OPERATIONS MANUAL

Rosie

Welcome aboard!

We are happy you have chosen Rosie for your vacation. We are sure you will enjoy cruising the lovely islands of the Pacific Northwest.

We are a local family of four who enjoy using Rosie. She was named by our nine-year old daughters.

We hope this manual will help you become familiar with the boat. If you notice any errors in the manual, please give AYC feedback and I will revise it for future renters. If you have questions about the boat or about places to visit, please do not hesitate to ask the AYC staff.

TABLE OF CONTENTS

BOAT OPERATION

Engine Inspection

Remember your "WOBBS" every morning: Water (Coolant), Oil, Bilges (Inspect and Pump-out), Belts and Sea Strainer. Be sure to also do a visual check of the engine and engine compartment before starting and after operation.

Open the engine compartment by:

1) clearing away items and the carpet from the back deck
2) Removing the table (pull up to remove table from legs and then rotate legs counter clockwise to unlock legs)
3) Unlocking the two engine compartment hatch locks
4) Lifting the hatch using the hatch lift switch by the transom steering console. DO NOT MANUALLY OPEN THE HATCH! It will break the mechanism.Check the level of COOLANT in the expansion tank, which is located on the top of the tank When the engine is cool (under pressure when hot) open the cap to check the level. The coolant level **s**hould be between the MIN (a horizontal bar not visible when coolant is full) and MAX (two vertical posts slightly protruding from the fluid when full) marks.

- Check the level of OIL in the engine using the dipstick. The dipstick is red, located on the port side of the engine. Do not overfill. Only fill if oil levels are below the halfway mark.

- Check the BILGE level in the hull. Manually test the bilge pumps (switches located at the main helm) to make sure they are working.

- Check the general condition of the BELTS, HOSES, and FUEL LINES for wear, cracks, or leaks.

- Ensure the valve on each RAW WATER THRU-HULL is in the 'open' position (lever in-line with valve). There are two valves located on the port and starboard side of the engine near the bottom of the hull.

- Observe the glass of the RAW WATER STRAINER for debris. If necessary, close the thru-hull valves, open the strainer cover, clean the strainer, and reassemble. Remember to reopen the thru-hull valves.

Start-Up

The engine should be started from the main helm station. Ensure the gearshift is in 'neutral'; the engine cannot be started if the gearshift is not in neutral due to the neutral lockout.

- **Switching On**: To turn the ignition on, press the IGNITION button. A green light in the button will illuminate to indicate that the ignition is on.

- **Start/Stop**: Press the START/STOP button and release it as soon as the engine has started.

- **Warm up**: let the engine idle for ten seconds, then operate it at low speed and low load until the normal operating temperature (185 C) is reached, while making sure to avoid racing the engine when cold.

Low Battery: If the engine cranks slowly or fails to turn over, check the condition of the battery bank 2 on the electrical panel in the aft berth. If the battery is low, try the battery parallel switch located on the port wall of the deck in a porthole, to connect the house battery bank to the engine. Turn off the parallel switch after using it to start the engine.

Post Start-Up Checks

After starting the engine, it is important to:

- **Check instruments and gauges**. The tachometer displays engine speed in RPMs, and engine hours are displayed in the tachometer window. The information display shows engine speed, oil pressure, coolant temperature, and battery voltage.

- **Listen for any unusual sounds**

- **Note any fault messages** on the display. If a fault is detected, the display will show a message. Press the OK button to see information about the fault and corrective actions.

- Normal operating temperature is **185 C** when warm.

Getting Underway

Before leaving the dock, ensure that all the necessary systems are ready:

- **Disconnect Shore Power:** Unplug the cord from the dock and flip the breaker to “off.” Unplug the cord from the boat and the dock. Coil the cable and place it in the cabinet under the deck steering console.

- **Secure the Boat:** Ensure all portholes, windows, and the forward hatch are closed**.**

- **Turn On Electronics:** Turn on your VHF radio, depth sounder, and any other electronics you will be using. Verify that the VHF is set to Channel 16.

- **Turn on the depth sounder:** On the Garmin display press Home> Sonar> Traditional. This will activate the sonar / depth sounder.

- **Turn on the Thrusters**: Turn on the main power switches for the bow thrusters (circle switches in aft berth). Turn on the power to the thruster transmitter (at the steering console) pushing the two "ON" buttons on the transmitter.

- **Assign Crew Positions**: Make a plan for departure. Make sure each member of your crew knows their responsibilities for departure, such as handling lines and fenders and buoys.

- **Check Safety Equipment:** Verify that life jackets are readily accessible and that you know the location of all safety equipment**.**

Maneuvering and Cruising:

- **Use command bridge helm for close quarters:** All close quarters maneuvering should be done from the command bridge for better visibility.

- **Cruising Speed**: Recommended cruising speed is 1500 to 2500 RPM. Do not exceed 3000 RPM except in emergencies. Rosie gets amazing fuel economy at around 1500 RPM, which gets about 7 knots and 4 gph. 3000 RPM will give you about 12 knots at 10 gph.

Special Considerations for This Vessel:

- **Single Screw:** Because this vessel is a single-screw boat, you should be aware of the “prop walk” effect which can cause the stern of the boat to move sideways when in. Practicing slow speed maneuvers will help you become familiar with the boat's handling characteristics.

- **Windage:** The boat's relatively small size and top enclosure make it significantly affected by wind. Be mindful of wind direction and speed, and how it impacts the boat’s movement.

- **Visibility**: Be aware of your surroundings. The command bridge has the best visibility.

Trim Tabs

The trim tabs are designed to improve your boat's performance by allowing you to adjust the boat's attitude, getting the boat on plane more quickly, correcting for listing, and reducing fuel consumption.

The trim tab buttons are two black large and unmarked buttons at the helm.

There will be a slight delay between pressing the control and the boat reacting, and this varies depending on boat speed. Be careful not to over-trim the boat; an over-trimmed boat will "plow" or "bow-steer." If you over-trim, press the "bow up" control to correct the bow's position. To correct for a list (when one side of the bow is higher than the other), push the "bow down" side of the control on the side of the boat that is high. For example, if the port bow is too high, push the port "bow down" control. Use short bursts to make gradual corrections. For best maneuverability, trim tabs should be fully retracted.

Thrusters

The boat is equipped with both a bow and a stern thruster to improve maneuverability in tight spaces, especially when docking. The thrusters have controls at each helm. Here’s how to use them:

- **Activation:**
    - Make sure the main power switches for the thruster system is ON (located in the aft berth).
    - Second, ensure that the power to the thruster receiver is also ON (controls at the helm).
- **Operation:**
    - To move the bow of the boat activate the forward joystick in the direction desired to move.
    - To move the stern of the boat activate the rear joystick in the direction desired to move.
    - Moving both joysticks in the same direction creates sideways motion of the boat.
- **Important Considerations:**
    - **Limited Continuous Use**: Be aware that the maximum continuous usage time for the thrusters is approximately 3 minutes. The electric motor has a thermal cut-off switch that will shut it off when it overheats and will re-engage it when it has cooled down.
    - **Battery Power**: Keep the main engine(s) running while using the thrusters to keep the batteries charged. A higher voltage at the thruster results in a higher torque (power).
    - **Safety**: Never use a thruster close to someone in the water.

Docking and Mooring

When preparing to dock Rosie, it is best for the skipper to use the command bridge helm, as this position offers greater visibility, particularly to the stern. Before approaching the dock or mooring location, take the following steps:

- **Crew Preparation:** Ensure that your crew is ready with lines and fenders and give clear instructions for the docking procedure. Often, a crew member will need to step off from the swim step with the stern line, and another crew member will be at the bow or mid-ships to handle the remaining lines.
- **Assess Conditions:** Consider wind and current, which can significantly affect your boat's handling, especially with the single screw and enclosure. Plan your approach to counteract these forces.
- **Trim Tabs:** To facilitate slow-speed backing and turning, rock the trim tab switches to the "bow up" position for approximately 8 to 10 seconds. This adjustment helps make the boat more responsive at slow speeds.
- **Slow Approach:** While moving slowly towards the dock or mooring location, center the wheel (keeping the rudders straight) and use only the throttle and thrusters to maneuver the boat. Do not use the wheel to steer once close to the dock.
- **Thrusters:** Use your bow and stern thrusters as needed to assist with maneuvering, but be aware of the limited run-time and how the thrusters affect the boat's position.

Shut Down

- **Cool Down Period**: Before shutting down, allow the engine to run at low idle, in neutral, for a few minutes. This is particularly important after operating at high RPM or under heavy load. This cool-down period helps to avoid after-boiling and allows for temperature equalization.

- **Neutral Gear**: Ensure that the drive/reverse gear is disengaged by putting the control lever in neutral.

- **Engine Stop**: Stop the engine by pushing the STOP button.

- **Ignition Off**: Turn off the ignition by pressing the IGNITION button. The main helm throttle needs to be active and in neutral to turn off the ignition.

Canvas

Replace the canvases to the command bridge and rear deck helms and seats when not in active use to prevent damage from birds and animals.

Enclosure

The enclosure walls are usually removed for summer season. If they are in place please treat them with care, the glass can scratch.

Fueling

The filler cap is located aft starboard near the power outlet. A deck fitting key is kept in the silverware drawer in the galley.

MAKE SURE YOU HAVE THE RIGHT FUEL! DIESEL! DIESEL! DIESEL! MAKE SURE IT IS GOING INTO THE RIGHT DECK FILL! DOUBLE-CHECK!

Before pumping, have an oil/fuel sorbs handy to soak up spilled fuel. You should have a rough idea of how many gallons you will need based on the engine hour indicator. Also periodically turn on the key to watch the fuel gauge.

Place the DIESEL nozzle into the tank opening, pump slowly and evenly, and note the sound of the fuel flow. Pumping too fast may not allow enough time for air to escape, which may result in spouting from the tank opening. As the tank fills, the sound will rise in pitch or gurgle. Pay attention to the TANK OVERFLOW VENT on the outside of the hull near the tank opening. The sound may indicate that the tank is nearly full. Top off carefully, and be prepared to catch spilled fuel. Spillage may result in a nasty fine from law enforcement. Replace tank cap. Turn on blower before starting engines. *Caution -- Clean up splatter and spillage immediately for environmental and health reasons. Wash hands with soap and water thoroughly.*

BOAT ELECTRICAL

120-Volt AC/DC Panel

The electrical system is divided into two distribution systems: 110-volt AC and 12-volt DC.

Battery Switches

When not connected to shore power, batteries are providing all power. Therefore, monitor the use of onboard electricity carefully with your voltmeter located in the aft berth or on the helm displays. Turn off electrical devices that are not needed.

The 120V systems are controlled from the electrical panel located in the after berth.

The battery switches located in a porthole on the port side of the back deck wall.

The 12 V systems are controlled with switches at the helms.

Shore Power

Shore power supports all AC equipment and receptacles on board, as well as the battery chargers.

To connect to shore power, plug the power cord into the boat and then into the dock receptacle. Check the power rating/plug size of the nearest dock receptacle (e.g., 50-amp, 30-amp, 20-amp, or 15-amp). Turn the dock power on. Cords coming off the bow can be wrapped loosely around the bow line.

If your outlets fail to work, check your GFIs to make sure that they have not been tripped.

Inverter

The boat is equipped with a KISAE Abso Sinewave Inverter-Charger to provide 120V AC power to standard outlets when the boat is not connected to shore power. The inverter is an automatic system that simplifies operation and provides both AC power and battery charging functions.

- **Location:** The inverter itself is located in the starboard cockpit lazarette.
- **Automatic Bypass Mode:** When the boat is connected to shore power, the inverter automatically goes into "bypass mode". In this mode:
    - The boat's AC power is supplied directly from the shore power connection.
    - The inverter acts as a multi-stage battery charger, automatically topping up the boat's 12V battery bank.
- **Inverter Power:** When shore power is disconnected, the inverter automatically switches to battery power and provides 120V AC power to most of the boat's AC outlets, including the microwave.
    - The inverter does not power the hot water tank.
- **Inverter Display:** The inverter system is equipped with a display panel.

Status LED	Display LED	Display	Function/Status
Green (solid)	Green	'Ful'	By-Pass Mode. Battery is fully charged
Green (flashing)	OFF	'bul'	By-Pass Mode. Battery charging in progress and is in 'BULK' mode
	OFF	'abs'	By-Pass Mode. Battery charging in progress and is in 'ABSORPTION' mode
Amber (solid)	Green	'12.5'	Battery Mode, inverter is running, display shows battery voltage in DC volts
	Amber	'0.80'	Battery Mode, inverter is running, display shows output power in kW (800W as shown)
Amber (flashing)	Battery Mode and AC Input is detected and AC output will switch to By-Pass mode within 20 seconds		
Red (solid)	OFF	E01-E12	Unit has shutdown. Display shows error code (See error code reference chart below)

- **Battery Usage:** The inverter is powered by the boat's 12V house batteries. Be aware that the amount of AC power available is limited by the capacity of these batteries.
    - Running high-power appliances such as hair dryers, toasters, coffee makers, or space heaters will quickly deplete the house batteries.
    - Use these types of appliances very sparingly and be mindful of your battery usage.
- **GFCI Protection:** The inverter system includes GFCI (Ground Fault Circuit Interrupter) outlets for safety. These outlets have a "test" and "reset" button.
- **No AC Power from inverter troubleshooting**: If there is no AC power from the inverter when shore power is disconnected, the first step is to check the inverter's display panel. The status indicator light should be amber when the inverter is supplying power from the batteries. If the light is not illuminated, check the following:
    - Ensure that the inverter is switched on.
    - Verify the 12V house batteries are charged and have adequate capacity.
    - Refer to the error code chart below.
- **Error Codes**: The inverter has error codes that will appear on the display if there is an issue. See table.

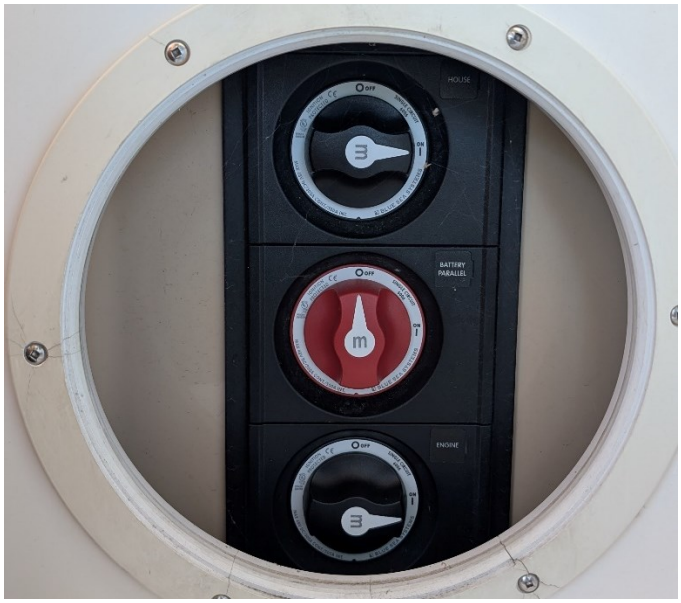
Error Code	Condition	Corrective Action
E01	Input battery voltage is too low, and unit has shutdown	Recharge battery immediately and restart unit
E02	Input battery voltage is too high and the unit has shutdown	Check battery voltage or determine if any external charger is connected to the battery bank
E03	AC output is overloaded or short circuited and unit has shutdown	Check load connected to the output. Reduce load and restart the unit
E04	Internal temperature is too high, and unit has shutdown	Turn unit off and wait for 15 minutes before restarting. Check if any object has blocked the air flow of the unit
E05	Input battery voltage is low and warning occurs	Recharge battery as unit will shutdown shortly
E06	AC output has sensed high and is close to shutdown limit	Reduce load
E07	Internal temperature is high and is close to shutdown limit	Reduce load and check if any ventilation of the unit is blocked
E10	Battery Charging voltage too high	Check battery setting
E11	Battery bad.	Battery did not accept charge
E12	Internal transfer switch temperature is high and shutdown occurs	Reduce load and check if any ventilation of the unit is blocked

Generator

This vessel is not equipped with a generator.

House Battery (12-Volt) System

- **Battery Banks:** There are three battery banks that support the 12-volt DC power system.
    - House/inverter battery bank
    - Engine battery
    - Thruster battery
- **Battery Switches:** The battery switches are located behind the port side circular access panel on the stern deck. Normally, the engine and house switches are left in the 'ON' position.
    - **Note: Do not change the position of the switches while the engines are running, or the alternator diodes will be damaged. Change positions with the engines off.**



- **Parallel switch:** The battery parallel switch located between the battery switches, can be used to jump-start the engine if its battery is low. To use it, turn the switch to connect the house battery to the engine battery and start the engine. Once the engine is running, turn the parallel switch off.

- **12-Volt DC Switches:** The 12-volt DC switches are located at the helms and throughout the boat (such as the light switches).

At Helm

Resettable switch breakers

At Helm

Resettable switch breakers

In Cockpit

- **House Battery Bank:** The house battery bank provides power for all DC systems, except the engines and thrusters. When disconnected from shore power, all 12-volt devices drain the house battery. Use devices as needed and monitor the voltmeter.
    - The DC voltmeter on the DC panel can be switched between Port, Starboard, and House Battery banks to measure charging or resting battery voltages.
- **Battery Charging:**
    - When a battery bank is being charged, the voltage will read from about 13.1 volts to 14.4 volts depending on the state of charge of the battery bank. When the battery bank is at rest, (that is, not being charged), the voltmeter can give a rough indication of the state-of-charge of the battery bank. The voltmeter is in the aft berth. The banks are labeled as follows: **Bank 1 = House**, **Bank 2 = Engine, Bank 3 = Thruster**

	Voltage to charge conversion. (when at rest, not charging) **12.65 volts** indicates a **100%** charge. **12.47 volts** indicates a **75%** charge. **12.25 volts** indicates a **50%** charge. **11.95 volts** indicates a **25%** charge. **11.70 volts** indicates a **0%** charge

  - The batteries are charged by the **engine alternators** while underway.
  - The engine/house batteries are charged by the **battery charger** when connected to shore power.

- **Bilge pump**: switches should always be left on

- **Propane**: switch should always be turned off when not in use.

SANITATION SYSTEM

Marine Toilet

- The boat is equipped with a Tecma electric freshwater flush toilet.
- It is essential that all crew members are instructed on the proper use of this marine toilet. The valves, openings, and pumps are small and may clog easily. If the toilet clogs, it is your responsibility.
- Never put paper towels, tampons, Kleenex, sanitary napkins, household toilet paper, or food into the marine toilet. Use only the special dissolving marine toilet tissue provided. The toilet is designed for human waste and marine toilet paper only.
- Always pump the head for children so you can make sure nothing foreign is being flushed.
- **To operate the toilet**: Refer to the label by the toilet.
- The toilet has a full tank lockout feature. The tank indicator will turn red and prevent flushing when the tank is full or near full.
- An excess of flushes after the full-tank lockout is disabled can cause waste to overflow the tank.

Holding Tank

- The sanitation holding tank has a capacity of **40 US gallons**.
- Be aware of the rate of waste production (approximately 1 gallon per flush).
- With an overfilled tank, it is possible to break a hose, clog a vent, or burst the tank. The result will be an expensive fix.
- Empty the tank every other day to avoid this problem.
- The holding tank is located under the main bed.
- The waste tank level can be checked by utilizing the head control panel.
- The holding tank can be emptied in one of two ways:
    - **At a Marine Pump-Out Station**: Remove the waste cap on starboard side of the deck. Insert the pump-out nozzle into the waste opening. Double-check the deck fitting. Turn on the pump and open the valve located on the handle. When pumping is finished, close the lever on the handle and turn off the pump. Remove from the deck fitting. Rinse the tank by adding 2 minutes of water into the tank, then re-pump to leave the tank rinsed.
    - **Macerator**: The tank's contents can be discharged with the macerator only in Canadian waters.
        - Before operating the macerator, locate the overboard shutoff valve under the V-berth, in line with the macerator pump.
        - This valve is likely secured with a zip tie to comply with US regulations.
        - If the valve is zip-tied shut, you will need to cut the zip tie to open the valve for macerator discharge.
        - Be sure to have a new zip tie to secure the valve after use to comply with US law.
        - To operate the macerator, depress the macerator rocker at the main helm.
        - Watch the pump out from the starboard window. Turn off the macerator when it is complete. It should only take a few minutes to empty the tank.
        - After use, ensure the valve is either locked or secured with a zip tie.
        - The boat operator is responsible for following all applicable laws when using the macerator to pump out into the surrounding waters.

WATER SYSTEM

Fresh Water Tank

- The freshwater tank holds 60 US gallons.
- The tank is located under the salon floor and can be sighted at the aft end.
- To refill the tank, remove the water cap(s) located on the port deck. Avoid flushing debris from the deck into the tank opening. DO NOT fill water and diesel at the same time.
- There is a water filter in the port deck lazarette to be used during filling.
- Waste water from the sinks and showers drains overboard through various thru-hulls usually located under the sinks.

Fresh Water Pump

- The water pressure pump is a Flojet 12-volt electric pump, P/N 10-13404-101. It is located under the salon floor at the cockpit door.
- The pump is activated at the by turning on the switch by the water gauge in the aft berth.

- If the water pump continues to run, you are either out of water or might have an air lock and need to bleed the system by opening up a faucet.
- If you run out of water shut off the hot water heater on the AC panel. Serious damage can occur.

Hot Water Tank

- The hot water heater has an 8-gallon capacity.
- It is available when connected to shore power or via a heat exchanger underway.
- To use on shore power, flip on the water heater circuit breaker on the AC electrical panel.
- Do not use the water heater if the water tank level is very low.

Shower

- Take only very short “boat” showers (turning off water between soaping up and rinsing).
- To keep the shower tidy, wipe down the shower stall and floor. Check for accumulation of hair in the shower and sink drains.
- There is also a shower sump located under the floor panel just outside of the head door.
- An additional freshwater shower is located at the transom gate.

Salt Water Washdown

- A pressured saltwater washdown is available from a hose spigot at the port transom.
- To activate the raw water washdown, flip the pump rocker switch located.
- After use, turn the switch off to prevent pump burn out, and ensure no object leans on the switch to turn it on accidentally.

Bilge Pumps

- The vessel is equipped with two automatic bilge pumps, forward and aft.
- The bilge pumps operate automatically with electronic float switches, even when battery switches and breakers are in the OFF position. However, the bilge pumps will run continuously once their switches are placed in the on position, so they should not be run when dry.
- The manual switches and the high-water alarm switch are located at the helm.
- The high bilge alarm should be set to the "armed" position to automatically operate. This is wired directly to the hot fuse block and will remain active regardless of battery switch position.

GALLEY

Drying

Recommended drying rack configuration

Stove/Oven

- **Turning on propane:** The oven/stove is propane, the following steps are required to supply propane:

    1. Open the propane tank, which is located in a locker on the swim step. If the tank is empty, swap in a fresh tank.

    2. Open the propane solenoid valve. The control is in the galley near the stove.

    3. When you have finished cooking, turn off the switch and close the bottle.

- **Stove Top Burner Lighting Instructions**
    - Before lighting, make sure that the burner caps are on the burners.
    - The burners are equipped with a flame failure device (thermocouple). If the flame goes out for any reason, the solenoid inside the control valve cuts off the gas supply to the burner.
    - **Ignitor Method:**
        1. **Push in** the control knob that corresponds to the burner you are lighting and turn it counterclockwise 90º.
        2. Continue pushing the control knob in.
        3. Continue to hold the control knob in and push the ignition button.
        4. Once the burner is lit, continue to hold the control knob in for 20 seconds to allow the thermocouple to heat up and energize the solenoid inside the valve.
        5. Turn the control knob counterclockwise to adjust the output down.
        6. To turn the burner off, turn the control knob clockwise to the off position.
    - **Lighter Method:**
        1. If the burner fails to light using the electronic spark system, turn off the burner for 1 minute to allow the gas to dissipate.
        2. Relight using a match or butane lighter.
        3. Push in the control knob, turn it counterclockwise 90º, and hold it in for 20 seconds to allow the thermocouple to heat up and energize the solenoid inside the valve.
        4. Turn the control knob counterclockwise to adjust the output down.
        5. To turn the burner off, turn the control knob clockwise to the off position.
- **Oven/Broiler Lighting Instructions**
    - The oven and broiler are controlled by the same valve. They cannot be operated at the same time.
    - It is important to pre-heat the oven for 10 minutes to achieve a stable temperature.
    - Ensure that the heat disbursement plate is installed on the side rails located towards the bottom of each oven side, with the circular notches towards the front.

- **Oven - Ignitor Method:**

    1. Push in the oven control knob and turn it counterclockwise to the desired temperature setting.

    2. Continue to hold the control knob in and push the ignition.

    3. Once the burner is lit, continue to hold the control knob in for 20 seconds to allow the thermocouple to heat up and energize the solenoid inside the valve.

    4. Allow the oven to preheat for 10 minutes to achieve a stable temperature.

    5. To turn off the oven, push in and turn the control knob clockwise to the off (vertical) position.

- **Oven - Lighter Method:**

    1. If the oven fails to light using the electronic spark system, turn off the burner for 1 minute to allow the gas to dissipate.

    2. Relight using a match or butane lighter.

    3. Push in the control knob, turn it counter-clockwise to the desired temperature setting, and hold it in for 20 seconds to allow the thermocouple to heat up and energize the solenoid inside the valve.

    4. Allow the oven to preheat for 10 minutes to achieve a stable temperature.

    5. To turn off the oven, push in and turn the control knob clockwise to the off (vertical) position.

- **Broiler - Ignitor Method:**

    1. Push in the oven control knob and turn it clockwise.

    2. Continue to hold the control knob in and push the ignition.

    3. Once the burner is lit, continue to hold the control knob in for 20 seconds to allow the thermocouple to heat up and energize the solenoid inside the valve.

    4. **Broil with the oven door open**.

    5. Do not operate the broiler for more than 20 minutes at a time.

    6. To turn off the broiler, push in and turn the control knob clockwise to the off (vertical) position.

- **Broiler - Lighter Method:**

    1. If the broiler fails to light using the electronic spark system, turn off the burner for 1 minute to allow the gas to dissipate.

    2. Relight using a match or butane lighter.

    3. Push in the control knob, turn it clockwise, and hold it in for 20 seconds to allow the thermocouple to heat up and energize the solenoid inside the valve.

    4. **Broil with the oven door open**.

    5. Do not operate the broiler for more than 20 minutes at a time.

    6. To turn off the broiler, push in and turn the control knob clockwise to the off (vertical) position.

Refrigerators

The boat is equipped with three refrigerators:

- Galley Refrigerator with small freezer – 4.3 CF - Nova Kool R4500DC. Freezer space is 0.6 CF.
- Aft Deck Refrigerator – 1.6 CF - Nova Kool WR 1600.
- Wine Cooler in the forward berth – six bottles - Domestic.

HEATING & AIR CONDITIONING SYSTEMS

Engine Heat

- This cabin heater is available while underway.
- The engines provide heat in the same way as a car heater.
- To turn on the heater, rotate the heater fan switch located by the main helm throttle.
- When the engines are not running, the heater switch should be turned off to conserve batteries.

Webasto Furnace

- The boat is equipped with a Webasto furnace.
- The Webasto system is controlled by the MC04-AirTop Evo control panel.

The control panel has the following features:

  - Main switch ON/OFF.
  - Mode selector knob for:
    - Eco - Energy-saving mode.
    - Normal - Comfort heating.
    - Plus - Fast heating.
    - Fan - Ventilation.
  - Temperature selection for heating/ventilation.
  - Status indicator.
  - Service indicator.

- The normal mode runs the heater at maximum nominal power to quickly warm the interior.
- The plus mode temporarily runs the heater at an increased amount of power for fast heating of the interior. The operation time for this mode is limited, and the heater will automatically switch to normal mode after a period of time.

ELECTRONICS

VHF Radio

- There is one VHF radio on the boat at the main helm.
- It is important to always monitor channel 16 while underway.
- Press the red “16/9” button to power on the radio. Hold it down for 2-3 seconds to power it off.

Depth Sounder

- To activate the depth sounder, open the sonar instrument on Garmin display
- The sounder should provide reliable readings in shallow waters.
- A blinking reading indicates a false reading. False readings can occur in depths of more than 200 feet or in areas of strong currents or tides.

Autopilot

- The boat is equipped with an autopilot, controlled by a Garmin GHC 20 unit.
- The autopilot can be put in standby mode and return to the heading screen.
- The autopilot status is displayed on the heading screen.
- When the device is in standby mode, “Standby” appears in yellow, and the autopilot status indicator appears in yellow.
- When the device is in heading hold, “Heading Hold” appears in green, and the autopilot status indicator appears in green.

Chart plotter

- The boat is equipped with a Garmin Glass Cockpit system.
- The system has an owner's manual available in the display, or it can be downloaded online.

WeBoost cell phone signal booster

- The system is powered by inserting the plug into the socket and switching the power switch.
- No connection is necessary, it automatically boosts signal strength when turned on.

ENTERTAINMENT

The media console is in the forward berth above the TV. It can also be powered on and controlled by the Garmin display at the helm under “A/V Controls.”

Bluetooth pairing

- On the Garming display press “Home” > “A/V Gauges, Controls” (right bar) > “Media”
- Power on the media device if needed
- Presse “Source” and select “Bluetooth”
- Press “Pairing”
- Check the “Discoverable” box
- On your phone Pair New Device and look for UD-750

ANCHORING

Anchor and Rode

- The primary working anchor is a Mantis 35 lb. anchor
    - The anchor rode consists of 5/16" x 50' chain and 5/8" x 150' nylon rode.
- A spare anchor, a Rocna 22 lb anchor, is located in the V-berth.
    - It is connected to 5/16” x 50' chain and 5/8” x 150’ nylon rode.

Windlass

- The vessel has a Lewmar electric windlass
- The windlass can be operated from bow deck switches or from a rocker switch at the main helm.
- The breaker for the windlass is behind the mirror in the bathroom
- Before raising the anchor, the engines should always be started because the windlass uses large amounts of power.
- Turn on the windlass switch.
- As the boat moves toward the anchor, press the ‘up’ control to take up slack line.
- Give the windlass short rests as you are pulling it up.
- Guide the anchor onto the roller as it rises, being careful not to allow it to swing against the hull.

Anchoring Procedure

- Let out sufficient anchor rode (chain and nylon line) before setting the anchor.
- Colored markers are placed every 50 feet on the chain and nylon rode, indicating the amount of rode.
- Put down at least a 3 to 1 scope (60 feet for 20 feet of water).
- Back the anchor in with a short burst from the engine, then let out additional scope depending upon conditions.

Mooring Cans

- The State Park sticker on the vessel allows the use of mooring cans in the parks for free.
    - You only need to register at the kiosk, usually located at the heads of the docks.
- Mooring cans have a metal triangle at the top, with a metal ring attached to the chain.
    - The metal ring is very heavy, and the strongest member of the crew should be picked for this job.
- Approach the can into the wind as if anchoring.
- Have crew members on the bow, one with a boat hook and one with a mooring line secured like a bow line.
- As you slowly approach the can, have the crew holding the boat hook point at the can, so the skipper always knows its location.
- Hook the can and bring the ring up to the boat, so the second crew member can thread the ring with the line.
- Release the hold with the boat hook.
- If the mooring line is led out the starboard chock, bring the end of the line back through the port side. This will create a bridle with about 10 feet of slack from the chock to the can.

DINGHY & OUTBOARD MOTOR

Dinghy Launch and Retrieval Operation

- The dinghy can carry four people (660 lbs) or 1003 lbs of persons, motors, and gear.
- To deploy the dinghy, clip the snap clip of the dinghy line to the top of the rail near the oarlock.
- Holding the dinghy and the line, detach the standoff bars, and lower the dinghy with the line into the water. Note that the dinghy gets heavier as it nears the water.
- When towing the dinghy, keep it tight to the boat any time you slow down or stop.
- Assign one crew member as the "dinghy person" to be responsible for taking up slack in the tow line to avoid wrapping the propeller.
- Coast Guard regulations state that any child 14 and under must wear a life jacket in a dinghy. It is recommended that everyone follow this rule.
- The dinghy is can be deployed or retrieved with a Come-A-Long that can be mounted to the cockpit overhead and is stored in the deck helm cabinet.

Outboard Motor

- The Yamaha F2.5SM is a four-stroke outboard motor.
- The engine is designed to use regular unleaded gasoline. The fuel tank capacity is 0.9 L (0.24 US gal, 0.20 Imp. gal). There is a fuel can stored in the cabinet on the swim step.
- **Before Starting:**

    1. Ensure the boat is tightly moored and you can steer clear of any obstructions. Make sure there are no swimmers in the water nearby.
    2. Make sure that the outboard motor is securely fastened to the transom or a stable stand.
    3. Check the fuel level to ensure there is enough for your trip. A good rule is to use 1/3 of your fuel to get to the destination, 1/3 to return, and to keep 1/3 as an emergency reserve.
    4. Remove the top cowling.

5. Ensure the engine shut-off cord (lanyard) is properly attached to a secure place on your clothing, arm, or leg. Do not attach the cord to clothing that could tear loose or where it could become entangled. Lanyard is stored in the silverware drawer in the galley.

6. Open the air vent valve. Be aware that gasoline vapor will be released, so refrain from smoking or being near any open flames or sparks.

7. Align the fuel cock with the open position.

- **Starting the Engine (Manual Start):**

1. Align the engine start mark " " on the throttle grip with the notch in the tiller handle. If the ambient temperature is -15°C (5°F) or less, turn the throttle grip so the engine start mark is positioned past the notch.

2. Pull out the choke knob fully. It is not necessary to use the choke when starting a warm engine.

3. Slowly pull the manual starter handle until you feel resistance, then give a strong pull straight out to crank and start the engine. If the engine does not start on the first try, repeat the procedure.

4. After the engine starts, slowly return the manual starter handle to its original position before releasing it.

5. Warm up the engine. The manual does not specify an amount of time.

6. Gradually return the choke knob to its original position.

7. Slowly return the throttle grip to the fully closed position.

CRABBING & FISHING

Always check the fishing and crabbing requirements before you leave on your cruise. You will need a license. Many areas are CLOSED to crabbing and fishing on certain months.

CRAB AWAY FROM THE BOAT! Lines can get wrapped around props. Fish-flavored cat food with the pop-up ringed lids work the best for a nice neat way to bait the ring. After 15-20 minutes, retrieve the crab line and ring quickly. Measure the crabs using the CRAB MEASURING GAUGE normally located in the silverware drawer Keep the male crabs of proper size (usually 6 ¼ inches across the carapace). Boil crabs about 12 minutes to cook.

After using, wash equipment thoroughly with fresh water (available from the cockpit shower faucet).
Note -- Please do not store wet rings and gear inside the boat.

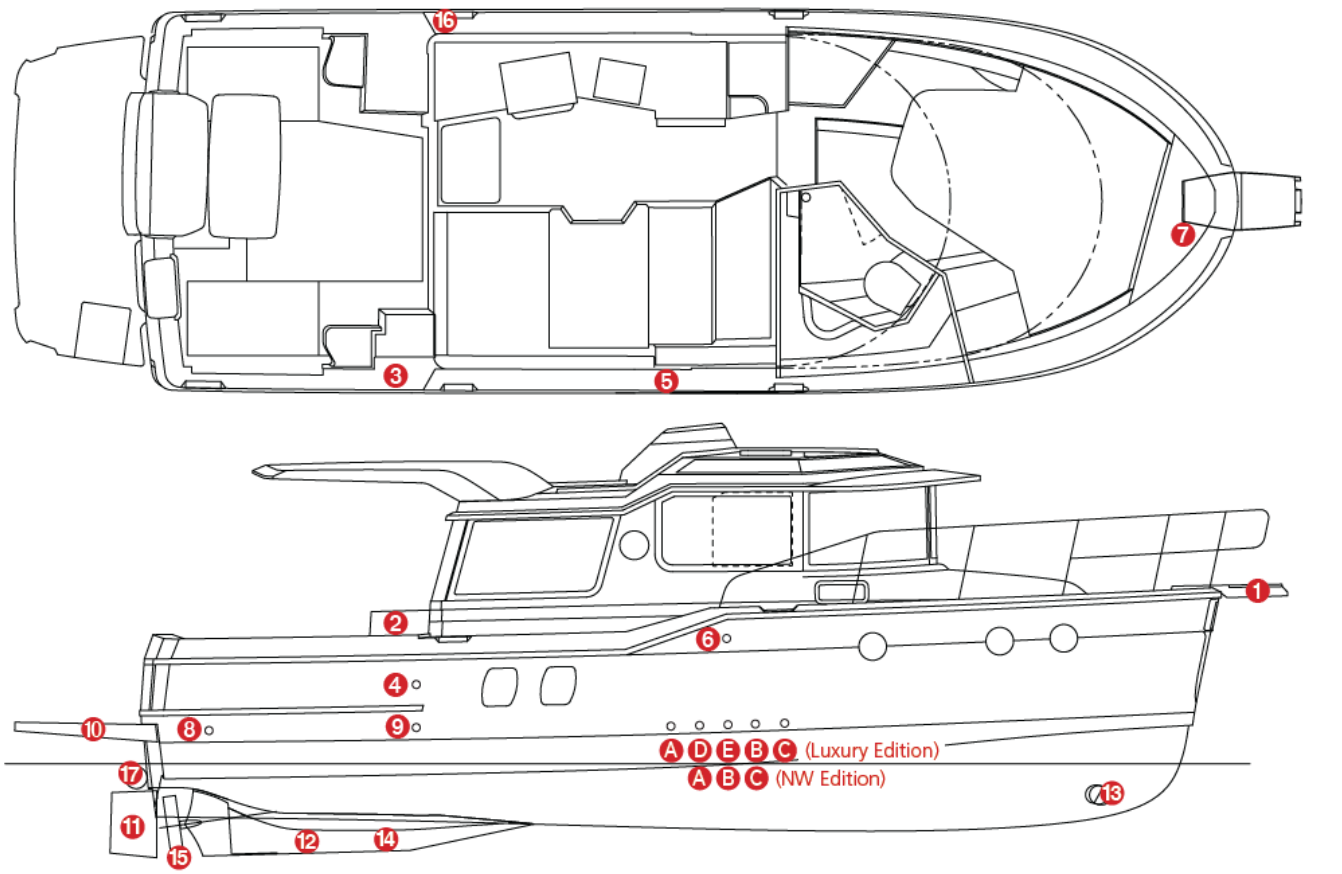
OTHER:

SAFETY should be paramount in your daily cruising. A MAN OVERBOARD DRILL should be discussed and perhaps even practiced with a life jacket. Remember your life jackets are stowed under the after deck and main bed. A few should always be out and ready. Your flares and safety equipment are located in the drawer under the main bed.

The spares are stowed in the lazarette under the sink. This includes oil filter, raw water impeller, pump parts, injectors, and other small parts.

COMPONENT AND THRU-HULL LOCATIONS

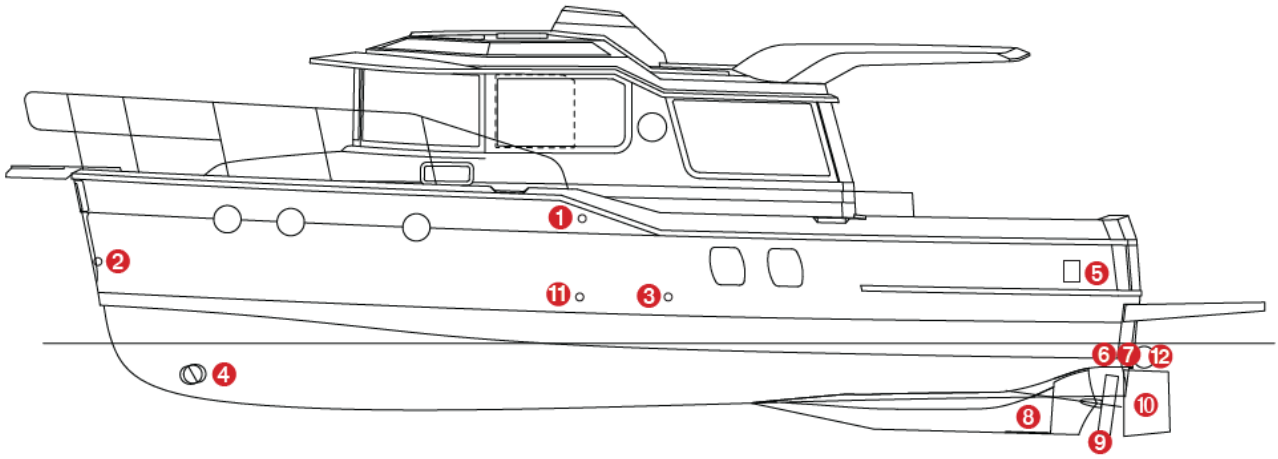
Starboard



1. Bow Ladder
2. Shore Power Inlet(s)
3. Diesel Fill On Deck
4. Fuel Tank Vent
5. Waste Outlet On Deck
6. Holding Tank Vent
7. Foredeck Anchor Windlass Switches
8. Aft Bilge
9. Forward Bilge
10. Boarding Ladder
11. Rudder
12. Keel Drain Plug
13. Bow Thruster
14. Keel
15. Prop
16. Water Fill On Deck
17. Stern Thruster

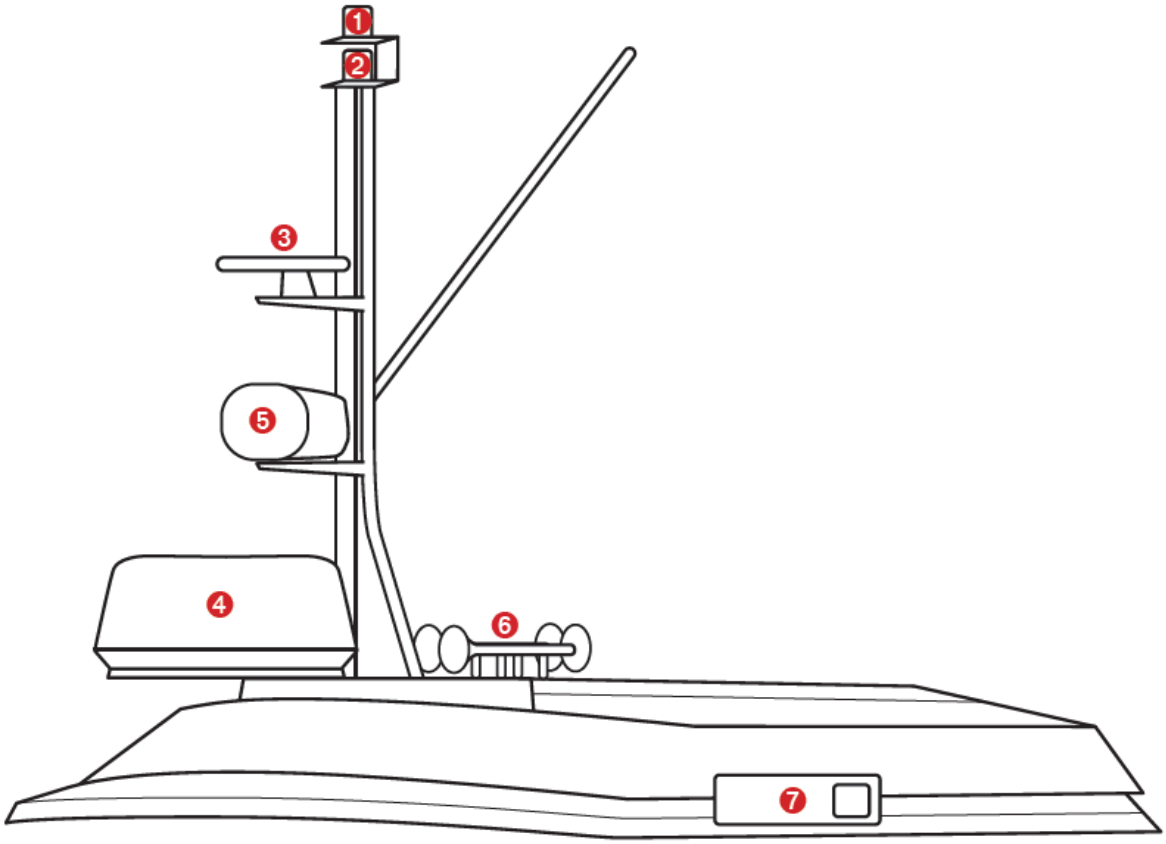
- A Macerator
- B Shower Sump
- C Sink Drain
- D AC Aft
- E AC Forward

Port



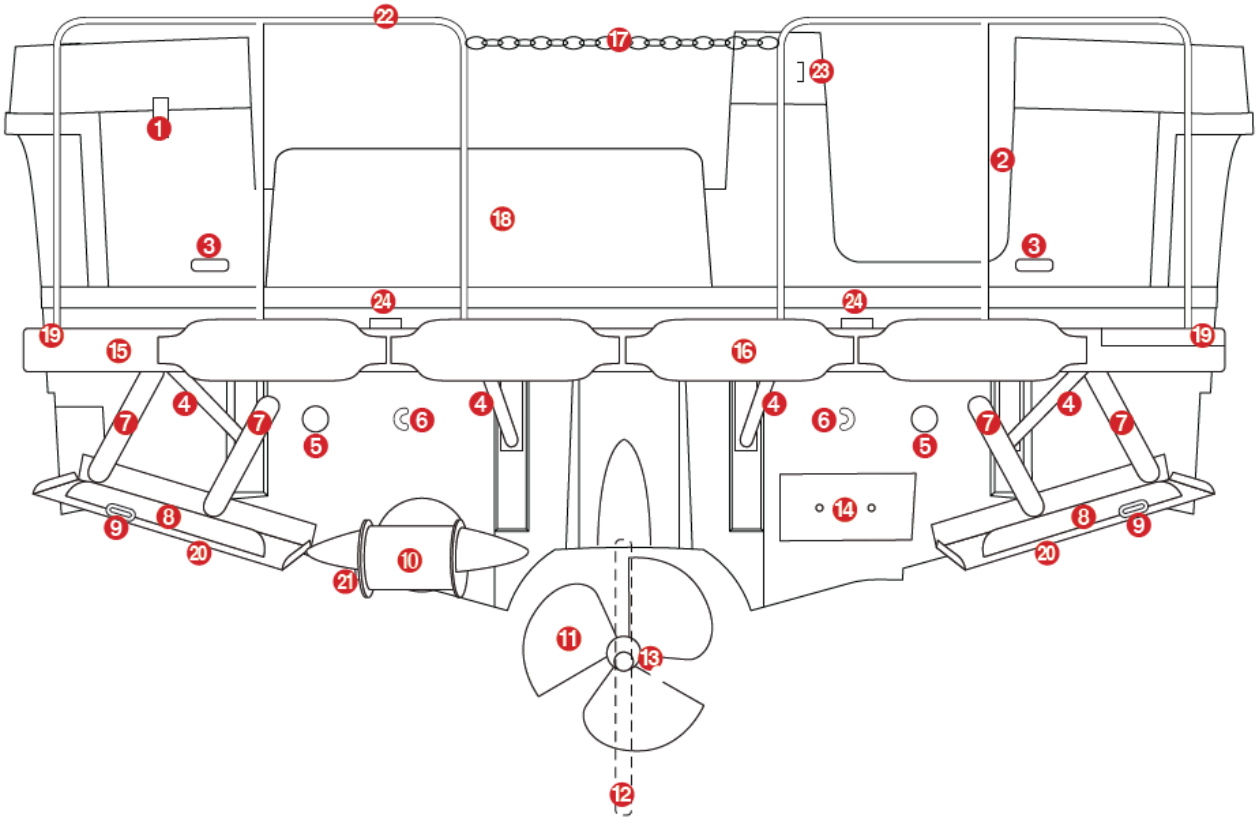
1. Water Tank Vent
2. Anchor Locker Drain
3. Galley Sink Drain
4. Bow Thruster
5. Generator Vent Cover
6. Generator Exhaust
7. Engine Exhaust
8. Keel
9. Prop
10. Rudder
11. Webasto Diesel Heater Exhaust
12. Stern Thruster

Top Deck



1. Anchor Light
2. Running Light
3. TV Antenna
4. Radar
5. Searchlight
6. Horn
7. Navigation Light (RED Port, GREEN Starboard)

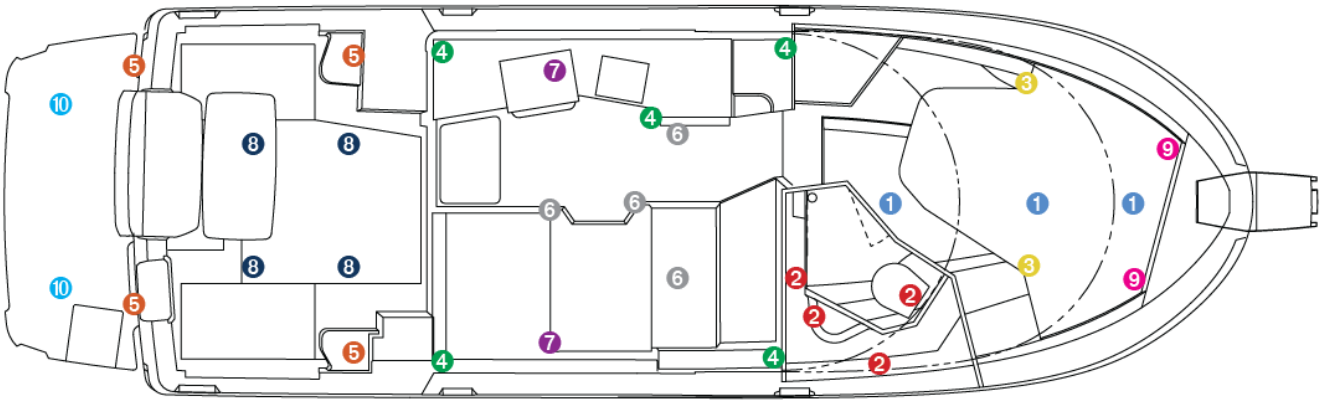
Stern



1. Flagstaff Mount
2. Deck Shower
3. Amber Courtesy Lights
4. Swim Platform Struts
5. Cockpit Drain with Flap
6. Towing Strapdown Eye
7. Trim Tab Ram
8. Trim Tab
9. Under Water Lights
10. Stern Thruster
11. Prop
12. Rudder
13. Prop Zinc
14. Transom Zinc
15. Swim Platform
16. Swim Platform Fenders
17. Rail Chain or Chain Gate
18. Propane Locker
19. Dinghy Cleats
20. Trim Tab Zincs
21. Thruster Zinc
22. Patio Railing
23. Stand Off Mounts
24. Dinghy Davit

Interior

	Main Cabin Switch	Dash Switch	Forward Cabin Switch	Head Switch	Cockpit Switch Panel	Switch On Fixture
1 V-Berth Cabin Lights			✓			
2 Head Lights				✓		
3 Under Bed Lighting			✓			
4 Indirect Cabin Lights	✓					
5 Cockpit & Transom Lights					✓	
6 Red White Combo		✓				
7 Overhead White Lights	✓					
8 Exterior Red/White					✓	
9 Reading Lights						✓
10 Underwater Lights					✓	



SEA STRAINERS

- Specific Sea Strainer Locations:
    - The engine sea strainer is in the engine compartment on the port side.
    - The raw water washdown sea strainer is in the engine compartment on the starboard side.