.
- Use whatever is at hand to signal for help.
- The chances of flooding, swamping, or capsizing can be reduced by being aware of:
  - Weather
  - Water Conditions
  - Proper boat handling techniques
  - Correct loading of the boat

Collision

In the event of a collision:

- Shut off the engine(s)
- Always wear your PFD or have it within reach.
- Check on passengers.
- If the bilge pump(s) have not automatically turned ON, switch them ON immediately.
- Determine the amount of damage to your boat's structure.
- Call for assistance.
- In the event of a collision, you must file an accident report. Contact a state enforcement agency or the nearest U.S. Coast Guard office.
- If you are boating outside U.S. waters, consult the nation you visit for accident reporting requirements.

Propulsion, Control, or Steering Failure

If there is a propulsion, control, or steering failure:

- Stop the engine (shut off at Ignition or pull on the Emergency Engine Shut-Off Switch.)
- Drop anchor to prevent drifting.
- Determine if the problem can be fixed or if assistance will be needed.
- Call for assistance if needed.

When loss of propulsion or steering is noticed, your quick reaction is required to prevent further damage to your boat or injuries to your passengers.

Outboard engines require propulsion to control the direction the boat will take. Without propulsion, the steering is virtually useless. If you are in a congested waterway, you will need to react quickly to warn others that you have lost power, propulsion, or steering control and that assistance will be required.

Running Aground

Running aground may be avoided by paying attention to marker buoys or indicated by waves as they form into breakers when passing over a sand bar.

If you run aground, the course of action depends on how hard the boat hits bottom and whether the ship remains stranded. If possible, do a thorough inspection before trying to get loose; throwing the boat into reverse before this is done may do more damage. If it is a simple touch, you may need only to inspect the engine's lower drive and the boat's hull.

Distress Signals

Visual Distress Signals (VDS)

U.S. Coast Guard regulations require all boats over sixteen (16) feet (5 meters) in coastal waters and the Great Lakes to carry Visual Distress Signals (VDS) for day and night use. Exceptions during the daytime apply to boats participating in organized events.

- For your boat, at least three (3) unexpired safety-approved pyrotechnic devices in serviceable condition must be readily accessible. They must be marked with a date showing the service life.
- Carry three (3) signals for day or night use. Some pyrotechnic devices, such as red flares, meet daily and night use requirements.
- Store pyrotechnic signals in a cool, dry location. An orange or red watertight container prominently marked “DISTRESS SIGNALS” is recommended.

Other recognized visual distress signals include:

- Flames in a bucket.
- Code flags November & Charlie.
- Black square & ball on orange background flag.
- Orange flag (certified).
- Electric distress light (certified)-for night use.
- Dye marker (any color).
- Person waving arms (slowly).
- U.S. ensign is flown upside down.

Audible Distress Signals (ADS)

Coast Guard regulations require one hand, mouth, or power-operated whistle or horn, audible for at least one-half mile.

Other recognized audible distress signals include:

- Radio communication (see Radio Communication below).
- Radio-telegraph alarm.
- The position indicates the radio beacon.
- Morse Code S-O-S (3 short, three longs, three short) sounded.
- The foghorn sounded continuous.

Radio Communication

Radio is the boat operator's primary method of receiving safety information and summoning aid.

VHF-FM radio is the primary means of short-range communication. Single sideband radio (SSB) is used for long-range communication.

VHF-FM channel 16 and SSB 2182 kHz are designated for emergency use. Such situations can be categorized as:

EMERGENCY-

"MAYDAY, MAYDAY, MAYDAY"- used when life or vessel is in imminent danger.

URGENCY-

"PAN-PAN, PAN-PAN, PAN-PAN"

(Pronounced PAHN-PAHN)-used when a person or vessel is in some jeopardy less than indicated by a "MAYDAY" call.

SAFETY-

"SECURITY, SECURITY, SECURITY"

(Pronounced SAY-CURE-IT-AY)-used for maritime safety or weather warning.

An emergency will be hectic, and there will not be time to learn proper radio procedures.

LEARN WHAT TO DO BEFORE YOU NEED TO DO IT. If you hear a distress call, stop all radio transmissions. If you can directly assist, respond on the emergency frequency. If you cannot assist, DO NOT transmit on that frequency. However, please continue to monitor until it is evident that help is being provided.

Weather

Getting caught in severe weather is hazardous. Bad weather and rough sea or water conditions can cause an unsafe situation.

Consult local weather services for up-to-date forecasts on weather and sea conditions. Television, Radio, and the Internet can give you access to NOAA weather reports that will help you decide where and when to get underway.

⚠ DANGER

DO NOT attempt to boat in severe weather conditions. Death or serious injury can occur. Get to shore before the weather turns bad.

D-09

Following are some weather-related rules:

- Understand the design limitations of your boat.
- Check the weather forecast and water conditions before leaving and while underway.
- Wear a Personal Flotation Device (PFD)

⚠ DANGER

A sudden change in wind direction or speed or an increase in wave height indicates deteriorating weather.

D-10

NOTICE

Check the weather forecast and water conditions before leaving and while underway

N-04

- If a storm approaches, immediately seek a safe harbor.
- If a storm hits, have everyone sit in the cabin or cockpit deck in the boat. Head the bow into the wind with enough power to maintain slow headway.
- If you encounter fog, determine your position, set a safe course, slow down and alert other boats of your presence with a sound signal.
- The safest action is to dock and disembark if a lightning storm approaches. If you cannot return to shore, have passengers enter the cabin and remain there until the storm passes.
- Stay out of the water during a lightning storm. If caught swimming during a storm, get back into the boat and remain there until the storm passes. Remember that lightning can strike several miles away from the storm itself.
- Be aware of the location of the storm relative to your location and the direction the storm is moving.

Swimming

- Do not swim from a moving boat.
- Many areas prohibit swimming from a boat except in designated areas.
- Before picking up the swimmer, turn off the engine in gear (to prevent propeller "wind milling").

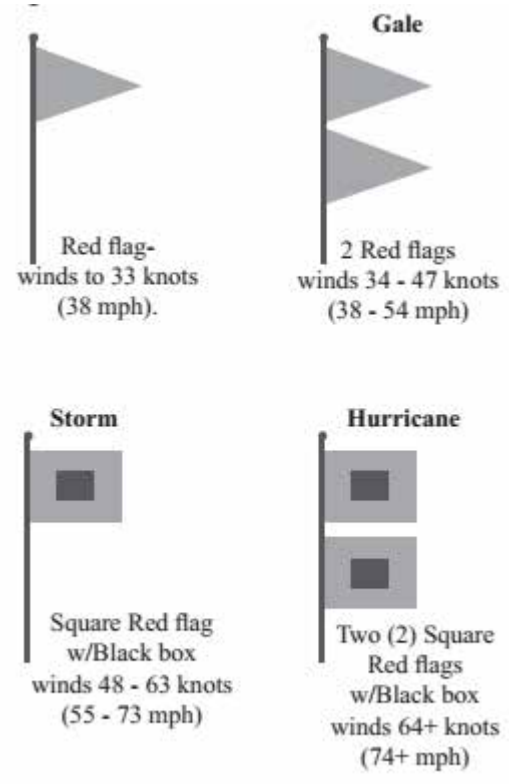


Figure 5 - weather warning pennants

Diving

Recognize and respect diving flags. Keep at least 30 meters (100 ft.) away.

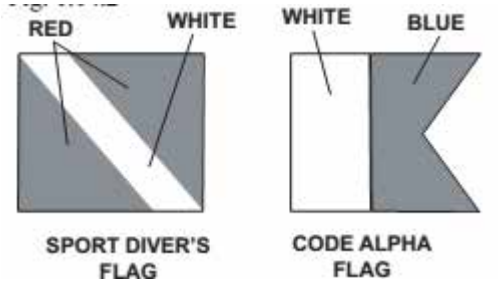


Figure 6 - driver's flag

- SPORT DIVERS FLAG-Red flag with a diagonal white stripe marks a diver in the water.
- CODE ALPHA FLAG-Blue and white pennant designate the boat used in dive operations.

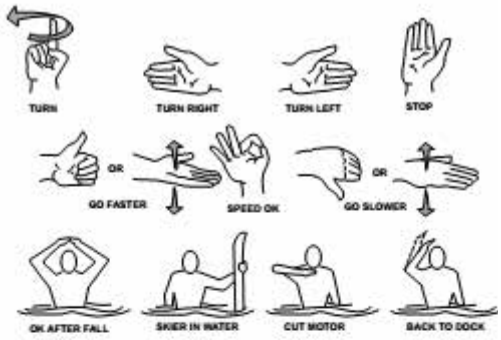
Water Skiing

Always have two persons in the boat, one at the controls and one who can quickly and continuously look at the skier. Insist that anyone who water skis must know how to swim.

Insist that skiers wear approved Personal Flotation Devices (PFDs). Ski only in daylight when visibility is good.

Water Skiing Signals

- Never drive the boat directly behind a water skier. At 22 knots (25 m.p.h.), it takes only 5 seconds to overtake a fallen skier.
- Ski only in areas where skiing is permitted.
- Observe local restrictions on the length of the tow line.
- Learn the signals to communicate with a skier. The skier is to control the boat through hand signals (Page 32, Figure 7).
- Your boat will handle different while towing a skier. Experiment carefully to learn the difference.
- Skiers may start from the shore or dock if boat traffic allows. When returning, pick up skiers from the water. Do not ski back to shore or dock.
- Give immediate attention to fallen skiers.
- Keep a downed skier in sight and on the operator's side of the boat when approaching the skier. Never back up to anyone in the water.
- Before picking up the skier, turn off the engine gear (to prevent propeller "wind milling").
- If the skier suddenly releases the tow rope, it can backlash into the cockpit. Spotters watching the skier must be aware of this and be prepared to take appropriate action to avoid injury.



Turn – Arm raised, circle with index finger extended.

Turn Right – Extend arm out from body to the right.

Turn Left – Extend arm out from body to the left.

Stop – Raise arm with palm vertical and facing forward.

Faster – Thumb pointed up or palm up, move hand up and down.

Speed OK – Raise arm and form a circle with thumb and index finger.

Slow Down – Thumb pointed down or palm down, move hand up and down.

OK After a Fall – Clasp hands together overhead.

Skier in Water – Extend one ski vertically out of water.

Cut Motor – Draw finger across throat.

Back to Dock – Pat top of head.

Figure 7 - skiing signals

Emergency Engine Stop Switch

Your boat is equipped with an emergency engine stop switch. The switch is on the console, near the steering wheel. The ignition shutdown safety switch incorporates a shut-off switch clip, lanyard, and lanyard clip clipped to the operator when running.

If an emergency arises and the engine must be shut down, a pull-on the cord to release the clip from the shut-off will shut off the engine.
This switch is designed to shut the engine off when the boat operator leaves the control station, either accidentally falling into the boat or being ejected overboard. This would most likely occur because of poor operating practices.

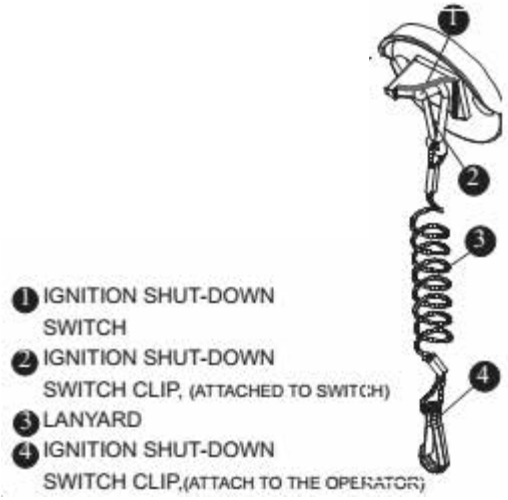


Figure 8 – emergency stop switch.

NOTICE

This switch only works when used properly. The decision of whether to use an ignition safety switch or not rests with you, the operator. N-05

The lanyard should be long enough to prevent accidental activation. DO NOT let the lanyard become entangled.

WARNING

Wear the lanyard at all times when operating The boat. Use it to stop only in an emergency. DO NOT use it to shut off the engine during normal operation W-14

Accidental loss of power can be hazardous, particularly while docking or under solid currents or high winds in heavy seas. Passengers and crew may lose balance, and the boat may lose steering control.

Should the operator fall out of the boat at planning speed, it may take several seconds for the engine and propeller to stop turning. The boat may continue to coast for several hundred feet, causing injury to anyone in its path.

Float Plan

Float plans are vital if you encounter problems on the water. A float plan should describe where you will be boating, departure time and return, the number and names of passengers, and destination.

The float plan should be given to a friend or relative, so they can provide the information to a national boating agency like the U.S. Coast Guard if you do not return at the time specified on the float plan.

Any changes to the float plan should be conveyed to the person holding the float plan. Once you return, you should contact the person holding the float plan to let them know you are back.

Chart Your Course

You must chart a course to avoid boating in unsafe areas with underwater obstructions, shallow water, and unnavigable conditions such as dangerous currents.

This means having and using National Oceanic and

Atmospheric Administration (NOAA) charts for coastal waters, observing, and understanding all navigational aids, using the knowledge and guidance of experienced boaters, and being aware of the tides and times where appropriate.

If you are boating in an unfamiliar area, proceed with caution and post a lookout to watch for hazards.

⚠WARNING

Hitting an object in or under the water or Boating in dangerous currents can cause serious injury or death to occupants in the boat.

You must know where the hazards are and avoid them. In uncharted waters, boat very slowly and post a lookout.

If an object is struck or if you run aground:

- Shut the engine OFF.
- Check the hull for damage.
- Check propeller for damage.
- If aground, consider the bottom grade before moving off, (damage to the hull and propellers could be worsened).
- Determine the tides and whether it will help or hinder you from the grounding.
- Do not have anyone other than a trained and competent service tow your boat.

W-15

Environmental Considerations

Fuel & Oil Spillage

Regulations prohibit discharging fuel or oily waste in navigable waters.

Discharge is any action that causes a film, sheen, or discoloration on the water surface or causes 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 it properly ashore.

Help protect your waters. Never pump contaminated bilge overboard. If there is much fuel or oil in the bilge, contact a knowledgeable marine service to remove it.

Excessive Noise

Many areas regulate noise limits. Even if there are no laws, courtesy demands that boats operate quietly.

Wake / Wash

Power boats can endanger people and vessels. Each power boat operator is responsible for injury or damage caused by the boat's wake. Observe "no wake" warnings. Be especially careful in confined areas such as channels or marinas.

Marine Mammals, such as manatees, may be present. Use extreme caution while operating in waters with marine mammals to avoid contact.

⚠WARNING

SPEED HAZARD

Watch your wake. It might capsize a smaller craft. You are responsible for damage caused by your wake.

W-16

⚠ CAUTION

Reduce speed in congested waterway. Be alert for No Wake markers. C-26

Homeland Security Restrictions

Recreational boaters have a role in keeping our waterways safe and secure. Violators of the restrictions below can expect a quick and severe response.
DO NOT approach within one hundred (100) yards and slow to minimum speed within 500 yards of any U.S. Naval vessel. If you need to pass within one hundred (one hundred) yards of a U.S. Naval vessel for safe passage, you must contact the U.S. Naval vessel or the Coast Guard escort vessel on VHF-FM channel 16.

⚠ DANGER

DO NOT approach within 100 yards of any U.S. Naval vessel without first contacting the vessel on VHF-FM channel 16. To do so will result in a quick and severe response. D-11

- Observe and avoid all security zones.
- Avoid commercial port areas, especially military, cruise lines, or petroleum facilities.
- Observe and avoid other restricted areas near dams, power plants, etc.
- DO NOT stop or anchor beneath bridges or in channels.

America's Waterway Watch

In March 2005, the U.S. Coast Guard officially launched America's Waterway Watch to encourage the boating public to report suspicious activities in our nation's ports and waterways.

America's Waterway Watch simply asks anyone who works, lives, or recreates on the water to watch suspicious activities. Anyone who spots such activity is asked to call the National Response Center's 24-hour hotline, 800-424-8802 or 877-24WATCH (877-249-2824).

Warning Label Locations

Mounted at key locations throughout the boat, warning labels to advise the owner/operator of imperative safety precautions to follow when operating and/or servicing equipment. Replace any label which becomes illegible. DO NOT REMOVE OR OBSTRUCT ANY WARNING LABEL.

Your boat is also equipped with instructional or informative labels throughout the boat to identify key features.

Contact SEAVEE® Service for information about label replacement.

NOTICE

It is important to replace any damaged or unreadable label. Contact one of our SEAVEE® Service(s) Center(s) for replacement labels. N-06

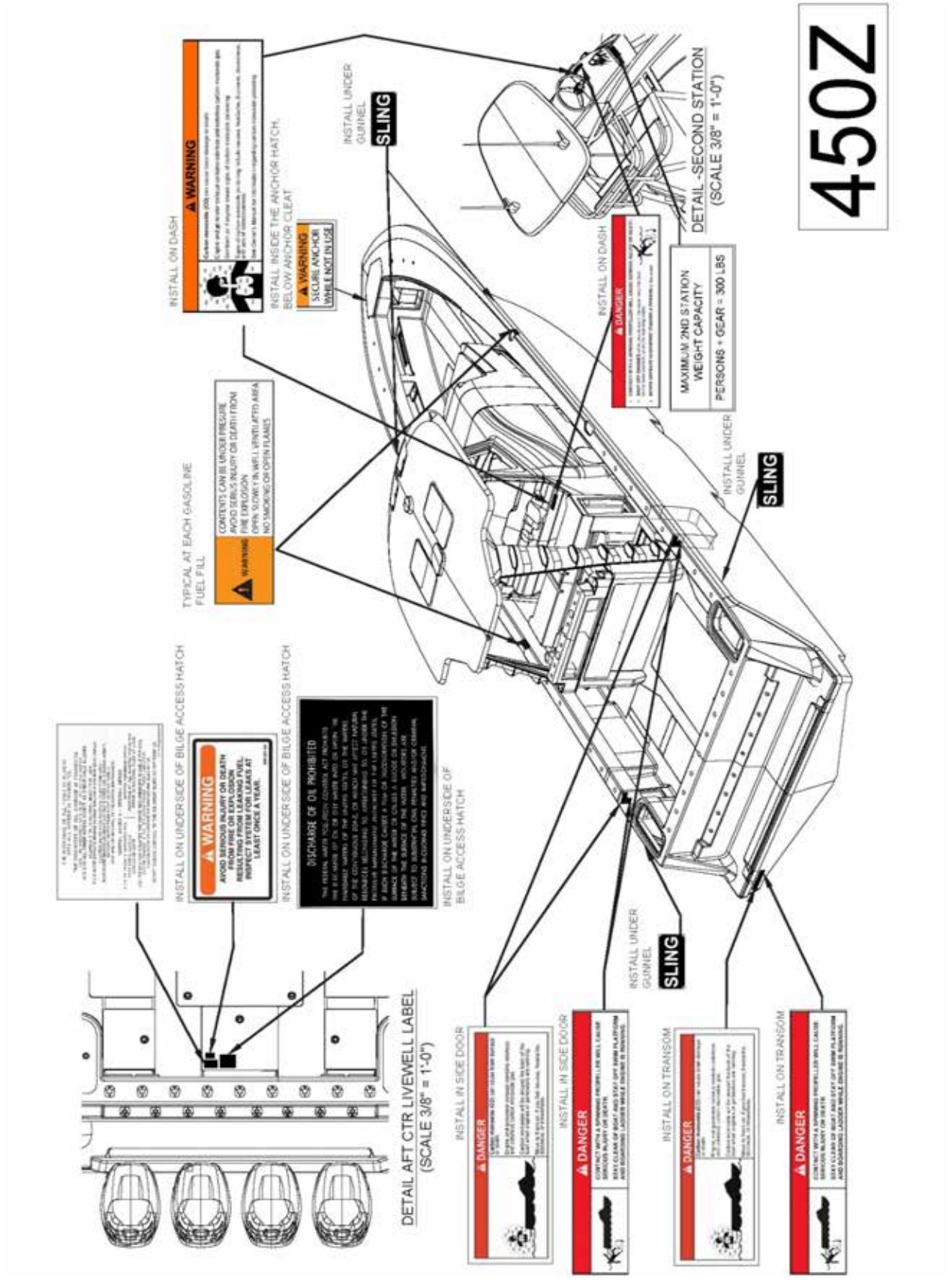


Diagram 1 - 450z safety labels location

Section 2 • General Information

Specifications

Construction Standards

SEAVEE® is dedicated to creating a superior product that will provide comfort, performance, safety, and dependability.

All our boats comply with the safety standards set by the United States Coast Guard. They are designed, engineered, and manufactured following the recommendations and guidelines of the American Boat and Yacht Council (ABYC.) and certified by the National Marine Manufacturers Association (NMMA).

Boat's Structure

SEAVEE® hulls, Liner, and deck Cap are constructed with our proprietary Vacuum Infusion process. This involves resin drawn into a sealed mold system where the resin fills voids in the part laminate. This process produces the highest quality composite structure, with very high modulus, strength, and stiffness. This technology delivers the strongest, lightest, and most durable boat.

Hull Identification Number

The "Hull Identification Number" is located on the starboard side of the transom. This is the most important identifying factor and must be included in all correspondence related to your vessel. Also vital are the engine serial numbers, part numbers, etc., when writing about or ordering parts for your engine.

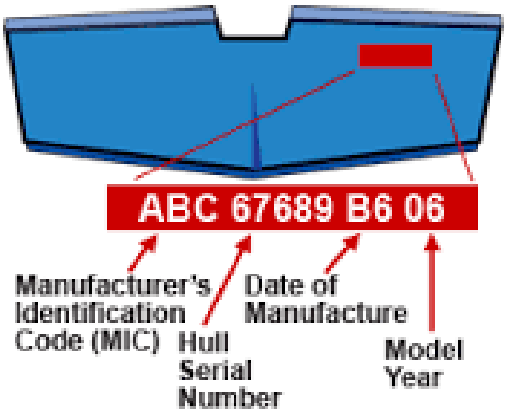


Figure 9 - hull identification number location.

Record Your HIN:

S X J _ _ _ _ _ _ _ _ _ _

Servicing Your SEAVEE®

SEAVEE® provides factory direct sales and service. Consult SEAVEE® Service in Miami, Florida, to have your boat serviced at one of our dedicated expert factory services centers.

If you are outside the South Florida area, your boat may be serviced locally by expert factory service representatives, supervised by our Miami Service center. Contact SEAVEE® Service, and they will arrange for service wherever you are located.

Manufacturer's Certification and Capacity

All boats must comply with federal regulations regarding overall maximum capacities. The boat is Yacht Certified under the auspices of the National Marine Manufacturer's Association. Following applicable laws, standards, and rules, this vessel

exceeds twenty (20) feet in length and is not required to have a specific maximum capacity. The operator should consider the size of the voyage, weather and weather forecast, conditions, passengers, and other factors in determining the safe operating load for a particular voyage.

An NMMA Certification means that the National Marine Manufacturers Association has judged your SEAVEE® to comply with applicable federal regulations and American Boat and Yacht Council standards.

Getting to know your SEAVEE®

Power Capacity

The "Specifications & Dimensions" on the following page has the maximum rated power listed for your boat. DO NOT EXCEED THIS RATING.

Today's various engine types are more powerful and require regular maintenance to maintain optimal performance. The owner/operator should read all information regarding safety features, warning notices, and maintenance schedules for the continued safe operation of the engine

Basic Specifications

Model Summary

BASIC SPECIFICATIONS

MODEL		450Z
LENGTH		45'-0"
BEAM		12'-6"
WEIGHT NOTE #2 (W/O ENGINES & DRY)	(LBS)	24,000
HULL DRAFT	(IN.)	30"
HULL DEADRISE	(DEG.)	22
FUEL (GASOLINE) NOTE #3	(GAL.)	750
FUEL (DIESEL)	(GAL.)	40
FRESH WATER	(GAL.)	110
MAX # ENGINES	(#)	4
MAX HP	(HP)	2200
WASTE	(GAL.)	25
HULL CONSTRUCTION		CORED/INFUSED

NOTES

1. All specifications provided as is, without warranty or guarantee. Specifications subject to change without notice.

2. Weight is dry boat, no engines, basic hardtop , basic leaning post/helm seat, side door, as applicable. Each boat can vary in weight considerably based on options, construction, and other factors. Weights are provided for comparative purposes only.

3. Fuel capacity based on latest fuel tank net capacities. Refer to section 3 for more information.

4. Some items listed may be optional, including waste tank, diesel generator and diesel tank, and others.

Model Summary

DETAILED ON-BOARD STORAGE SPECIFICATIONS

	MODEL	450Z
	LENGTH	45'-0"
	BEAM	12'-6"
FWD FISHBOX - Standard	1	150 gal
FWD FISHBOX - Standard, Optional Baitwell	2	60 gal
FWD STORAGE BOXES (Each)	3	95 gal x 2 (Port & Starboard)
IN-DECK STORAGE - Standard, Optional Fishbox and/or Baitwell	4	40 gal x 2 (Port & Starboard)
TRANSOM LIVEWELL (Port / Starboard Each)	5	40 gal x 2 (Port & Starboard)
AFT SIDE STORAGE COMPARTMENT(S) - Standard (Each)	6	40 gal (Removable) x 2
AFT FISHBOXES - Standard (Each)	7	100 gal x 2 (Port & Starboard)

1. All specifications provided as is, without warranty or guarantee. specifications subject to change without notice.

2. Weight is dry boat, no engines, basic hardtop, basic leaning post/helm seat, no side door, as applicable. each boat can vary in weight considerably based on options, construction, and other factors. Weights are provided for comparative purposes only.

3. All capacities approximate and actual capacity may vary.

4. Some items listed may be optional, including waste tank, diesel generator and diesel tank, and others.

Basic Features

Deck Plan

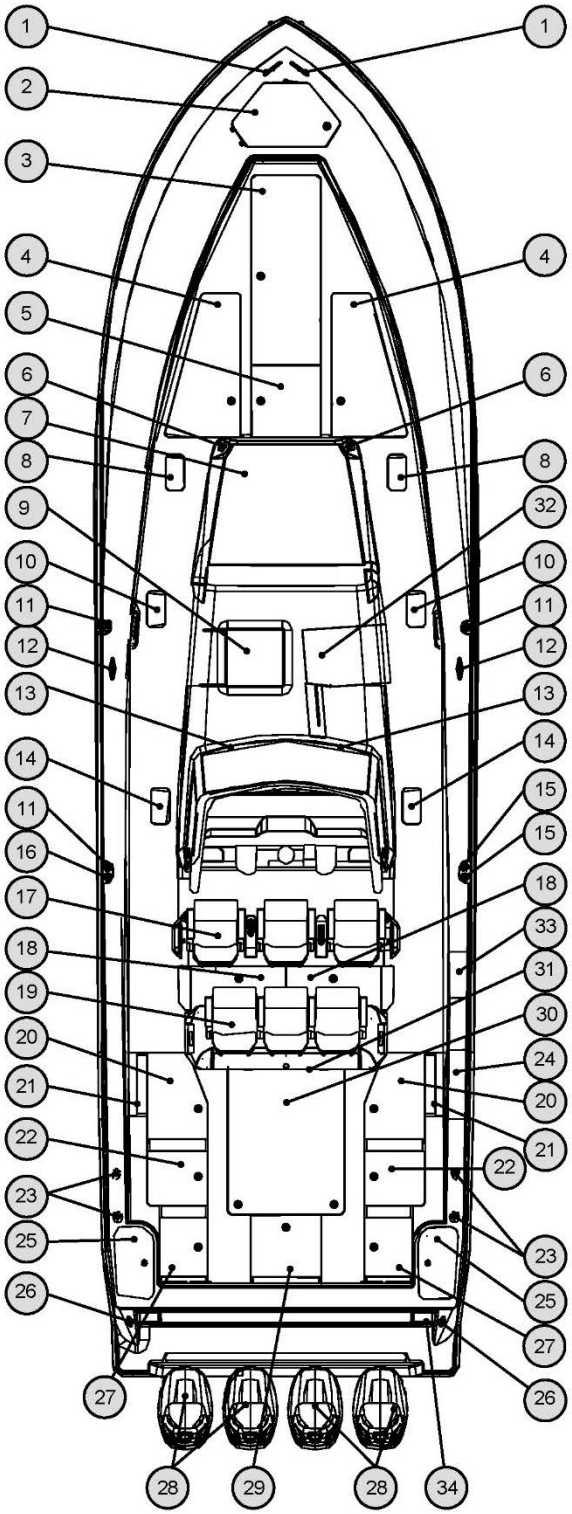


Diagram 2 -Basic Features.

	FEATURES DECK
1	BOW CLEATS
2	ANCHOR LOCKER
3	FORWARD FISH BOX STANDARD
4	FORWARD STORAGE BOX
5	FORWARD FISH BOX STANDARD/ OPTIONAL BAITWELL*
6	CUP HOLDER
7	CONSOLE LOUNGE SEATING
8	FUEL TANK ACCESS HATCH (VENT)
9	CABIN HATCH - EMERGENCY EXIT
10	FUEL TANK ACCESS HATCH (FILL & SENDER)
11	GASOLINE FILL
12	SPRING CLEATS
13	CONSOLE
14	FUEL TANK ACCESS (PICKUPS)
15	FRESHWATER FILL
16	DIESEL FUEL FILL
17	HELM SEATING
18	IN-DECK STORAGE
19	SECOND ROW SEATS
20	AFT FISH BOXES
21	SWIM LADDER HATCH
22	STORAGE / (OPTIONAL FISHBOX OR BAITWELL*)
23	ROD HOLDERS
24	HULL SIDE DOOR
25	TRANSOM BAITWELLS
26	STERN CLEATS
27	AFT STORAGE COMPARTMENTS
28	ENGINES
29	MACHINERY/BILGE ACCESS
30	AUX MACHINERY SPACE / GENERATOR & SEAKEEPER ACCESS
31	COOLERS & TACKLE STORAGE (UNDER)
32	CABIN ACCESS DOOR
33	SHORE POWER (Under the deck)
34	CITY WATER HOOKUP

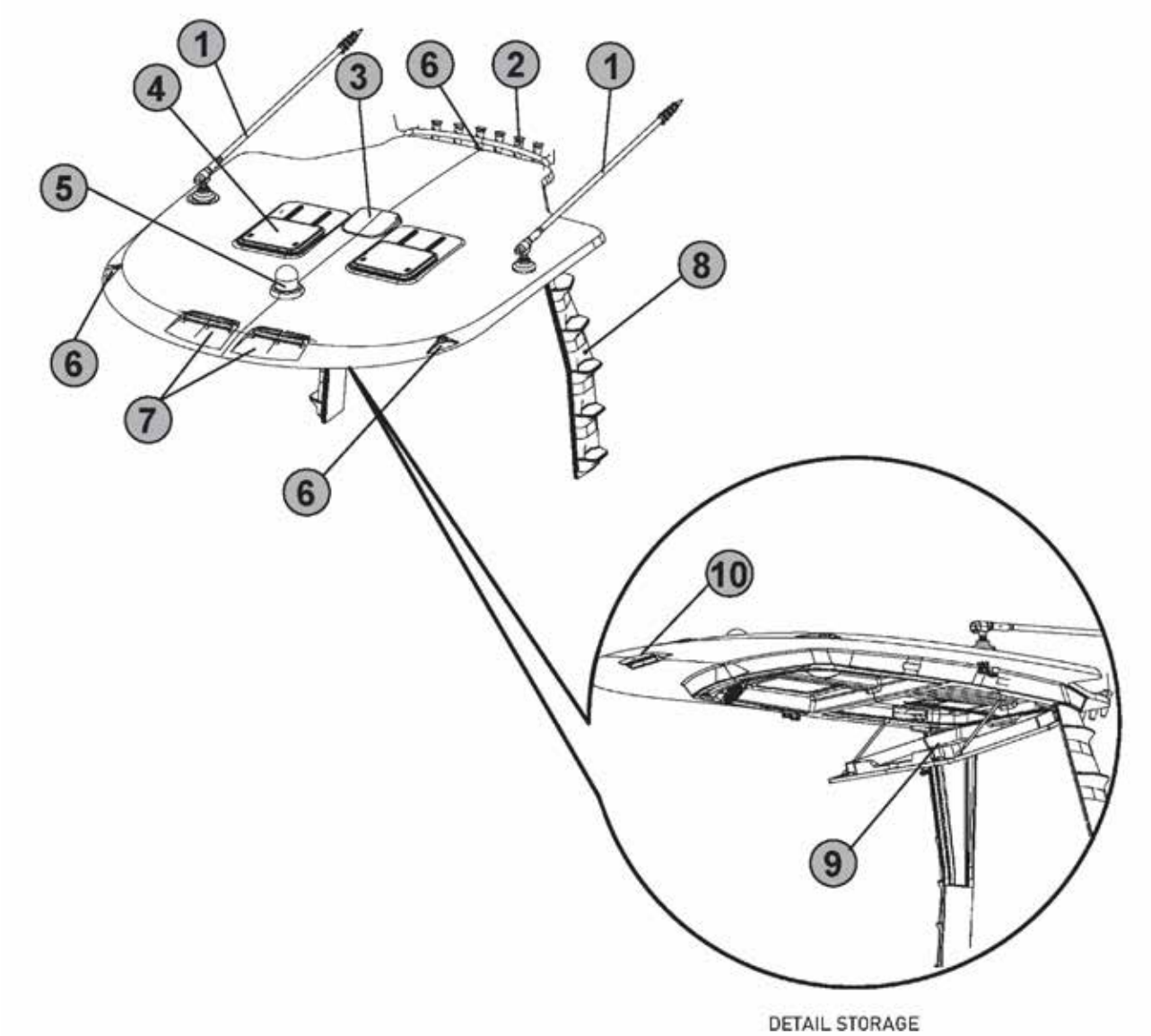
**Optional features can variate on position, quantity, and availability. Final product may differ from illustration.*

Features Hardtop

(Each boat customized and may vary)

1	RADIAL OUTRIGGERS*	**6**	NAVIGATION LIGHTS
2	ROD HOLDERS	**7**	SEARCHLIGHTS
3	RADAR FLAT*	**8**	UPPER STATION LADDERS
4	SUNROOF HATCHES	**9**	KITES / LIFE JACKET STORAGE
5	NIGHT VISION CAMERA*	**10**	FLOOD LIGHTS (underside)

Diagram 3 - Features Hard Top.



**Optional features can variate on position and quantity; Final product may differ from illustration.*

Typical Bilge Layout

(Each boat is customized and may vary)

1	FUEL FILTERS	**11**	SEAKEEPER SEAWATER VALVE
2	SUMP BOX – FISHBOX DRAINAGE	**12**	SEACHEST (*configuration may vary*)
3	FISH BOX STARBOARD SIDE AFT VALVE	**13**	PORT IN-DECK BAITWELL VALVE
4	FISH BOX PORT SIDE AFT VALVE	**14**	PORT TRANSOM BAITWELL VALVE
5	BILGE PUMPS	**15**	STARBOARD IN-DECK BAITWELL VALVE
6	SEACHEST PICK UP - FLUSH BOTTOM, SEACOCK	**16**	STARBOARD TRANSOM BAITWELL VALVE
7	SEACHEST PICK-UP – HIGH SPEED, STARBOARD SIDE SEACOCK	**17**	STARBOARD BAITWELL VALVE
8	SEACHEST PICK-UP – HIGH SPEED, PORT SIDE SEACOCK	**18**	AIR CONDITIONING SEAWATER VALVE
9	GENERATOR SEAWATER VALVE	**19**	PORT TRANSOM BAITWELL VALVE
10	FORWARD BAITWELL DRAIN VALVE		

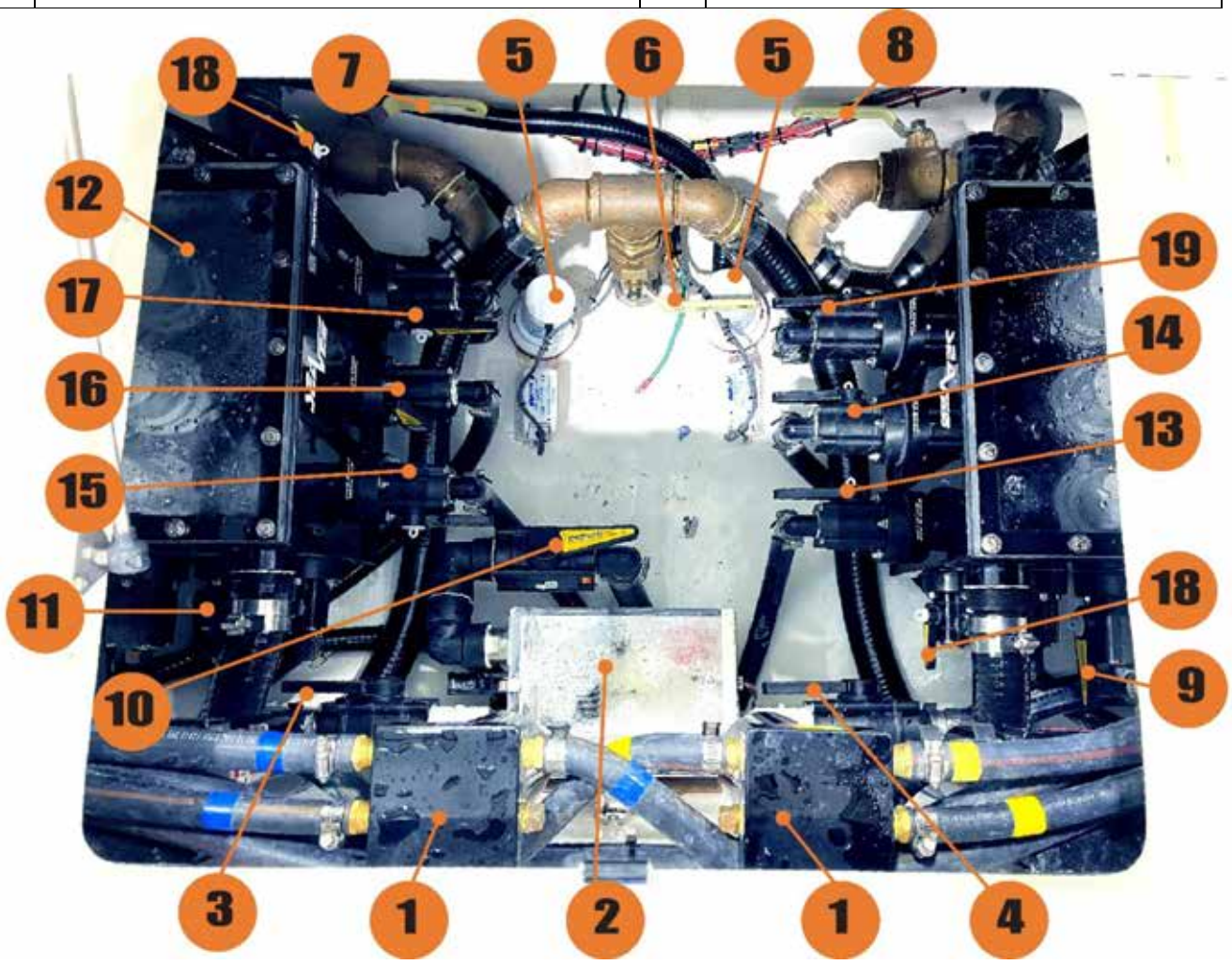


Diagram 4 - features bilge

Auxiliary Machinery Bilge Layout

1	SEA WATER STRAINER	8	GYRO SEAWATER COOLING PUMP
2	AIR CONDITIONING SEAWATER COOLING PUMP	9	GENERATOR LIFT MUFFLER
3	AUTOMATIC FIXED FIRE EXTINGUISHER SYSTEM	10	SALTWATER PUMP
4	BATTERIES, PORT & STARBOARD ENGINES/HOUSE	11	DIESEL GENERATOR
5	MACHINERY SYSTEM BREAKERS	12	ELECTRIC FUEL VALVES
6	FRESH WATER PUMP	13	BATTERY SWITCH PORT
7	SEAKEEPER GYRO STABILIZER	14	BATTERY SWITCH STARBOARD

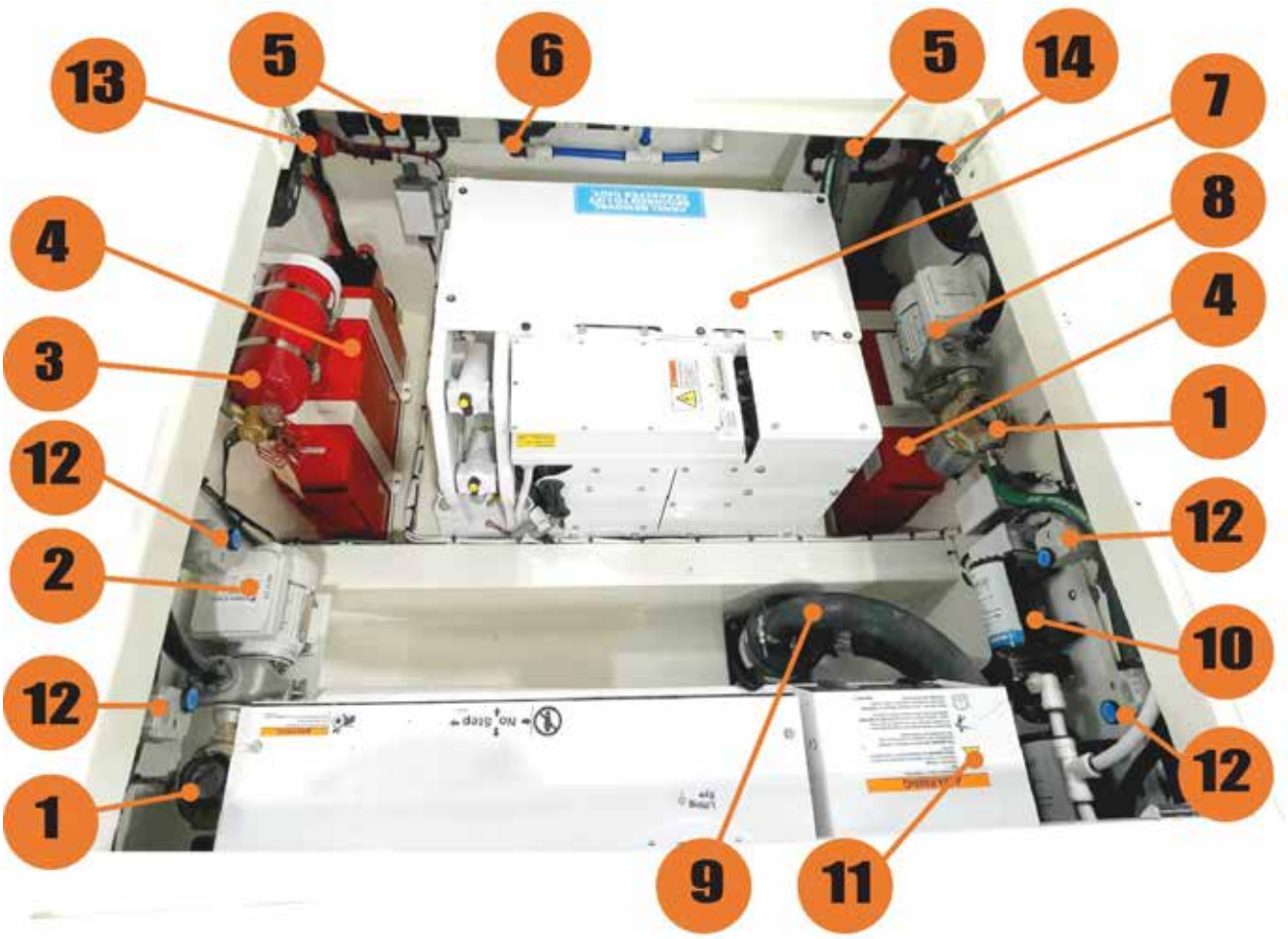


Diagram 5 -auxiliary machinery compartment.

Additional Transom Bilge

(Each boat is customized and may vary)

AUXILIARY PORT BILGE COMPARTMENT	
1	BAITWELL PUMP Y-VALVE
2	TRIM TAB PUMP PORT SIDE
3	BAITWELL OVERFLOW SEACOCK, PORT DECK CAP
4	HOT WATER HEATER

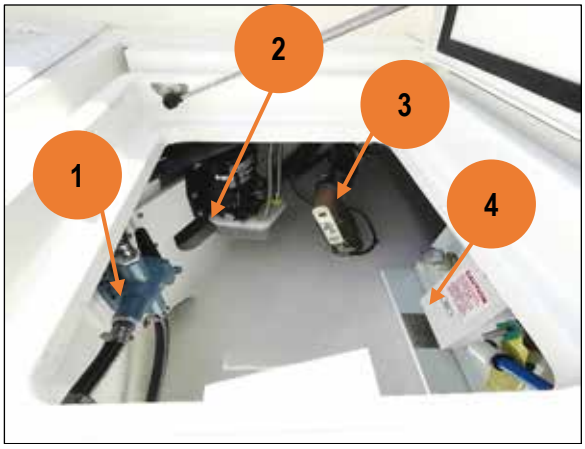


Diagram 6 – auxiliary port bilge compartment.

AUXILIARY PORT BILGE COMPARTMENT WITH OPTIONAL IN-DECK BAITWELL	
1	BAITWELL PUMP Y-VALVE
2	TRIM TAB PUMP PORT SIDE
3	BAITWELL OVERFLOW SEACOCK, PORT DECK CAP
4	BAITWELL OVERFLOW SEACOCK, PORT IN-DECK
5	HOT WATER HEATER

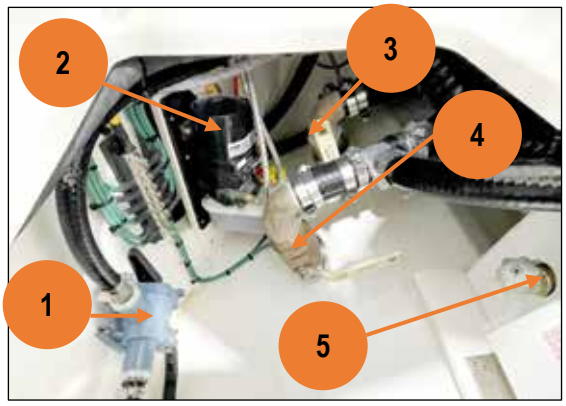
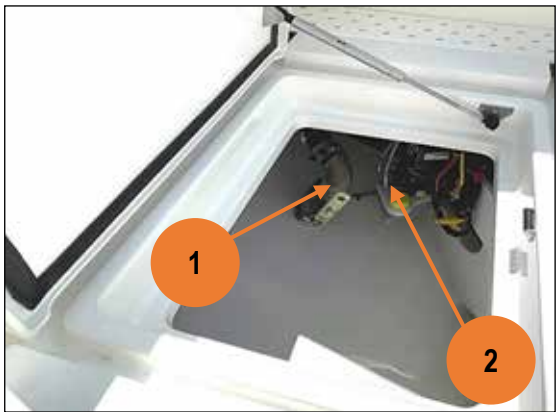


Diagram 7 – auxiliary port bilge compartment with optional floor baitwell

AUXILIARY STARBOARD BILGE COMPARTMENT	
1	BAITWELL OVERFLOW SEACOCK, STARBOARD DECK CAP
2	TRIM TAB PUMP STARBOARD SIDE
3	CHILLER EXHAUST VALVE
4	SEAKEEPER EXHAUST VALVE
5	AIR CONDITIONING, COCKPIT, SEAWATER COOLING EXHAUST VALVE



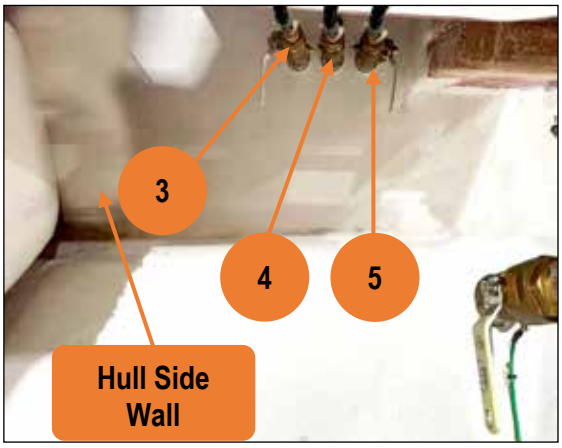


Diagram 8 – auxiliary starboard bilge compartment.

AUXILIARY STARBOARD BILGE COMPARTMENT WITH OPTIONAL IN-DECK BAITWELL	
1	BAITWELL OVERFLOW SEACOCK, STARBOARD DECK
2	TRIM TAB PUMP STARBOARD SIDE
3	BAITWELL OVERFLOW SEACOCK STARBOARD IN-DECK (OPTION)

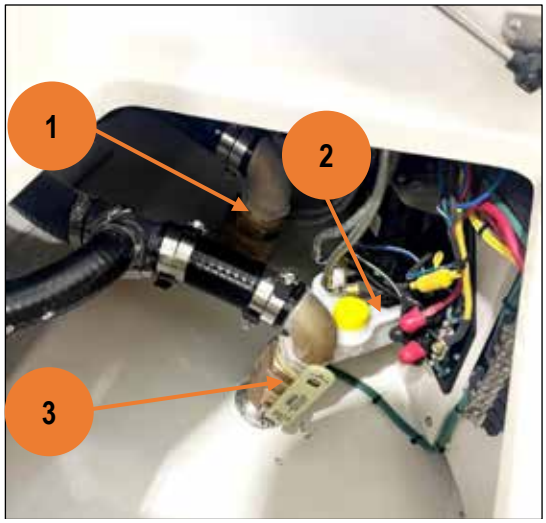


Diagram 9 – auxiliary starboard bilge compartment with optional floor baitwell

TRANSOM BILGE COMPARTMENT			
1	ENGINE GROUNDING	4	GENERATOR EXHAUST SYPHON BREAK
2	ENGINE MAIN DC BUSBARS	5	ENGINE FRESHWATER FLUSHING SYSTEM
3	ENGINE STARTER SOLENOID FOR PARALLEL SWITCH	6	GENERATOR COOLANT EXPANSION TANK

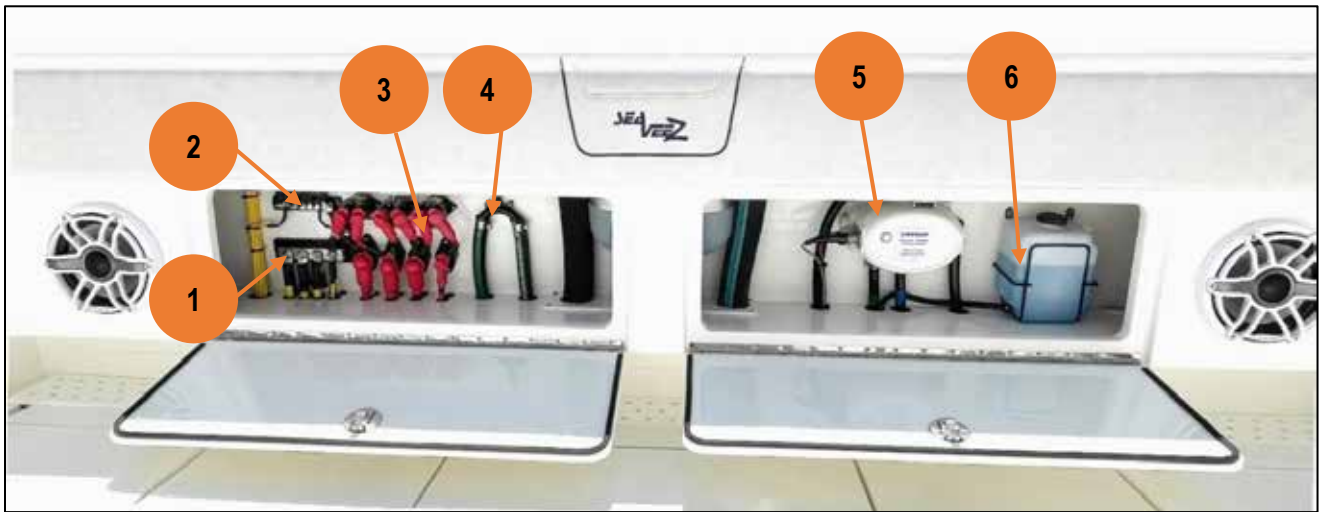


Diagram 10 - transom bilge compartment.

**Optional features can variate on position and quantity. The final product may differ from the illustration.*

Features Cabin

*(*Each boat is customized and may vary*)*

1	COMPANIONWAY STAIRS	**12**	HEAD VANITY
2	WASTE OVERBOARD DISCHARGE VALVE (UNDER STAIRS)	**13**	FUEL TANK SELECTOR PANEL
3	AIR CONDITIONING DUCTING ACCESS	**14**	MAIN ELECTRONICS ACCESS
4	TELEVISION*	**15**	BATTERY ACCESS
5	STORAGE COMPARTMENT	**16**	CABIN AIR CONDITIONING AND ELECTRICAL ACCESS
6	CABIN SEATING	**17**	SHOWER CONTROL
7	HI/LO TABLE	**18**	CARBON MONOXIDE DETECTOR
8	HOT/COLD WATER SYSTEM MANIFOLD ACCESS	**19**	CABIN AIR CONDITIONING CONTROL PANEL
9	GALLEY CABINETS & REFRIGERATOR	**20**	CHILLER PLATE CONTROL PANEL*
10	CABINETS & MICROWAVE	**21**	ACCESS HATCH BOW THRUSTER AND OPTIONAL FORWARD BAITWELL STRAINER
11	ELECTRICAL MAIN DISTRIBUTION PANEL		

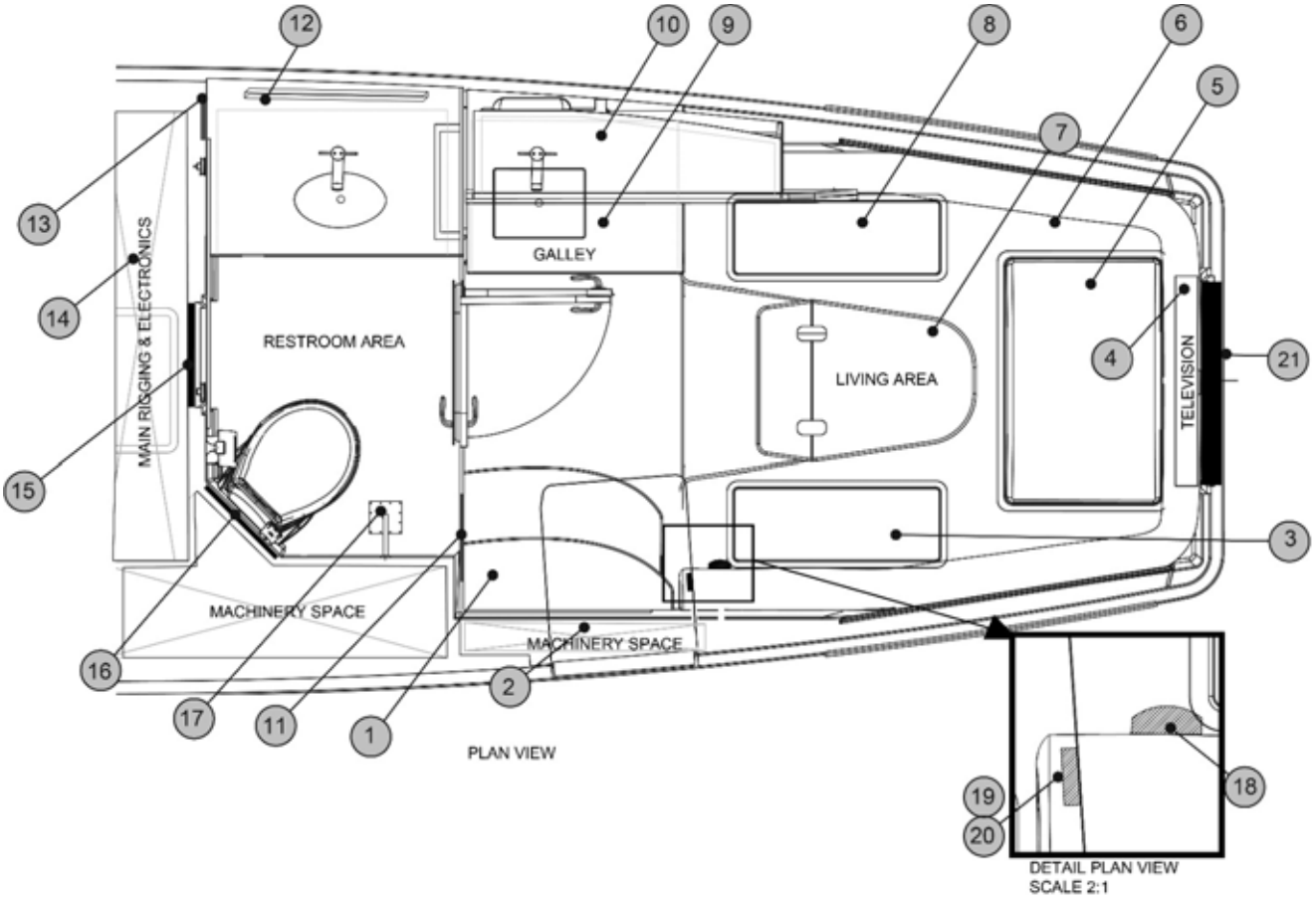


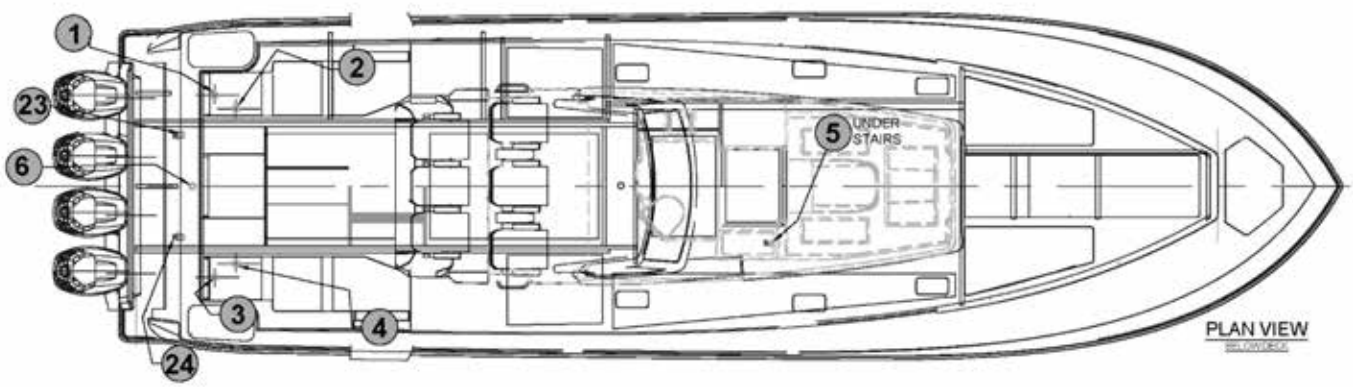
Diagram 11 – cabin layout.

**Optional features can variate on position and quantity; the final product may differ from the illustration.*

Typical Thru-Hull Fittings Layout – Hull Sides & Transom

(Each boat customized and may vary)

1	BAITWELL OVERFLOW – PORT SIDE CAP	**5**	WASTE TANK OVERBOARD DISCHARGE
2	BAITWELL OVERFLOW - PORT IN-DECK	**6**	BOTTOM FLUSH PICKUP – SEAWATER- PORT
3	BAITWELL OVERFLOW – STARBOARD SIDE CAP	**23**	TRANSOM HIGH SPEED PICK UP - PORT
4	BAITWELL OVERFLOW – STARBOAR IN-DECK	**24**	TRANSOM HIGH SPEED PICK UP - STARBOARD



The liner, cockpit, and cabin are shown for reference. All thru hulls are at the hull bottom.

Diagram 12 -thru-hull fittings below deck plan view.

12	BILGE PUMP BOW DISCHARGE #1	**20**	AIR CONDITIONING COCKPIT DRAINAGE
13	GYRO COOLING WATER DISCHARGE	**22**	AIR CONDITIONING CABIN DRAINAGE
14	CHILLER COOLING WATER DISCHARGE	**25**	EXHAUST GAS GENERATOR DISCHARGE
17	BAITWELL STRAINER DRAINAGE BOW	**27**	SCUPPER DRAIN
19	ROD LOCKER GUTTER DECK DRAINAGE		

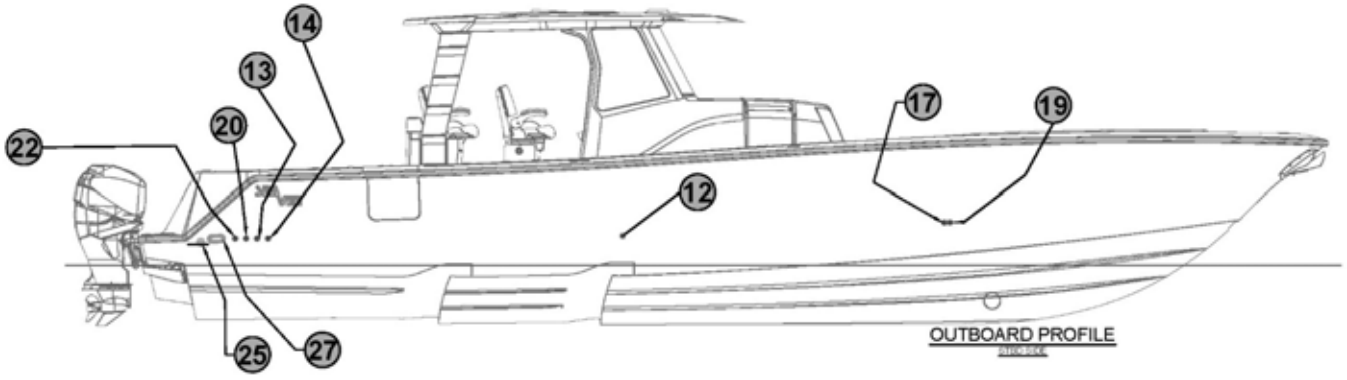


Diagram 13 - thru hull fittings outboard starboard side.

7	BAITWELL STRAINER DISCHARGE – DRAINAGE PORT	**15**	BAITWELL OVERFLOW BOW AREA
8	BAITWELL STRAINER DRAINAGE STARBOARD	**16**	ROD LOCKER GUTTER DECK DRAINAGE
9	BILGE PUMP #1 DISCHARGE	**21**	SHOWER SUMP DISCHARGE
10	BILGE PUMP #2 DISCHARGE	**26**	GENERATOR EXHAUST COOLING WATER
11	SUMP BOX DISCHARGE– FISH BOX DRAIN	**27**	SCUPPER DRAIN

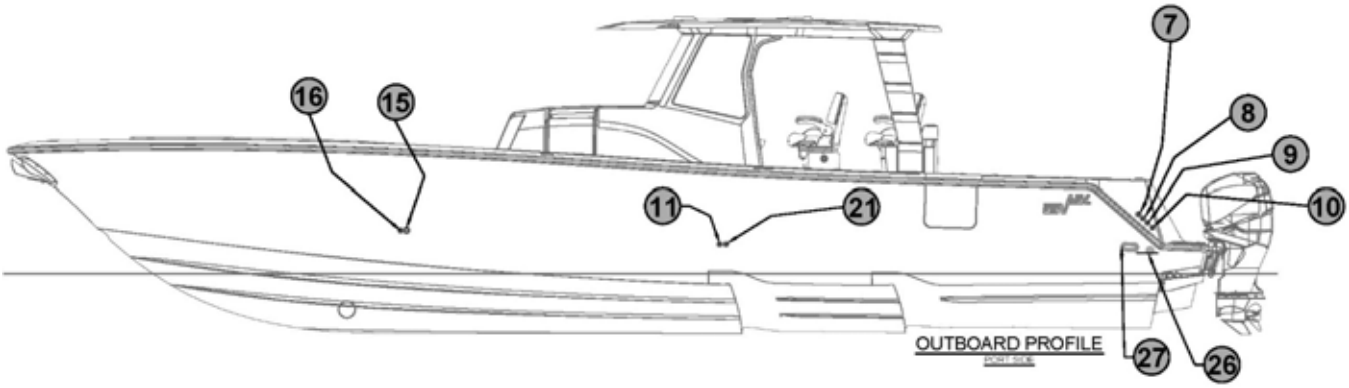


Diagram 14 -thru-hull fittings outboard port side.

**Optional features can variate on position, quantity, and availability. Final product may differ from* illustration.

Typical Transom fittings

(Each boat is customized and may vary)
Engines are not shown for clarity

1	PULL OUT SWIM LADDER	**5**	ZINC ANODE
2	TRIM TABS	**6**	GARBOARD DRAIN
3	UNDERWATER LIGHTS*	**7**	SCUPPER DECK DRAIN
4	HIGH-SPEED PICK-UPS	**8**	CITY WATER INLET

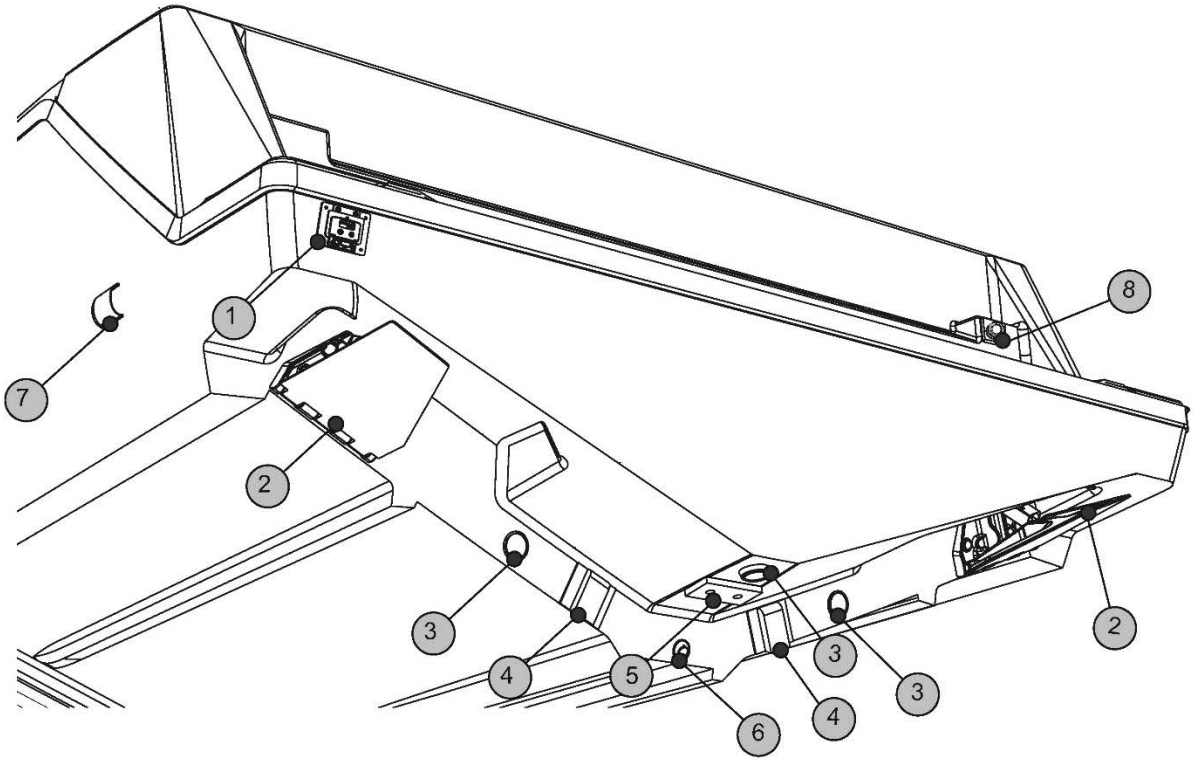


Diagram 15 - transom fittings layout.

**Optional features can variate on position, quantity, and availability. Final product may differ from illustration.*

Typical Dash / Helm Layout

1	STEERING WHEEL	12	MERCURY VESSEL VIEW
2	KILL SWITCH	13	FIRE EXTINGUISHING EMERGENCY PULL
3	TRIM TABS	14	COMPASS
4	JOYSTICK	15	HELM SWITCH PANEL
5	GEAR SHIFT/THROTTLE CONTROL	16	AUXILIARY SWITCH PANEL
6	CUP HOLDERS	17	STEREO HEAD
7	AC VENT	18	BOW THRUSTER JOYSTICK
8	USB RECEPTACLES	19	CHART PLOTTER REMOTE CONTROL
9	MULTIFUNCTION DISPLAY 24"	20	FIXED FIRE EXTINGUISHING DISPLAY
10	SEAKEEPER CONTROL	21	VHF REMOTE MICS
11	GENERATOR DISPLAY		

**Optional features can vary on position or quantity based on owners layout. Final product may differ from illustration.*

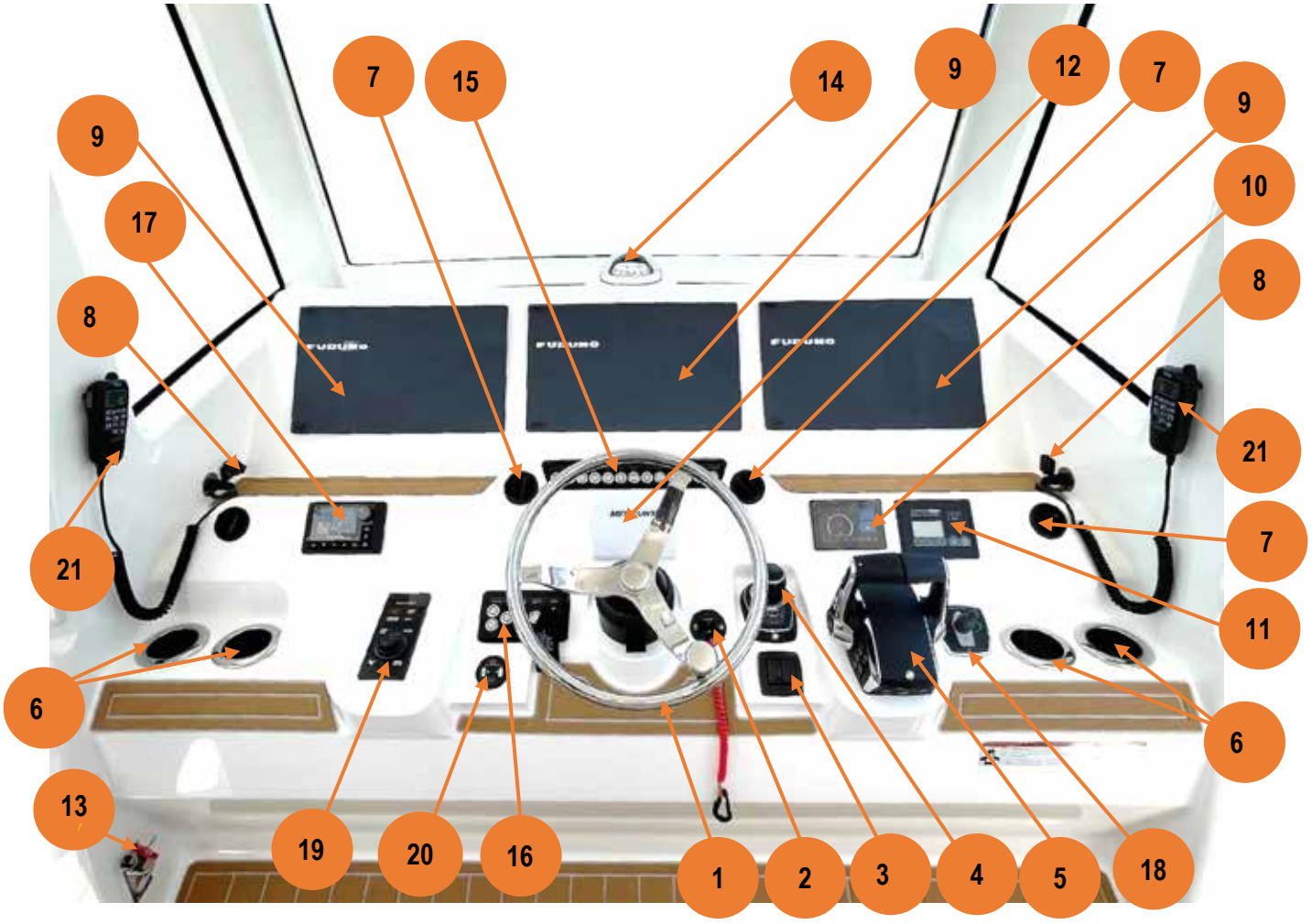


Diagram 16 - Helm Layout.

Lifting & Transporting

Bow Tow Eye (Option)

The optional heavy-duty welded stainless steel bow tow eye may be installed on the hull, extreme front of the boat, reinforced with a stainless-steel backing plate in the anchor locker.

Towing or being towed stresses the boat(s): hardware and lines. Failure of any part can seriously injure people or damage the boat(s).

DO NOT stand directly in line with the tow line. If it were to break, it would "snap back," causing injury or damage to everything in its path.

⚠WARNING

PERSONAL INJURING HAZZARD
Towing or being towed stresses the boat (s) hardware and lines. Failure of any part can seriusly injure people or damage the boat(s). DO NOT stand directly in line with the tow line. If it were to break, it would "snap back" causing injury or damage to everything in its path
W-01

The tow eye may be used to tow the boat by another larger yacht. Extreme care should be taken, and it is the responsibility of the master of the tow vessel to determine proper speed based on sea conditions, length of scope, type of tow line, type and arrangement of tow fittings, and many other factors. A very experienced operator should only attempt this. Loss of the boat could result from an improper or poorly executed tow.

If it becomes necessary for you to have your boat towed, the U.S. Coast Guard or a private salvage company experience

in this type of operation is better equipped to perform the service.

Use another recreational boat only as a last resort. Doing so may cause damage to one or both boats due to operator inexperience or other conditions such as weather and current.

In addition, the pitch of most propellers on average recreational vessels is geared toward maximizing the speed of the vessel, not torque, thus making towing inefficient and stressful on the engine

Another recreational boat may assist by standing by and possibly keeping the disabled boat's bow at a proper angle until help arrives.

If it becomes necessary to tow your boat:

If possible, create a harness with a line around the hull or superstructure or use spring lines to secure the towed vessel to the towing boat (See Figure 10)

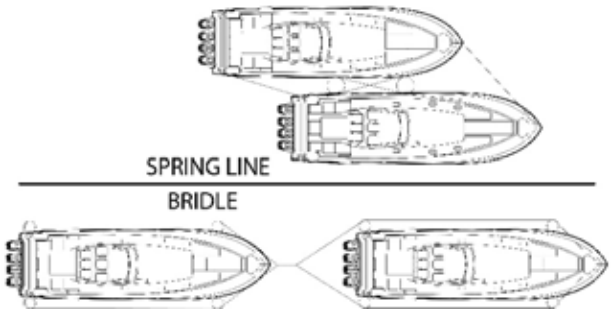


Figure 10 - methods of towing

Either of these methods will distribute the load over a wide area. Be sure to use fenders or other chafe protection at the pressure points.

If using the bow eye to tow is the only option:

- Use double-braided or braid-on-braid line. NEVER use three-stranded twisted nylon; it has too much elasticity and can break and "snap back," causing severe injury or damage.
- Attach the tow line to the bow tow eye only. DO NOT attach the tow line to a cleat or deck rail.
- Have towing vessel move slowly to prevent strain on a slack line.

- Keep someone at the helm of the towed vessel to steer.
- Keep lines clear of propellers on both boats.
- Keep hands and feet clear of the other boat.
- NEVER hold a towline after it is pulled taut.

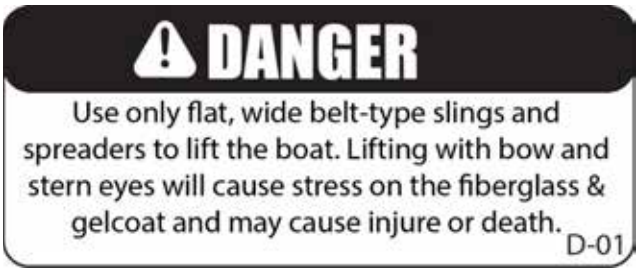
Lifting

DO NOT use the bow eye for lifting the boat.

Whether you are lifting your boat out of the water for routine maintenance or long-term storage, consider the following:

- If you are using a professional lifting service, it is prudent to check all credentials and ask for proof of insurance to protect your investment.
- Ensure that fish boxes and bilge are pumped out before lifting.
- Ensure that the A/C system, generator, chiller plate system, and seakeeper are OFF before lifting the boat. Running the raw water systems outside the water can damage your units.
- Use a wide, flat belt sling for lifting to minimize stress on the gunwales.
- Careful location of the sling is required. Use the safety labels "SLING" located at the port and starboard sides under the gunnel to place the slings. (*Refer to Page 36, Diagram 1*)
- DO NOT place slings where contact with underwater fittings will occur.
- ONLY LIFT THE BOAT WITH SLINGS LOCATED ON THE SLING LOCATIONS
- When secured on land, pull the garboard drain, ensure that motor well drains and deck drains are free-flowing, and position the boat with the bow slightly higher than the stern so that any water which is allowed to accumulate in the cockpit, motor well, or bilge can quickly drain from the boat.

Diagram 17 provides the measurements you or your professional lifting service need to lift your vessel. For more information, please contact SEAVEE® service.



Hull Lifting & Dimensions Diagram

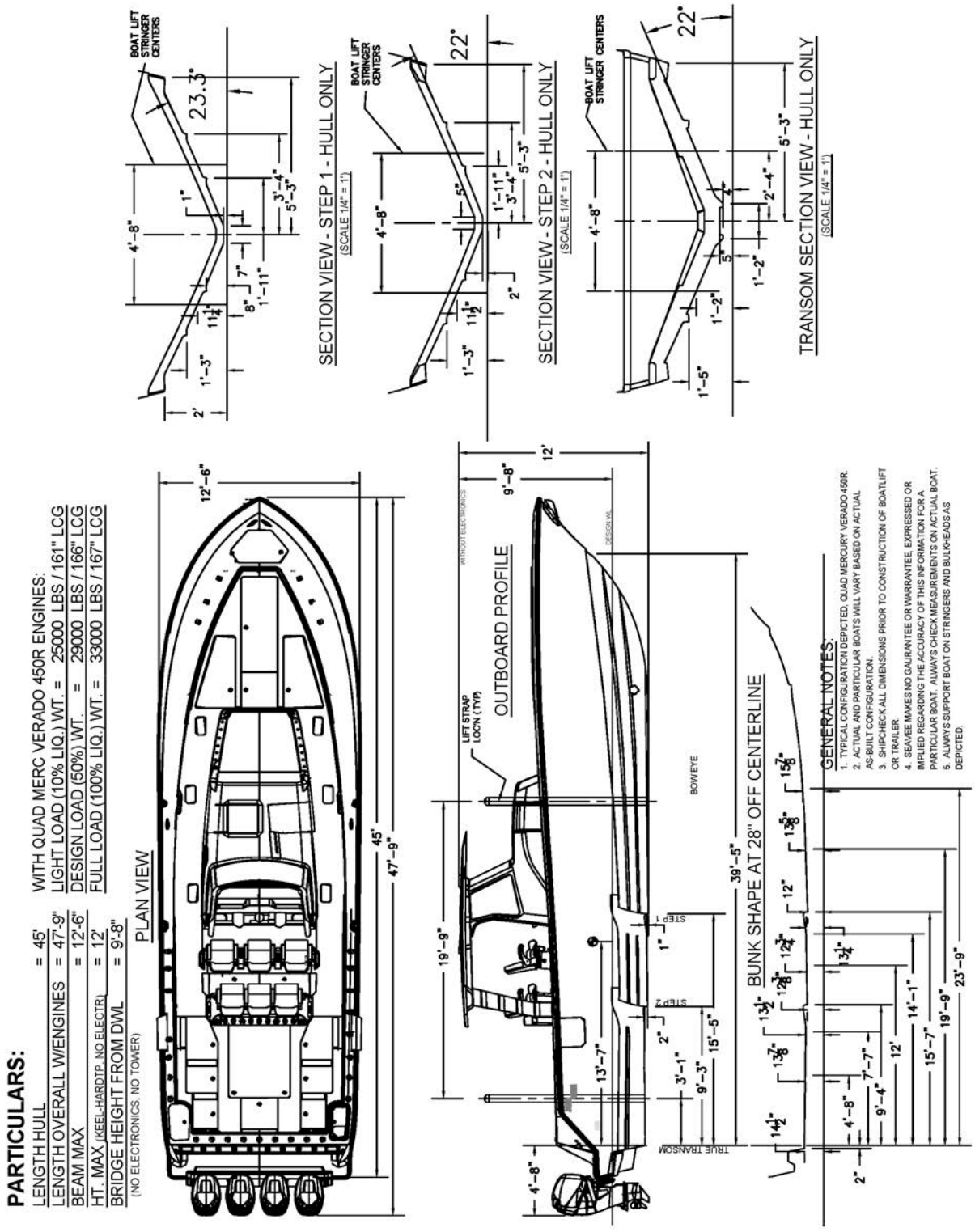


Diagram 17 - trailering & Lifting Points.

Mooring & Anchoring

Docking

Your boat has six (6) 10-inch cleats, two located at the bow (port & starboard), two located amidships (port & starboard), and two at the stern (port & starboard) (*See pg. 41, Diagram 2*). The cleats are used to secure the boat to the dock. While loading, unloading, or mooring.

The Figure 11 below shows the correct method for tying a belaying knot, commonly used to secure a boat to a dock. This type of knot will hold fast and is simple to release when needed.

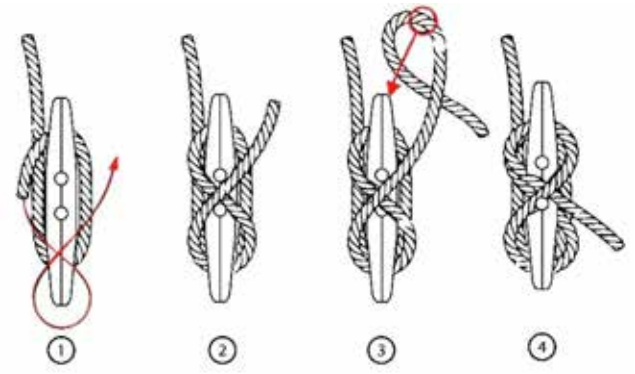


Figure 11 - docking belaying knot

Anchoring System

Danforth Anchor System (Standard)

The boat is configured standard for a Danforth anchor to be stowed and manually deployed, including a dedicated stowage compartment for the anchor, rode, and chain.

The molded recess for the Danforth Style Anchor stock includes poly clips to retain the anchor while running. The owner should measure and check the dimensions of the molded recess to ensure the customer-supplied anchor will fit in the molded recess.

The Danforth/ Fluke style anchor compartment also includes a forward molded storage compartment designed for keeping sea anchors, dock lines, and other anchoring items in place.

Figure 12 – forward molded storage for Danforth/ fluke style anchor.

The anchor should be stowed with the stock set inside the dedicated molded grooves in the anchor locker, and the poly retaining clips should be rotated over the stock to ensure that the anchor remains secure while running.

The bow eye includes an anchor retaining plate bolted to the inside of the bow eye bolt inside the anchor locker. The bitter end of the anchor rode should be tied off to this plate to ensure that if the anchor comes to the end of the rode, the anchor will not be lost overboard.

Windlass Anchor System (Option)

Alternatively, the boat can be configured with a windlass system, which includes a dedicated windlass compartment and custom Lewmar Anchor roller assembly.

The anchor roller assembly is designed for the Lewmar DTX 35lb plow anchor.

This system can be configured with a conventional windlass that includes a capstan/Wildcat or a Drum Style Windlass.

The conventional windlass retrieves and deploys the anchor rode and chain from the anchor chain locker located below the windlass mounting platform. The end of the rode is connected to the plate bolted to the back side of the bow eye in the chain locker.

The conventional windlass may be operated in either the FREE-FALL mode or motor UP and DOWN mode. For more information, refer to the windlass manufacturer manual.

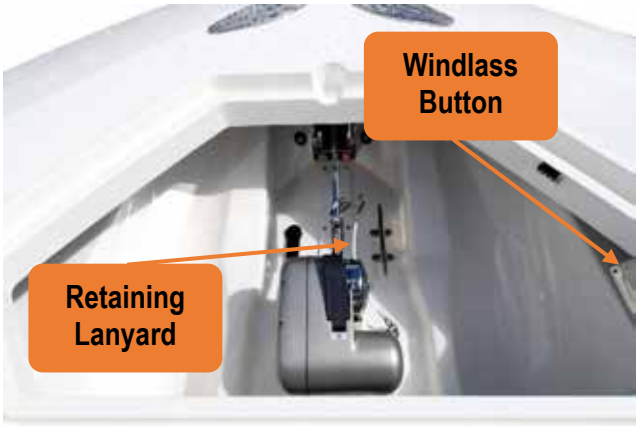


Figure 13 – conventional windlass inside the anchor hatch.

The drum-style windlass will retain the anchor and rode on the drum. The bitter end of the rode is connected to the drum.

The operation of both windlass styles is similar. Consult the specific manual for more specific information regarding their operation.

Use the anchor retaining lanyard to secure the anchor in place when steaming to prevent the anchor from coming loose and damaging the hull, as shown in Figure 13.

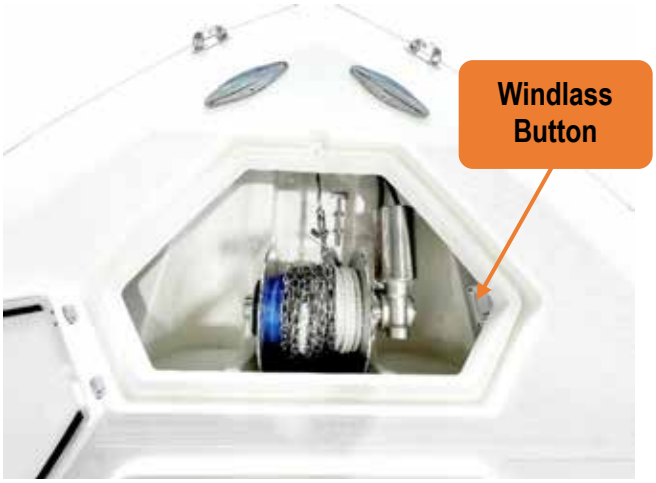


Figure 14 – drum style windlass & button inside the anchor hatch

Anchoring

Bring the bow into the wind or current and keep the engines neutral to anchor. When the vessel stops, lower the anchor from the bow.

When at anchor, secure the anchor and rode to the cleat. Do not use your windlass to secure the rode while at anchor.

Windlass Usage

The windlass provides powered retrieval of the anchor and rode. However, the windlass should not be used to belay the anchor rode while anchoring to prevent damage to the windlass.

Belay the anchor rode to the anchor cleat on the windlass platform whenever at anchor.
Never use the windlass to pull the boat forward to free the anchor. This will put unnecessary strain on the windlass and could cause the windlass to fail.

⚠ CAUTION

NEVER attempt to break a stuck anchor loose using the windlass system, as that will likely cause damage to the windlass motor, anchor rode, and/or your boat. C-34

Always use the power from the engines to position yourself and break the anchor free from the bottom. Once the anchor is free, use the windlass to retrieve it from the water and onto the roller.

CONSULT THE INCLUDED WINDLASS MANUAL SUPPLIED IN YOUR OWNER'S MANUAL BAG FOR THE SAFE AND PROPER OPERATION OF THE WINDLASS.

The windlass solenoid is located inside the anchor hatch on the port side. A qualified service technician can unscrew the cover to access the solenoid.

For any troubleshooting, consult with SEAVEE® service.

Figure 15 - windlass solenoid access.

Operating The Conventional Windlass Manually

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

One (1) star socket on the right side of the windlass is used for manual anchor deployment.

- Insert the emergency handle into the star socket and turn it clockwise to loosen the anchor windlass wildcat clutch, allowing the wildcat/capstan to turn freely.
- The star socket located off-center is used to tighten or loosen the clutch.
- Turn the handle clockwise to help to drop the anchor and turn counterclockwise to help to raise it.
- Place the handle in its storage location and secure it with a wing nut.

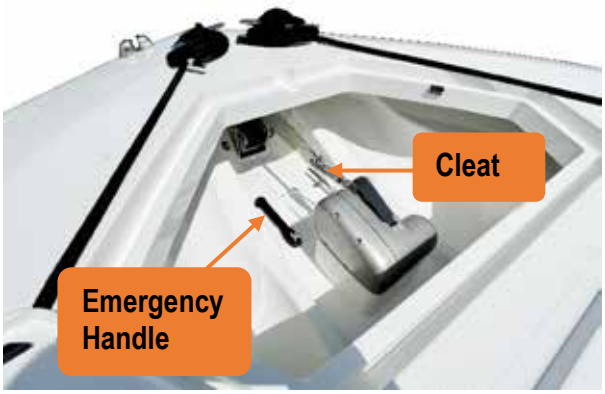


Figure 16 –emergency handle location for conventional windlass

After retrieving and securing the anchor, re-tighten the clutch assembly by turning the center socket clockwise.

Be sure to attach the safety lanyard when the anchor is stowed in the anchor roller.

When the operation is complete, place the handle in the storage location and secure it with a wing nut

FOR MORE INFORMATION ABOUT THE WINDLASS MANUAL OPERATION, REFER TO THE MANUFACTURER'S MANUAL.

Considerations

- The wind and sea conditions can affect the boat.
- Because the boat is not moving through the water, there is no control.
- Ensure that the anchor will hold under all circumstances if you leave the boat.

Proper anchoring requires knowledge of RODE and SCOPE and understanding the relationship between rode, scope, and anchor performance.

The minimum rode-scope ratio is 5:1 for calm conditions; the normal is 7:1, and severe conditions

may require a 10:1.

Rode length is equal to bow height plus the water depth multiplied by the scope (*refer to Figure 17*)

Example:

Required rode length for a boat with four (4) feet bow height in a ten (10) feet water depth:

Rode length = (4 feet + 10 feet) X 7*
Rode length = 14 feet X 7*
Rode length Required = 98 feet

The scope may range from 5 to 10 or more. However, at less than 5, the anchor can easily break loose.

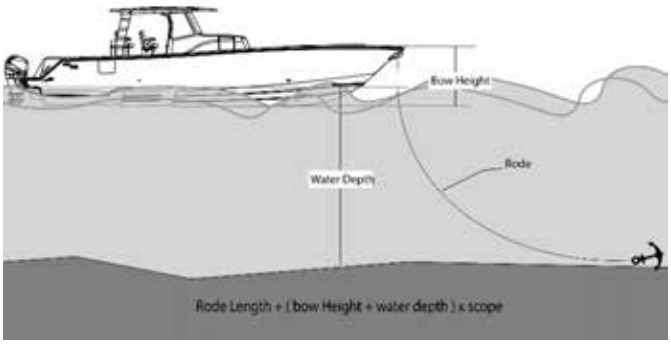


Figure 17 - proper anchoring

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.

Setting the Anchor

With the anchor rode out and the boat in the intended swing zone, secure the rode and let the anchor dig in and stop the boat. Exercise caution as you do this.

Wrap the rode once or twice around a cleat and keep your hands well-clear. Once you feel the anchor begin to dig in and set, put the engine in idle reverse and back down on the anchor to secure it to the bottom. This is especially important in areas where the bottom has a layer of sand and grass.

Once the anchor is set, take note of any reference points (landmarks) in relation to the boat. Check these points frequently to make sure you're not drifting.

Weighing the Anchor

To weigh (or retrieve) the anchor, with the engines running, idle forward in the direction of the anchor until directly above, taking up the rode as you go. The anchor will break loose if caught in a soft bottom.

Retrieve a Fouled Anchor with an Anchor Ball

This system works by using a ring attached to a buoy, known as an anchor ball.

It serves as a pulley system that moves down the anchor rode and uses the force from the boat and buoyancy of the buoy to free your anchor and float it to the surface.

1. With the anchor line firmly cleated on the bow, attach the ring on the anchor rode and snap the carabiner to the ring. Then throw the ball overboard.

2. Motor forward toward the anchor at enough of an angle so that you do not run over the rode. As you come up over the anchor, the rode will now be running from the bow alongside and astern of the boat.

3. Keep running forward. The anchor ball will be forced all the way down the rode to the crown of the anchor, where it lifts the anchor out by its head (which is how this ring can help with a stuck anchor). In practice, the anchor often pops loose before the ball travels all the way down the rode.

4. When you see the ball resurface, with the anchor hanging in the ring, stop the boat, turn toward the anchor, and haul it in, bumping in and out of gear to ease the anchor handler's job.

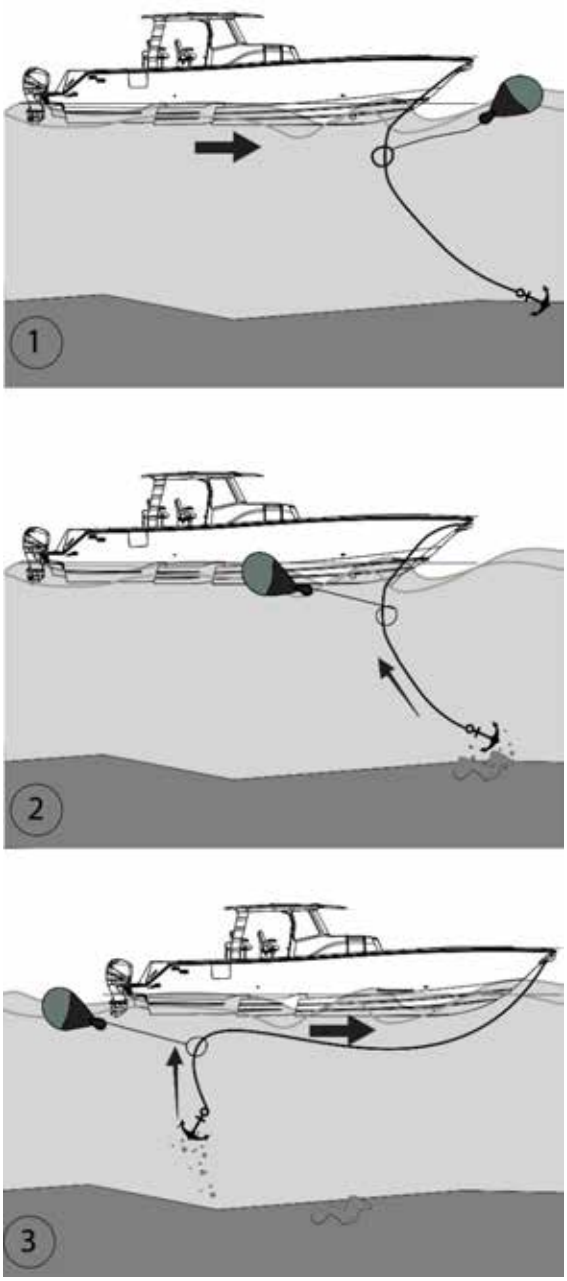


Figure 18 - retrieve a fouled anchor with a ball

Section 3 • Propulsion and Maneuvering

Gear Shift & Throttle Control

Figure 19 - Gear Shift & Throttle Control

The following information is generally applicable to all outboard engine manufacturer installations.

REFER TO THE ENGINE MANUALS AND OTHER DOCUMENTATION FOR THE SPECIFIC OPERATION OF YOUR ENGINES MANUFACTURER'S EQUIPMENT INSTALLED ON YOUR BOAT FOR SAFETY, STRAIGHTFORWARD OPERATION, AND MAINTENANCE INFORMATION.

⚠ DANGER

To avoid risk of injury or death, shut off engines when near swimmers or prior to using swimm ladder. D-02

Your boat features a state-of-the-art digital "drive-by-wire" gear shift and throttle control system.

⚠ DANGER

Be aware of your footing white the boat is underway,slipping or failing could result in serius injury or death, especially if the boat is in motion or in rough seas. Keep the accomoda-tion deck clean, so if movement is neccesary it will be free of obstruction D-03

⚠ WARNING

Never allow passangers to ride in an area (i.e bow, gunnels,transom, etc.) That will pose a hazard to themselves or the boat. W-03

The throttle control regulates the RPM of the engine. Regulating the RPM of the engine will control the speed of the boat. Moving the lever forward engages the forward gear. Moving the lever forward will increase the boat's forward speed.

⚠ CAUTION

Shift Controls into NEUTRAL before starting engine. Shift only when engine is at idle. Reversing at high speeds can cause flooding/ swamping due to water being pushed over the transom. C-01

NOTICE

Wind and seas currents can change how your boat responds while in motion. Understanding your boat and its reaction at speed will make your boating safer and more enjoyable. N-02

Likewise, to reverse power, bring the control lever back to engage the reverse gear and increase the

reverse thrust by continuing to pull back on the throttle control.

The control must be in the "NEUTRAL" position to start your engine(s). Neutral is in the center position of the unit and acts as an idle.

While in this position, the propeller is not rotating. Moving the control arms back and forth allows you to feel a detent in the center position and hear a click when neutral is engaged.

Power Trim Operation

The trim switches are used to obtain an ideal boat angle (concerning the water surface) for a given load and water condition. In most cases, the best all-around performance is obtained with the engine adjusted so the boat will run at a 3° to 5° angle to the water.

The trim switch is located on the handle of the shifter/throttle lever.

NOTICE

Motor trim, hull trim plane and speed are factors that affect a boat's trim angle such that visibility can be obscured. N-10

The power trim & tilt system allows you to raise and lower the engine(s) for optimum performance in the water and for trailering, launching, and beaching.

The switches are momentary-type switches, which means that constant pressure must be applied to the switch during the raising and lowering cycle.

REFER TO THE ENGINE MANUFACTURER'S MANUAL IN YOUR SEAVEE® OWNER'S BAG FOR COMPLETE INSTRUCTIONS, INFORMATION, AND WARRANTY.

It is recommended to have the engines trimmed down or in for best visibility and reduced planning time. Once on-plane, adjust the trim angle for maximum engine RPM and efficiency.

Power Trim and Trim Tabs

First, adjust the engine trim to the desired running attitude to achieve maximum performance. Then, use the trim tabs to level the boat port and starboard. It may be necessary to re-adjust and fine-tune the trim tabs to achieve optimum attitude and performance.

Trim Guidelines

Running in heavy seas (3-4 feet) requires increased attention to the control of your boat. Trimming the engines down when running in the direction opposite of the waves can help to engage the high deadrise bow into the waves and help keep the boat in the water.

Always consider maintaining a higher bow attitude when running in following sea conditions to avoid stuffing the bow into a wave.

Fuel System

This system has been designed to meet the EPA regulations using certified components to limit fuel vapor emissions.

Your fuel system provides the following benefits:

- Automotive style refueling.
- Automatic nozzle shut-off.
- Fuel nozzle retention.

⚠ CAUTION

Oil and fuel Spills can be dangerous and can subject offenders to severe penalities.
Leaking fuel is a fire and explosion hazard, inspect the system regularly. Examine fuel tanks and exposed lines for leaks and corrosion. C-04

This system signals the pump nozzle to shut off before there is any spit-back or well-back through the fill opening.

Overfill protection is included with each system, reducing the possibility of accidental fuel spills.

The boat includes specially designed fuel fills that reduce hydrocarbon emissions. This fuel fill has a permanently attached cap with a positive closure mechanism with an audible click to let you know when it is sealed. Each cap includes a vent valve to allow air to replace the fuel that keeps water out and prevents fuel vapors from escaping via evaporation.

Fuel tank

Your boat has permanently installed foamed-in fuel tanks made of welded aluminum and coal tar epoxy coated.

The port and starboard fuel tanks have a gross capacity of 192 gallons. However, EPA requires a 5% reserve for fuel expansion. The internal fill shut-off limits the net capacity of each tank to 180 gallons.

Following EPA compliance, the center fuel tank has a gross capacity of 466 gallons and a net capacity of 428 gallons.

The total net capacity of all fuel tanks is 788 gallons. It may not be possible to use the entire capacity of the tanks due to the pick-up location and running trim angle.

It would be prudent to plan on the following minimum usable capacities; approximately 364 gallons for the center tank and 153 gallons for each port and starboard tank.

It is recommended that you follow all instructions regarding filling fuel tanks. Please read and understand the fuel-related information and warnings regarding gasoline and your boat in the engine owner's packet.

NOTICE

It is your responsibility to read and understand the engine manufacturer's manual in your owner's manual bag for complete fuel and fueling information and warnings. N-16

⚠ CAUTION

Use of improper fuel can seriously damage your engine. Engine damage resulting from use of improper fuel is considered misuse of engine and will void the warranty. Follow engine manufacturer's recommendations regarding the types of fuel and oil to use. C-05

Fuel tanks containing less than one-fourth capacity can cause engine stalling problems due to fuel starvation or by allowing sediment and dirt to enter the fuel supply lines. Keep the tank full and monitor the fuel level often to prevent this.

Fuel Fill and Vent System

Each fuel tank is fitted with an integrated fill and vent system.

The system includes an integrated overpressure and vacuum release with anti-surge and flame/spark arresting protection.

The fuel fill and vent system also play an essential role in controlling the "FULL" fuel level using the FLVV (Fill Limit Vent Valve). Grade Valves on the tank allow proper tank ventilation when the boat is stored, or trailered, on a moderate incline.

Fuel Distribution System

The fuel is delivered from the tank to the engine through the fuel line via an in-line electrically operated fuel valve.

The valves are located in the auxiliary machinery space, forward of the aft bilge. (*See pg. 44, Diagram 5*)

These valves only open when the engine it feeds is running.

The fuel valves are controlled by the fuel control panel located in the cabin. Each engine may be supplied by either the center tank or a wing tank.

NOTICE

The fuel gauge only reads accurately when the boat is level (not underway) N-01

Fuel Selector Panel

Quad Engine Configuration

In the case of a quad engine configuration, the fuel system is designed for the two center engines to draw fuel from the center tank.

The center tank is approximately 50% of the total fuel capacity, so two engines will draw this tank evenly down with the outboard engines, each pulling from their respective outboard tanks, the port outboard engine to the port outboard tank, and the starboard outboard engine from starboard outboard tank.

Triple Engine Configuration

Active fuel management is required with the triple configuration. In this case, each engine can be set to pull from each tank, with the outboard port and starboard engines going to their respective tanks and the center engine pulling from the center tank.

This will result in the center tank having approximately 50% fuel remaining after the forward tanks are empty.

Switch the outboard engines to pull from the center tank periodically during a more extended voyage to prevent an adverse fuel load. It will help to balance the boat better and maintain an optimum center of gravity for the most efficient operation.

Each engine may be switched to an alternative tank using the fuel selector panel.

Each switch on the panel represents an engine, and the panel setting determines which tank the engine will pull fuel from.

Figure 20 - fuel selector panel for engines.

WARNING

The modification of any of the fuel system components or the replacement of these components with unauthorized parts may result in over-pressurization of the fuel system and circumvent the safety features designed into your tank. W-23

NOTICE

Keep records of the fuel capacity and consumption of your boat. Drastic changes in consumption and mileage may indicate a problem. N-17

Manual Fuel Selector Override

Motorized ball valves help prevent potential head or diurnal pressure from being transferred to the fuel supply line and enable each engine to drain fuel from specific tanks.

The motorized ball valves automatically open when engines are keyed ON according to the settings on the fuel selector panel and automatically close when

the engines are keyed OFF.
Your fuel system is equipped with eight (8) motorized ball valves with standard manual override. Two (2) motorized ball valves control fuel for each engine.

The valves are located inside the auxiliary machinery space and are distributed equally between the port and starboard sides (*See pg. 44, Diagram 5).*

In the event of an electrical failure that prevents the fuel valves from opening or closing properly, the ball valves can be operated using the manual override.

If manual operation is required, follow the instructions below:

1. Shut OFF the respective engine associated with the ball valve. This will shut OFF power to the valve and enable manual override

2. Each ball valve is labeled, indicating the engine and the fuel tank. Select the valves to be open.

3. Lift the button and gently turn it left or right to open "O" or close "S."

Figure 21 – motorized ball valve inside the auxiliary machinery space.

4. Press the button back down after power "ON."

5. Visual indicator valve position: the line is parallel(with pipe) when the valve is open and vertical when the valve closed

Filling the Tank

Before Start

- Secure the boat to the fuel dock and ensure the engines are turned off.
- Ensure no one is smoking in the area or any flames are present. You should also turn off all electrical equipment that could throw a spark.

- A final precaution before filling your tank is to hold the nozzle firmly against the fill pipe opening to ground it against static buildup.

The fuel system is designed to automatically shut off the fuel nozzle when the tank is full, like an automotive fuel system.

The tank is filled when the fuel fill nozzle has shut itself off the second time. Attempting to fill the tank past this point may cause some of the components not to function correctly or malfunction.

Stop filling from the fuel nozzle after the fuel nozzle automatically clicks off.

Do not overfill the tank. The fuel could overflow and spill onto the boat and yourself. This could damage the boat's gelcoat, Rub rail, upholstery, and other equipment. You may also be responsible for such an event's environmental damage and legal penalties.

The warranty does not cover damage resulting from fuel spillage due to overfilling.

If spills happen, clean up fuel spills immediately with an oil-only absorbent pad. Wipe down the bilge or any interior parts that may have come in contact with the fuel.

Maintaining a full fuel tank when the boat is not in use is best. This will reduce airflow in and out of the tank due to temperature changes and reduce the accumulation of moisture inside the tank.

NOTICE

Limit exposure of any ethanol in the fuel to humidity and condensation. N-62

Filling at the gas station

- Be aware if your gas station sells gasoline with ethanol. Special precautions should be taken when using ethanol-blended gasoline.
- Level your boat; fuel goes in more quickly and is less likely to spill if your boat is level. Adjust your bunks/rollers or lower your trailer hitch if necessary. Note any needed changes and adjust the trailer after your next launch.
- Position yourself to see the deck fill and hold the nozzle comfortably. If you have to strain to control the nozzle and see the deck fill, you will likely have a spill. This may mean getting into the boat or using a step stool.
- DO NOT carry Fuel on-board outside of the fixed fuel system.
- Shut down the engine, motors, and fans before taking on fuel. Any ignition sources should be extinguished before filling the fuel tanks.
- Close all ports, windows, doors, and hatches.
- Fueling should never be done at night except in well-lighted areas.
- Always keep the fuel nozzle in contact with the fuel fill plate opening throughout the filling process.
- Allow areas where the gasoline vapors could collect to be ventilated before starting the engines.
- Wipe any spillage entirely and dispose of rags or waste on shore.
- Secure the fuel cap tightly. It will click to indicate it is properly closed.

Static Electricity and the Fuel System

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 from a source outside the regular venues (e.g., marinas, fuel service stations).

Your boat has safety features that can be circumvented by not adhering to standard fueling practices. The following suggestions will help keep you safe from static electricity while refueling your boat.

- NEVER fuel your boat in unsafe conditions, such as suspended on a sling or in a situation that increases the likelihood of static discharge.
- NEVER use homemade containers to fill your fuel tanks.

⚠ DANGER

Static electricity can ignite gasoline vapors causing serious injury/death and/or destruction of property.
Check for leaks in tubing, connections and hoses. Correct the cause of any leaks and ventilate the area to insure that no fumes remain, prior to energizing any electrical equipment and/or starting the engines. D-17

⚠ CAUTION

Allow areas where gasoline vapors could collect to be ventilated before starting the engines. C-27

Ethanol-Blended Fuels

Ethanol is an oxygenated hydrocarbon compound with a high-octane rating and therefore helps increase the octane level of unleaded gasoline.

The fuel-system components of your engine(s) have been tested to perform with the maximum level of ethanol-blended gasoline (10% ethanol) currently allowed by the EPA in the United States.
SEAVEE® recommends the use of REC90 or other non-ethanol fuels when possible. Due to phase separation, ethanol-blended gasoline is not recommended when the boat is stored for extended periods.

⚠ CAUTION

The use of fuels containing ethanol higher than 10 percent (E-10) can damage your engine and/or fuel system and will void the warranty.
E85 FUELS COULD SERIOUSLY DAMAGE YOUR ENGINES AND MUST NEVER BE USED.
C-07

NOTICE

The use of improper gasoline or additives can damage your fuel system and is considered misuse of the system. Damaged caused by improper gasoline or additives WILL NOT be covered under warranty.
N-18

Phase Separation

Humidity and condensation create water in your fuel tank which can adversely affect the ethanol-blended fuel. Phase separation can occur if water is drawn into the fuel beyond the saturation point.

The presence of water in the fuel beyond the saturation level will cause most of the ethanol in the fuel to separate from the bulk of the fuel and drop to the bottom of the tank, significantly reducing the ethanol in the fuel mixture at the upper level (phase). If the water and ethanol in the lower level of the tank are deep enough to reach the fuel inlet, it could be pumped directly to the engine(s) and cause significant problems.

Engine problems can also result from the reduced ethanol/fuel mixture left in the upper phase of the tank.

Additives

There is no functional additive known that can prevent or correct phase separation. The only solution is to keep water from accumulating in the tank.

If phase separation does occur, your only remedy is to drain the fuel, clean and dry the tank completely and refill with a fresh, dry load of fuel.

Fuel Filters

Your fuel system is equipped with a fuel/water separator filter. It is advisable to carry extra fuel filters in case filter plugging from debris in the fuel tank becomes a problem during boating.

Figure 22 - fuel filters at aft bilge hatch.

The fuel filter accumulates water that may be present in the fuel system. Periodically removing the fuel filter element and emptying it into a bucket will drain any water collected in the filter and prevent it from entering the engine.
Dispose of water/fuel mixture waste on shore at a marina or gas station that will accept such waste.

Storage

Extended storage periods and non-use are common for boats. When preparing to store a boat for two months or more, it is best to remove all fuel from the tank altogether.

If it is impossible to remove the fuel, maintaining a full fuel tank with a fuel stabilizer added to provide fuel stability and corrosion protection is recommended.

- Add fuel stabilizer/treatment at the manufacturer's recommended dosage.
- Run engine(s) for 10 minutes.
- Top off the fuel tank, leaving space for expansion. DO NOT fill to the point of overflow.

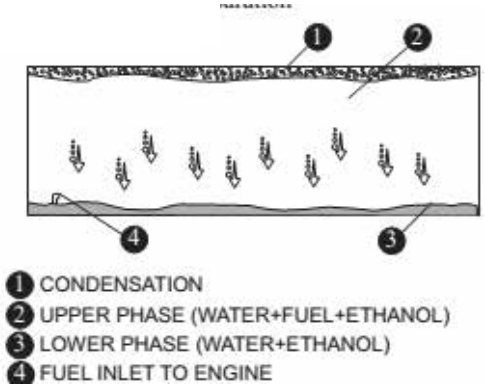


Figure 23 - fuel condensation.

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

REFER TO THE ENGINES MANUFACTURER'S MANUAL IN YOUR OWNER'S MANUAL BAG FOR COMPLETE INSTRUCTIONS AND WARRANTY.

Fuel & Oil Spillage

Regulations prohibit discharging fuel or oily waste in navigable waters.

A common violation is bilge discharge. Discharge is defined as any action which causes a film, sheen, or discoloration on the water surface or causes a sludge or emulsion beneath the water surface.

- Use rags or sponges to soak up fuel or oily waste, then dispose of them properly ashore. If there is a large quantity of fuel or oil in the bilge, contact a knowledgeable marine service to remove it.
- NEVER pump contaminated bilge discharge overboard.
- Fill the fuel tank below the rated capacity to allow for fuel expansion.

Power Steering

Your boat is equipped with a power steering pump system, either electronic or electric over hydraulic.

Electric over Hydraulic System

Each engine has a hydraulic cylinder that operates the engine tiller to steer the engines.

The steering system uses an enclosed hydraulic pump unit. The pump is located in the aft transom and can be accessed from the aft cockpit transom access hatch.

The pump is electrically operated to provide hydraulic pressure to the steering system.

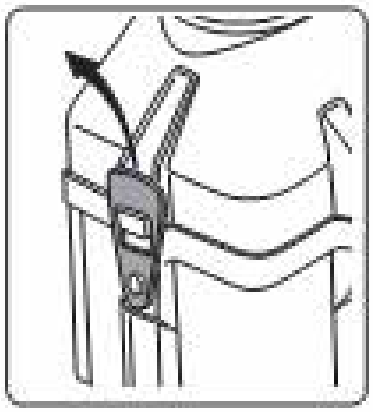
In the event of loss of electric power, the steering wheel helm pump acts as a manual pump to steer the boat. If the pump losses power, the operator should be prepared to turn the steering wheel many times to rotate the engines slowly. Use slow speed and extreme caution since the boat will be difficult to steer rapidly to avoid potential obstacles. Engine thrust may be used to aid in steering.

Filling & Maintenance

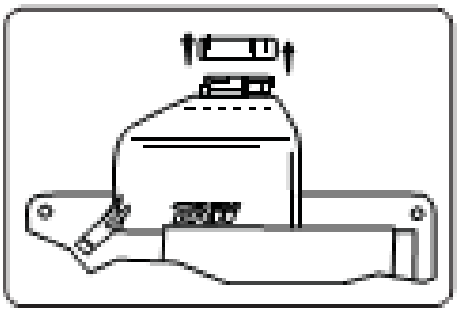
The system is virtually maintenance-free, aside from regular fluid checks and visually inspecting the outside of the unit for signs of leaks or damage.

Fill the Pump:

- 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 SAE 0W-30 Synthetic Power Steering Fluid if necessary.



- Replace cap and cover

NOTICE

Ensure that cover is properly seated to prevent intrusion of water into the pump enclosure.
N-19

- Check the fluid level before each trip.

Steering system integrity is imperative when engaging in recreational water activities. Proper maintenance of this system will ensure worry-free usage for the life of your boat.

Special care and attention must be taken to ensure the adequate 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.
- Check the fluid level in the helm pump unit.

All steering systems, whether mechanical or hydraulic, require regular inspections. Periodic adjustment and occasional replacement may be necessary.

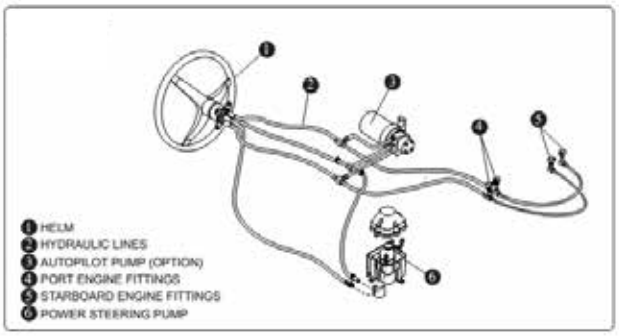


Figure 24 -power steering

Electronic Steering System

The boat may alternatively include an optional electronic steering system. This system uses a computer to control the hydraulic pump directly or does not use a hydraulic pump and uses a direct-acting ball screw electric actuator on the engine to control the tiller.

This system does not include a hydraulic helm pump. In the event of loss of power, the engines may be

manually steered by releasing the lock on the hydraulic valve block in the transom using the emergency steering knob.

Loosen the labeled knob, push the engines to the desired steered direction, then tighten the knob to lock them in this position. This may be repeated to steer.

Purely electric systems include a small cover on each electric actuator to turn the ball screw using an included hex wrench to steer the engines manually.

Engines

Starting the Engines

The master battery switch is a key located on the auxiliary dash control panel on the dash at the console.

The remote key switch will turn on all battery switches. The main breaker on the DC Main Distribution Panel inside the cabin must also be on to enable engine starting.

The Ignition keys are inside the cabin, Accessed via the aft hatch in the vanity room. (See Figure 25)

⚠ CAUTION

NEVER start or operate your outboard (even momentarily) without water circulating through all the cooling water intake holes in the gearcase to prevent damage to the water pump (running dry) or overheating of the engine.

C-08

Figure 25 – ignition keys location at the main rigging electronic access.

NOTICE

The gear shift/throttle control levers will not allow engine starting if the control levers are in any other position than NEUTRAL.

N-21

- Operators should know boating safety, safe navigation, and boat operating procedures.
- Make sure that the lower unit of the engine is in the water.
- Make sure the gear shift/throttle control is in the neutral position. (The engine will not start if the control lever is in any other place than NEUTRAL)
- Ensure the emergency stop switch is in the "RUN" position.
- Turn each of the engine master ignition key switches (clockwise).
- Be sure the throttle control lever is in The NEUTRAL position.
- Press the START/STOP button(s) for the Appropriate engine.
- The "ACTIVE" light located on the remote throttle pad will become illuminated once The engines are started and communicate with the throttle control.

CAUTION

launching the hull while running at high speeds in rough seas may cause insufficient cooling water flow and can damage the water pump impellor.

C-09

Warming Up the Engines

The "THROTTLE, ONLY" button on the throttle control pad allows the operator to increase engine RPM for warm-up without shifting the engines into gear.

- Ensure the gear shift and throttle control levers are in the NEUTRAL position.
- Press and hold the "THROTTLE ONLY. "Button.
- Hold the button until the horn sounds twice and the neutral lights start flashing. The flashing lights indicate that throttle only is engaged.
- Advance the control handles to increase the engine's RPM.
- NOTE: Engine RPM is limited to prevent engine damage.
- To disengage, return the control handles to the neutral position.
- The throttle-only mode can be re-activated anytime.

Stopping the Engines

Ensure the gear shift and throttle controls are in the NEUTRAL position.

- Press the start/stop button on the ignition pad for the appropriate engine.

REFER TO THE OWNER'S MANUAL IN YOUR OWNER'S MANUAL BAG FOR COMPLETE INSTRUCTIONS AND WARRANTY.

Trimming the Engines

When trimmed correctly, your boat will achieve maximum RPMs, minimize steering effort, and allow for more stability and increased performance.

Trimming the engines DOWN will drive the bow down, causing the boat to plow through the water and will prevent the engines from achieving maximum RPMs.

Trimming the engines UP will push the stern down and raise the bow. If engines are trimmed UP too far, the engine RPMs may exceed the optimal maximum.

The machine may also more easily ventilate and 'lose grip.

A properly trimmed boat will have the bow slightly UP while running at full speed.

Different seas or operating conditions will necessitate running the boat in different trim positions. The operator must use their best judgment while boating in other conditions

NOTICE

Ensure continuous visibility of other boats, swimmers and obstacles during bow-up transition to planing. Adjust engine after the boat is on plane.

N-23

Flushing the Engines

Your boat may be equipped with an automatic flushing system to avoid corrosion damage on your motor by flushing fresh water.

Flush your engines after each use to avoid damage.

- Shut off the engines
- Locate the Reverso Control Panel. It may be located in the cockpit on one of the columns or inside the main bilge.

- Connect a freshwater source to the water inlet, then open the valve at the shore to pressurize the system with fresh water.
- Press the flushing button on the Control Panel.
- Allow the system to cycle freshwater through each engine. The switch will illuminate when the process is complete.
- After flushing, shut off the freshwater supply valve onshore, remove the freshwater hose from the system and replace the cap on the inlet fitting.

FOR TROUBLESHOOTING, REFER TO YOUR REVERSO OWNER'S MANUAL IN YOUR OWNER'S MANUAL BAG.

Figure 26 - reverso flushing switch on the deck - starboard side.

Trim Tabs

The boat is equipped with hydraulic trim tabs. (*Page 46, Diagram 10*).

Trim tabs are used to trim the list of your boat caused by uneven weight distribution, such as too many people on one side of the boat, uneven fuel, strong crosswinds, or other weight loads.

Figure 27 - k-plane trim tab.

An improperly trimmed boat will:

- Decrease operator visibility
- Reduce fuel economy
- Increase wear on your engine.

Trim tabs are sometimes also beneficial when accelerating from a non-planning to a planning operation. While accelerating, the trim tabs can be used to decrease the time to plane when in shallow water or with an unusually high load.

Operation

The trim tabs are controlled by rocker switches located on the helm dash panel to the starboard of the steering wheel. (*See pg. 51, Diagram 16*)

Short momentary bursts of the rockers will achieve the proper attitude of the hull. The trim tab switch is marked "BOW DOWN." indicating the reaction the adjustment will cause.

Figure 28 - trim tab buttons at the helm.

Proper use of trim tabs:

- Level the boat fore and aft, port, and starboard.
- Reduce resistance in the steering system.
- Provide a smoother, more stable ride.
- Increase speed and fuel efficiency.

NOTICE

Ensure continuous visibility of other boats, swimmers and obstacles during bow-up transition to planing. Adjust the engine after the boat is on plane.

N-23

Maintenance of Trim Tabs

The trim tabs are hydraulically actuated using hydraulic cylinders operated by hydraulic pumps located in the port and starboard outboard bilges.

Access the pumps through the port and starboard aft auxiliary bilge hatches.

The hydraulic cylinders should be inspected periodically for leakage.

Trim tabs are also fitted with sacrificial zinc anodes to prevent galvanic corrosion of the cast aluminum trim tabs. These should be inspected periodically and replaced when significantly depleted.

The Trim tab pumps contain a hydraulic fluid reservoir. Maintain the proper fluid level in these pumps as necessary. Check the fluid level periodically. The trim tab plates must be in the full-up position when checking fluid levels.

REFER TO THE TRIM TABS MANUFACTURER'S MANUAL IN YOUR OWNER'S MANUAL BAG FOR COMPLETE INSTRUCTIONS AND WARRANTY.

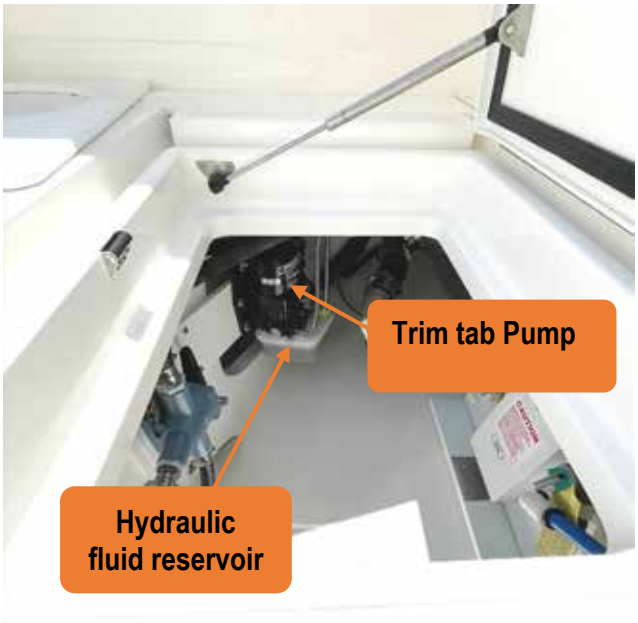


Figure 29 – The port side trim tab pump is located inside the auxiliary machinery hatch.

Propellers

The engines on your SEAVEE® have been equipped with propellers best suited for general use under average conditions and loads.

Your boat has been propped to operate within the engine manufacturer's RPMs performance specifications.

Changing Propellers

In some situations, you may wish to change the propeller to give your boat slightly different performance characteristics.

In general, changing to a lower-pitch propeller will increase acceleration and load-pulling capability, with a slight decrease in top-end speed. If you change propellers, the type should be discussed with SEAVEE® Service.

All propellers are designed to provide maximum forward thrust; consequently, the reverse thrust of the propeller will not be as efficient. If required, the vent plugs fitted on propellers may be removed to improve reverse thrust.

FOR MORE INFORMATION ABOUT REPLACING PROPELLERS, REFER TO YOUR ENGINE MANUFACTURER'S MANUAL IN YOUR OWNER'S MANUAL BAG.

⚠ DANGER

Disconnect power by moving the battery switch to the "OFF" position prior to removing the propeller. D-18

NOTICE

- It is advised that you always carry a spare propeller, propeller hardware and propeller wrench on board. Should your propeller become damaged it can then be easily replaced.
- Under no circumstance should you use a propeller which allows the engine to operate at a higher than recommended RPM.

N-31

⚠ DANGER

PROPELLER SAFETY

- Before starting your boat, walk to the stern and look in the water to assure there is no one near your propeller. People near propeller may not be visible from helm.
- NEVER allow passengers to board or exit your boat from the water when engines are on.
- Educate passengers about the dangers of propellers
- Be especially alert when operating in congested areas. NEVER enter swimming zones.
- Take extra precautions near boats that are towing skiers or tubers.
- NEVER permit passengers to ride on the bow, gunwale, transom, seatbacks, or other locations where they may fall overboard.
- STOP! if someone falls overboard. Slowly turn the boat around, and keep the person in sight as you approach. Turn your engine off FIRST and then bring the person aboard.
- NEVER reverse your boat to pick someone up out of the water. D-11

Section 4 • Mechanical System

Bilge Pumps

The vessel is equipped with three (3) automatic bilge pumps, two located inside the bilge hatch (2000 Gallons Per Hour) and one (900 Gallons per hour) situated below the head area in the battery access hatch and below the shower sump.

Each pump is activated automatically by a float switch when the water in the bilge reaches a predetermined level. When the water level is high enough, each float switch will activate each pump.

The switch on the dash will illuminate red to indicate that the pump is running. The operator should frequently check for the switches for bilge pump operation.

Frequent cycling of float switches could indicate a water leak. Every effort should be made to find the source of the leaking water and close it if possible. Urgent corrective action should be taken in the case of rising bilge water levels.

Each pump may also be operated manually, overriding the float switch position. By using the switch on the Dash Main switch panel labeled "Bilge Pumps: AFT 1, AFT 2, and FWD" (See Figure 30), the operator can energize the pumps regardless of the position of the float switches. (*See pg. 51, Diagram 16*)

The aft bilge pumps overboard discharge thru-hulls are located on the port deck cap aft quarter.

Forward Bilge pump discharge thru-hulls are located on the hull starboard side amidship. (*Refer to Page 48, Diagram 13*)

Figure 30 - bilge pumps buttons.

Emergency High Water Alarm

The boat is equipped with a float switch mounted on the forward bilge bulkhead, next to the saltwater sump box. This high-water level float switch activates an alarm at the helm auxiliary dash panel, indicating a high-water level in the aft bilge.

The aft bilge pumps will automatically operate BEFORE the high-water alarm sounds.

The operator should immediately investigate the bilge water level and determine if water is coming into the boat and where Emergency Actions should be taken to stop water flow into the boat. The operator may declare an emergency, instruct passengers to don life jackets, and take other emergency actions to protect their safety of life.

Figure 31 -bilge alarm at the auxiliary dash switch panel.

The Bilge Alarm located (see above) in the auxiliary dash switch panel at the helm (*see pg. 51, Diagram 16*) will make noise until the water level is reduced below the high-water alarm float switch.

In the event of high-water alarm signals

Take immediate action:

- Switch all bilge pumps ON.
- If the source of water intrusion is not immediately stopped, use your radio to broadcast a PAN-PAN distress call (*See pg. 51, Diagram 16 for location*).
- Turn OFF all AC and DC breakers before stepping into the water in the bilge.
- Determine the problem and take necessary action to stop the inflow of water.
- If after you determine your situation no longer requires assistance, you must cancel the PAN-PAN call.

Access to the Pumps

The aft pumps can be accessed through the machinery bilge located at the stern center aft hatch of your boat in the cockpit. (*See pg. 43, Diagram 4*).

The forward pump can be accessed via the battery hatch inside the head, under the shower sump. (*See pg. 47, Diagram 11*).

NOTICE

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

N-13

Maintenance

To clean the pump filter, 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:

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

Figure 32 - bilge pump 2000.

Figure 33 – forward pump 900

FOR MORE INFORMATION ABOUT BILGE PUMPS MAINTENANCE, REFER TO THE MANUFACTURER'S MANUAL INCLUDED IN YOUR OWNER'S MANUAL BAG

Float Switch

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

To clean:

1. Soak in heavy-duty bilge cleaner for 10 minutes,
2. Agitate several times by rotating the knob on the side of the switch.
3. Check for free operation of the float by rotating the knob and listening for pump operation.
4. Repeat the cleaning procedure if necessary.

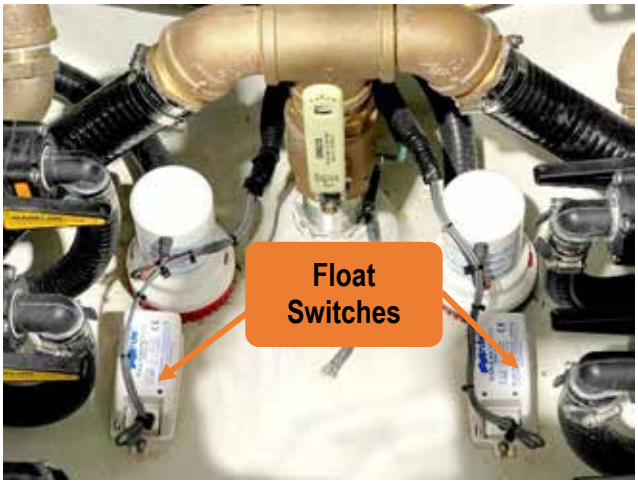


Figure 34 - float switches inside the bilge hatch.

AIS (Aquatic Invasive Species) Decontamination Process

All our pumps are designed to meet the ABYC standards for the current AIS Decontamination procedure, including low-pressure water at 120ºF for 130 seconds.

To decontaminate your pumps, flush or spray at low-pressure fresh warm water (120 °F) inside your bilge compartment for not less than 130 seconds.
For more information about AIS, refer to page 151.

NOTICE

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

N-13

Discharge Thru-Hull Hoses

Access

Aft Thru-Hulls may be accessed via the aft machinery/bilge hatch at the stern of your vessel and the port and starboard auxiliary bilges. (*See pg. 45*)

The forward fish box thru-hulls may be accessed by removing the forward speaker or reaching through the round access hatch on the aft face of the forward storage locker.

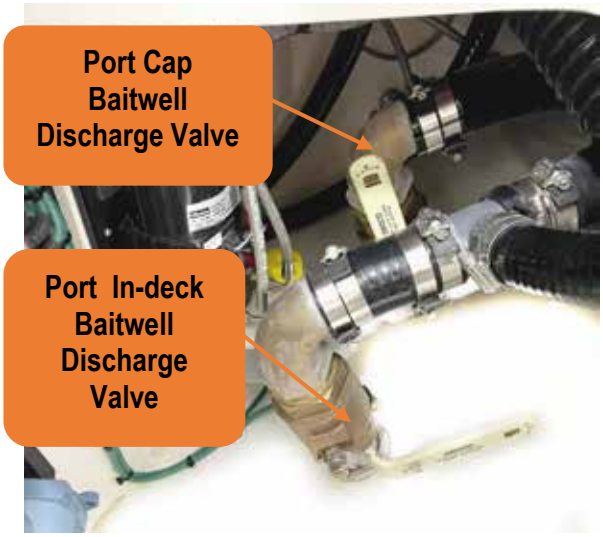


Figure 35 – port baitwell discharge valve located at the port auxiliary bilge.

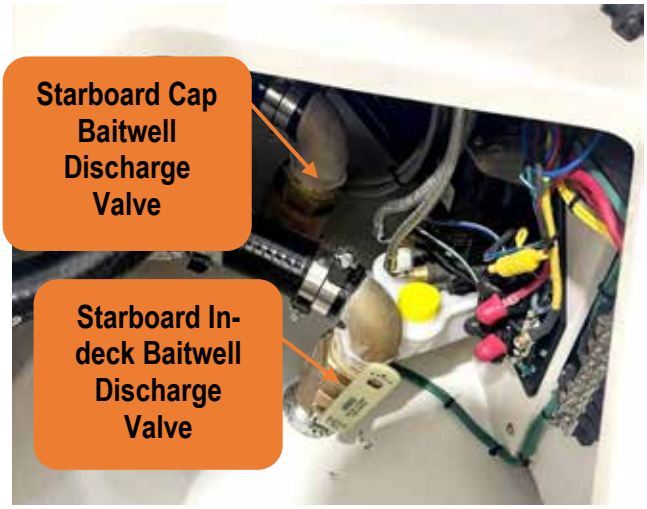


Figure 36 – starboard baitwell discharge valve located at the port auxiliary bilge.

Figure 37 – oversea waste tank discharge valve is located under the cabin's stairs.

Freshwater System

⚠WARNING

The fresh water system is a non-potable water source. DO NOT drink or use it for cooking.

W-24

The freshwater system includes.

- Single 6 GPM Heavy Duty Pump.
- Dual Welded Aluminum Freshwater Tanks.
- Y-valve tank selector.
- 7 Gallon water heater tank.
- Control Manifold.
- Faucets in the Head and Galley Sink, Head Shower, Starboard Forward Deck Washdown Hose Coil, and Starboard Aft Cockpit Deck-Washdown Hose Coil.
- Optional Freshwater Cockpit Shower (*Figure 38 below*).
- City Water Shore Connection *(See Pg, 81, Figure 42*)
- Freshwater Connection for Toilet Freshwater Flushing.
- Fresh water fills (*See pg. 41, Diagram 2*)

This system is designed for freshwater cleaning but is not potable and should not be used for drinking or food preparation.

NOTICE

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.

N-22

Figure 38 - fresh water cockpit shower.

Diagram 18 - Fresh water wash down hose in the aft starboard cockpit.

The pump is located on the forward bulkhead of the auxiliary machinery space/bilge area. It is accessed through the auxiliary machinery/bilge hatch in the aft cockpit. (*See pg. 44, Diagram 5*)

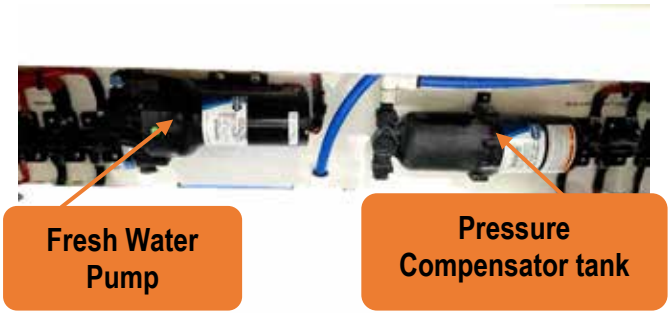


Figure 39 - freshwater pump with the pressure compensator tank inside the auxiliary machinery hatch.

The pump includes a small strainer that should be checked regularly for debris. The strainer basket should be removed by unscrewing the clear plastic cap, rinsing, and reinstalling it.

The freshwater system is connected to a pressure compensation tank to smooth the inherent pulsations from the pump and create a constant flow. It requires no maintenance and is a sealed unit.

Filling the Water Tank

The water tanks can be filled through the water-fill deck plates on the starboard side of amidships. (*See pg. 41 Diagram 2*)

The tanks are installed below the deck under the bonded/glued access hatch in the aft cockpit. Removing the access hatches will permit access to the fill, vent, and sender fittings on the top of each tank.

Fill the tank only from a source of fresh water and use only a plastic hose to fill the water tank. The hose should only be dedicated to filling use and stored in a clean, dry place.

It is good practice to cover the ends of the hose to ensure the inside stays clean.

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 (check with SEAVEE® Service) 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. Fill the water tanks with clean water.

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

Freshwater System Operation

To operate the system, turn ON The "FRESHWATER PUMP" breaker on the DC Main Distribution Panel in the Cabin.

Use the tank selector Y-Valve located in the port aft bilge. Set the Y-valve to the starboard or port tank. If the pump is ON but not pumping water, turn the Y-Valve to the other tank. (*See pg. 81, Figure 43*)

The valve should be periodically moved to the opposite side tank to balance the water load and make all water available.

When activated, the freshwater pump draws water from the selected water tank, providing pressure to the entire freshwater system.

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

If the freshwater pump often runs with all the outlets closed, it is likely a leak. Contact SEAVEE® service for assistance.

Each faucet must be opened or closed to supply water. The freshwater pump is designed for use with one open faucet at a time.

Opening more than one faucet at a time may significantly reduce pressure and flow from each faucet and may cause strong pulsations in flow.

Hot Freshwater Operation

The water heater is located in the port bilge in the aft cockpit. It includes an overflow relief valve in case of overpressure. The water heater is operated by turning on the "HOT WATER HEATER" breaker on the 110VAC panel located inside the cabin. The generator or shore power must be active to enable the use of the water heater.

The hot water thermostat temperature is set to 140°F degrees to prevent the growth of bacteria in the system. Temperatures above 125°F degrees can cause scolding and severe burns.

Children should be supervised when operating hot water faucets. Do NOT operate the hot water faucets without mixing cold water.

Note that the hot water tank is approximately three (3) gallons. The freshwater pump produces flow at about 6 gallons per minute. When consuming hot water, be mindful that the tank will provide approximately thirty seconds of hot water with the hot water faucet at maximum and no cold water. —

Use the hot water carefully by mixing it with cold water.

Only operate the shower or faucet when actively rinsing or washing. This will conserve hot water and make the hot water system more effective, particularly when showering.

⚠ DANGER

SCALDING INJURY

Water temperatures over 125°F can cause severe burns instantly or death from Scalds. Children, disabled and elderly are at highest rick of being scalded.

Feel water, before washing or showering. Open the cold water faucet to reduce water temperature. D-32

Freshwater Valve Manifold

The freshwater valve manifold is located under the seat on the port side of the cabin. This manifold includes individual valves for each faucet.

Contact SEAVEE® Service if a freshwater leak is detected. In case of a leak, the operator may close the applicable valve to prevent freshwater from leaking while the problem is resolved.

Figure 40 - fresh water manifold is accessed from under the cabin port seat hatch.

Figure 41 - manifold distribution.

City Water Hookup

A City Water supply connection is located above the motor well on the transom starboard side. To connect, unscrew the cap on the fitting and attach a garden hose to this fitting. Attach the other end of the garden hose to shore freshwater and open the valve. The city freshwater supply will pressurize the system and be available for use throughout the boat.

The city water inlet regulates the boat's freshwater pressure while preventing backflow.

NOTICE

The city water DOES NOT fill the tanks. Filling the tanks can only be accomplished via the deck fill only N-64

Figure 42 - fresh water inlet at the starboard side of the outside stern deck.

Fresh Water System Maintenance

Besides annual disinfecting and winterizing, very little maintenance is required for the freshwater system. Periodically check the entire system to ensure that the hose connections, tube fittings, electrical connections, and mounting bolts are properly secured and free of chafing.

The system is fabricated with quick connect fittings. Any possible leaks can often be resolved by firmly grasping the fitting and hose and pushing the hose more firmly into the quick connect fitting.

Periodically check the in-line strainer located inside the port auxiliary bilge. Clean the strainer basket by removing the clear cover, wash the basket with clean water and reinstall the basket after maintenance.

Figure 43 – Fresh water pump filter inside the port auxiliary bilge.

Consult SEAVEE® Service with any questions or issues associated with your freshwater system.

REFER TO THE MANUFACTURER'S MANUAL IN YOUR OWNER'S MANUAL BAG FOR COMPLETE INSTRUCTIONS.

Figure 44 - fresh water pump.

Shower System

Your Boat is equipped with a freshwater hot/cold shower inside the head (*See pg. 47, Diagram 11*) and an optional pull-out shower installed in the starboard aft cockpit.

When using the shower, prevent spraying water on the vanity or head door. The head shower water drains from the head sole into a shower sump located below the battery compartment. The sump contains a pump activated by a float switch which discharges the shower water overboard.

To operate the shower sump, Set the breaker on the DC Main distribution panel in the cabin labeled "Shower Sump" to the" ON" position.

Shower sumps often become clogged with hair and other material. Clean the sump regularly by removing the Snap-On cover and cleaning it of hair and other debris, then replacing the cover.

Figure 45 - shower sump inside the battery hatch in the toilet.

CONSULT WITH SHOWER SUMP MANUFACTURING FOR SPARE AND REPLACEMENT PARTS.

Saltwater Washdown System

The Saltwater Washdown system consists of:

- Seachest with dedicated washdown valve.
- Diaphragm Pump System.
- Wash down Hose Coil and Faucet under the port side of the deck on the shelf at the port bow.
- Wash down Hose Coil and Faucet under the deck in the aft port cockpit.

The saltwater washdown pump switch is located on the auxiliary pump switch panel on the aft side of the second-row seat. *(See pg.126, Figure 91*).

Saltwater Washdown System Operation

To operate the system:

1. Open the seawater seacocks for the seachest, ball valves, flush bottom pickup, and aft high-speed pickup.
2. Open the seawater supply valve on the seachest located on the starboard side Seachest inside the bilge hatch.
3. Set the "SALTWATER PUMP" switch on the auxiliary pump switch panel to the ON position. The switch should illuminate.
4. The pumps only run on-demand, so you will only hear the pumps running when water is flowing out.
5. Raw water washdown hose coils are located on the boat's port side, at the bow, under a hatch, and under the gunwale in the port aft cockpit. Open the faucet at the desired hose coil and rotate the nozzle to spray water.

Figure 46 – wash down hose coil located at the bow port side under the small hatch.

6. The pump switch may be left on to leave the system on standby, ready to run on demand.
7. Turn off the switch when the boat is unattended to prevent flooding in the event of a leak.

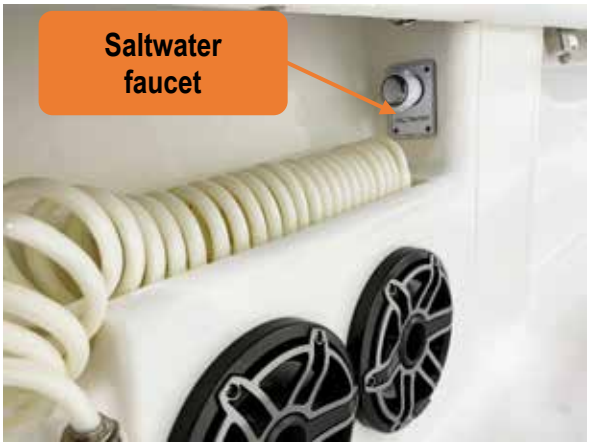


Figure 47 - saltwater washdown hose coil and faucet at the port aft cockpit column.

Figure 48 - salt water wash down valve located at the forward face of the starboard seachest.

Saltwater Pump

The saltwater pump is located in the auxiliary machinery space on the starboard side.

The pump installed on your boat has an internal pressure switch that will maintain the system pressure until the switch is turned off at the switch panel.

Saltwater System Maintenance

Occasionally check all plumbing hardware and fittings in the line for tightness.

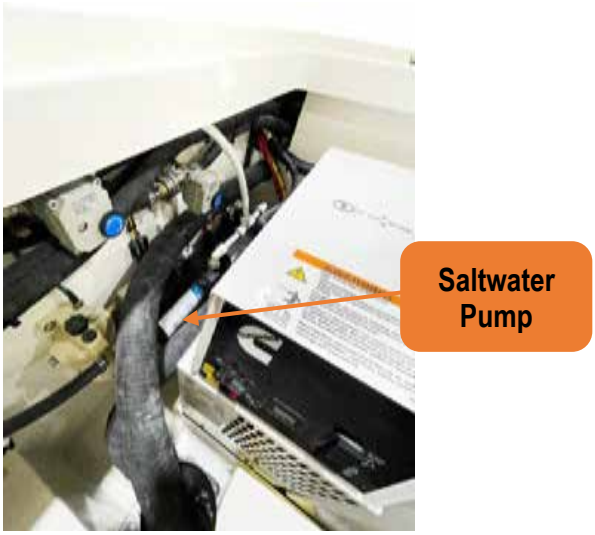


Figure 49 – saltwater pump at the starboard side of the auxiliary machinery space

Waste System

The Waste System includes the following components:

- Electric Macerating Toilet.
- Welded Aluminum Permanently installed Holding tank Located below the cabin sole.
- Macerating Overboard Discharge Pump.

The waste tank has a net volume of 40 gallons and is located under the deck sole in the cabin, on the centerline. The fill, vent, discharge, and sender fittings may be accessed through an access panel located on the forward face of the settee step down.

NOTICE

This head is installed with a macerated holding tank. when discharging waste, you must check with local authorities on the regulations in your area.

N-26

Figure 50 – macerator pump access hatch behind cabin stairs.

Figure 51 - access hatch for waste tank location.

Operating the Toilet

- Ensure the "Freshwater" system is ON at the helm switch panel.
- Ensure the "TOILET" breaker is turned ON at the DC Main Distribution Panel inside the cabin
- Before using the toilet, press the "Fill" button to fill the bowl with water.
- After using the toilet, press "Flush." This function will fill and flush the head simultaneously.
- Remember to drain the bowl before running through rough waters by pressing "Drain" on the control panel to prevent sloshing.
- Do not put anything else down the toilet except for toilet paper.
- The Toilet paper holder storage is located on the head vanity aft door inside the cabinet.

Pressing the "FLUSH" button will cause the fresh water to be pumped to the toilet, and the contents in the bathroom will be macerated and pumped to the holding tank.

Because your waste system is a low water use device, special paper must be used to prevent clogs.

Figure 52 - toilet control panel located inside the restroom area.

NOTICE

NEVER use residential tissue paper in your marine waste system. N-29

Overboard Discharge

In areas where the overboard discharge of the holding tank is permitted, the tank can be emptied using the holding tank macerator pump. This pump is controlled by a breaker labeled "Macerator" on the DC Main Distribution Panel in the cabin.

To discharge Waste overboard into the ocean:

1. Ensure that you are legally allowed to discharge waste in your current location
2. Lift the companionway stairs and open the overboard discharge seacock located under the stairs.
3. Set the breaker labeled MACERATOR on DC Main Distribution Panel to the "ON" position.
4. Depress the "WASTE DISCHARGE" button on the DC Main Distribution Panel.
5. Maintain the control depressed until the pump sound pitch and level change, indicating the tank is empty.
6. Release the button to stop the pump.
7. Close the Overboard discharge valve and stairs.

⚠ CAUTION

Never operate the macerator with a dry holding tank to avoid damaging the pump. C-33

Seakeeper Gyro Stabilizer

Your Boat is equipped with a Seakeeper gyroscopic Stabilizer designed to reduce your boat roll with 6000 N-M-S stabilizing power.

The seakeeper is inside the auxiliary bilge hatch at the cockpit; the display control panel is located at the helm station (See Diagrams 5 and 14).

Figure 53 - seakeeper gyro 6.

The Gyro System includes:

- Seakeeper 6 Gyro Stabilizer.
- Seakeeper Control Panel.
- Seawater Cooling Pump.
- Seawater Strainer.

The Gyro operates on 110VAC power. The generator or shore power must be energized to run the Seakeeper Gyro.

⚠ CAUTION

To avoid Seakeeper damage , NEVER run the System while the boat is out of water. Make sure the GYRO seacock is open before starting the unit. C-32

To Operate the Gyro Stabilizer:

1. Check the seawater strainer for debris located in the Auxiliary Machinery Space and clean if necessary.
2. Open the chiller valve discharge located at the starboard auxiliary bilge compartment.
3. Open the flush bottom and high-speed pickups on the seachest in the main bilge.
4. Open the Gyro Seawater Cooling Supply Valve on the Seachest

Figure 54 - gyro seawater valve at the forward face of the starboard seakeeper.

5. At the 110VAC Main Distribution Panel in the cabin, ensure that either the generator or shore power is energized, and set the "SEAKEEPER GYRO" breakers and "GYRO PUMP" breakers both to the on position.

6. Use the Seakeeper Control Panel located on the dash to control the Seakeeper.

When shutting down the Seakeeper, reverse the order of operation.

The Seakeeper Gyro unit includes some sacrificial anodes that should be checked periodically. The unit should be maintained, clean, and dry.

FOR MORE INFORMATION ABOUT THE SEAKKEPER OPERATION, CONSULT THE MANUFACTURER'S MANUAL LOCATED INSIDE YOUR OWNER'S MANUAL BAG.

Airconditioning System

Your 450Z model has up to two air conditioning units that provide cooling and heating. These units operate on 120-volt AC power and share one raw water pump for the water-cooled compressors.

The cabin air conditioning unit is in the console main rigging & electronic compartment, and the helm air conditioning unit is under the helm seat base. (*See Diagrams 22 and 23*)

Air Conditioning Operation

⚠ CAUTION

To avoid damage in the Air conditioning Unit , NEVER run the System while the boat is out of water. Make sure the A/C seacock is open before starting the unit. C-31

Open the Air conditioning discharge valves located inside the starboard auxiliary bilge compartment on the hull side.

Inside the aft cockpit bilge:

1. Check the seawater strainer for debris located in the Auxiliary Machinery Space and clean if necessary.

2. Open the hull bottom and high-speed transom pickups feeding the seachest in the main bilge.

3. Open the Air Conditioning Seawater Cooling Supply Valve on the Seachest

Figure 55 - air conditioning valve at the forward face of the port seachest.

4. At the 110VAC Main Distribution Panel in the cabin, ensure that either the generator or shore power is energized, and set the "Air Cond FWD," "Air Cond Aft," and "Air Cond Pump" breakers to the on position.
5. Use the Air conditioner Control Panels located in the cabin to control the Air conditioners.

6. Consult the air conditioning operation Manual for operating instructions.

The AC Unit displays are located on the top of the Cabin Main Breaker Panel or at the helm station.

Figure 56 - a/c control location -cabin.

Depending upon humidity, the air conditioners will condense 5 to 15 gallons of water per day which drains into the sump pump located on top of the holding tank in the forward bilge.

Air conditioner vents are located throughout the cabin and cockpit to provide a good air supply. The vents are adjustable to change airflow direction.

Closing the ducts may cause the units to freeze up. In this event, shut the unit off and let it thoroughly defrost before re-starting it.
Leaving the cabin door open with the air conditioning running in the cabin for an extended period could cause excessive condensation on the forward air vent grill. Shut off the air conditioning or close the cabin door to prevent this condition.

Dry any condensate with a towel to avoid damage to interior finishes.

System Diagrams

Refer to the additional diagrams for all mechanical systems.

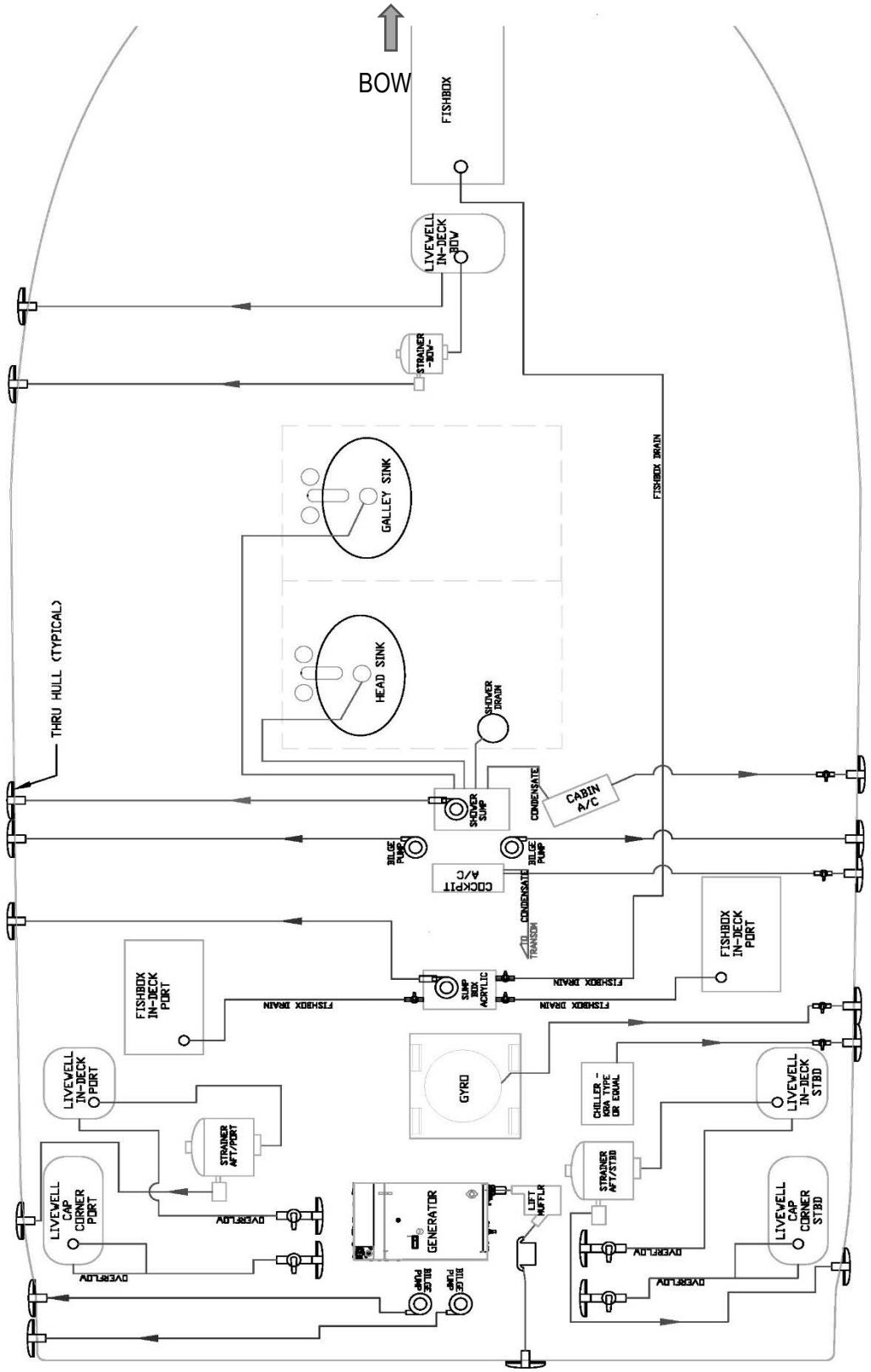

BOW
FISHBOX
LIVEWELL IN-DECK STBD
STRAINER STBD
FISHBOX DRAIN
GALLEY SINK
HEAD SINK
THRU HULL (TYPICAL)
SHOWER DRAIN
CONDENSATE
CABIN A/C
SHOWER SUMP
BILGE PUMP
COCKPIT A/C
BILGE PUMP
CONDENSATE
TO TRANSOM
FISHBOX IN-DECK PORT
FISHBOX DRAIN
SUMP BOX ACRYLIC
FISHBOX DRAIN
FISHBOX IN-DECK PORT
FISHBOX DRAIN
LIVEWELL IN-DECK PORT
GYRO
CHILLER - KRA TYPE OR EQUAL
LIVEWELL IN-DECK STBD
STRAINER AFT/PORT
STRAINER AFT/STBD
LIVEWELL CAP CORNER PORT
GENERATOR
LIFT MUFFLR
LIVEWELL CAP CORNER STBD
OVERFLOW
OVERFLOW
OVERFLOW
OVERFLOW
BILGE PUMP
BILGE PUMP

Diagram 19 -hull drainage & plumbing plan.

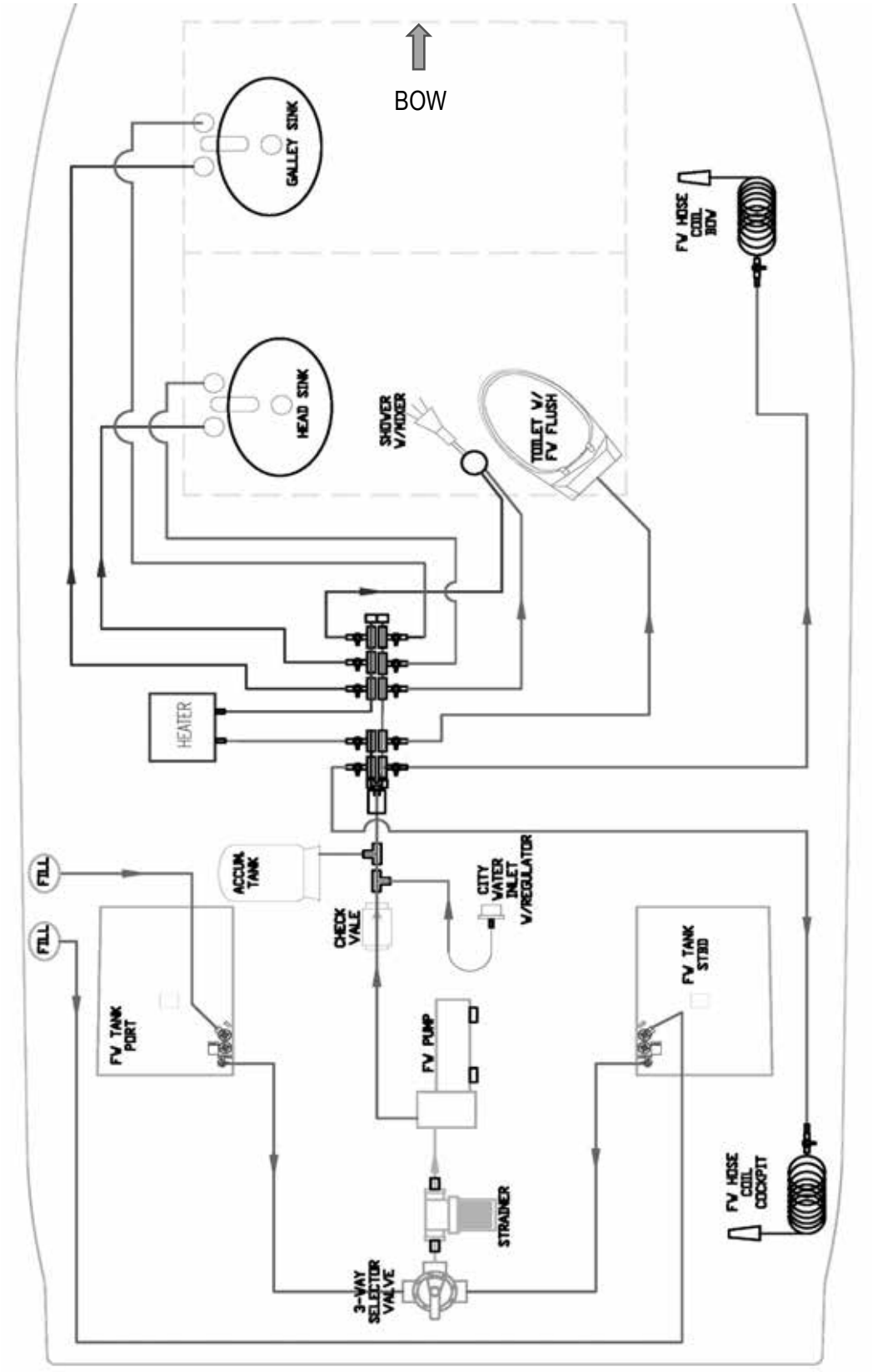


Diagram 20 - fresh water system diagram.

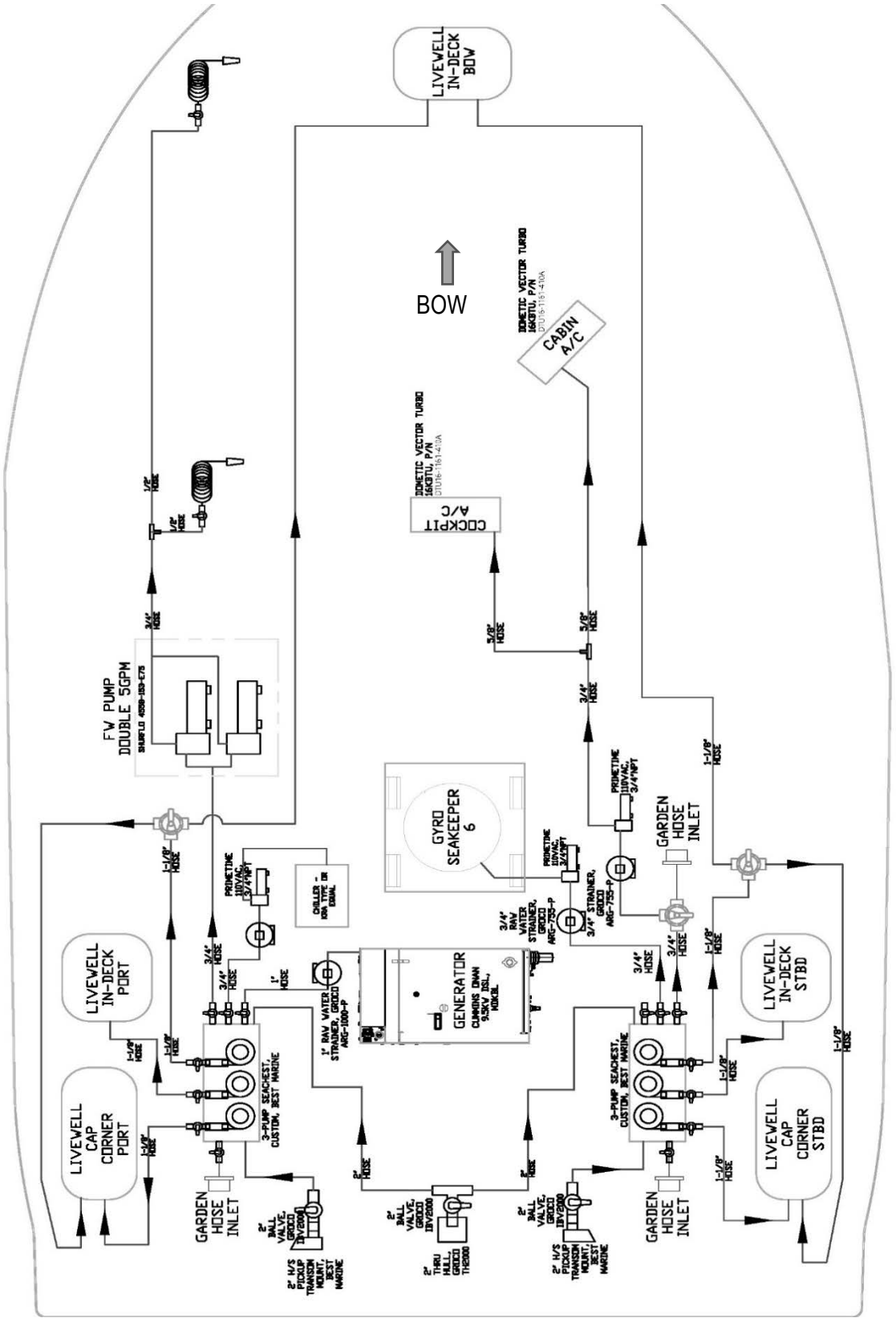


Diagram 21 - raw water system diagram.

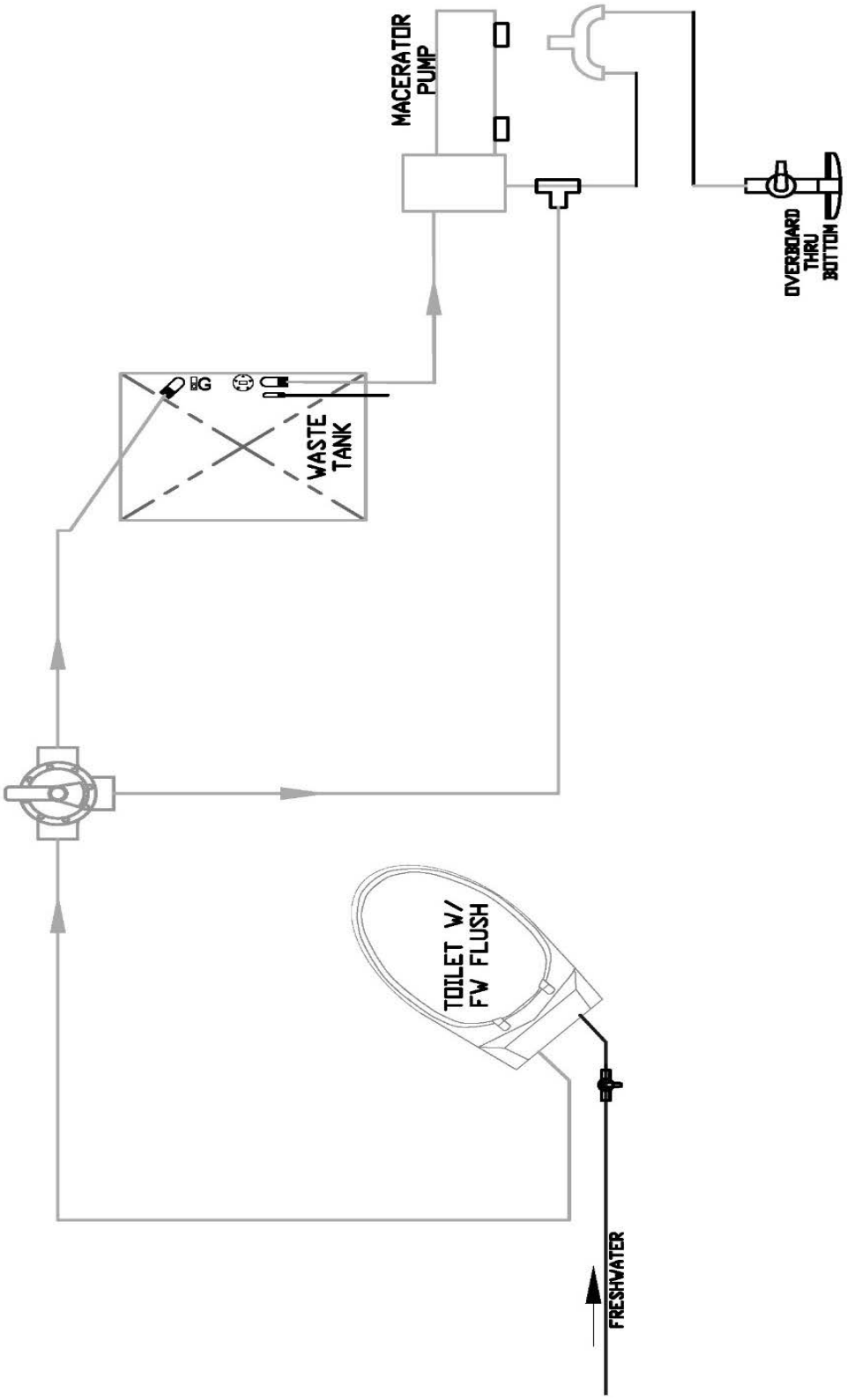


Diagram 22 - waste system diagram.

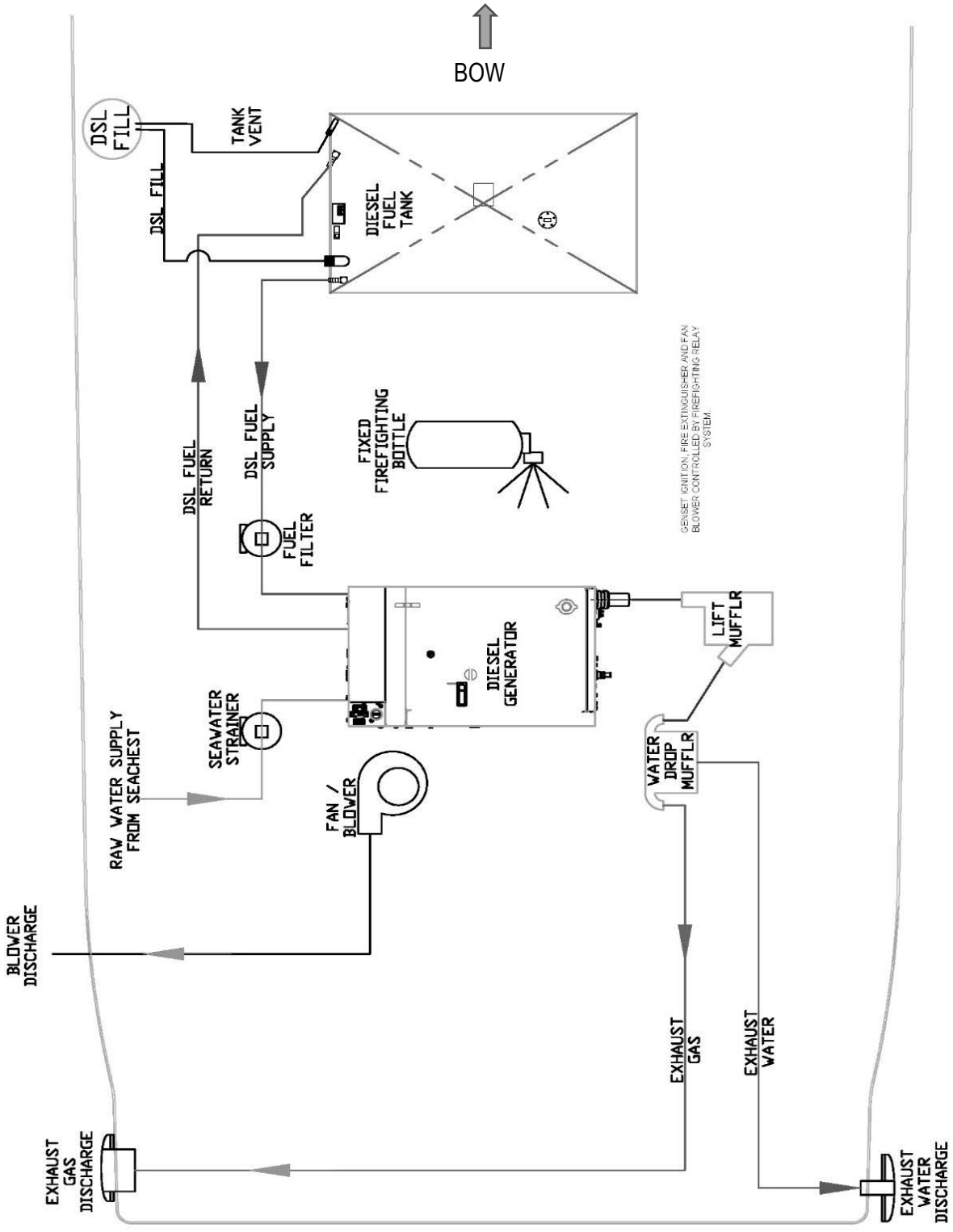


Diagram 23 -generator system diagram.

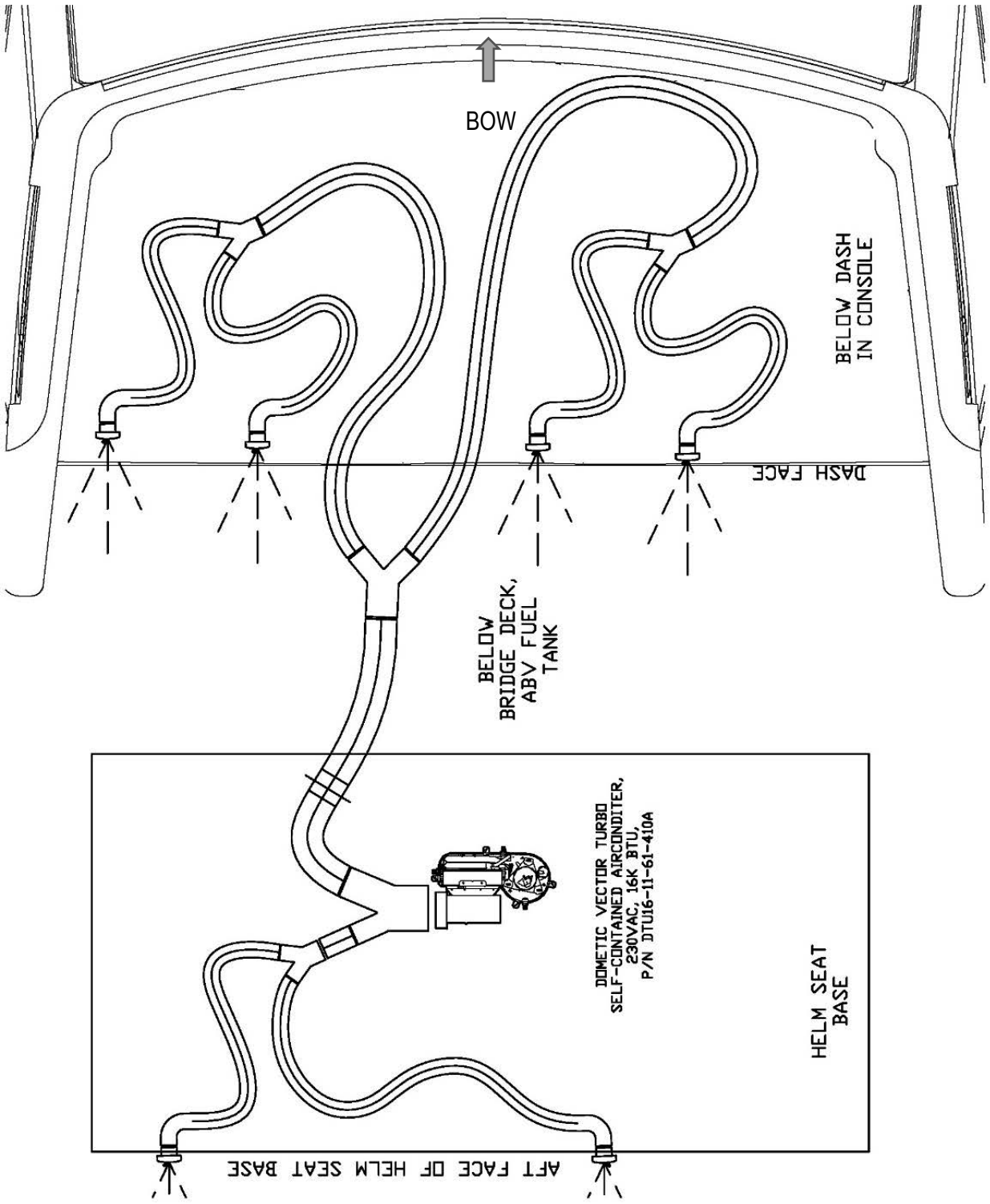


Diagram 24 - air conditioning system diagram in the helm.

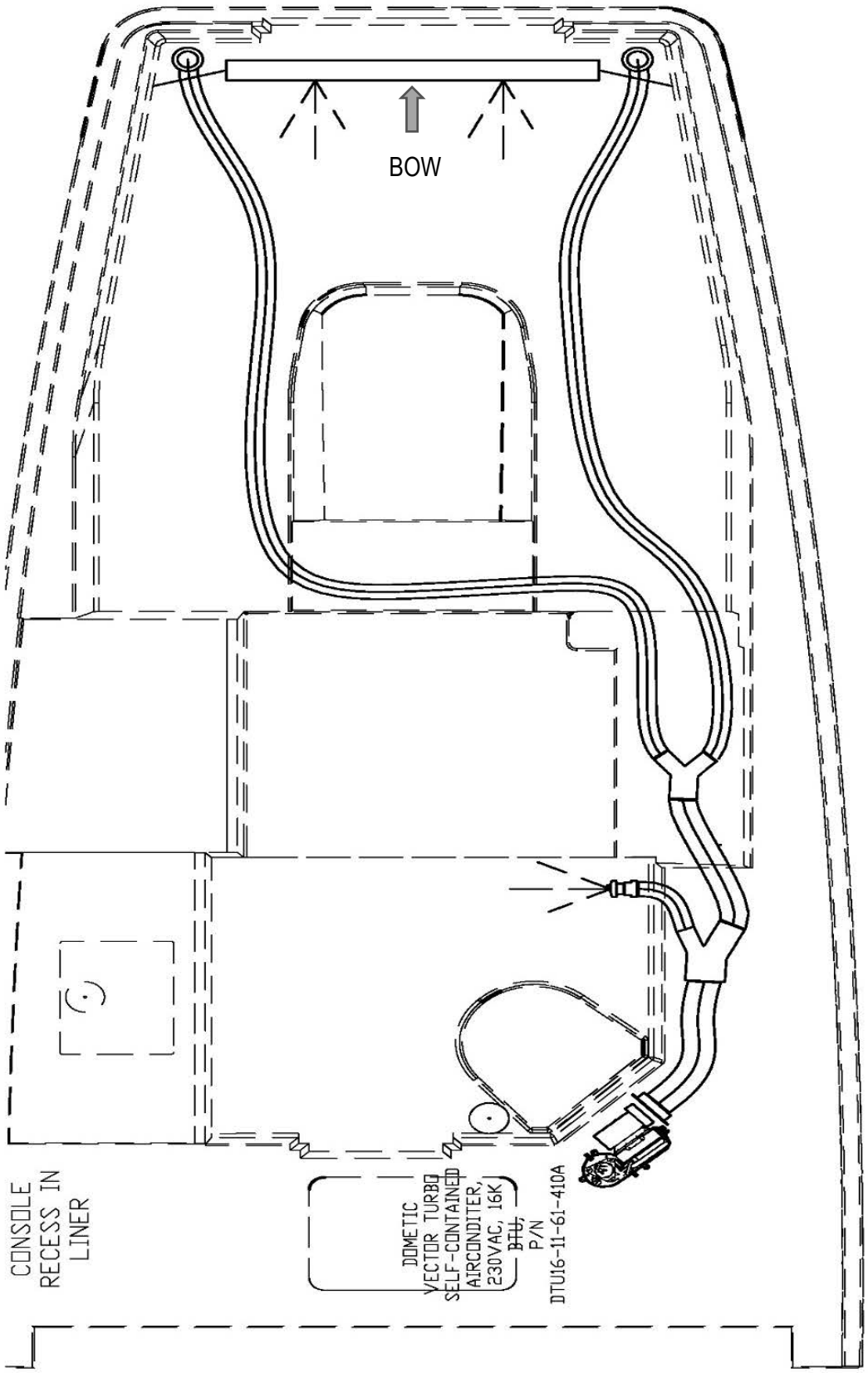


Diagram 25 - air conditioning system diagram inside the cabin.

Section 5 • Electrical System

12 Volt DC Electrical System

The boat is equipped with an electrical system powered by Absorbed Glass Matt dual-purpose, lead-acid batteries (AGM). The batteries are charged either by the outboard engines when the alternators are running or by 110VAC Battery chargers powered by the shore power or onboard diesel generator.

The DC Electrical System consists of:

- Four separate DC busbars for power collection and distribution.
- Dedicated Engine Start.
- House of Electronics.
- Pumps system.
- Stereo system.

Each bank consists of one or more batteries and serves to start the engine that charges it.

The generator battery is a dedicated engine start battery.

Motor-activated battery switches control the batteries.

These switches are all activated using the main Battery switch at the dash, located on the auxiliary helm switch panel.

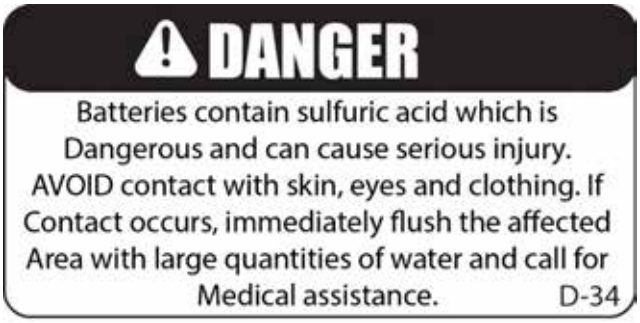
Batteries

The boat is equipped with three BCI Sizes Group 31 Batteries, with two dedicated to the pump buss and one dedicated to the engine start buss. Two additional house batteries, PC-1800 Size, Power the House/Electronics, and Stereo busses.

Your boat is supplied with Absorbed Glass Mat Batteries, which are sealed and require no additional maintenance.

Batteries' life is consumed with each discharge and will eventually require replacement. SEAVEE® strongly recommends using AGM batteries of the same BCI size, Reserve Capacity, and Cold Cranking amperage.

Consult SEAVEE® Service for more information about testing and replacing batteries.



Battery Boxes and Trays

The Group 31 Batteries are in the dedicated battery compartment located below the main electronics rigging area inside the console. These batteries are in dedicated boxes and are strapped down to prevent movement while underway.

These batteries are on a sliding system that will permit the upper two batteries to slide outboard to

access the battery below.

The large PC1800 Size batteries are located in the auxiliary machinery space outboard of the gyro. These batteries may be removed or replaced by unfastening the top aluminum retainer and lifting the battery from its tray.

The straps and retaining bars ensure that the batteries will not move while underway, causing damage to components fitted in the same area.

Ensure that these retaining devices are firmly in place after servicing your batteries.

The dedicated boxes and lids for the 31 batteries are labeled carefully; ensure not to mix the labels when replacing or checking the batteries inside the boxes.

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 the battery is to be drained to zero charge before recharging.

NOTICE

Always store the batteries in the battery trays.
Tighten the straps to keep
The batteries secure.
N-36

⚠ CAUTION

- Never use an open flame in the battery storage area.
- Avoid striking sparks near the battery.
- A battery will explode if a flame or spark ignites the free hydrogen given off during charging.
- The battery should always be disconnected before doing any work or maintenance on the electrical system.
- Never reset a breaker without first determining and correcting the cause of the trip. Should a circuit repeatedly trip, have a qualified electrician determine and correct the cause.
- If equipped with a battery switch, you will need to stop the engine before moving the switch to the "OFF"

C-17

Battery Charger

The boat is equipped with a high-capacity battery charger which is mounted on the aft wall inside the air conditioning hatch located behind the toilet.

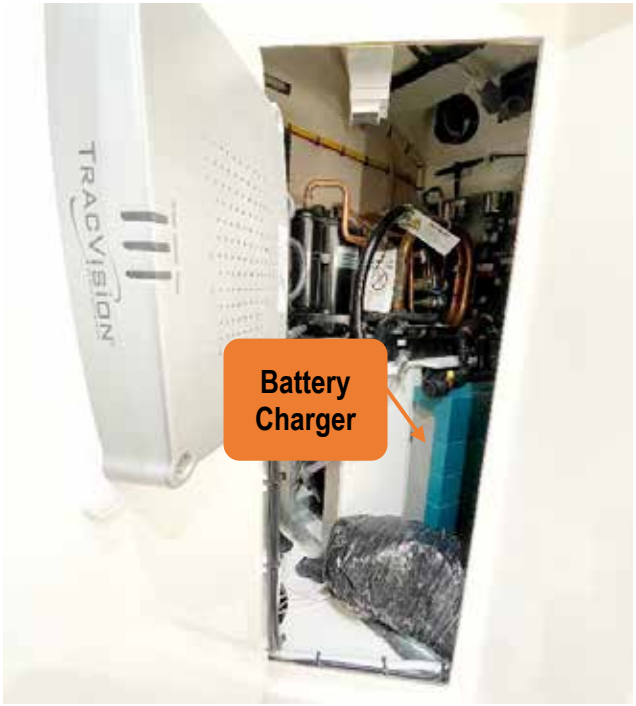


Figure 57 - battery charger behind the toilet hatch.

The charger operates on 110VAC when the AC Main Distribution Panel is energized by shore power or the diesel generator, and the battery charger breaker is turned ON.

The 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.

The "Battery Charger" breaker on the 110VAC panel must be in the "on" position to operate the charger.

After a long day of boat operation, the charger may require up to 10 hours to completely recharge all batteries.

Fully charging each battery is critical to maintaining battery life and preventing sulfation or loss of battery performance.

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 electrical short must be removed for the charger to resume charging characteristics.

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.

Battery Switches

Motor-activated battery switches control the batteries. These switches are all activated using the battery switch key labeled "BATT SWITCH" at the dash, located on the auxiliary helm switch panel.

When the batteries have been completely depleted, there may be insufficient power to operate the motor-operated battery switches. In this case, manual operation will be required.

If the battery switches require manual operation, they may be found on the forward bulkhead inside the auxiliary machinery space forward of the PC1800 batteries (*See pg. 44, Diagram 5*) and in the main electronics rigging area inside the console. (See below)

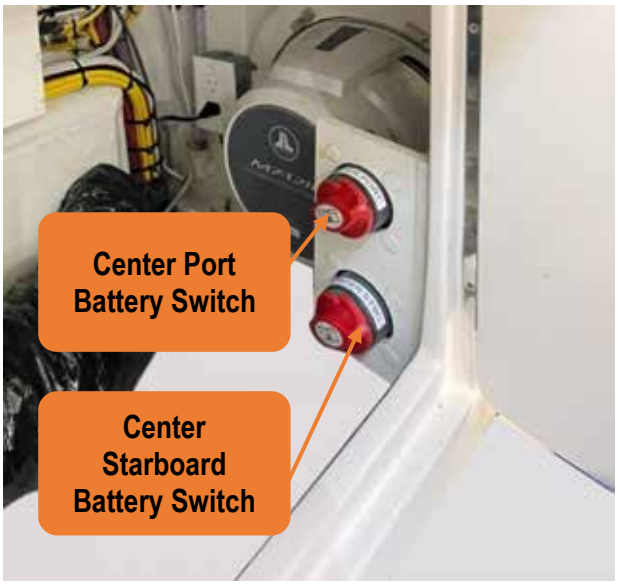


Figure 58 - battery switch at the electronic hatch inside the cabin.

Figure 59 - battery switch for port and starboard

engines inside the aft auxiliary bilge hatch.

For manual Operation of the battery switches, push the knob in first, then turn each switch clockwise.

The switch is in the "ON" position when the green label is revealed on the switch face, and the red-light illuminates.

Figure 60 - manual battery switch turned on.

Battery Parallel System

A momentary switch on the auxiliary dash switch panel provides emergency battery paralleling. This may be used to start the engines in the event of a dead battery bank.

A dedicated engine start battery has few loads and is maintained at a high charge. This battery can supply the ampacity to start all other engines when the momentary parallel is engaged.

To activate the parallel system, press and hold the "BATTERY PARALLEL" button in the auxiliary dash panel until your engine starts.

Figure 61 - battery parallel switch on the auxiliary dash

Automatic Charging Relays (ACR)

The outboard engines can produce significant charge amperage when running.

Each engine has an ACR that can provide additional charging.

The engine alternators are connected to ACR's which share unused charging capacity.

The ACR automatically parallels another bank to add additional charging when the engine's battery bank is fully charged.

Battery banks are connected in parallel through 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 time.

REFER TO THE MANUFACTURER'S MANUAL IN YOUR OWNER'S MANUAL BAG FOR COMPLETE INSTRUCTIONS, WARRANTY, AND SAFETY INFORMATION.

Battery Maintenance

Periodically, check each battery and the charging system for loose connections or wiring. Regular 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.

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 electricity conducting battery acid becomes weaker, and the voltage drops. As the battery remains discharged, the process continues until recharging the battery becomes impossible.

If the battery becomes run-down, recharge it as soon as possible. Overcharging the battery can be just as detrimental to its life as running it down too far.

USB Accessory Receptacles

Your boat is equipped with two (2) USB ports. They are located on the dash panel. (*See pg. 51, Diagram 16)*

These receptacles are made of corrosion-resistant marine-grade materials and have a moisture-proof cap.

The USB receptacles are active when the 10-amp breaker "12VDC RECEP" located in the 12VDC main distribution panel inside the cabin is "ON

Be sure to use accessories that DO NOT EXCEED the rated capacity of the circuit (3 amps).

⚠ CAUTION

DO NOT insert a cigarette lighter into the 12V receptacles. Damage to the unit and system may occur.

C-19

12VDC Main Distribution Panel

Your boat's DC electrical system operates on 12VDC Power supplied by the batteries. The 12VDC Main distribution panel (12VDC MDP) is located inside the console above the steps and accessed via the hinged door on the front.

The 12VDC Main Distribution panel below includes two meters that provide current information about your DC system, including voltage and amperage draw on each bus. (*Refer to Pages 112-113*).

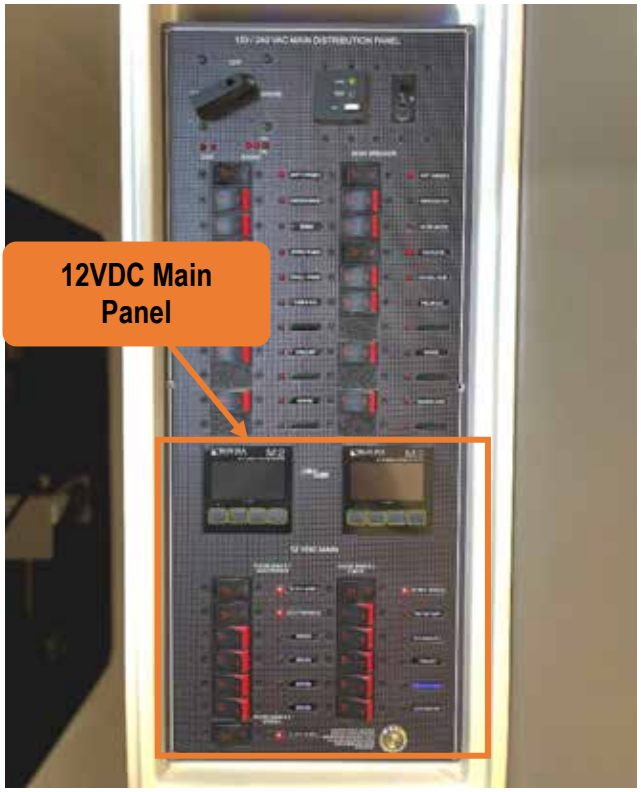


Figure 62 – 12VDC main distribution panel.

Each Breaker on the 12VDC has a light that will illuminate when the breaker is energized for each load. The main breaker at the top of each bus energizes the loads on the bus.

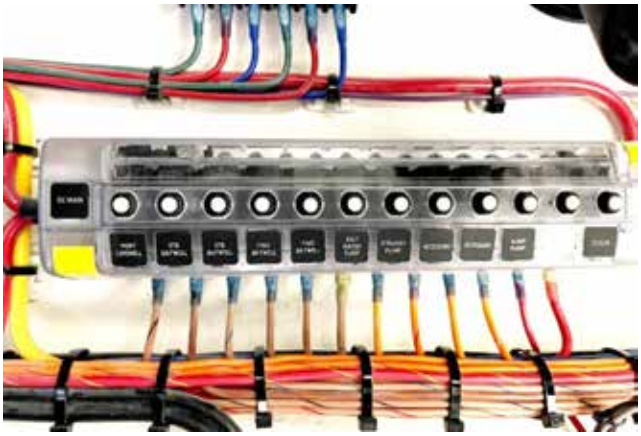


Figure 63 - dc main breakers.

The 12VDC MDP includes flip-style breakers used for inductive loads, including pumps.

The flip style 25 Amp breakers protect the pumps' electrical systems for baitwells and other appliances, and a 100 amps breaker protects the windlass system (see below). These breakers are at the battery hatch inside the cabin (*See pg. 47, Diagram 11).*

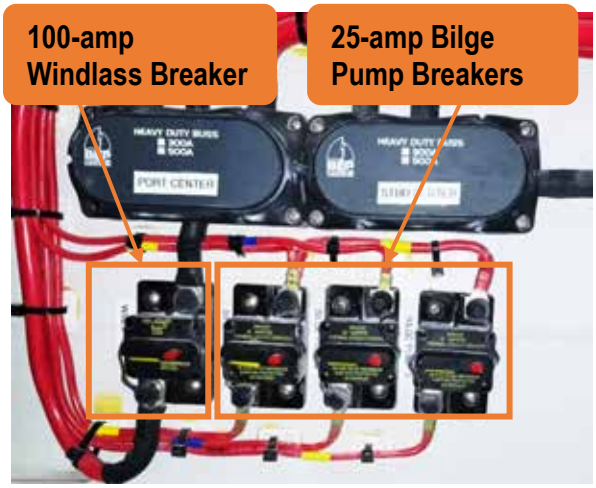


Figure 64- -bilge and windlass breakers inside the battery hatch in the cabin.

Additional flip-style breakers for the seakeeper system, battery charger, and the group 31 batteries from the port and starboard side are located inside the auxiliary bilge hatch (*See pg. 44, Diagram 5*).

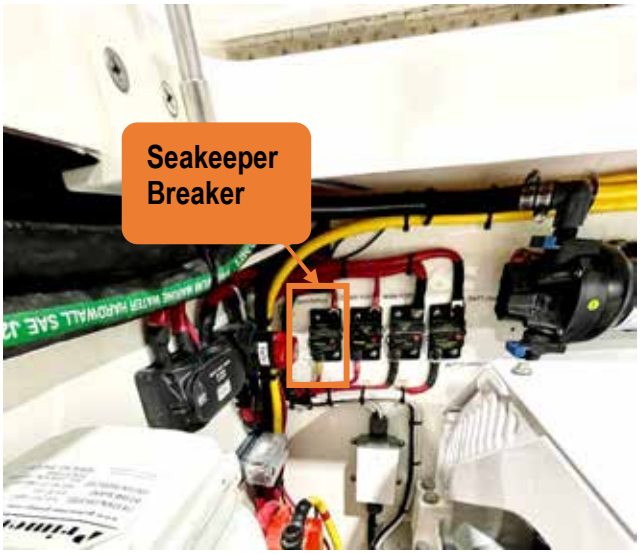


Figure 65 – additional port side breakers inside the aux bilge hatch.

12VDC Breakers are located inside the electrical rigging area, and these breakers protect non-inductive loads, like lighting, electronics, and stereo components.

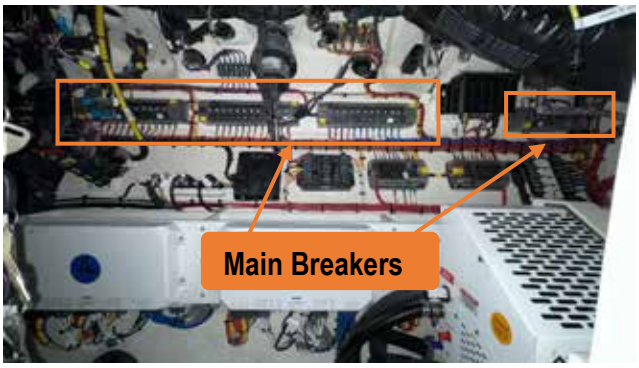


Figure 66 – 12VDC main breakers inside the electrical rigging area in the restroom.

Figure 67 - 50-amp DC breakers inside the battery hatch in the cabin.

If a load does not operate, locate the associated breaker, and attempt to reset the breaker. If the

breaker immediately trips again, do not attempt to reset it.

Troubleshoot the root cause or Contact SEAVEE® Service for repair prior the re-setting the breaker.

If it is necessary to replace a breaker, use a breaker sized adequately for the load.

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 create a fire hazard.

WARNING

Use of higher amperage fuses or breakers is a fire hazard. W-28

Fuse Blocks

The electronics fuse blocks are in the electrical rigging compartment in the aft portion of the console.

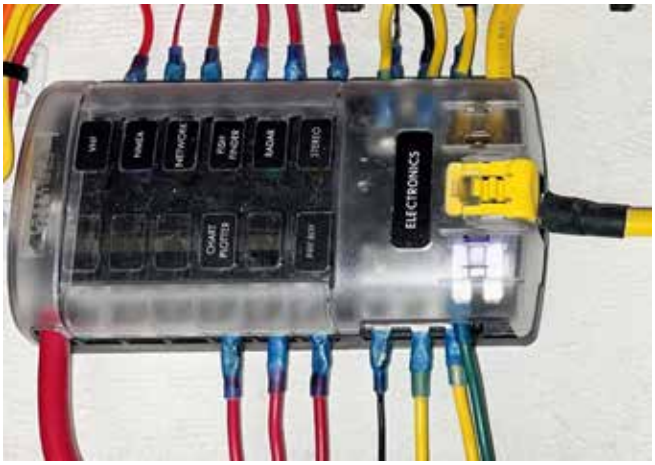


Figure 68 – fuse block.

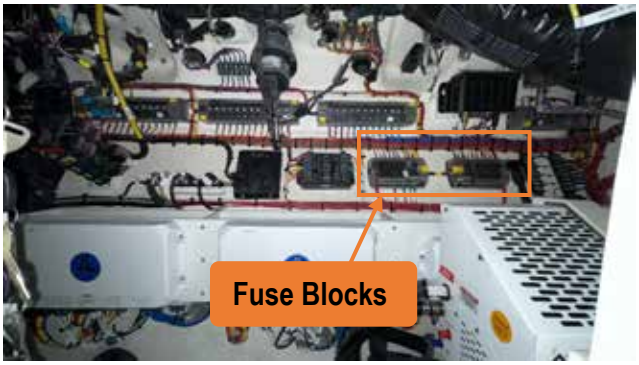


Figure 69 electronics fuse blocks in the electrical rigging compartment inside the cabin.

If 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 create a fire hazard.

WARNING

Use of Higher amperage fuses or breakers is a fire hazard.
Use fuses and breakers having the same amperage rating as the original or as specified.
W-36

120/220 Volt AC Electrical System

The 120 Volt AC (120VAC) Electrical system supplies power to AC loads, including the gyro stabilizer, air conditioning, microwave, and battery chargers.

The 220VAC system is a "4-Wire" system, with two separate 120VAC hot legs, neutral and ground. Some loads are also operated at 220 volts by

combining legs to operate inductive loads more efficiently and reduce startup amperages.

The 120VAC MDP includes a multimeter that provides voltage, amperage, frequency, and other information for each 120VAC line.

A 50Amp shore service can power the system via a shore cord or the onboard 9 KW diesel generator.

The 120VAC MDP provides complete control over AC loads and critical operating information.

Note that the generator does not provide as much power as is available via shore power. Some loads may not be able to be operated at the same time while on the generator. Load management may be required.

120VAC 50 Amp Shore Power

The heavy-duty 50 Amp shore power system permits the boat to hook up to 4-wire dual 120VAC shore power.

The 120VAC Main Distribution Panel located in the cabin is used to control this system. (*See pg. 47, Diagram 11*).

The shore power inlet is located under the deck ring on the liner column on the starboard side outboard of the companionway door.

The shore power system is connected using an ELCI (Equipment Leakage Circuit Interrupter) main breaker located on the main A/C panel inside the console's forward part. (*See pg. 110, Diagram 29*)

The ELCI protects people from line-to-ground shock hazards from defective, misused or neglected electrical equipment.

The ELCI will not prevent line-to-ground electric shock but limits exposure time to a period considered safe for ordinarily 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.

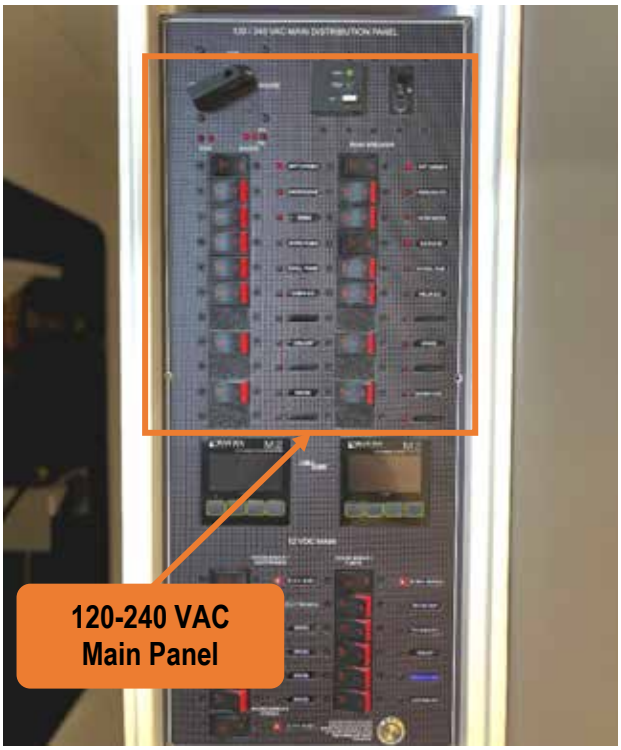


Figure 70 - 120-240 VAC main distribution cabin with shore power control inside the cabin.

Connecting to 120VAC Shore Power

1. Before making shore power connections, ensure that your boat is securely moored.
2. Make sure all AC breakers are off on the 120VAC MDP
3. Set the AC Source Selector switch on the 120VAC MDP to "SHORE."
4. Connect the female plug to the boat using the Shore power cord first.
5. Ensure that plug is twisted and locked in position.
6. Ensure that the dockside breaker is off.
7. Connect the male plug of the cord to the dockside power, twist, and lock.
8. Turn on the dockside Power breaker.
9. Switch on 120VC MDP AC main breaker.
10. Check the voltmeter for 120VAC on both Lines. Check that the reverse polarity light is not illuminated. Shut off all breakers and investigate fault sources if voltage or polarity is incorrect.
11. Switch applicable load breakers.

Figure 71 - shore power inlet at the starboard middle column.

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. C-12

CAUTION

It is imperative that the shore power outlet is dry before plugging into the dock power outlet. C-13

Figure 72 - shore power female plug.

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. C-11

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. C-14

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 certain appliances based on load requirements, shore power connections, and generator operation.

To obtain the most power for your appliances, it is best to use the "GENERATOR" to deliver a higher load capacity.

Diesel Generator System

Your Boat is equipped with a 9 KW diesel generator that provides 120-volt AC power mains to the Cabin main breaker panel. It is in the auxiliary machinery space under the aft cockpit.

The generator can operate at all anticipated speeds. In heavy seas, reduced speed may be required to ensure that the Seachest remains full of water in order to provide adequate water coolant to the generator.

The generator is sized with the capacity to provide sufficient power for most electrical needs, including microwave, refrigeration, and air conditioning. Nevertheless, it is possible to overload the generator by trying to operate too much equipment at one time. The circuit breaker that protects the output circuits on the generator set will trip should that occur.

SEE THE GENERATOR OPERATOR'S MANUAL IN YOUR OWNER'S MANUAL BAG FOR MAINTENANCE, SPECIFICATIONS, AND ADDITIONAL DETAILS.

⚠ CAUTION

To avoid damage in the generator, NEVER run the unit while the boat is out of water. Make sure the generators' seacock is open before starting the unit. C-30

Generator Operation

⚠ CAUTION

Make sure to close raw water seacock ball valve if boat will be left in the water without the generator operating for an extended period of time to prevent accidental flooding. C-10

1. Open the seacocks for the port and starboard seachests water intakes (*See pg. 43, Diagram 4*)
2. Check the seawater strainer for the generator cooling water located in the auxiliary machinery space. Ensure that it is clean and free of debris.
3. Open the generator seawater cooling valve on the seachest. By confirming the handle is parallel to the valve body. *(See 122- Diagram 34*)
4. Set the Generator Main Breaker to the "OFF" position on the 120VAC MDP.
5. Turn on the generator "BLOWER" breaker on the DC side of the panel to help to evacuate the heat.
6. On the auxiliary dash switch panel, turn on the blower switch located next to the generator start/stop switch.
7. Press and hold the generator START / STOP switch until the generator starts. This may be confirmed by either listening to the generator motor run or visually noting that 120 volts are

being shown on the two digital displays on the AC side of the breaker panel.

8. Allow the generator to stabilize a minimum of 15 seconds after starting before turning on the loads.

9. Set the AC Source Selector on the 120VAC MDP to "Generator."
10. Once the generator has stabilized, switch the "GENERATOR" main breakers to the on position.

11. Confirm that all the breakers for desired AC loads on the AC mains are turned ON.

For the generator's shutdown, reverse the process.

The generator exhaust is directed through a lift muffler, then to a water drop muffler.

Cooling water from the generator exhaust is separated from the exhaust gas. Generator cooling water is expelled from the boat aft through the port side scupper on the hull side.

The generator exhaust gas is expelled from the boat's aft starboard side of the scupper.

Maintenance

Periodically check to ensure the cooling water is expelled from the boat's port side to provide proper cooling.

Water moisture can damage the generator, periodically check the generator diesel fuel filter located at the auxiliary machinery hatch in the aft cockpit.

Replace the filter annually or as required for a better performance

NOTICE

Periodic generator maintenance is required as outlined in the generator owner's manual. inspect and clean the generator strainer frequently. refer to the manufacturer's manual for additional information N-30

Figure 73 - diesel fuel filter inside the aft auxiliary machinery hatch.

Periodically check the generators' coolant levels in the port aft transom hatch recovery tank. (*See pg. 46, Diagram 10*).

Refill the recovery tank following the manufacturer's guidance as needed.

Use ONLY the manufacturer's recommended antifreeze mixture.

Raw Water Strainer Maintenance

Periodically check the raw water strainer, located on the port side inside the Auxiliary machinery space, close to the generator for debris, and clean as necessary.

Failure to see cooling water being expelled can signal a damaged impeller on the generator

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

REFER TO THE MANUFACTURER'S MANUAL IN YOUR OWNER'S MANUAL BAG FOR COMPLETE USAGE, MAINTENANCE INSTRUCTIONS, AND WARRANTY.

Electrical Schematics

The following pages contain schematics about the electrical system in your boat. These schematics are for reference and to be used by service technicians.

SEAVEE® does not recommend you attempt to work on the electrical system unless you have the technical skills. Instead, we suggest you take your boat to SEAVEE® Service for electrical service.

SEAVEE® reserves the right to update the electrical system on any model at any time without notice to the customer and is not obligated to make any updates to units built before the change.

Wiring Identification Chart

SEAVEE® attempts to adhere to electrical wiring requirements which meet all the ABYC-11 standards where suitable and applicable. The following chart outlines the wiring gauge, color, and function.

Wire Color Chart for DC and Special Circuit

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

Diagram 26 - Wiring Color Chart

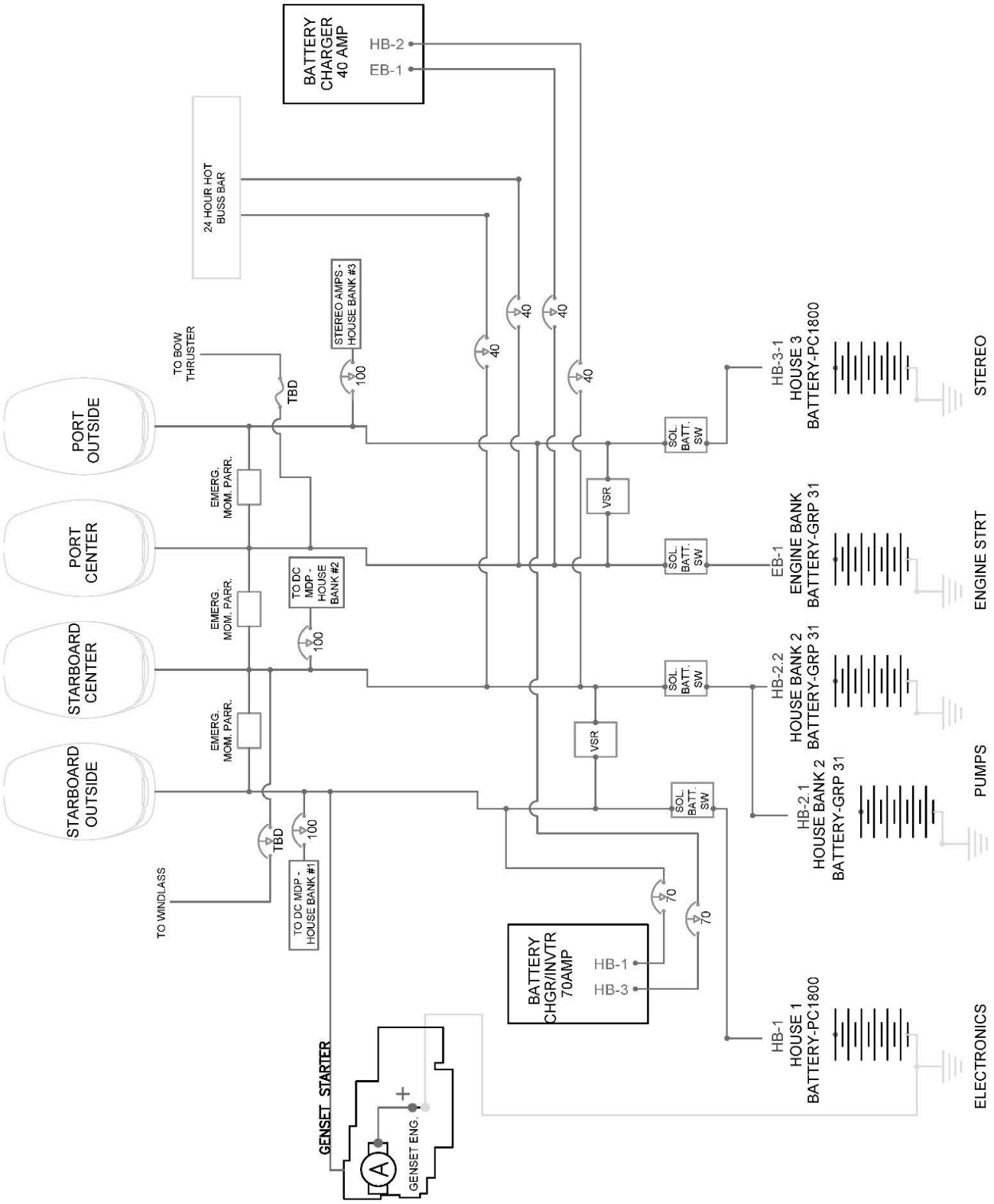


Diagram 27 – Engine Quad Wiring Schematics.

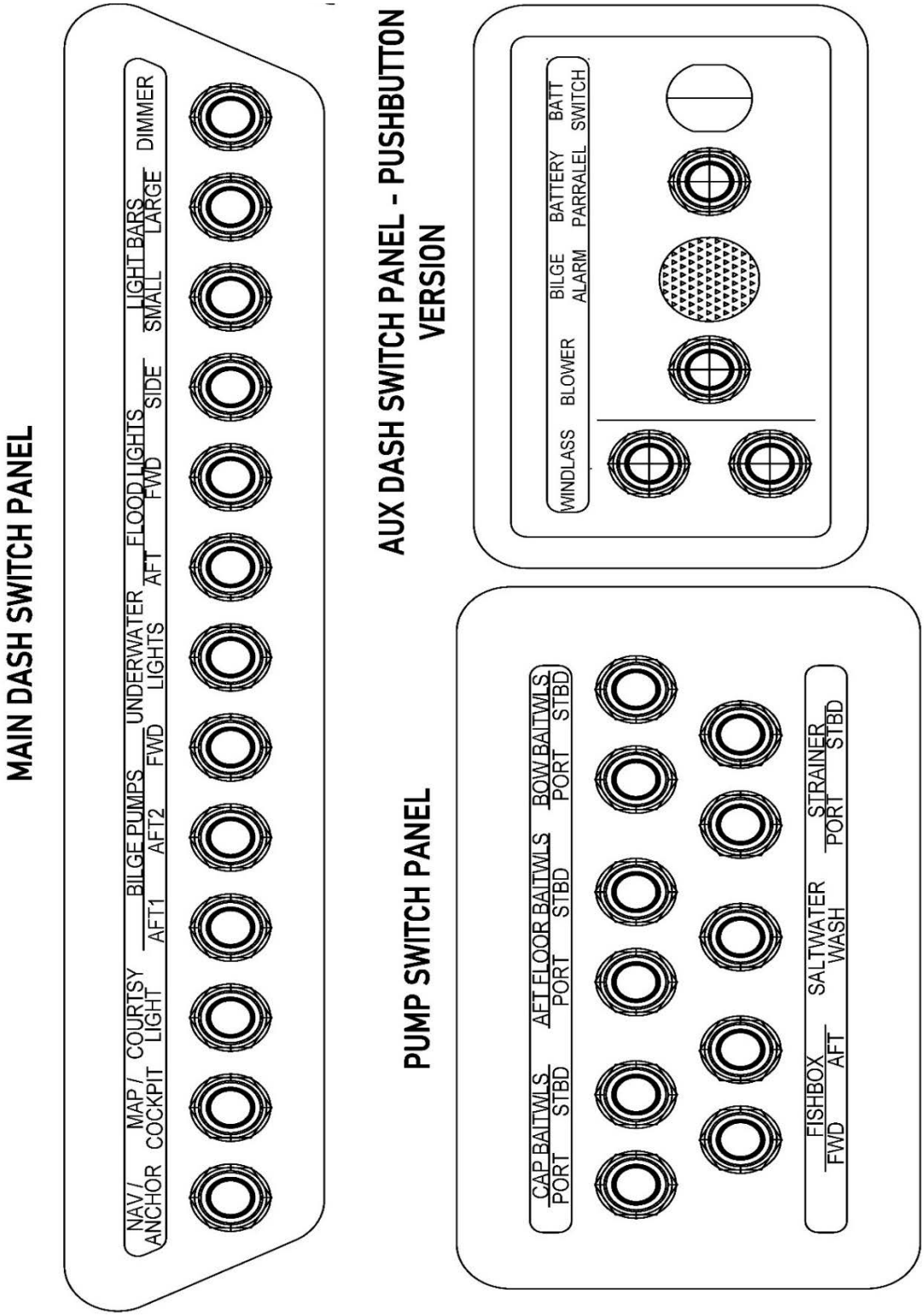


Diagram 28 - Switch Panels.

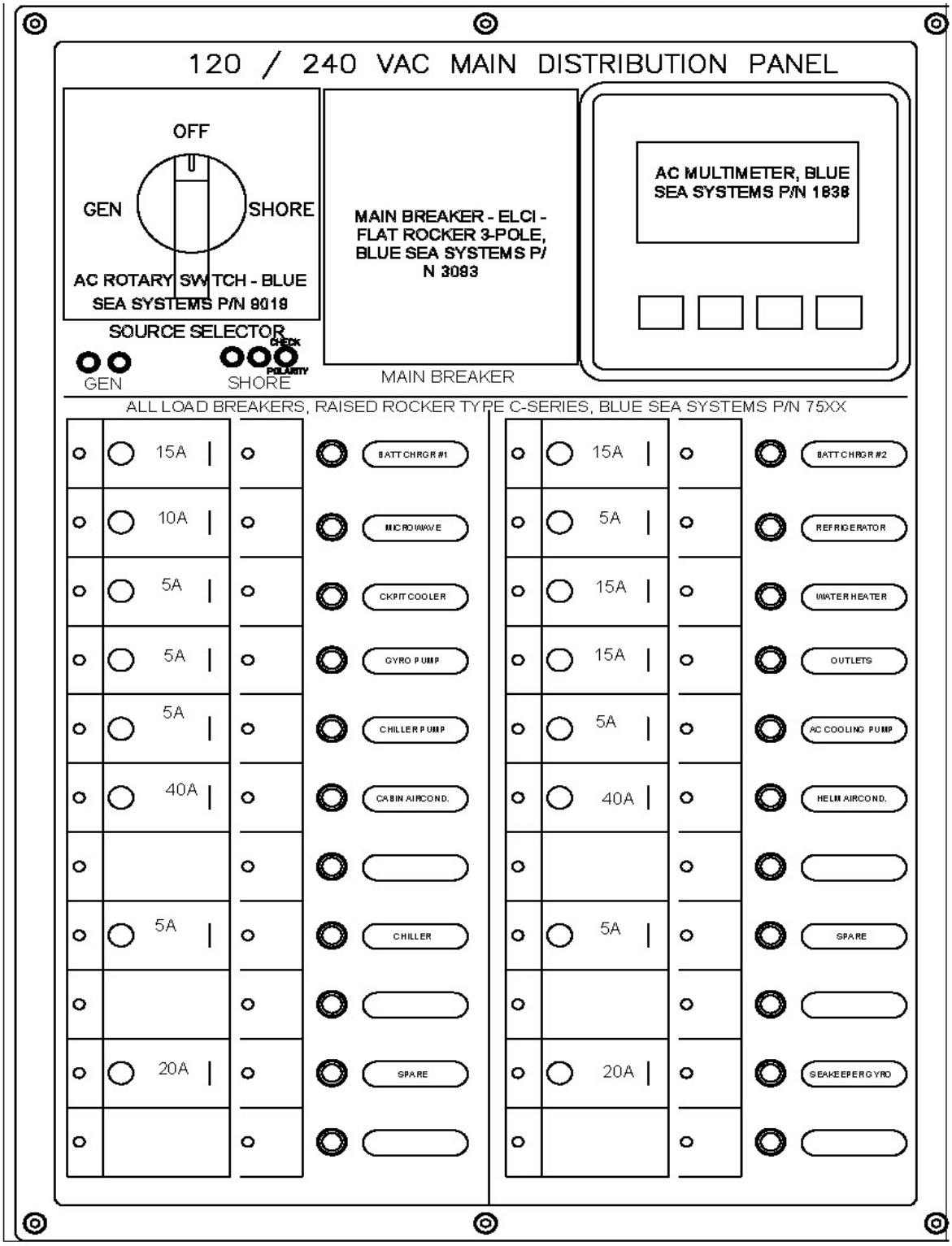


Diagram 29 – 120/240 VAC main electrical distribution panel.

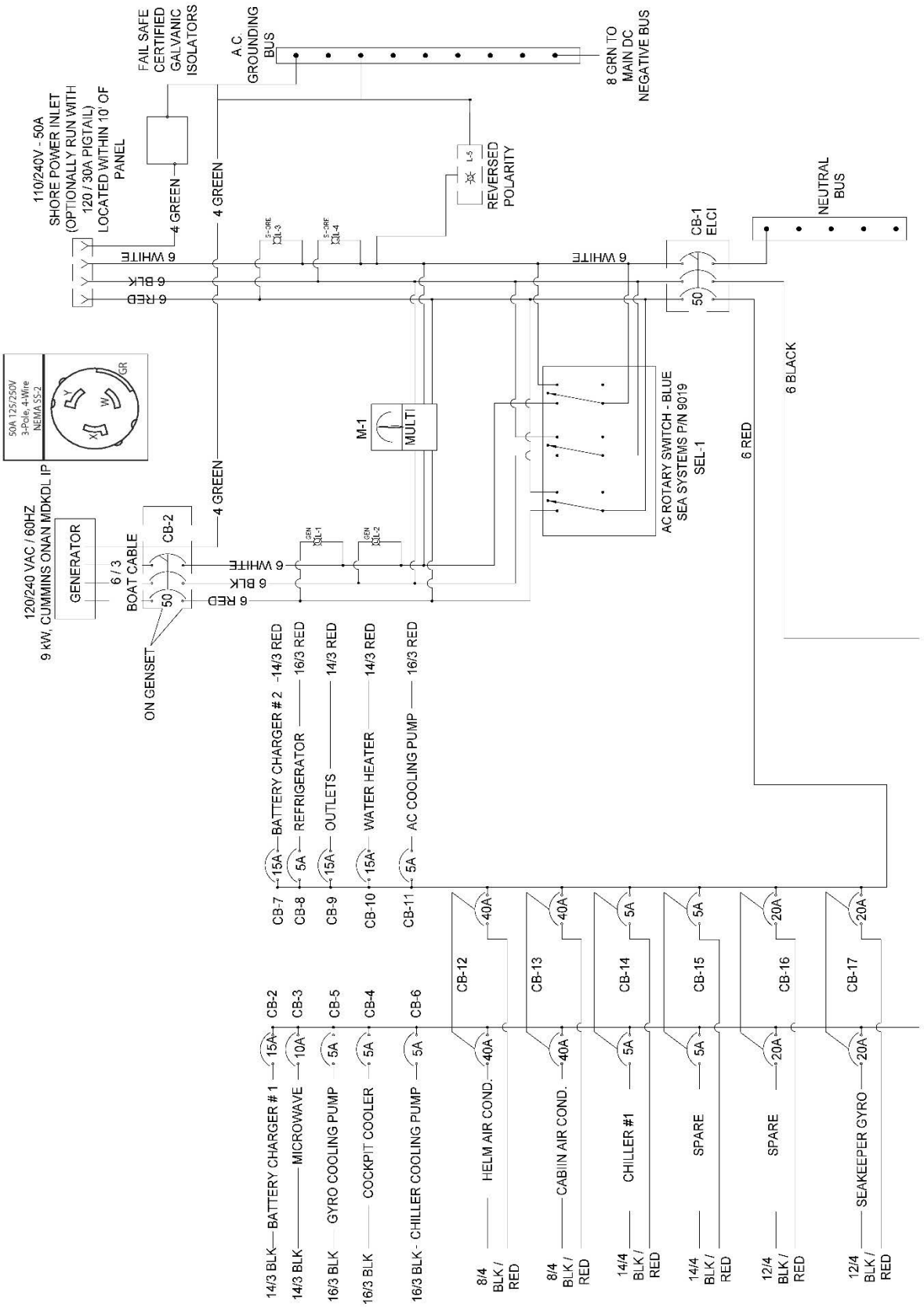


Diagram 30 -120/240 VAC main electrical distribution panel wiring.

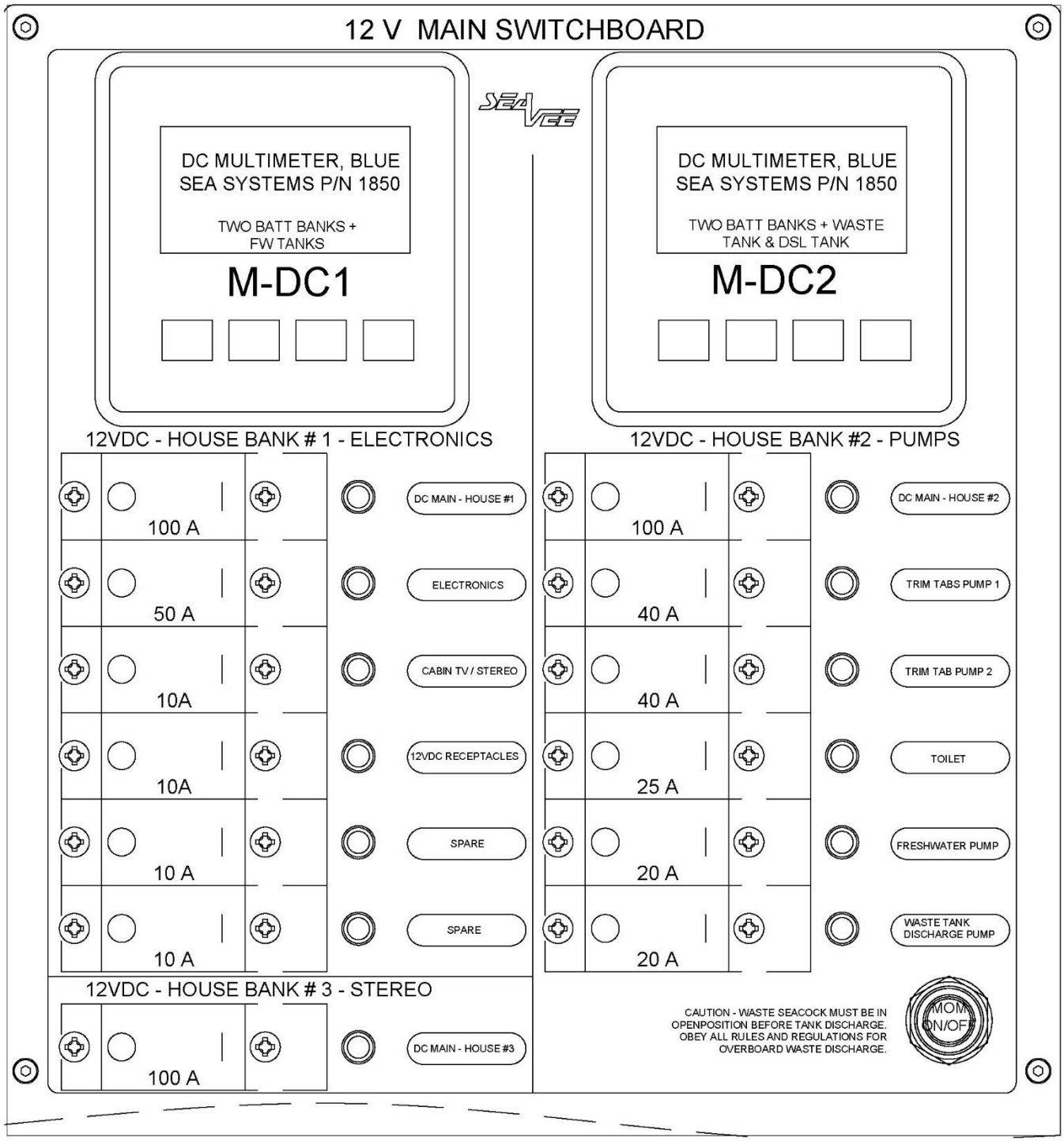


Diagram 31 – 12VDC Main Switchboard Panel

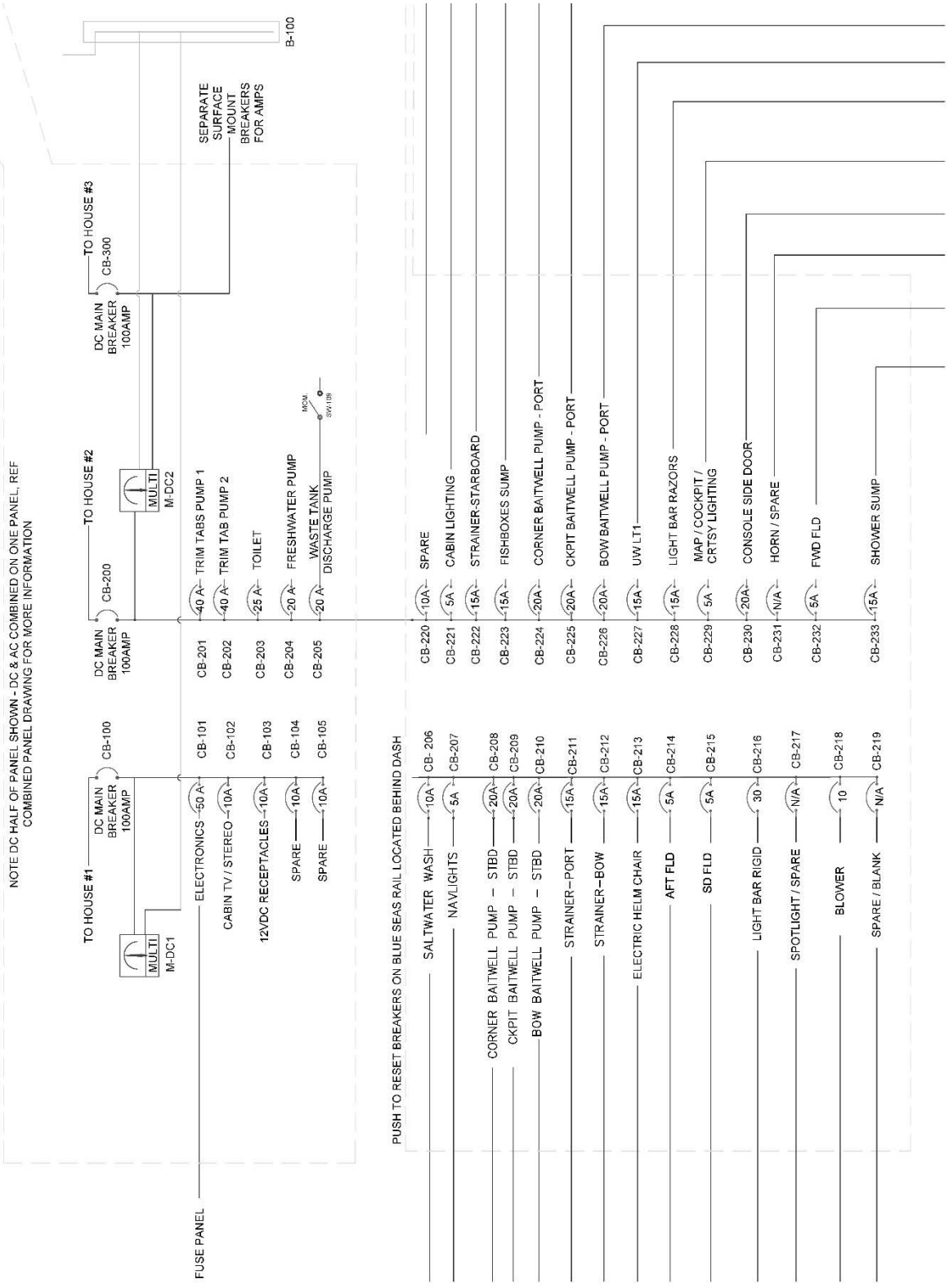


Diagram 32 – 12VDC Switch Panel Load Distribution & DC Main Breakers

Electrolytic Corrosion & Zinc Anodes

Electrolytic corrosion of metals on power boats can result in severe deterioration. You should be aware of the possibility of electrolysis and galvanic action (the deterioration of metals due to distinct characteristics when placed in salt water).

Zinc Anodes are installed on the transom, outboard engines, and trim tabs *(See pg. 50, Diagram 15*) to protect underwater hardware. Less noble than copper-based alloys and aluminum used in underwater fittings, Zinc will deteriorate first and protect the less noble metals.

The zinc anodes need replacement once a year in freshwater and every six months in a saltwater environment

If replacing the anodes is required more frequently, this may indicate a stray current problem within your boat or at the slip or mooring. If your anodes do not need replacement after one-year, loose anodes or low-grade zinc may also be a problem.

Transducer

The transducer is part of the electronics system and provides depth and bottom contours. It is located forward of the forward step to prevent entrained air in the flow along the hull bottom from decreasing the transducer performance.

Avoid damaging the face of the transducers by not scratching them; this can make readings inaccurate.

NEVER operate the transducer when the boat is out of water.

Always put the transducer on "STAND BY" when the sounder is ON while the boat is out of water.

The transducer is located below the batteries and may be accessed in the head from the aft access door. Replacing the transducer requires the removal of the batteries.

Consult SEAVEE® Service for more information about your transducer.

Figure 74 - transducer location inside the battery hatch in the toilet.

Section 6 • Lighting

Navigation Lighting

USCG / COLREGS-compliant navigation lighting is installed for your safety. The lights must be illuminated at night or in low visibility conditions. The operator must ensure that the navigation lights are in good working order and that the proper lighting is shown.

The boat includes the following required lighting:

- Three Nautical Mile Separate LED Side Lights are located on the port and starboard sides of the hardtop.
- Three Nautical Mile Steaming Lights, Stern light, located on the aft end of the hardtop.
- Three Nautical Mile Masthead Light / Anchor Light:
    - On the top of the hardtop on a 1M Stanchion that can be lowered for traversing low clearance; or on the second station/tower.
    - Ensure that the stanchion is up and locked before operating at night.

These lights are LED and do not have a bulb that requires replacement. (*See pg. 42, Diagram 3*)

The lights are protected by the "NAV LIGHTS" breaker on the 12VDC Main Distribution panel located in the cabin.

Operating the Navigation Lighting

A three-position switch on the console switch panel marked "NAV/ANCHOR" controls the navigation, anchor, and baitwell lighting.

Figure 75 - nav/anchor button.

In the NAVIGATION LIGHTS position, the port (red) and starboard (green), and masthead (white) lights will illuminate, and the button will illuminate "blue." These lights let other vessels know the approximate size and direction of travel of your boat, depending on which lights they can see.

Figure 76 - blue lighting indicating navigation lights mode ON.

The masthead light works in conjunction with the stern light and is required due to the size of this boat.

In the NAVIGATION MODE position, the lower stern light on the aft end of the hard top provides aft facing white light 22.5 deg forward of the stern, port, and starboard, while the Masthead/Steaming light faces forward and completes the circle, with a light forward to 22.5 deg abaft abeam.

Figure 77 - red lighting indicating anchor light mode ON.

In the ANCHOR LIGHTS position, the masthead light

completely illuminates white, 360 Degrees, and no other navigation lights illuminating. The panel button will illuminate RED, indicating the Anchor light mode is selected.

Map/Cockpit Lighting

Overhead lights are located on the underside of the hardtop.

Pressing the switch "MAP COCKPIT" on the console switch panel causes these lights to illuminate WHITE.

Quickly pressing the switch OFF/ON will cause the lights to illuminate RED.

Repeating the process will cycle the color to BLUE, PURPLE, or switch OFF the lights.

The lights are protected by the "COCKPIT LIGHTS" breaker on the 12VDC Main Distribution panel located in the cabin.

Courtesy/Under Gunnel Lighting

Courtesy lights are placed around the cockpit, under the gunnel. LED lights will provide years of service and require no maintenance.

Switch the "COURTESY LIGHTS" Switch on the console dash helm switch panel to illuminate the lights. (*See pg. 51, Diagram 16*)

The lights are protected by the "COURTESY LIGHTS" breaker on the 12VDC Main Distribution panel located in the cabin.

Underwater Lights (Option)

The underwater lights are located on the transom below the water's surface. When lit, the lights illuminate the water in a translucent glow, which enhances the after-dark experience of being on the water and may attract a myriad of marine life.

The underwater lights are powered by the "UNDERWATER LIGHTS" switch on the helm switch panel.

The lights are protected by the "UNDERWATER LIGHTS" breaker on the 12VDC Main Distribution panel located in the cabin.

Forward and Aft Flood Lights

The hardtop is equipped with forward and aft flood lights.

Forward flood lights should not be operated while underway due to the reduction in night vision from the strong lighting reflection.

Forward and aft flood lights can be independently operated at the console dash helm switch panel by the switches labeled "AFT" and "FWD" under floodlights.

The lights are protected by the "FWD LIGHTS" and "AFT LIGHTS" breakers on the 12VDC Main Distribution panel located in the cabin.

Baitwell Lighting

Baitwells are equipped with sealed LED lighting. The Baitwell lights will activate automatically together with the navigation and anchor lights by pressing the "NAV/ANC" button in the console switch panel (*See pg. 115, Figure 75*).

The lights are protected by the "NAV LIGHTS" breaker on the 12VDC Main Distribution panel located in the cabin.

Cabin Lighting

Your boat is equipped with contemporary LED lighting throughout the cabin. They are controlled using toggle switches located on the wall close to the cabin entrance.

There is also a switch on the aft wall of the head vanity for the overhead light.

The cabin lighting is protected by a breaker on the DC breaker panel. The "CABIN LIGHTS" breaker must be ON for the lighting to function.

Figure 78 - cabin light control panel at the cabin entrance.

Section 7• Fishing Systems

Baitwell Systems

The boat is equipped with port and starboard above deck Baitwells in the aft cockpit. In addition, the boat may optionally be rigged with an in-deck Baitwell in the bow and two in the aft cockpit, making for a possible five Baitwells total.

The boat is equipped with two standard Seachests, providing at least one pump supplying seawater to each Baitwell.

These Baitwells are all constructed using the SEAVEE® Pressurized Baitwell system, keeping baits healthy for extended times in challenging conditions.

Baitwell pumps are controlled via the auxiliary pump panel on the aft face of the second-row seating base, behind the tackle rigging door in the cockpit.

Figure 79 - auxiliary pump panel at the aft seat.

"Pressurized" Baitwells Concept

Each Baitwell is configured to permit it to be pressurized to prevent baits from being damaged by sloshing water in the tank.

Eliminating the air at the baitwell tank's top prevents Baitwell water from sloshing. This pressurized design dramatically reduces the sloshing providing a stable environment to reduce fatigue on your baitfish resulting in a more active and healthier bait.

Pressurized Baitwell Operation

The Baitwells have two drains to regulate the unit's water. By utilizing the seacock to control the upper drain, you can adjust the water level in the tank. The bottom drain and plug (supplied) are used to empty the Baitwell of water once the tank is empty of baits.

Your Baitwells do not require and do not use separate tubes or other internal parts that might block the access to bait or damage valuable baits.

Each hatch is fitted with a small gap in the gasket forward to permit air to escape and allow the tank to fill.

Some water may leak out of this gap when the tank is pressurized. Adjust pressurized baitwells, so the water level is even with the top of the hatch or very slightly overflowing.

Baitwell Water Supply and Drainage Process

1. Open the seacocks for the Seachests water intakes, including the flush pickup on the hull bottom and the high-speed pickups on the stern.

2. Purge air from the seachest by depressing the small valve mounted on the seachest lid until full, allowing all the air to be evacuated.

3. Insert a drain plug (supplied) into the bottom drain inside the Baitwell. Open the Baitwell overflow drain seacock for the Baitwell. (*See pg. 45*)

4. Turn on the Baitwell pump and fill the Baitwell.

5. Close the lid on the Baitwell.

6. The upper overflow drain will allow the water to rise to just below the lid before starting to drain.

7. If the Baitwell is too full, and water is coming out the top of the lid, open the overflow seacock valve about ¼ turn until it stops overflowing or minimized.

8. If the water level does not reach the bottom of the lid, close the valve slowly until the water level rises to meet the lid.

9. The baitwell is pressurized and ready for bait.

10. After use, empty the Baitwell of baits, and pull the drain to empty the well.

NOTICE

The seacock MUST be in the OPEN position. Running the pump dry may cause damage to the unit. N-25

Figure 80 - standard baitwell.

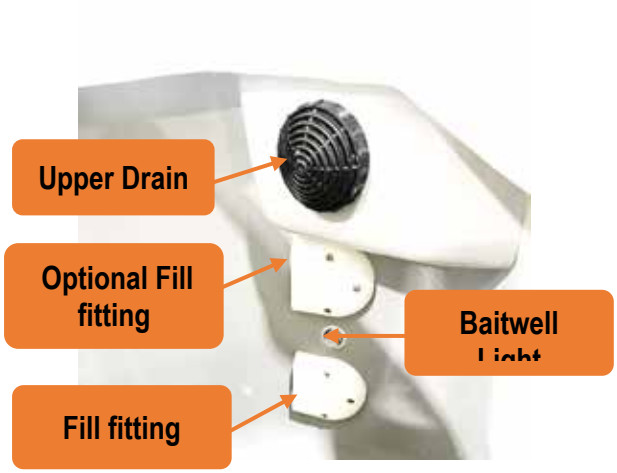


Figure 81 – inside the baitwell tank system.

Maintenance

Maintenance of the raw water system requires Periodic inspection of the hull bottom water strainer and all fittings and hoses for system integrity to prevent leaks.

Clean away debris and tighten hose connections as required. The system should be run at least every other month to keep the pumps impellers in good condition.

⚠WARNING

Running livewell pumps dry could damage or destroy them. W-30

Seachests

The 450Z is standard equipped with two seachests, each containing Baitwell pumps, valves, and fittings for all the equipment requiring seawater. The Seachests are in the machinery space/aft bilge in the aft cockpit. (*See pg. 43, Diagram 4*)

On a stepped hull, Seachests are required to provide seawater at high speed while minimizing air, and it contains submerged pumps that remain cooler and provides better flow

Figure 82 - seachest starboard side

Figure 83 - seawater flush pick-up valve at the bilge hatch

Figure 84 - seachest port side

Seachest Operation

To operate the seachest, with the boat in the water, ensure that the aft transom high-speed pickup seacocks are open (handle aligned with the body of valve) and that the hull bottom flush pickup/vent fitting seacock is also open (handle aligned with the body of valve).

Press the purge valve, observe water filling the chest, then release it. This only needs to be done once when the boat is launched in the water and every time the boat is hauled and relaunched. (See Diagrams on Pages 122-123).

Ensure that the transom pickup and the flush hull bottom pickup seacocks are open. The pumps and the Baitwells can now be operated normally.

Seachest Maintenance

If the Seachest injects debris, you must remove all the bolts holding the top of the seachest cover.

To clean inside the seachest, first Close the transom pickup seacock and the hull bottom pickup/vent seacock valves before loosening these bolts.

⚠ DANGER

Do not remove bolts holding seachest top cover before closing all seacocks that provide seawater to seachest. Flooding of the boat could result.

D-25

After clearing the obstruction, replace the cover, including the rubber gasket between the seachest and the cover. Use the rubber-backed washers between the bolts and the cover.

While tightening bolts in a crisscross pattern, be careful to apply only about 10-inch pounds of torque to bolts holding the top cover to prevent cracking the cover. Test the cover seal to the seachest before departing to confirm no water leaks.

The Seachest may include pumps which may be backup or secondary supplies to one or more Baitwells.

Each of these backup pumps has its dedicated valve on the seachest. These fittings must remain CLOSED unless the pump is used to supply water to the Baitwell.

Leaving the pumps open will result in water and air being drawn out of the Baitwell backward and through the pump into the Seachest. This will cause the seachest and the Baitwell to empty and may kill all the bait in the Baitwell and damage the pumps.

Ensure that valve fittings for the Baitwells, not in use, are closed unless the Baitwell and its pumps are in use.

This caution also includes ensuring that optional above deck Baitwell fill fitting caps are secure unless the pump is being used to supply water.

Seachest Additional Diagrams

Use the additional diagrams for guidance about the raw water system and the seachest configuration.

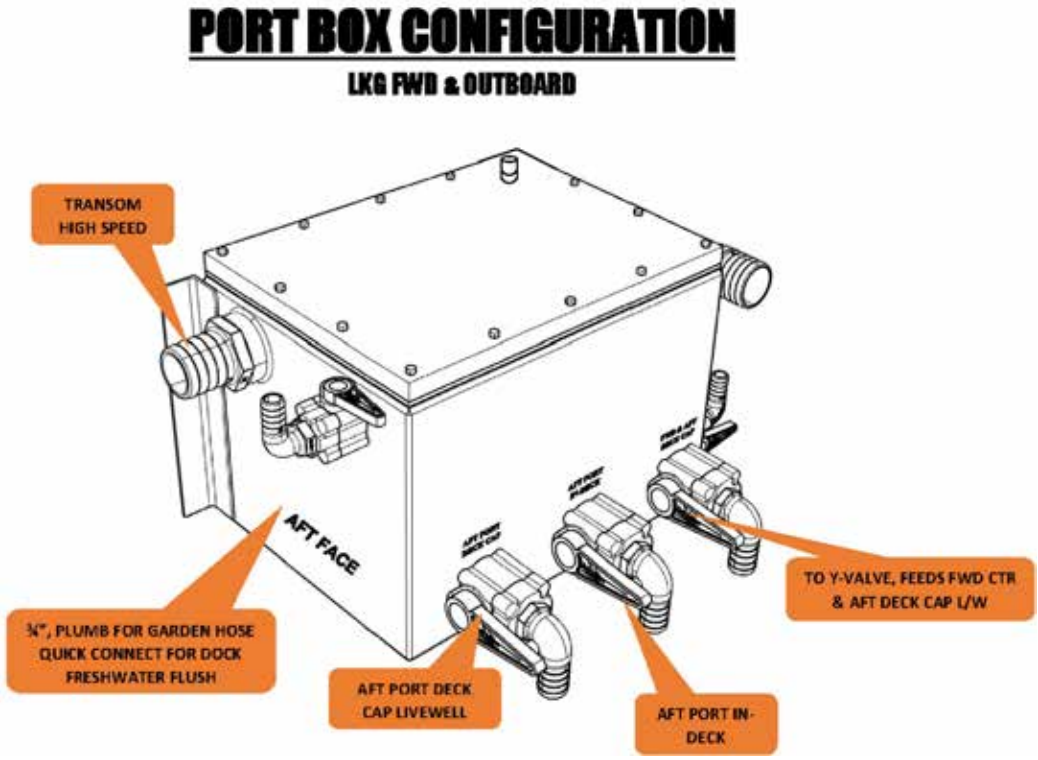


Diagram 33 - seachest portside configuration.

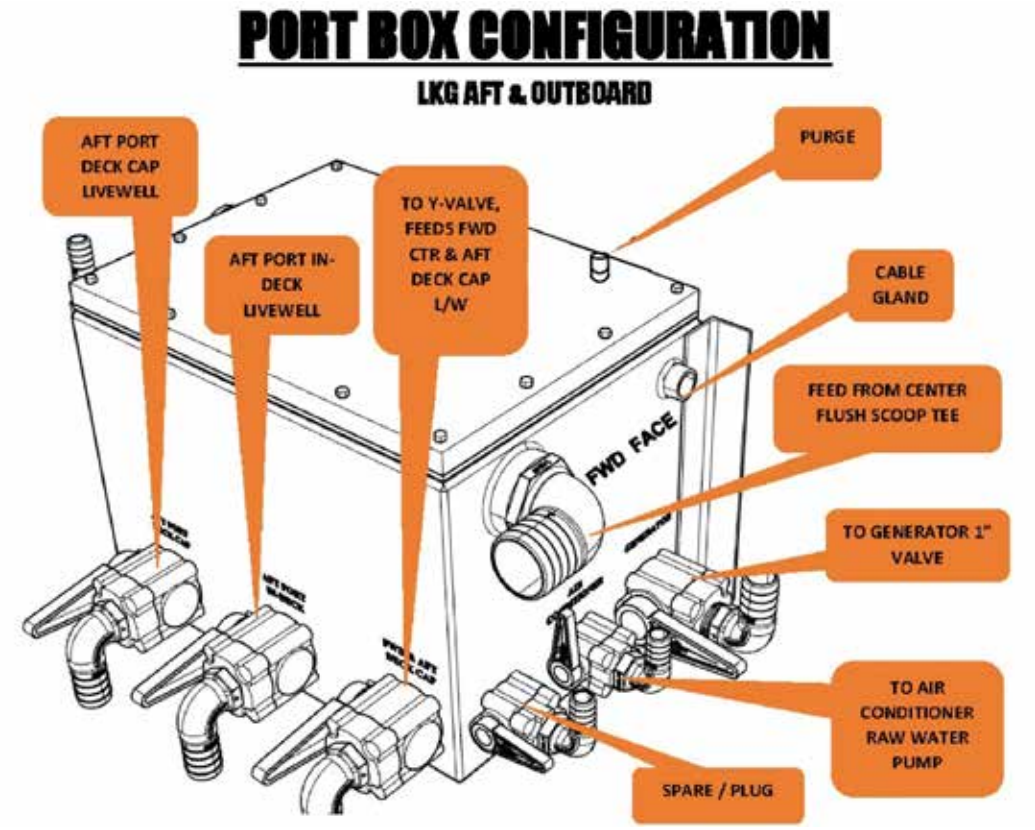


Diagram 34 -seachest port side configuration.

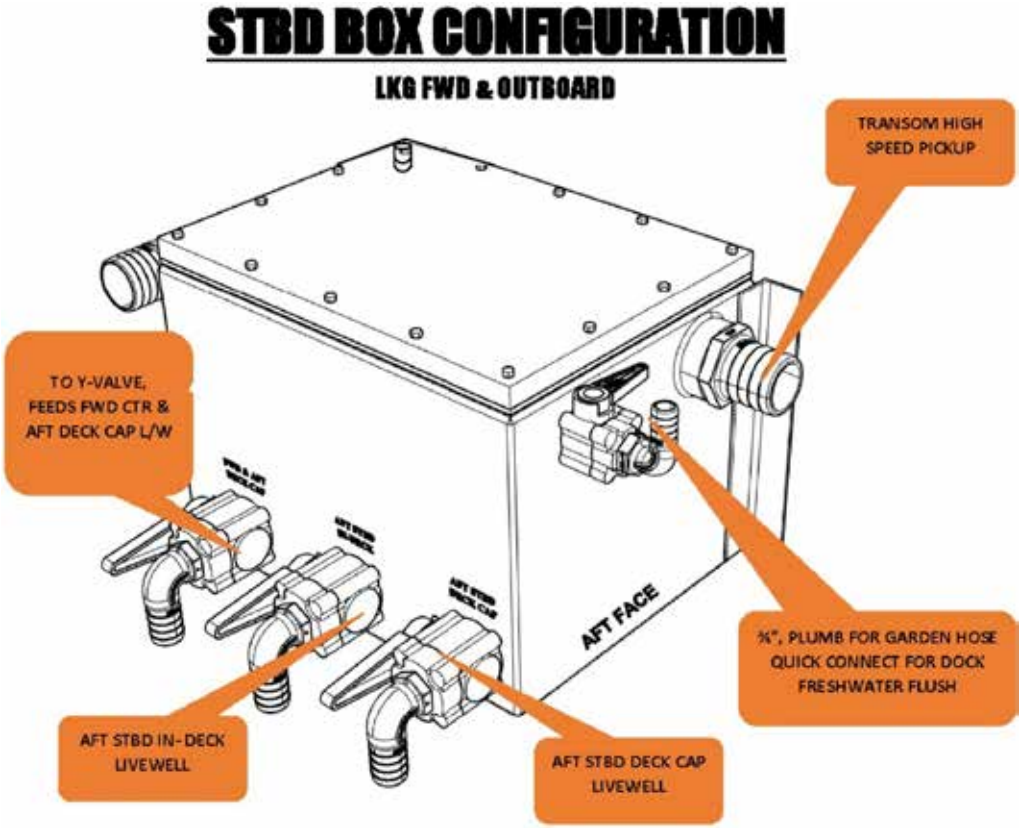


Diagram 35 - seachest starboard side configuration.

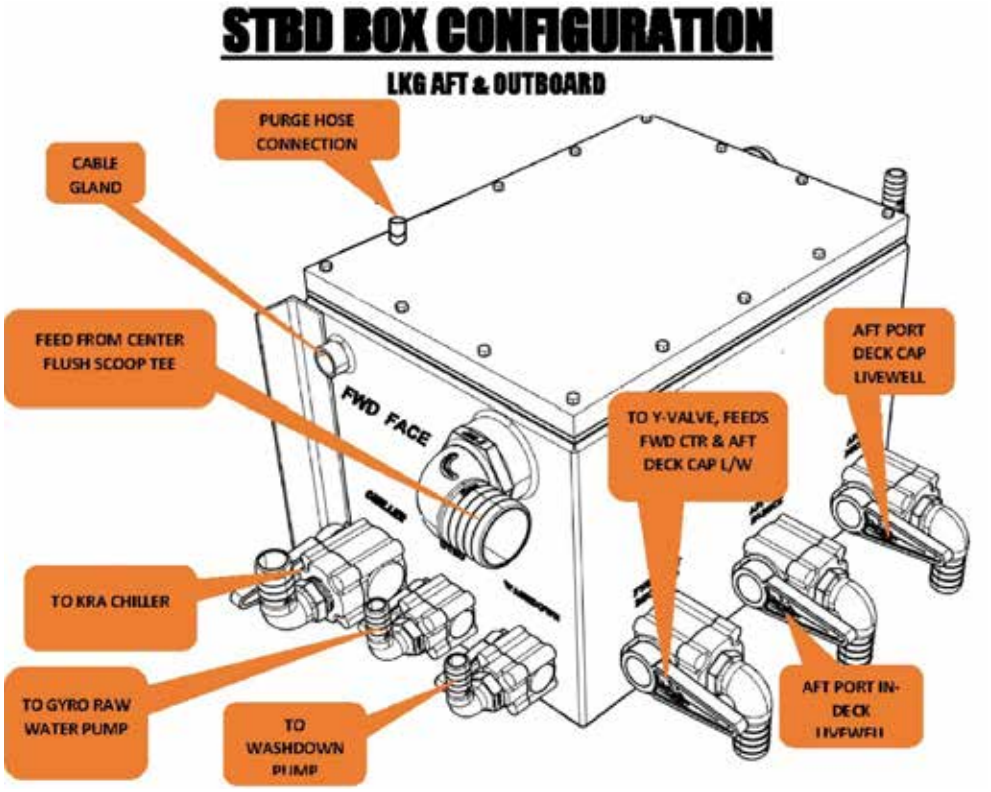


Diagram 36 - seachest starboard side configuration.

Electric Reel / Downrigger Receptacles (Option)

12V/30-amp electrical receptacles for powering electric reels may be located under the deck ring.

Push the plug into the receptacle and turn clockwise to secure the connection.

The receptacles are protected by 50-amp DC breakers inside the cabin's battery hatch. (*See pg. 100, Figure 67*)

A weatherproof cover protects the receptacles while not in use from fresh and saltwater spray.

Rocket launcher (Option)

Your boat may be equipped with a rocket launcher located in the aft cockpit.

The rocket launcher can be used to manage rods with baits being fished from kites or baits in a trolling spread from one central location.

The rocket launcher is bolted into a mounting aluminum plate on the deck. It may be removed when not used by unbolting it and installing the flush mounting hardware provided with the boat.

Figure 85 - rocket launcher at the stern.

Chiller Plate (Option)

An optional 110VAC powered Seawater cooled chiller system may be installed on your boat.

The system consists of a dedicated seawater strainer, a circulating pump both located inside the auxiliary machinery space, a condensing unit located inside the aft cabin in the electronics compartment., and a holdover plate installed inside the fishbox or the cooler.

The chiller compresses the gas and is plumbed directly to the holdover plate.

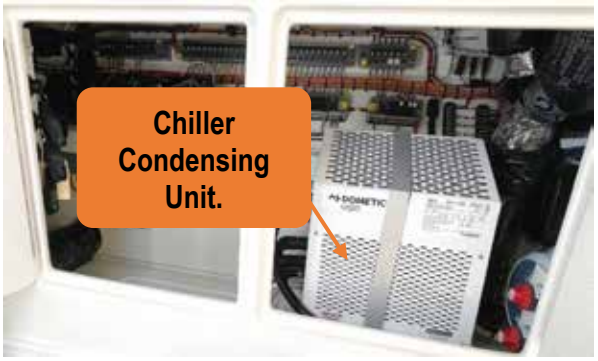


Figure 86 – chiller condensing unit inside the aft cabin.

The chiller and chiller pump switches are located in the 120/240 VAC main distribution panel inside the cabin.

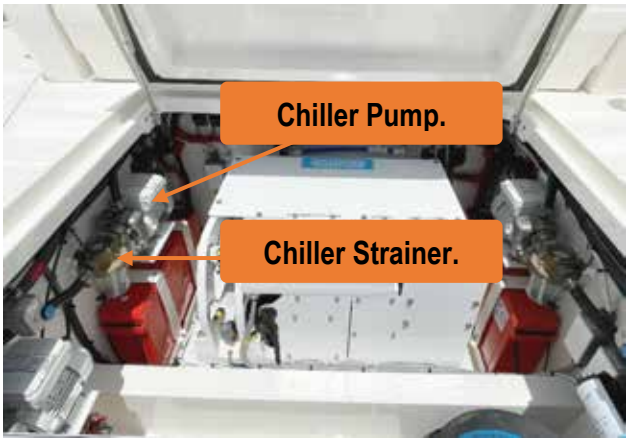
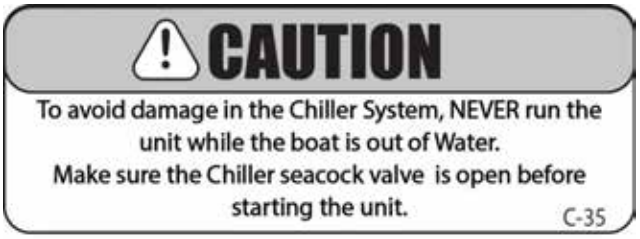


Figure 87 – chiller pump and strainer inside the auxiliary machinery space.

To operate your chiller system:



1. Open the discharge valve located at the hull side inside the starboard auxiliary bilge compartment.

2. Open the seacocks to the seachest, including flush bottom pickup and high-speed transom pickups.

3. Open Chiller Seawater cooling water valve on the seachest.

Figure 88 - chiller valve at the forward face of the starboard seachest.

4. Ensure that the chiller cooling water overboard discharge seacock located on the starboard aft hull side is open in the aft starboard bilge.

5. Inspect the Chiller Seawater Strainer for debris.

6. On the 110VAC MDP, turn on the breakers for the "Chiller Pump" and "Chiller."

7. Use the chiller control panel located inside the cabin, above the cabin light switches, to set the box temperature.

Maintenance

Verify that all seawater connections are tight, and check for water flow from the overboard discharge at the starboard aft thru-hull (See Figure 87 above). Check the chiller strainer periodically. Remove any debris from the strainer basket by washing it with fresh water.

The centrifugal seawater pump does not need any regular maintenance.

SEE THE CHILLER SYSTEM MANUFACTURER'S MANUAL IN YOUR OWNER'S MANUAL BAG FOR ADDITIONAL MAINTENANCE, SPECIFICATIONS, AND DETAILS.

Bow Thruster (Option)

Your boat may be equipped with an electric Bow Thruster. This system helps you control the bow's position while docking or mooring.

To activate your thruster, use the control panel located on the helm.

The thruster has a limited duty cycle and is not designed to be continuously operated for an extended period.

To access your bow thruster for maintenance, remove the hatch on the cabin's forward bulkhead inside the cabin. (*See pg. 47, Diagram 11*)

The bow thruster wiring requires a high amperage and is protected by a fuse located inside the battery hatch in the cabin; make sure to keep a spare fuse on board.

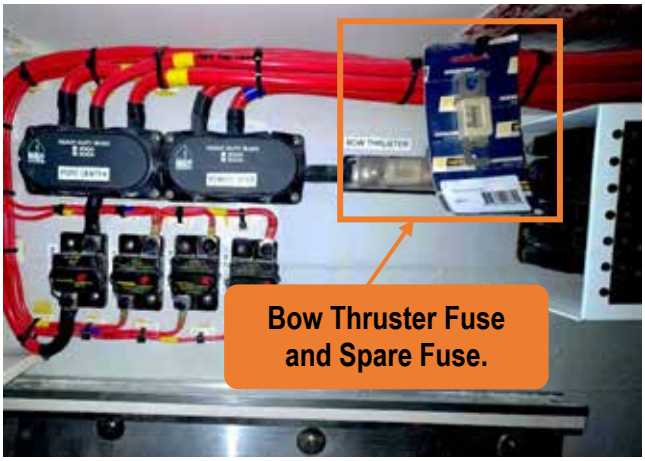


Figure 89 - bow thruster fuse inside the battery hatch in the cabin.

SEE THE BOW THRUSTER MANUFACTURER'S MANUAL IN YOUR OWNER'S MANUAL BAG FOR MAINTENANCE, SPECIFICATIONS, AND ADDITIONAL DETAILS.

Fishboxes & Below Deck Baitwell(s) Drainage

Four insulated fishboxes are included, each with dedicated high-speed drainage.

Dedicated strainer(s) house high-speed impeller-style pump(s) will pump out wastewater from fishboxes while capturing particles like fish parts and ice that might otherwise clog the pump.

The main fishbox strainer is located in the aft bilge on the forward bulkhead and drains the main large forward fishbox and the aft cockpit side fishboxes.

The strainer includes a hinged and latched lid that may be unlatched to gain access to the strainer basket.

Figure 90 – main fish box strainer inside the bilge.

The basket should be removed and emptied periodically. Valves from the fishboxes may be left open to constantly drain melt water from the fishboxes or closed partially or fully to prevent ice slush from escaping.

NOTICE

Open ONLY one drain valve at a time to prevent the contents of one fish box from draining into another. N-65

The pump switch for this main strainer box is located on the auxiliary pump switch panel on the aft face of the second-row seating behind the tackle rigging door (*See pg. 118, Figure 79*).

Figure 91 - auxiliary pump switch panel.

All the baitwell pumps and fishbox drainage circuits are protected by the DC MAIN flip-style breakers

located inside the electrical rigging area in the cabin.

Make sure that each labeled breaker is ON before using the fishbox drainages and baitwell pumps switches. (See pg.100, Figure 66)

Optionally a second strainer may be in the bow to drain the small forward center fish box/baitwell. This strainer is round, with a clear lid with a retaining manually operated unit.

Open the hatch in the forward bulkhead of the cabin to access this strainer. Periodically empty and wash with clean water the strainer basket of this strainer for proper operation.

Figure 92 – forward baitwell strainer inside the cabin.

Optionally port and starboard strainers may be installed inside the Auxiliary port and starboard bilge compartments. These strainers are round, with a clear lid and a retaining screw. They will drain the optional in-deck live wells located in the aft cockpit.

Figure 93 – port in-deck baitwell strainer inside the port auxiliary bilge compartment.

Periodically empty the strainer baskets of each strainer for proper operation.

Section 8 • Cabin

Cabin Sliding Door System

Your Cabin is equipped with an electrically operated companionway sliding door system.

You can open and close your door using the external button located outside your cabin and inside on your left next to the entrance.

The door is equipped with a magnetic clutch that provides enough force to open and close the door but can be overridden with a firm push forward or aft if required.

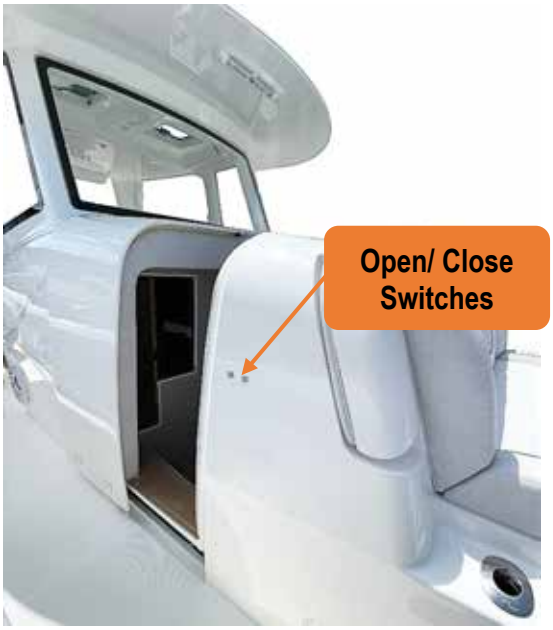


Figure 94 - cabin sliding door.

The Door system is protected by a 12VDC breaker located at the DC main breaker inside the electrical rigging area in the cabin. Make sure the breaker labeled "DOOR" is ON before using the system.

Cabin Emergency Release System and Access

In case of an emergency inside the cabin, there are options to release the door from outside and inside the cabin using the emergency release buttons located under the deck at the front column of the door and inside the cabin at the entrance.

In case of a door opening failure, while inside the cabin, use the upper hatch in the ceiling to exit the cabin.

If outside the cabin, use the egress unlock tool located inside the anchor hatch to unlock the cabin ceiling hatch latches if necessary.

Figure 95 - cabin ceiling hatch location.

Figure 96 – cabin unlock tool inside the anchor hatch.

Maintenance

Regular maintenance of the door system will help to ensure smooth and reliable performance.

Door system tracks require particular attention. The sliding door rides on the upper and lower tracks, including a recess for the drive cable and bearing races.

The cable channel and bearing races should be greased semi-annually. Use high-quality marine grease, such as *MERCURY 24C*.

1. Open the door completely. Wipe the exposed surfaces of the track with a clean rag to remove old grease and any debris.

2. Apply high-quality marine grease generously to the center of the track where the cable operates, packing the grease into the cable tighly trough out the entired expose length.

3. Apply high-quality marine grease to the top and bottom of the track where the cars ride.

The door gearbox and other components require annual maintenance by SEAVEE® Service. Contact SEAVEE® service to schedule the yearly maintenance, including drivetrain disassembly, cleaning, lubrication, removal of door system cover plates, door system inspection, and adjustment if required. SEAVEE® service will also lubricate the normally concealed portions of the tracks and cable.

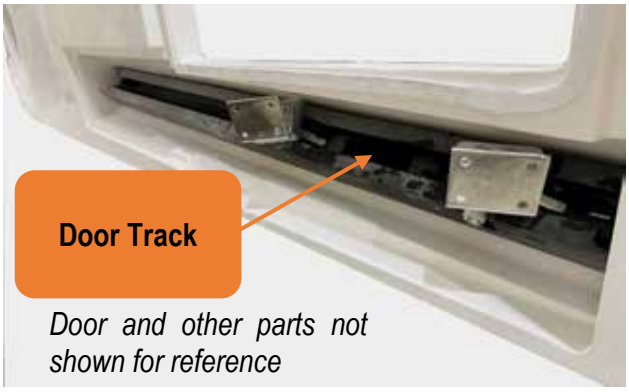


Figure 97 – Cabin Door Tracks at the door bottom.

Failure to regularly service the door system could cause premature system failure and could cause the system to malfunction during use.

Electric Table Base

The table inside the cabin is installed with a Hi/Lo electric base. This system converts the sitting area to a full bunk.

To lower the table base, use the rocker switch located at the cabin entrance.

Bunk Cushions are stored under the settee in the forward seating.

Figure 98 - electric table button at the cabin entrance.

Cabin Refrigerator

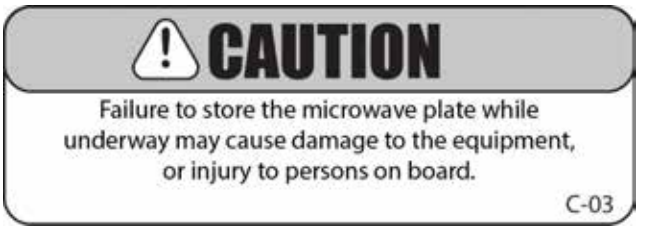
The refrigerator is located in front of the galley. The "REFRIGERATOR" 5 Amp breaker on the AC breaker panel must be ON to operate the fridge from shore or generator power.

REFER TO THE MANUFACTURER'S MANUAL IN YOUR OWNER'S MANUAL BAG FOR COMPLETE INSTRUCTIONS AND WARRANTY.

Microwave

The microwave, located above the galley, inside the head cabinet in the port cabin, is powered by the generator or shore power and is protected by the 10 Amp "MICROWAVE" breaker on the AC breaker panel located on the starboard side of the cabin.

REFER TO THE MANUFACTURER'S MANUAL IN YOUR OWNER'S MANUAL BAG FOR COMPLETE INSTRUCTIONS AND WARRANTY.



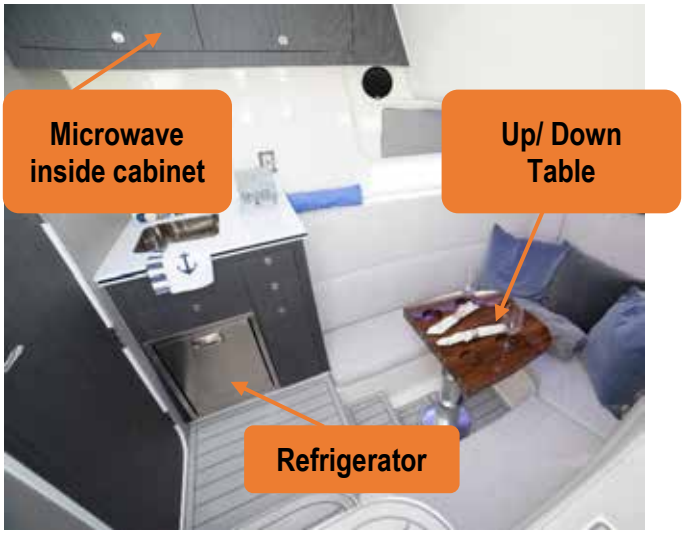


Figure 99 – cabin appliances

Section 9 • Seating & Accommodation

Side Dive Door

The hull side door(s) and ladder system provide safe and comfortable access to and from the water.

The hull side door(s) swing aft into the boat, revealing the swim ladder hatch when open.

To close the hull side door(s), first, stow the ladder and close the ladder hatch to close the door. Push the door outboard until it fully closes against the hull side gasket. Rotate the latch handle to lock the door in place. Then, confirm the latching arm is positively locked in the closed position.

The hull side door should be closed while the vessel is underway.

Dive Ladder

A swim ladder is stored in the swim ladder compartment.

To deploy the ladder

1. Open the hatch, reach into grab, and pull the telescopic ladder out of the ladder compartment.

2. When extended out of the compartment, gently set the dive ladder tread plate onto the hull side.

3. Flip the ladder over the hull side and unclip the retainer to extend the ladder fully into the water. Close the ladder compartment hatch.

Figure 100 - dive hull ladder at the port side

The dive ladder should be rinsed with fresh water after each use before storage.

Deluxe Stern Bench (Option)

Your Vessel may be equipped with a deluxe stern seat.

To install the bench, with legs folded and the bench tipped down to the deck, insert the aft pins into the sockets and ensure each click into place. Lift the bench and lower the legs fully.

When removing the bench, first fold the legs up and the bench down, push the button at each socket and

gently pull the seat forward to unclip.

To install or remove the backrest, simply slide it in or out of place; the backrest can be removed firmly from the bases in the aft bolster.

Figure 101 - deluxe stern bench option

Transom Mounted Pull-out Ladder (Option)

An optional transom-mounted pull-out ladder allows access to the boat from the water at the transom. The ladder is extended by pulling up on the pin above the ladder and pulling the ladder out.

Figure 102 - transom tube ladder at port side

Extend the ladder out of the boat before tilting it downwards. Rotate each tread out away from the ladder to use the ladder.

To stow the ladder, fold each tread completely against the ladder tube. Rotate the entire ladder up and gently push it into the boat.

Ensure that the ladder is stowed correctly, and the locking pin is fully engaged before running the boat, or damage to the ladder could occur. Never operate the vessel in any way with the ladder deployed. Damage to the ladder or boat could occur.

DO NOT use the ladder when the engine is ON. Severe injury could occur.

READ AND OBSERVE ALL MANUFACTURER'S INSTRUCTIONS AND WARNINGS.

Aft Cockpit Cooler (Standard & Option)

Slide-Out Cooler (Standard)

Figure 103 - electric sliding cooler.

An electric sliding dual cooler provides seating and can be retracted flush with the second-row seating.

Deluxe Rear Facing Slide-out Cooler/Seat

The sliding aft-facing molded seat cooler may be installed instead of the standard sliding cooler and includes cooler storage under the seat and removable backrest cushions.

Figure 104 – deluxe rear-facing slide-out cooler/seat.

The removable backrest upholstery can be stored inside the port side hatch under the forward helm seating.

Figure 105 - storage hatch under helm seating.

Cooler Features

Both coolers share several unique features. A convenient bottle opener is located on the bottom side of the cooler lid

Drain the cooler by opening the drain plugs located at the port and starboard sides of the cooler. Drain plugs can be opened but left in place or completely removed if desired.

Keeping the plugs open while the cooler is not in use will help prevent mildew.

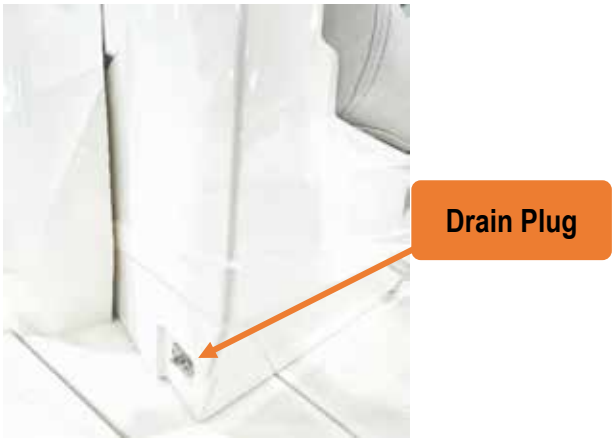


Figure 106 -drain plug installed on the sides of sliding cooler.

To slide the seat in or out, use the switch located on the port side of the second-row seat. Ensure that the area is clear before extending the cooler. Always drain and dry the cooler after each use.

Figure 107 - cooler button is located at the port side of the aft seat.

Lounge Seat

The Lounge seat is located at the bow of your boat on the top of the console and includes integrated folding armrests/handholds.

Section 10 • Tower

Upper Control Station (option)

Your boat may be equipped with a tower and a second control station. This system provides the same control features as the lower central control station.

Access

Use the cockpit ladders to access the second station; Access the tower ONLY when the vessel is not in motion. NEVER exceed the maximum weight capacity of the second station.

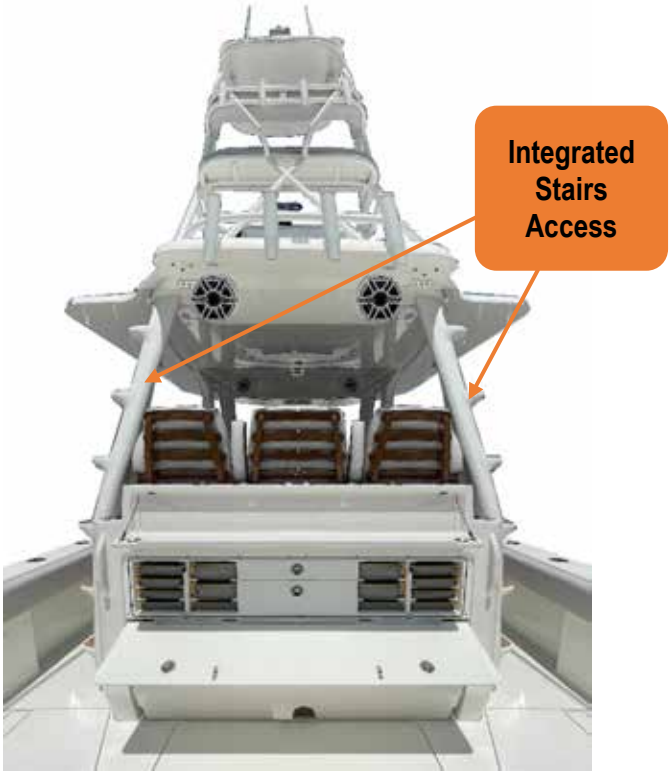


Figure 108 - hardtop with the second station.

If your boat is not intended to have an upper station, DO NOT climb on the integrated stairs of your hardtop while your vessel is underway or occupying the top of the hardtop.

⚠WARNING

In the absence of a second station, Stairs and hardtop are not intended to be occupied while underway

W-31

⚠WARNING

DO NOT access the tower while the boat is underway.

W-38

Station Transfer

First, place the engine idle out of gear from the lower station to operate the boat from the upper station. Maintain a proper watch and ensure the ship is in a safe place before attempting to climb up to the upper station.

⚠ DANGER

Limited visibility from the upper station. Ensure boat is clear before placing in gear

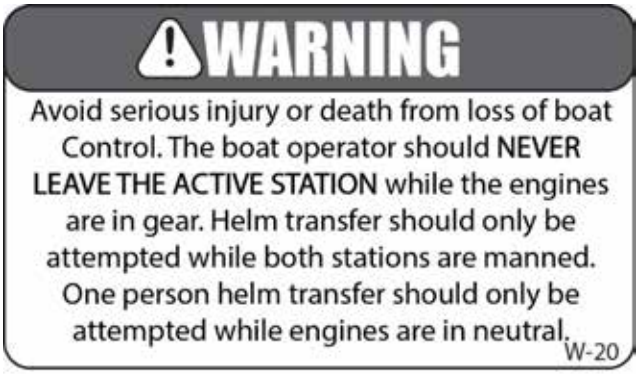
D-27

After climbing up to the upper station and securing yourself by attaching the safety lanyard, you take the helm control by pressing the transfer button on the top of the shifter/throttle control. You now have control of the shifter throttle.

The steering wheel is always operable from the upper station. Use caution when operating from the upper station. Visibility to the cockpit may be minimal, and always confirm that swimmers or other hazards are completely clear before putting the boat in gear.

Proceed with extreme caution when operating from the upper station.

The upper station steering wheel is always operational. When exiting the upper station, ensure the engine is idle, out of gear, and remove the safety lanyard. Warn all passengers in the upper station not to turn the wheel while the boat is underway.



Typical Upper Station Dash / Helm Layout

(Each boat is customized and may vary)

1	AUXILIAR STORAGE HATCH AND ELECTRONICS RIGGING ACCESS
2	VHF SYSTEM
3	MULTIFUNCTION DISPLAY
4	STEERING WHEEL
5	MERCURY VESSEL VIEW
6	KILL SWITCH
7	TRIM TAB SWITCH
8	GEAR SHIFT/THROTTLE CONTROL

Optional features may variate on position and quantity. The final product may differ from the illustration.

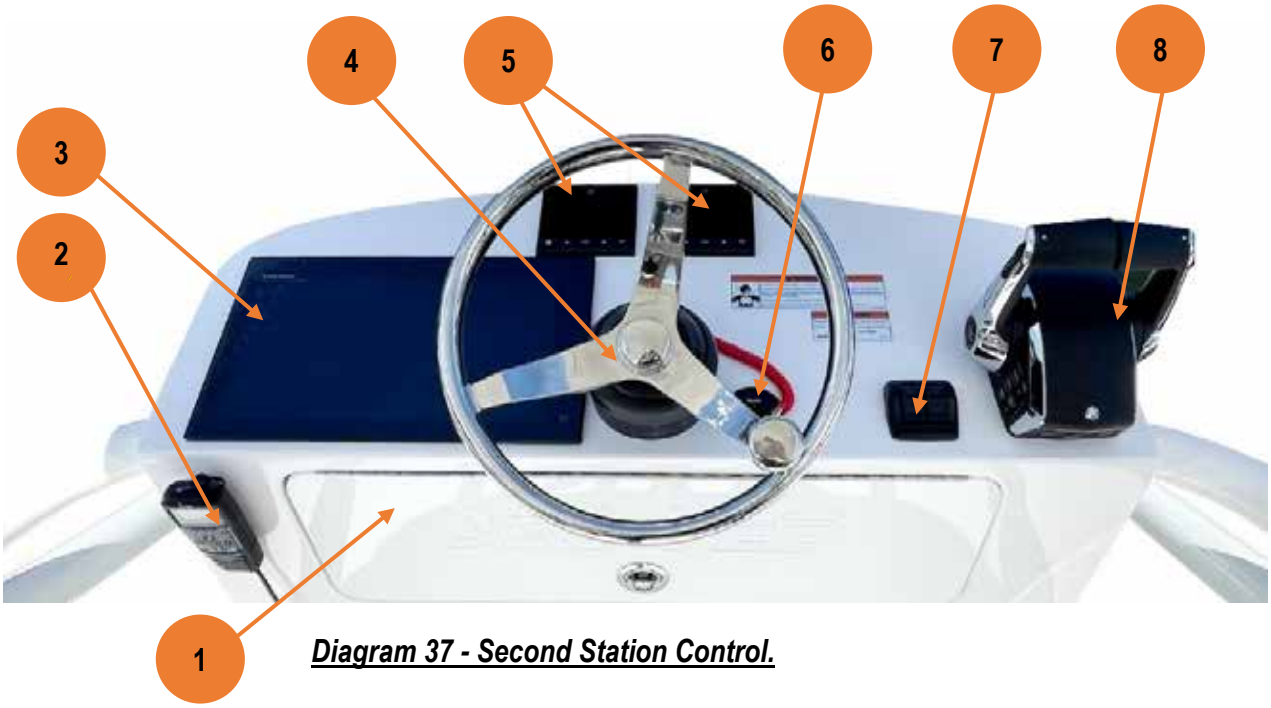


Diagram 37 - Second Station Control.

Section 11 • Care & Maintenance

Routine inspection, service, and maintenance of your boat, systems, and components are vital to assure your safety and prolong your boat's life. You should develop regular routines for inspecting and servicing your boat.

⚠ DANGER

When using solvents read all information from the solvent manufacturer regarding safety and handling of the material.
Wear proper protective equipment to ensure your personal safety.
Only use solvents in a well ventilated area and keep all solvents away from open flame and any other forms of ignition
Ensure that passengers in upper station do not operate steering wheel.
D-29

The interval between necessary service or maintenance is highly variable, depending on the environment in which your boat will be used. For example, corrosion of boat parts and components will occur far more rapidly in a saltwater environment than on a vessel that is used in freshwater.

⚠ WARNING

Regularly inspect & test hardware, fittings, Windshields, hatches, seams, etc. For proper seal. Reseal and/or readjust/tighten fittings, latches, etc. As needed.
W-32

This section provides **only general guidelines** for the care and cleaning of your boat.

You are responsible for determining whether maintenance and care intervals need to be accelerated due to your boat usage and operating environment.

NOTICE

Refer to the individual manufacturers' manuals for important information regarding service, care and maintenance of your boat, equipment and components. Failure to do so may in some cases void the warranty.
Owner's Manuals for your boat and each of the various components and equipment can be found in your Owner's Manual Bag.
N-38

Hull

Freshwater, saltwater, and water temperature can all affect the types of growth that you will find on your boat's hull.

Any growth will affect the boat's performance and overall look. You might notice algae or slime growth on the hull if it has been a while between inspections.

The growth should be cleaned immediately after removing the boat from the water. This can be cleaned with a coarse towel or soft bristle brush. If the growth is allowed to dry, it will be much harder to remove.

Compounding may be necessary to remove more stubborn stains and chalk from the surface of your boat. If compounding is needed, it must be done after thorough washing and before waxing.

If the growth is more severe, you may need to enlist the services of a professional hull cleaning company.

Check with SEAVEE® Service for recommendations on a compatible rubbing compound for your boat or a professional hull cleaning company in your area.

Waxing the Gel Coat Surfaces

Waxing is necessary to provide added protection to the gel coat. Periodic cleaning and waxing will also ensure that your boat is protected and looks good longer.

NOTICE

Waxing of the exterior surfaces is recommended to be done at least twice a year to protect the gel coat of your boat. N-39

Do not wax over dirt. Make sure the surface of your boat has received a thorough washing and rinsing and is clean before waxing. If a rubbing compound has been necessary, make sure that any minor scratches or surface pitting are cleaned of compound residue.

Use a good quality carnauba wax or a high-quality wax designed for a marine gel coat. Apply several coats.

Hull Maintenance

If using a pressure washer to clean your boat's hull and deck surfaces, you must use the wide fan nozzle only and move the spray head continuously.

DO NOT concentrate the high pressure on a small area of the boat surface, and NEVER use the fine pinpoint nozzle, as the concentrated stream can cause damage to the surface of your boat.

It is also recommended that you refrain from pressure washing the console as high pressure may compromise the integrity of the electronics, gauges, and other equipment installed on your boat.

Avoid pressure washing all caulk seams, upholstery, rubber seals, curtains, vinyl products, or any other soft goods that can be damaged.

When staining from build-up does occur, use only cleaning agents that are recommended for marine gel coat for use on those stubborn stains.

NEVER use an abrasive cleaner to wash your boat's hull.

NEVER use an abrasive pad to attempt to remove stubborn stains.

NEVER use strong solvents to clean or chlorine.

NEVER apply tape or any other type of adhesives directly to the painted surfaces on your boat.

Use care when covering your boat's painted surfaces, as tarps and other covers can trap dirt and cause chaos.

⚠WARNING

Gelcoat surfaces are slippery when wet. Use extreme caution when walking on wet surfaces.

- Never occupy the working decks while the boat is underway.
- Use care when waxing to ensure that walkways are not made dangerously slippery.

W-18

Hull Blistering

Due to the quality of the materials used in the hulls, blistering is rarely ever seen.

Water-soluble materials cause blistering in the hull laminate. The fiberglass and resin structure of your boat is porous. However, water intrusion into the gel coat will take some time.

The effect of osmotic pressure allows water to impregnate below the gel coat and substrate, thus forming a blister.

The United States Coast Guard has funded extensive university studies regarding the cause and effect of blistering in the gel coat of fiberglass boats.

Fiberglass blisters can form anywhere from near-surface layers of the gel coat to very deep into the fiberglass structure.

The damage can range from cosmetic to catastrophic (although the latter is infrequent). The studies seemed to point toward long-term hull immersion in warm water as a primary cause of hull blisters.

Stress cracks on the hull below the waterline also contribute to the formation of hull blisters.

Prevention

There are a variety of ways to prevent the formation of hull blistering. Epoxy coatings can be applied to the hull, followed by hull painting. An alkyd- urethane-silicone marine paint can also be used to aid in the prevention of hull blisters.

Use a bunk lift or trailer to store the boat out of water. Using a trailer or boat lift will reduce the likelihood of hull blisters forming. Reducing the time your boat stays in the water also helps prevent hull blisters from forming.

Bottom Painting

⚠ DANGER

There are risks and dangers inherent with the use of paints and solvents. Dispose properly of all rags, rollers and trays used for painting. Follow all the precautions and regulations listed by the manufacturer before and after painting your boats hull. D-30

If your boat will spend most of its time in the water, painting the bottom of your hull is an excellent way to slow the formation of hull blisters and keep bottom growth (fouling) under control.

You might want to forgo the painting if you are trailering the boat to and from the water.

⚠ CAUTION

DO NOT paint over zinc plates. This action will render them usless and lead to deterioration of the underwater metal parts of your boat. C-22

⚠ CAUTION

Some bottom paints contain metals that can cause corrosion of the outboard engine. Leave a minimum of 3/4" unpainted around all engine parts. Use only a paint specifically designed for aluminum engines as anti-fouling protection. C-23

NOTICE

If blisters are present in the hull, they need to be properly cleaned and dried out before any barrier protection can be applied. N-40

Bottom Painting a Bare Hull

Since the boat has never been painted, preparation is the key to successful hull painting. Take extra care and time in preparation before proceeding to paint.

Begin by scrubbing the surface with a stiff brush using an all-purpose marine soap and water to remove loose dirt and contamination. Flush with fresh water to remove all soap residue.

The Gelcoat must be dewaxed of mold release wax before sanding begins. Otherwise, the wax will be dragged into the scratches and will reduce the adhesion properties of the paint.

Remove any mold-release wax using fiberglass surface prep solvent and a scrub pad. Scrub only a few square feet at a time. Flush with fresh water. If the water beads up or separates, continue scrubbing the surface. When the water sheets off, the wax contamination has been removed.

After the dewaxing is complete, applying an epoxy barrier coat is highly recommended. Pay close attention to scratches, nicks, and dings on the

surface. If necessary, fill any repair areas with a watertight epoxy filler. After the filler is cured, sand with 80-grit paper until smooth. Remove the sanding residue using a fiberglass solvent wash.

The paint can be applied after sanding, and cleaning is complete. Follow the paint manufacturer's recommendations for application.

Bottom Painting a Pre-Painted Hull

If the hull bottom is already painted, you must be sure to test the paint's adhesion to the already painted surface. If the paints are incompatible, the new paint will not adhere to the hull bottom, or the color will "lift" the old paint.

NEVER apply paint without first preparing the old painted surface following the paint manufacturer's recommendations.

⚠WARNING

Bottom paint is designed to resist algae growth which means it has chemicals embedded in the paint that are harmful if ingested. Take all necessary precautions required before painting or repainting your boat's hull. W-33

Follow the paint manufacturer's recommendation for applying the paint.

Humidity and weather will affect how and when the paint is applied. Several thin layers are better than one thick layer.

To determine the waterline, you must place the boat in the water with a whole load of fuel, water tanks, and gear. Mark the waterline and measure above the marked line 1 to 3 inches for placement of the tape line.

Make sure that there is enough paint left to cover areas that were not accessible (slings, jack stands, etc.) and paint accordingly. Follow the paint manufacturer's recommendation for do's and don'ts after the painting is complete.

NOTICE

Painting your boat's hull will adversely affect the boat's speed and performance and may require re-propping if the maximum engine RPMs drop below the engine model/mfg recommended operating range. N-41

NOTICE

Masking tape is NOT recommended for the types of paint you will be using. N-47

Rubrail Care

The rubrail on your boat is constructed of an injected high-density PVC vinyl material which laboratory tests have proven to be highly resistant to staining, fading, and cracking.

You must follow some basic maintenance precautions as resilient as this material.

General maintenance requires a thorough cleaning with mild soap & water.

DO NOT use any cleaning agents which contain chemicals.

Although the outer shell is tough and durable, there is a chance that it can be breached. Use care when docking or exposing the Rubrail to conditions that may cause damage, such as docking against heavily barnacle-encrusted pilings.

Some tears (cleanly sliced) can be repaired with a "Super Glue" type product.

Thoroughly clean and dry the affected area. Apply glue and hold the surfaces together.

Areas torn or affected by heavy abrasion will have the damaged section replaced. Please see SEAVEE® Service for this type of repair.

Cleaning Fiberglass & Non-Skid

To protect your deck and non-skid areas from the deteriorating effects of the sun, oxidation, water spots, and pollution use good quality fiberglass and non-skid deck wax every two to three months.

NOTICE

NEVER use abrasive cleaners, detergents or soft scrub type cleaners to wash your boats surfaces.
NEVER use abrasive pads, brushes or sponges to attempt to remove stubborn stains.
NEVER use strong solvents or detergents which contain chlorine. N-42

As the manufacturer recommends, when applied to your deck and non-skid areas, the wax forms a protective non-stick surface that will keep debris from sticking. Dirt, soot, bird droppings, and fish blood will rinse.

To avoid injury, use anti-slippery wear; always confirm that the product applied on non-skid surfaces will not leave any residue that may turn the surface slippery.

Stainless Steel Care

The cleaner your stainless trim and fittings can be kept, the greater the assurance of optimum corrosion resistance. Without proper care, even the best stainless steel will rust.

Stainless steel is strong and corrosion-resistant but requires maintenance to maintain its appearance.

Frequent routine cleaning of your stainless steel with a mild soap and water solution and coating with a good-grade cleaning wax will help keep the finish.

- Wash with mild soap and cold or lukewarm water.
- Dry THOROUGHLY.
- Apply cleaning wax with a soft, dry cloth.
- Allow the wax to dry, then polish and buff.

Even the finest cleaning powders can scratch or burnish a mill-rolled surface. On polished finishes, rubbing or wiping should be done in the direction of the polish lines, NOT across them.

NOTICE

NEVER use abrasive cleaners, detergents or soft
scrub type cleaners to wash your boats surfaces.
NEVER use abrasive pads, brushes or sponges to attempt to remove stubborn stains.
NEVER use strong solvents or detergents which contain chlorine.
NEVER use silver cleaners. N-43

Crevice corrosion is a brownish coloring where water and air impurities cause two pieces of stainless hardware to meet. It can be easily cleaned with a good-grade marine polish using a sponge, cloth, or small bristled brush (for nooks and crannies).

Aluminum Care

Preventative maintenance is essential to the life of the metals on your boat. Salt particles and moisture are the primary cause of white spots, pitting, and corrosion.

Manufacturers and applicators of protective coatings will not warrant protective coatings on metals in the marine environment.

The use of harsh chemicals can also cause deterioration. Proper owner maintenance is required to reduce corrosion which will result in most cases by the failure to wash down and wipe dry after each use and the use of abrasive, acidic, or other improper cleaners.

Wash thoroughly using a soft cloth and mild detergent to remove salt particles. hosing alone will not dislodge all particles. **DO NOT** allow soap to dry as it may cause stains on coated surfaces. Make sure to wash and dry the entire circumference of aluminum parts.

Apply an aluminum protector at least twice yearly, more frequently, as conditions warrant. Neglect will cause pitting of the surface which cannot be reversed.

Inspect and repair or replace all damaged nylon bushings, washers, or other hardware designed to prevent contact with dissimilar metals.

A qualified marine technician should check aluminum parts for stray currents whenever electrical or electronic changes are made to the boat. Make sure all electronic equipment is correctly grounded with adequate-sized wire.

Powder Coated Surfaces

Your boat may have been manufactured with a powder coating on the Hardtop frame, leaning post, and other metal fabrications.

While most powder coat finishes are tougher and much more flexible than conventional solvent-based paints, they are about the same hardness as automotive paint so that they will scratch.

To clean a powder-coated surface, gently wash with a clean, soft cloth and a mild detergent, followed by a clear water rinse.

Even though most powder coatings are highly resistant, certain solvents can harm them and should be avoided. DO NOT APPLY:

- Nail polish remover
- Paint or lacquer thinner
- Motor oils
- Transmission or brake fluids
- Parts cleaning fluids

If any of the above should contact the powder-coated surface, immediately wipe the area with a soft, clean cloth, and wash as described above.

Do not screw, mount, or clamp anything to your powder-coated surfaces. This could damage the coating and permit the aluminum to corrode. This will further accelerate the damage and could cause large areas of the powder coating to fail and flake off.

Immediately repair any damage to the powder coating.

Powder Coating Touch-Up

Suppose it is necessary to apply touch-up paint on areas of the finish that have been scratched or damaged. In that case, the powder material supplier should be contacted for their recommendation of the proper touch-up material to use.

Single component Acrylic Enamel (spray enamel) touch-up paint is commonly used to repair minor damage in the powder-coated finish. In some cases, a two-component catalyzed paint system may be required to achieve the desired repair. In all cases, perform a color and adhesion test in an inconspicuous finish area to assure compatibility before applying the paint to the damaged area.

NOTICE

The visual, mechanical, chemical as well as corrosion protective and weather resistance properties of repaired areas ARE NOT equal to those the original powder coating and are not suitable for long term performance. N-50

Touch-up Procedure

- CLEAN surface of dirt, oil, grease, etc.
- SAND LIGHTLY with 400 grit wet/dry abrasive paper.
- REMOVE sanding dust with a lint-free cloth dampened with mineral spirits.
- TEMPERATURE of surface and paint must be at room temperature (between 70 to 90 degrees is ideal).
- APPLY paint to minor scratches by spraying a small amount of paint into the container's cap. Using a small brush, carefully apply the paint sparingly to the properly prepared surface. Apply several light coats allowing the paint to dry until tacky between each coat.

DO NOT APPLY A HEAVY COAT ALL AT ONCE.

NOTICE

It is Highly recommended that you DO NOT penetrate the powder coating on your boat by securing equipment or other objects onto the coated surface. If necessary, Contact the manufacturer for repair reccomendations. N-52

NOTICE

If painting over exposed or bare metal, a chemical pretreatment process and/or primer sealer is reccomended.
Follow manufacturer's recommendations. N-51

Canvas Care and Maintenance

NOTICE

Do not use detergents in vinyl, use only clear water N-53

To keep your canvas and metal parts in good working condition and appearance, you will need to keep them clean.

The fabric should be cleaned regularly before substances, such as dirt, pollen, etc., are allowed to accumulate on and become embedded in the material. The canvas can be cleaned without being removed from the installation.

Chafing, fiber wear from dirt and grit, and deterioration from ultraviolet light can cause your canvas to degrade over time.

Maintaining a good appearance

After each use, mainly if used in saltwater areas, rinse the canvas entirely with fresh cold water.

Regularly Maintenance

Brush off any loose dirt, pollen, etc.

- Hose down with fresh cold water and clean with a mild solution of natural soap in lukewarm water (maximum 100°F / 38°C).
- Allow the canvas to soak. DO NOT ALLOW THE SOAP TO DRY.
- Rinse thoroughly with fresh water.
- Let the canvas dry completely. **DO NOT** store any of the canvas pieces while wet.

The chemical treatment of canvas items can sometimes reduce the effects of ultraviolet light.

Consult SEAVEE® Service or check your canvas manufacturer's manual **BEFORE** using any chemical treatments on your canvas.

Cleaning Stubborn Stains

Soak fabric for approximately twenty minutes in a mild solution consisting of no more than 1/2 cup (4 oz.) of bleach and 1/4 cup (2 oz.) of natural soap per gallon of lukewarm water (not to exceed 100° F / 38° C).

Rinse thoroughly in cold water several times. Allow the fabric to air dry thoroughly.

NOTICE

Failure to remove all of the soap solution can cause deterioration of seams and prevent fabric from proper retreating N-45

Retreat the fabric using an air-curing product such as 303 High Tech Fabric Guard to ensure water and stain repellency.

All canvas should be stored flat or rolled in a clean, dry space.

Maintaining Zippers and Hardware

Lubricate zippers and fasteners periodically with a clear silicone spray. In the absence of silicone spray, a wax candle can be used to lubricate the zipper track.

Replace any missing fasteners or any fasteners showing signs of corrosion.

NOTICE

DO NOT use petroleum based products, such as petroleum jelly, on the zippers or fasteners. N-46

Maintaining Your Polycarbonate Windows

The canvas on your boat may incorporate polycarbonate windows. Your windows will provide lasting enjoyment with a few care and cleaning steps. Regular cleaning, compatible cleaners, and proper maintenance techniques will significantly improve the vinyl's service life.

- Rinse polycarbonate thoroughly with clear water to remove any dust, dirt particles, salt water, or environmental agents before applying cleaning products.

This should be done frequently to avoid the buildup of salt water, dirt, and other environmental contaminants.

- Using a soft, non-abrasive cloth, wash windows inside and out with a mild soap (Woolite, Joy, Palmolive, etc.) and water solution. Rinse thoroughly with cool water.

DO NOT USE DETERGENTS.

- Use separate soft cloths or sponges to apply cleaners and polishes (Use the manufacturer's recommended products).

- Use a small amount of cleaner, or streaking may occur.

If you get streaking or a leftover film, follow up the application with a water rinse.

- Dry with a soft cloth or chamois to prevent water spots. Polish with a separate cloth.

- DO NOT leave cleaners on for long periods; wash immediately.

- DO NOT apply cleaners in direct sunlight or at elevated temperatures.

- DO NOT use scrapers, squeegees, razors, brushes, or towels.

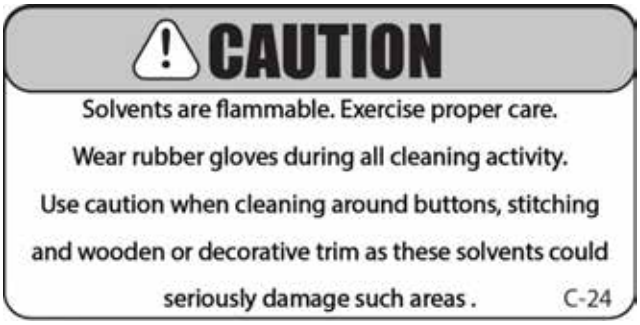
Using a soft, non-abrasive cloth, wash the vinyl curtains inside and out with mild soap and water mixture. **RINSE COMPLETELY** with cool water.

To minimize fine or hairline scratches, apply a mild automotive polish (i.e., Johnson's Paste Wax) and remove it with a soft, clean cloth.

DO NOT USE ABRASIVE PLASTIC POLISHES.

Cushions

Saltwater, salt residue, dirt, ultraviolet rays, etc., will take their toll on vinyl products, causing them to lose their luster and texture.



To Clean Your Cushions

- DO NOT let stains sit. Wipe off any excess with a dry white cloth or fabric but do not spread it all over the surface as soon as the incident happens.

- Clean the whole surface in circular motions using a clean cloth or fabric (white), liquid hand soap, and water (1 part of soap to 9 parts of water).

- Wipe with a clean damp cloth to get rid of any excess soap.

- If any build-up cannot be removed with soapy water, use the following mixture: 9 parts isopropyl alcohol to 1 part water.

- Clean with circular motions without spreading the stain. We recommend using a soft-bristle toothbrush for highly textured materials for deeper cleaning. Remember, light colors need more care, more often.

- Clean with a clean damp cloth, wipe off, and dry. Make sure there is not any cleaning product left.

- Use ONLY the following recommended cleaning products:

Manufacturers Approved Cushions Cleaner Products	
Cleaner Product	**Manufacturer**
303 AEROSPACE PROTECTANT *(Apply every 3-5 weeks only)*	303 Products, Inc
303 FABRIC/VINYL CLEANER	303 Products, Inc.
A&G Boat Wash & Multipurpose Cleaner	A&G Industries, Inc.

ASEPTICARE TB + II	ECOLAB
BABÈS BOAT CARE *(1 oz per gallon of water)*	Babe`s Boat Care Products
BIO KLEEN AMAZING *(Dilution: 6 oz per gallon of water).*	Bio Kleen Products Inc.
Caviwipes XL Packed	Metrex
Crystal Simple Green *(Dilution 1:30 of water)*	Sunshine Makers Inc
Coverage Plus Germicidal Wipes	Spray Nine
Dispatch *(Dilution 1:10 of water)*	Caltech Industries Inc.
Ducky All Purpose Cleaner	DUCKY PRODUCTS INC
Fabric Cleaner	Tekonsha Corp.
Antibacterial Fantastik All Purpose Cleaner Heavy Duty	S.C. Johnson & Son, Inc.
Formula 409® Antibacterial All-Purpose Cleaner	The Clorox Company
Glance NA Diluted *(Dilution 1:50 of water)*	Diversey Inc.
GP Forward Diluted *(Dilution1:64 of water)*	Diversey Inc.
Hydrogen Peroxide Cleaner Disinfectant Wipes	The Clorox Company
Lustrell Faux Leather Care Kit - Lustrell Regular Cleaner	Warwick Lustrell
Lysol Foaming Disinfectant Cleaner	Brand, IC
Mold & mildew stain remover *Diluted 1/2 ounce per quart of water*	water Iosso Marine Products
Oxycide Diluted Ecolab *Dilution 3 oz per gal of water*	Ecolab
Sanicloth AF 3	PDI
Simple Green Towels	Simple Green
Stride Floral Neutral Clean excess dirt) *(Dilution 1:32 of water) – (Daily clean Dilution 1:64 of water)*	Diversey Inc.
Stride Fragrance-Free Neutral Cleaner *(Dilution 1:266 water)*	Diversey Inc.
Super S	Tekonsha Corp.
Super Sani-cloth	PDI
Vinyl Sauce	Boat Bling
Virex II 256 *(Dilution 1:256 of water)*	Diversey Inc.
Virox 5 Rtu	Diversey Inc.
Wex Cide 128 *(Dilution 1:128 of water)*	Wexford Labs, Inc.
Sonax Car interior cleaner	Sonax
Super Fabric Disinfectant & Deodorizer 5%	Crypton Inc
Leather/ Vinyl Cleaner	Crypton Inc
Pinnacle Natural Brilliance	Pinnacle
Upholstery Stain Remover	Crypton Inc

Spray 9 Multi-Purpose Cleaner	Spray Nine
Eco lab oasis 146 multi quat sanitizer *(Dilution 0,25 oz per gallon of water)*	ECOLAB
A&G BOAT WASH & MULTI-PURPOSE CLEANER	A&G INDUSTRIES, INC
FROTEX	INDUSTRIAS FROTEX S.A
PERFEX MULTIPURPOSE DETERGENT	PERFEX
FINYL FIX - VINYL CLEANER	Neuco Seating Inc.
Sodium hypochlorite disinfectant *(Dilution 0,56 % of water)*	PCS - Process Cleaning Solutions
E - VINYL CLEANER *(Concentration Pure and 1:1 with water)*	Bio2Eco
REPROSOLV CLEANER	American Continental tech labs, LLC
HULA BOAT CHILL MOLD RETARDANT	Hula boat care
Clorox Fuzion	Clorox
APCO VINYL CLEAN PLUS	
CLOROX HEALTHCARE WIPES	THE CLOROX COMPANY
Caviwipes 1	Metrex
CLOROX HEALTHCARE VERSASURE	CLOROX PRO
Microkill Bleach Wipes	Medline Industries, Inc
SUPER HDQL10 *Dilution 0.5 oz./gal. or 1:16 of water*	Spartan Chemical Company
BIOSQUE BOTANICAL DISINFECTANT	Natureal, LLC
NON-ACID RESTROOM, DISINFECTANT *Diluted 2 ounces per gallon of water*	Hillyard
TOP CLEAN *Dilution 1: 256 of water*	Hillyard
Disinfectant Maxim Facility *dilution at 2 oz. Of product per gallon of water (1:64)*	3M

Cleaning Laminated Glass Windshield

Your boat is equipped with a laminated glass windshield that will provide years of service. It requires very little maintenance.

Cleaning should begin at the top of the glass to reduce the risk of leaving residue and cleaning solutions on the glass. Cleaning procedures should also ensure that the wind is not blowing the cleaning solution and residue onto the already cleaned glass.

Use commercially available glass cleaners or a mixture of fresh water and vinegar to clean your glass windshield. Dry with a soft terry cloth towel or chamois or microfiber towel.

Ensure that all water and cleaning solution residue are dried from the window caulk/sealant perimeters to avoid the potential for deterioration of these materials due to the cleaning process.

Note that the windshield is laminated glass and is subject to shattering if any complex sharp objects are impacted.

Recommendations to follow for laminated glass

- DO clean glass as soon as dirt and residue appear visible.
- DO determine if coated glass surfaces are exposed.
- •DO avoid cleaning tinted and coated glass surfaces in direct sunlight.
- DO start cleaning at the top and continue to the bottom.
- DO soak the glass surface with clean di-ionized water and dilute soap solution to loosen dirt and debris.
- DO use a mild, non-abrasive commercial window cleaning solution.
- DO use a squeegee to remove all of the cleaning solutions.
- DO dry all cleaning solutions from window gaskets, sealants, and frames.
- DO be aware of any following the glass supplier's specific cleaning recommendations.
- DO caution other workers against allowing other materials to contact the glass.
- DO watch for and prevent conditions that can damage the glass•

Avoid the following Situations to keep your laminated glass new.

- DO NOT use scrapers or any size or type for cleaning glass.
- DO NOT allow dirt or residue to remain on glass for an extended period.
- DO NOT begin cleaning glass without knowing if a coated surface is exposed.
- DO NOT allow water or cleaning residue to remain on the glass or adjacent materials.
- DO NOT begin cleaning without rinsing excessive dirt and debris.
- DO NOT use abrasive cleaning solutions or materials.
- DO NOT allow metal parts of cleaning equipment to contact the glass.
- DO NOT trap abrasive particles between the cleaning materials and the glass surface.
- DO NOT allow other workers to lean tools or materials against the glass surface.
- DO NOT allow splashed materials to dry on the glass surface.

Cleaning Your Instrument Gauge

Salt crystals may form on the bezel and plastic covers when gauges are exposed to salt water. Remove the salt crystals with a soft, damp cloth. Clean with a mild household detergent or plastic cleaner.

Never use abrasives or rough, dirty clothes to clean plastic parts. A mild household detergent or plastic cleaner should be used. Wipe clean with a damp chamois.

Long Term Storage & Winterization

Extended storage periods, winter lay-up, and non-use, typical to boats, create unique problems.

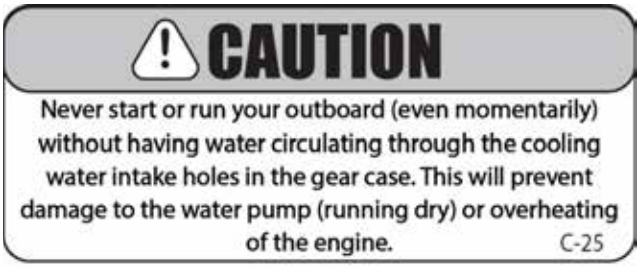
When preparing to store a boat for extended periods of two months or more, it is best to ensure that the vessel and its systems are appropriately conditioned for such extended periods of non-usage.

The guidelines presented on the following pages give basic instructions on "winterizing" your boat and boat systems. If inexperienced with winterization, it is best to hire the services of a professional.

Engine

Protecting your engine's vital moving parts from corrosion and rust caused by freezing trapped water or excessive condensation due to climatic changes is important.

Freezing water in the engine can cause extensive damage to the internal moving parts. Internal engine parts can also be affected by rust due to a lack of proper lubrication



- ☐ Flush the engine with fresh water
- ☐ Let all water drain from the engine.
- ☐ Fog the engine while it is running. Spray until it stalls.
- ☐ Run fuel that has been treated with conditioner and stabilizer through the engine.
- ☐ Replace lower unit gear oil. Check for moisture in old oil, a sign of deteriorating seals.
- ☐ Remove the prop and grease the shaft and threads.
- ☐ Treat all grease fittings with the recommended lubricant.
- ☐ Lightly lubricate the exterior of the engine or polish it with good wax.
- ☐ Check engine mount bolts. Ensure that they are torqued to 55 ft/lbs.
- ☐ In addition, you must follow all the recommendations set by the engine manufacturer's operation manual.
- ☐ Store the battery in a cool, dry area.
- ☐ Use your battery charger to keep the batteries charged or charge the batteries every 30-60 days.

Fuel System

Tank(s), hoses, and fuel pumps should be treated to help prevent varnish and gum formation.

Temperature extremes will cause condensation to accumulate in an empty or partially filled fuel tank leading to fuel contamination and premature wear of your system.

Fill the tank (100%) and add a fuel stabilizer and conditioner, following the manufacturer's recommendations, to provide fuel stability and corrosion protection.

Batteries

☐ Disconnect the battery cables (negative cable first).

☐ Remove the battery from the boat.

☐ Clean the terminal ends of the cables and battery terminals with a solution of baking soda and water. Rinse thoroughly with clean water.

☐ Apply a grease coat on the cables' terminal ends and the battery terminals.

Baitwell/Raw Water System

Drain the baitwells. Ensure that all water is removed from the drain hose.

Remove the fill hose from the pump in the bilge and drain the water from the hose. Replace the hose on the pump and tighten the two clamps.

Fresh Water System

If the water system is not used for an extended amount of time, it is recommended to be drained.

☐ Energize the freshwater pump switch on the instrument panel.

☐ Open all faucets and wash-down connections. Activate any sprayers connected to the system.

☐ Run the system until the freshwater tank is empty.

☐ De-energize the freshwater pump switch on the instrument panel.

☐ Add non-toxic antifreeze to the water tank per the manufacturer's recommendations.

☐ Energize the freshwater pump switch on the instrument panel.

☐ Run the system until antifreeze is seen running out of all faucets, wash-down connections, and sprayers.

☐ Close all faucets, wash-down connections, and sprayers.

☐ De-energize the freshwater pump switch on the instrument panel.

After Long Term Storage

Before you fill the freshwater system, it must be adequately 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.

☐ Fill with potable water.

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

☐ Add fresh water and flush the system.

Electrical System

☐ Check all connections and tighten them if necessary.

☐ Spray all connections with an anti-corrosion spray.

Deck

Clean the deck with soap, hot water, and a stiff brush to clean up any oil spills.

Drainage

Raising the boat's bow is essential enough to allow for proper water drainage from the deck and bilge area.

Make sure all the drainage fittings are clear and free of debris

Store the engine in an upright (trimmed down) position to promote adequate drainage of water.

Cover

When covering your boat, it is best to use support to keep the cover-up. This allows air to circulate and discourages water from pooling on the cover.

Vents along the entire length of the cover will allow condensation to escape.

To help keep your boat dry and mildew free, consider placing commercial odor and moisture-absorbing products in the boat under the cover.

Aquatic Invasive Species (AIS)

Aquatic invasive species (AIS) are plants and animals that occur in waters in which they are not native and whose introduction causes or is likely to cause economic or environmental damage or harm to human health.

AIS has a negative impact on the waterway, its native species, and recreational and commercial uses of the waterway.

Your boat may carry invasive species that can be transported to other water bodies by recreational activities. (Aquatic Hitchhikers)

Prevention

As responsible boaters and citizens, each boat owner should do their part to prevent the spread of these aquatic hitchhikers. In many cases, it is also required by law.

Check local regulations for any waterway where you will boat.

After each boating trip, follow these three simple steps before you leave the water access to stop the spread of AIS:

Clean

☐ Inspect and remove all aquatic plants, animals, mud, and debris from the boat, engine, trailer, anchor, and any watersports equipment.

☐ Rinse, scrub, or wash, as appropriate, away from storm drains, ditches, or waterways.

☐ Rinse watercraft, trailer, and equipment with hot water (120°F) when possible.

☐ Flush motor according to the owner's manual.

Drain

☐ Completely drain all water from the boat and its compartments, including but not limited to the bilge, wells, lockers, ballast tanks or bags, bait containers, engines, and outdrives.

Dry

☐ Allow the boat to dry before visiting any other bodies of water entirely.

Use the table below as a reference for the AIS decontamination process by the area/part of your boat to be treated:

Aquatic Invasive Species (AIS) Decontamination					
	BOAT PART / LOCATION	**WATER TEMPERATURE °F**	**DURATION (SEC)**	**TYPE OF APPLICATION**	**AIS LIFE STAGE**
EXTERIOR	Hull	140	10	High Pressure Spray[1]	Adult
	Trailer	140	70	Low Pressure Spray[2]	Adult
	PFD, Anchor, Paddle	140	10	Low-Pressure Spray	Adult / Veliger
PROPULSION SYSTEMS	Engine	140**+	***	Flush**	Veliger
INTERIOR	Live Well/ Bait Well	120	130	Low-Pressure Spray or Flush	Veliger
	Bilge	120	130	Low-Pressure Spray or Flush	Veliger

*The times listed are the minimum times necessary to achieve mortality
[1]High pressure = 3000 psi.
[2]Low pressure = using the pressure from the decontamination unit with no nozzle, not to exceed 60 psi (a garden hose flow)
[3]Flush = adding water to a compartment of a boat to treat or force the water out
+These temperatures denote the exit temperature (i.e., the temperature of the water exiting the ship, not going the wand or flush attachment)
**When flushing engines with a dedicated connection (not muffs), the pressure should be limited to less than 60 psi to prevent internal engine damage. The maximum input temperature during flushing should not exceed 140°F
***Engine flushing relies on the exit temperature as a guideline for decontamination duration.
Additional Information about how to stop aquatic hitchhikers: **www.stopaquatichitchhikers.org**

YOUR SEAVEE® MAINTENANCE SCHEDULE

MAINTENANCE	EACH USE	WEEKLY	MONTHLY	SEMI-ANNUALLY	YEARLY	AS NEEDED
CLEAN HULL BELOW THE WATERLINE				X		
BOTTOM PAINT					X	X
CHECK SACRIFICIAL ANODES			X			
REPLACE SACRIFICIAL ANODES					X	
WASH BOAT CANVAS & HARDWARE	X		X			
WAX EXTERIOR GELCOAT				X		X
CLEAN & PROTECT HARDWARE						X
POLISH & PROTECT THE PLASTIC GLASS					X	X
CLEAN EXTERIOR UPHOLSTERY	X					X
CLEAN CABIN & INTERIOR UPHOLSTERY						X
FLUSH ENGINE WITH FRESH WATER	X					
SPRAY METAL COMPONENTS IN THE BILGE WITH A PROTECTOR			X			
CLEAN BILGE				X		X
CHECK BILGE FOR LEAKS	X		X			
INSPECT & OPERATE THRU-HULL VALVES			X			
INSPECT STEERING & CONTROL SYSTEMS	X					
SERVICE STEERING & CONTROL SYSTEMS				X		
INSPECT FUEL SYSTEM FOR LEAKS	X					
INSPECT & SERVICE FUEL SYSTEM				X		
REPLACE FUEL FILTERS					X	X
LUBRICATE FUEL FILL O-RINGS			X			
INSPECT FIRE EXTINGUISHING SYSTEMS			X			
TEST BILGE PUMP AUTOMATIC AND MANUAL SWITCHES	X					
INSPECT & PROTECT ELECTRICAL COMPONENTS, WIRE & BATTERY CONNECTIONS				X		
CHECK BATTERY ELECTROLYTE & SERVICE			X			
TEST AND INSPECT AC ELECTRICAL SYSTEM & SHORE POWER CORD				X		
INSPECT WATER SYSTEMS FOR LEAKS				X		
CHECK NEUTRAL SAFETY SWITCH	X					
CHECK TRIM TAB OPERATION			X			
INSPECT BAITWELL STRAINERS/ SHOWER SUMP AND OTHER STRAINERS			X			
CLEAN BAITWELL STRAINERS/ SHOWER SUMP AND OTHER STRAINERS						X
GREASE DOOR CABLE CHANEL & BEARING RACES				X		
SERVICE DOOR SYSTEM BY SEAVEE® SERVICE					X	

SEAVEE® SERVICE LOG

DATE	HOURS	SERVICED BY	SERVICE REPAIRS

Keep Track Of Service Records Handly

Supplementary Information

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DEPARTMENT OF HOMELAND SECURITY
U.S. Coast Guard
OMB Control Number: 1625-0003
Expires: 07/31/2022

RECREATIONAL BOATING ACCIDENT REPORT

INSTRUCTIONS: Use "Report required because" section below to determine if a report is required for your accident. If required, please have each vessel owner or operator involved in the accident submit a report to their state reporting authority. Each boat operator/owner involved in an accident should submit a separate report. For each question below, please provide answers if applicable and if known; otherwise leave blank.

Privacy Act Notice

Authority: 46 U.S.C. 6102 and 33 CFR 173 & 174 authorize the collection of information on boating accidents.
Purpose: The Coast Guard uses this information for statistical purposes, chiefly to inform the public, to measure the Program's efforts, and to regulate issues relating to boating safety.
Routine Uses: The Coast Guard shares this information within the agency, and if state and federal law permit it, to the public.

REPORT SUBMISSION

Report required because *(select all that apply)*:

- ☐ At least one person in this accident *died*: If so, how many? _____
- ☐ At least one injured person in this accident *required or was in need of treatment beyond first aid*: If so, how many? _____
- ☐ At least one person in this accident *disappeared* and has not yet been recovered: If so, how many? _____
- ☐ *All* boat and other property *damage (e.g., fishing/hunting gear)* caused by this accident *totaled (or likely totaled)* $2,000 or more:
  - Approximate value of damage to *your* boat: $_____
  - Approximate value of damage to *your* other property: $_____
- ☐ Your or another *boat* in this accident was *(or likely was)* a *total loss*

Report submitted by *(select all that apply)*:

- ☐ Boat Operator *(required if possible)*
- ☐ Boat Owner *(if operator unable, or same as operator)*
- ☐ Other *(describe)*: _____

To be submitted within:

48 hours *(if injury, disappearance or death)*
10 days *(if boat/property damage only)*

To be submitted to: *(Local State Reporting Authority)*

Phone:

You may submit any comments concerning the accuracy of the burden estimate or any suggestions for reducing the burden to: Commandant (CG-BSX-21), U.S. Coast Guard, Washington, DC 20593-0001 or Office of Management and Budget, Paperwork Reduction Project (1625-0003), Washington, DC 20503. Questions relating to the collection of this data should be sent to the Coast Guard.

For State Agency Use Only	
First Name	*Last Name*
Phone:	

First Name	Last Name	Phone	*Primary Cause of Accident*

ACCIDENT SUMMARY

WHEN

Date: *(mm/dd/yyyy)* Time: am ☐ pm ☐ *(select one)*

WHERE

Body of Water Name

Location *(on water)* description

Nearest city/town

County: State:

ACCIDENT DESCRIPTION: *Briefly* describe this accident *(attach extra pages if necessary)*

DAMAGE TO *YOUR* BOAT: *Briefly* summarize any damage to your boat

***YOUR* BOAT – PEOPLE**	
# people *on board (including operator)*:	
# people *being towed (e.g., on tubes, skis)*:	
# people *wearing lifejackets (on board or towed)*:	
***OTHER* BOATS INVOLVED IN ACCIDENT**	
# of *other* boats involved:	

DAMAGE TO *YOUR* OTHER PROPERTY: *(NOT BOAT)*
Briefly summarize any damage to your other property *(not boat)*

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For each question below, please provide answers IF APPLICABLE AND IF KNOWN, otherwise leave blank.

YOUR BOAT

BOAT IDENTIFICATION

Your Boat Name:	Manufacturer:
Model Name:	Model Year:
Registration #:	Documentation #:
Hull Identification # *(HIN)*:	Rented: ☐ Yes ☐ No

SIZE ESTIMATES

Length: ft.	Depth from transom *(stern)* to keel *(bottommost point)*: ft. in.	Beam width at widest point: ft.

HULL MATERIAL

Type of Hull Material *(select one)*

☐	Fiberglass	☐	Wood	☐	Rubber/vinyl/canvas	☐	Other *(describe)*:
☐	Aluminum	☐	Steel	☐	Plastic		

BOAT TYPE

Boat Type *(select one)*						**Available Propulsion** *(select all that apply)*	
☐ Cabin motorboat	☐ Inflatable boat	☐	Personal watercraft *(PWC) (e.g., Wave Runner ™, Jet Ski ™, Sea-Doo ™)*	Paddlecraft:		☐ Propeller	☐ Air thrust
☐ Open motorboat	☐ Houseboat			☐ Canoe		☐ Sail	☐ Other *(describe)*:
☐ Auxiliary sail	☐ Sail *(only)*	☐	Air boat	☐ Kayak		☐ Manual	
☐ Pontoon boat	☐ Rowboat	☐	Other (*describe*):	☐ Standup Paddleboard		☐ Water jet	

ENGINE

# Engines:	**Engine type and horsepower** *(select one)*					**Fuel type** *(select all that apply)*	
Manufacturer	☐ Outboard	☐ Sterndrive	☐ Inboard	☐ Pod drive		☐ Gas	☐ Electric
Total horsepower: hp	☐ No engine	☐ Other:				☐ Diesel	☐ Other:

SAFETY MEASURES

Organizations that have conducted a vessel safety check *(VSC)* on board your boat within the past year *(including carriage of safety equipment, e.g., lifejackets, anchor and line, fire extinguishers)*:

US Coast Guard Auxiliary: VSC Decal? ☐ Yes ☐ No	☐	Federal Agency *(Name)*:	
US Power Squadrons: VSC Decal? ☐ Yes ☐ No	☐	State Agency (*Name*):	
	☐	Other Agency (*Name*):	

# Life jackets on board:		# Fire extinguishers on board:		Type of fire extinguishers *(e.g., ABC)*:	
		# Fire extinguishers used:			

ACCIDENT DETAILS – EXTERNAL CONDITIONS

WEATHER

Overall weather was *(select one)*		**It was** *(select one)*	**Visibility was** *(select one)*	**Wind was** *(select one)*
☐ Clear	☐ Raining	☐ Day	☐ Good	☐ 0 mph *(none)*
☐ Cloudy	☐ Snowing	☐ Night	☐ Fair	☐ Over 0, up to 12 mph *(light)*
☐ Foggy	☐ Hazy		☐ Poor	☐ Over 12, up to 25 mph *(moderate)*
☐ Other *(describe)*:		Approximate air temperature: °F		☐ Over 25, up to 55 mph *(strong)*
				☐ Over 55 mph (stormy)

WATER

Overall water conditions *(select one)*:	**Other water conditions:**				
☐ Up to 6 in. waves *(calm)*	Approximate water temperature:	°F			
☐ Over 6 in., up to 2 ft. waves *(choppy)*	Strong current?	☐	Yes	☐	No
☐ Over 2 ft., up to 6 ft. waves *(rough)*	Hazardous waters? *(e.g., rapid tidal flow, currents)*	☐	Yes	☐	No
☐ Over 6 ft. waves *(very rough)*	Congested waters?	☐	Yes	☐	No

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For each question below, please provide answers IF APPLICABLE AND IF KNOWN, otherwise leave blank.

ACCIDENT DETAILS – ACTIVITIES AND OPERATIONS ON *YOUR* BOAT

OPERATOR/PASSENGER ACTIVITIES

Operator/passenger activities on *your* boat at time of accident:

Activities were *(select one)*	**Operator/Passenger activities** *(select all that apply)*			
☐ Recreational	☐ Fishing	☐ Tubing	☐ Starting engine	
☐ Commercial	☐ Hunting	☐ Water Skiing	☐ Making repairs	
	☐ White water activity *(e.g., rafting)*	☐ Relaxing	☐ Other *(list)*:	

BOAT OPERATIONS

***Your* boat operations at time of accident** *(select all that apply)*

☐ Cruising *(underway under power)*	☐ Drifting	☐ Racing	☐ Towing another vessel
☐ Changing direction	☐ At anchor	☐ Rowing/paddling	☐ Launching
☐ Changing speed	☐ Being towed	☐ Docking/undocking	☐ Tied to dock/mooring
☐ Sailing	☐ Other *(list)*:		

ACCIDENT DETAILS – CONTRIBUTING FACTORS ON *YOUR* BOAT

CONTRIBUTING FACTORS

Indicate factors on *your* boat which may have contributed to this accident *(select all that apply)*

☐ Alcohol use	☐ Improper lookout	☐ Dam/lock	☐ Starting in gear
☐ Drug use	☐ Operator inattention	☐ Force of wake/wave	☐ Sharp turn
☐ Excessive speed	☐ Operator inexperience	☐ Hazardous waters	☐ Restricted vision *(e.g., fog)*
☐ Improper anchoring	☐ Language barrier	☐ Heavy weather	☐ Mission/inadequate aids to navigation *(e.g., buoy, daymarker)*
☐ Improper loading	☐ Navigation rules violation	☐ Ignition of fuel or vapor	☐ Inadequate on-board navigation lights
☐ Overloading	☐ Failure to vent	☐ Hull failure	☐ People on gunwale, bow or transom
☐ Other *(describe)*:			

ACCIDENT DETAILS – *YOUR* BOAT

MACHINERY/EQUIPMENT FAILURE

Failure of the following machinery/equipment on *your* boat contributed to this accident *(select all that apply)*

☐ Engine	☐ Onboard lights	☐ Shift	☐ Sound equipment *(e.g., horn, whistle)*
☐ Electrical system	☐ Seats	☐ Radio	☐ Auxiliary equipment
☐ Fuel system	☐ Steering	☐ Fire extinguisher	☐ Other *(list)*:
☐ Sail/mast	☐ Throttle	☐ Ventilation	
☐ Onboard navigation aids *(e.g., GPS)*			

ACCIDENT DETAILS – EVENTS ON *YOUR* BOAT

ACCIDENT EVENTS

Types of events occurring to/on *your* boat during accident *(select all that apply)*

☐ Collision with recreational boat	☐ Flooding/swamping	☐ Person fell overboard
☐ Collision with commercial boat *(e.g., tug, barge)*	☐ Fire/explosion – fuel	☐ Person fell on/within boat
☐ Collision with fixed object *(e.g., dock, bridge)*	☐ Fire/explosion – non-fuel	☐ Sudden medical condition
☐ Collision with submerged object *(e.g., stump, cable)*	☐ Carbon monoxide exposure	☐ Person struck by boat
☐ Collision with floating object *(e.g., log, buoy)*	☐ Mishap of skier, tuber, wake boarder, etc.	☐ Person struck by propeller or propulsion unit
☐ Capsizing	☐ Person left boat voluntarily	☐ Person electrocuted
☐ Grounding	☐ Person ejected from boat *(caused by collision or maneuver)*	
☐ Sinking	☐ Other *(describe)*:	

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For each question below, please provide answers IF APPLICABLE AND IF KNOWN, otherwise leave blank.

ACCIDENT DETAILS –*YOUR* BOAT- INJURED PEOPLE RECEIVING *OR IN NEED OF* TREATMENT BEYOND FIRST AID

Report only injured people on, struck by, or being towed by *your boat*, receiving *or in need of* treatment beyond first aid. *Do not report* injured people on, struck by, or being towed by *another boat or no boat* (e.g., swimmers, people on a dock). *If more than one* injured person to report, attach additional copies of this page. *If none*, SKIP INJURED PEOPLE section.

INJURED PERSON

First Name	MI	Last Name
Street		
City	State	Zip
Phone	Date of Birth *(mm/dd/yyyy)*	Age

INJURY DETAILS

Injury caused when person *(select all that apply)*

☐	Struck the *(e.g., boat, water)*:		
☐	Was struck by a *(e.g., boat, propeller)*:		
☐	Was exposed to carbon monoxide poisoning		
☐	Received an electric shock		
☐	Other *(describe)*:		

Nature of most serious injury *(select one)*

☐	Scrape/bruise	☐	Dislocation
☐	Cut	☐	Internal organ injury
☐	Sprain/strain	☐	Amputation
☐	Concussion/brain injury	☐	Burn
☐	Spinal cord injury	☐	Other *(describe)*:
☐	Broken/fractured bone		

Person was wearing lifejacket?	☐	Yes	☐	No
Person received treatment beyond first aid?	☐	Yes	☐	No
Person was admitted to a hospital?	☐	Yes	☐	No

Body part of *most serious* injury *(e.g., head, trunk, leg)*:

ACCIDENT DETAILS – *YOUR* BOAT – DEATHS/DISAPPEARANCES

Only report deaths/disappearances of people on, struck by, or being towed by *your boat*.
If more than one death/disappearance to report, attach additional copies of this page.
If none, SKIP DEATHS/DISAPPEARANCES section.

PERSON WHO DIED/DISAPPEARED

First Name	MI	Last Name
Street		
City	State	Zip
Phone	Date of Birth *(mm/dd/yyyy)*	Age

DETAILS OF DEATH/DISAPPEARANCE

Injury caused when person *(select all that apply)*

☐	Struck the *(e.g., boat, water)*:		
☐	Was struck by a *(e.g., boat, propeller)*:		
☐	Was exposed to carbon monoxide poisoning		
☐	Received an electric shock		
☐	Other *(describe)*:		

Nature of death/disappearance *(select one)*

☐	Death – by drowning				
☐	Death – other likely cause *(describe)*				
☐	Disappeared and not yet recovered				
	Person was wearing lifejacket?	☐	Yes	☐	No

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For each question below, please provide answers IF APPLICABLE AND IF KNOWN, otherwise leave blank.

ACCIDENT DETAILS – *YOUR* BOAT OPERATOR

OPERATOR INSTRUCTION	OPERATOR SAFETY MEASURES
Boating safety instruction completed *(select all that apply)*	**On board, prior to accident, was operator wearing:**
☐ None	A lifejacket? ☐ Yes ☐ No
☐ State course	An engine cut-off switch *(Lanyard or wireless device)* if equipped? ☐ Yes ☐ No
☐ USCG Auxiliary course	On board, prior to accident, was operator using:
☐ US Power Squadrons course	Alcohol? ☐ Yes ☐ No
☐ Internet *(name of sponsoring organization)*	Drugs? ☐ Yes ☐ No
☐ Other *(describe)*	Operator arrested for Boating Under the Influence? ☐ Yes ☐ No
	Weather reports consulted prior to accident? ☐ Yes ☐ No

OPERATOR EXPERIENCE

Experience operating this type of boat *(select one)*

☐ 0 to 10 hours ☐ Over 10, up to 100 hours ☐ Over 100, up to 500 hours ☐ Over 500 hours

ACCIDENT DETAILS – OTHER KEY PEOPLE

Only report other key people *not already documented* as injured, died, disappeared or operator/owner of *your* boat.
If more than two other key people to report, attach additional copies of this page.

NAME/ADDRESS

This other key person was a(n) *(select all that apply)*

☐ *Other* boat operator ☐ *Other* boat owner ☐ Owner of *other* damaged property ☐ Passenger on *your* boat ☐ Witness

First Name	MI	Last Name	
Street			
City	State	Zip	Phone
Other boat name *(if any)*		*Other* boat registration # *(if any)*	

NAME/ADDRESS

This other key person was a(n) *(select all that apply)*

☐ *Other* boat operator ☐ *Other* boat owner ☐ Owner of *other* damaged property ☐ Passenger on *your* boat ☐ Witness

First Name	MI	Last Name	
Street			
City	State	Zip	Phone
Other boat name *(if any)*		*Other* boat registration # *(if any)*	

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For each question below, please provide answers IF APPLICABLE AND IF KNOWN, otherwise leave blank.

YOUR BOAT OPERATOR

NAME/ADDRESS

First Name	MI	Last Name
Street		
City	State	Zip

AGE/GENDER/PHONE

Date of Birth *(mm/dd/yyyy)*	Age	Gender		Male		Female	Phone

YOUR BOAT OWNER

If same as *your* boat *operator* SKIP rest of YOUR BOAT OWNER section.

NAME/ADDRESS/PHONE

First Name	MI	Last Name	
Street			
City	State	Zip	Phone

PERSON SUBMITTING THIS REPORT

If same as *your* boat *operator* OR *owner*, SKIP rest of PERSON SUBMITTING THIS REPORT section.

NAME/ADDRESS/PHONE/ROLE

First Name	MI	Last Name	
Street			
City	State	Zip	Phone

I was a(n) *(select one)*

	Other person on board *this* boat
	Accident witness *not* on board *this* boat
	Other *(describe):*

SIGNATURE OF PERSON SUBMITTING THIS REPORT

Your signature	**Date** *(mm/dd/yyyy)*

An Agency may not conduct or sponsor and a person is not required to respond to an information collection, unless it displays a currently valid OMB Control Number.

The Coast Guard estimates that the average burden for this report form is 30 minutes. You may submit any comments concerning the accuracy of this burden estimate or any suggestions for reducing the burden to: Commandant (CG-BSX-21), U.S. Coast Guard, Washington, DC 20593-0001 or Office of Management and Budget, Paperwork Reduction Project (1625-0003), Washington, DC 20503.

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