

441 SEDAN OWNER'S MANUAL

Date of Purchase: _____

Port Engine Serial Number: _____

Starboard Engine Serial Number: _____

Hull Identification Number:_____

Hull Identification Number

- The Hull Identification Number (HIN) is located on the starboard aft corner of the hull, just below the gunnel.
- Record the HIN (and the engine serial numbers) in the space provided above.
- Include the HIN with any correspondence or orders.



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Hazard Boxes & Symbols

The hazard boxes and symbols shown below are used throughout this supplement to call attention to potentially dangerous situations which could lead to either personal injury or product damage. Read *all* warnings carefully and follow *all* safety instructions.

DANGER!

This box alerts you to immediate hazards which *WILL* cause severe personal injury or death if the warning is ignored.

🚹 WARNING!

This box alerts you to hazards or unsafe practices which *COULD* result in severe personal injury or death if the warning is ignored.

CAUTION

This box alerts you to hazards or unsafe practices which *COULD* result in minor personal injury or cause product or property damage if the warning is ignored.

NOTICE

This box calls attention to installation, operation or maintenance information, which is important to proper operation but is not hazard related.



Chapter 1: Welcome Aboard!

- This *Owner's Manual* provides specific information about your yacht that is *not* covered in the *Cruiser & Yacht Owner's Manual Supplement*.
- The *Cruiser & Yacht Owner's Manual Supplement* contains general information about safe operating practices, general boating regulations, and general maintenance techniques. Information that is more specific to your particular yacht is found in this *Owner's Manual*.
- **Before** using your yacht, study this *Owner's Manual*, the *Cruiser & Yacht Owner's Manual Supplement*, and **all** engine and accessory literature carefully. If similar instructions are found in more than one manual, **always** refer to the specific manufacturer's manual (such as the engine manual) for the most complete and accurate information.
- Keep this *Owner's Manual* and the *Cruiser & Yacht Owner's Manual Supplement* on your yacht in a secure, yet readily available place.

Dimensions & Tank Capacities

Overall Length	Length Rigged	Bridge Clearance	Beam	Draft (Hull)	Draft (Maximum)	Fuel Tanks	Freshwater Tanks	Holding Tank
47' 2"	49' 1/2"	19' 6"	14' 3"	2' 8"	3' 2"	432 Gallons	150 Gallons	55 Gallons

Dealer Service

- Your dealer is your key to service.
- Ask your dealer to explain *all* systems *before* taking delivery of your yacht.
- Contact your dealer if you have any questions or problems with your new yacht.
- If your dealer cannot help, call our customer service hotline: 360-403-2198 or send us a FAX: 360-403-1158.
- Buy replacement parts from any authorized Meridian dealer.
- You can access on-line parts catalogs, links to vendor websites, and other helpful features by logging on to <u>www.meridiancustomercare.com</u>.

Warranty Information

- Meridian offers a Limited Warranty on each new Meridian purchased through an authorized Meridian dealer.
- A copy of the Limited Warranty was included in your owner's packet.
- If you did not get a copy of the Limited Warranty, please contact your Meridian dealer or call 360-403-2198 for a copy.

Boating Experience

WARNING!

CONTROL HAZARD!

An experienced operator *MUST* be in control of your yacht at *ALL* times. Do *NOT* operate your yacht while under the influence of alcohol or drugs.

If this is your first yacht or if you are changing to a type of yacht you are not familiar with, for your own comfort and safety, get handling and operating experience *before* assuming command of your yacht.

Take one of the boating safety classes offered by the U.S. Power Squadrons or the U.S. Coast Guard Auxiliary. For more course information, including dates and locations of upcoming classes, contact the organizations directly:

- U.S. Power Squadrons: 1-888-FOR-USPS (1-888-367-8777) or on the Internet at: http://www.usps.org
- In Canada, for the CPS courses call 1-888-CPS-BOAT.
- U.S. Coast Guard Auxiliary: 1-800-368-5647 or on the Internet at: http://www.cgaux.org

Outside the United States, your Meridian dealer, national sailing federation, or local boat club can advise you of local sea schools or competent instructors.

Qualified Maintenance



Failure to maintain your yacht's systems (listed in the warning above) as designed could violate the laws in your jurisdiction and could expose yourself and others to the danger of bodily injury or accidental death.

Follow the maintenance instructions in:

- this Owner's Manual
- the Cruiser & Yacht Owner's Manual Supplement
- the engine owner's manual, and;
- *all* accessory literature.

Structural Limitations

The command bridge is designed to be lightweight for proper yacht balance. The command bridge load limit, as shown on the bridge capacity label, is 1000 pounds, evenly distributed.



Engine & Accessory Guidelines & Literature

NOTICE

BEFORE starting or working on your engines, read the engine manual.

NOTICE

BEFORE using the accessories on your yacht, read the accessory manuals.

NOTICE

BEFORE storing your yacht, refer to your engine and accessory manuals for storage/ winterization instructions.

NOTICE

Certain modifications to your yacht *WILL* result in cancellation of your warranty protection. *ALWAYS* check with your dealer *BEFORE* making any modifications to your yacht.

- Your yacht's engines and accessories were selected to provide optimum performance and service.
- Installing different engines or adding accessories may affect your yacht's running trim.
- If you choose to install different engines or add accessories that may affect your yacht's running trim, have a trained marine technician perform a safety inspection and handling test *before* using your yacht again.
- The engines and accessories on your yacht have their own manuals. Read these manuals *before* using the engines and accessories.

Unless noted otherwise, *all* engine and accessory literature referred to in this *Owner's Manual* is included in your owner's packet.

While the topics listed below may be included in this *Owner's Manual* and in the *Cruiser & Yacht Owner's Manual Supplement, always* refer to the engine manual first for specific information on these important subjects:

- Engine Break-in Procedure
- Engine Starting and Stopping
- Gear Shifting

- Fuel and Oil Recommendations
- Engine Maintenance
- Engine Storage/Winterization

Propellers

ENGINE DAMAGE HAZARD!

The factory standard propellers may not be the best for your particular yacht and load conditions. Refer to the engine manual for engine RPM ratings. The engines should reach, but *NOT* exceed the full rated RPM when full-throttle is applied.

Immediately contact your local Meridian dealer if:

- The engines cannot reach the full rated RPM when full-throttle is applied, or;
- The engines exceed the full rated RPM when full-throttle is applied.
- Keep the propellers in good repair and at the correct pitch for your particular situation.
- A slightly bent or nicked propeller will adversely affect the performance of your yacht.



Safety Standards

DANGER!

FALLING and ROTATING PROPELLER HAZARD!

• *NEVER* allow anyone to ride on parts of your yacht *NOT* designed for such use.

• Sitting on seat backs, lounging on the forward deck, bow riding, gunwale riding or occupying the transom platform while underway is especially hazardous and *WILL* cause personal injury or death.

DANGER!



- FALLING, ROTATING PROPELLER and CARBON MONOXIDE POISONING HAZARD!
- *NEVER* allow anyone to occupy, or hang from, the back deck or transom platform while the engines are running.
- Teak surfing, dragging, or water skiing within 20 feet of a moving watercraft can be fatal.

A DANGER!

PERSONAL SAFETY HAZARD!

• ALWAYS secure the anchor and other loose objects BEFORE getting underway.

<u>____</u>

• The anchor and other items that are *NOT* properly secured can come loose when your yacht is moving and cause personal injury or death.

WARNING!

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

Examples Include:

- Engine and generator exhaust
- Engine and generator fuel, and other liquids such as coolants and oil, especially used motor oil
- Cooking fuels
- Cleaners, paints, and substances used for vessel repair
- Waste materials that result from wear of vessel components
- Lead from battery terminals and from other sources such as ballast or fishing sinkers

To Avoid Harm:

- Keep away from engine, generator, and cooking fuel exhaust fumes.
- Wash exposed skin thoroughly with soap and water after handling the substances above.
- Your yacht's mechanical and electrical systems were designed to meet safety standards in effect at the time it was built.
- Some of these standards were mandated by law, and all of them were designed to insure your safety and the safety of other people, vessels and property.

Read this Owner's Manual, the Cruiser & Yacht Owner's Manual Supplement, the engine owner's manual, and **all** accessory instructions for important safety standards and hazard information.

Special Care for Moored Yachts

- Whether moored in saltwater or freshwater, your yacht will collect marine growth on its hull bottom.
- This will detract from your yacht's beauty, greatly affect its performance, and may damage the gel coat.
- There are two ways to slow marine growth:
- 1. Periodically haul your yacht out of the water and scrub the hull bottom with a bristle brush and a solution of soap and water.
- 2. Occasionally reapply the anti-fouling paint on your hull bottom. How often your hull needs new anti-fouling paint depends on many factors. Ask your selling dealer or local marina for advice.

Sacrificial Anodes (Zincs)

NOTICE

- Do *NOT* paint between the zinc and the metal surface it contacts and do *NOT* paint over the zincs.
- If the zincs are not bonded correctly, they will NOT provide protection.

Your yacht features sacrificial anodes (zincs) to protect underwater metal parts from excessive deterioration. Check the zincs regularly and replace them if they have deteriorated more than 70%.

There are many factors that affect the rate at which the zincs deteriorate, including:

- Water temperature
- Salinity
- Water pollution
- Stray electrical current

Stray electrical current from your yacht, another boat, or the dock may cause complete deterioration of the zincs in just a few weeks. If there is rapid zinc deterioration, measure the electrolytic corrosion around your yacht with a corrosion test meter.



NEW SACRIFICIAL ANODE



DETERIORATED SACRIFICIAL ANODE

Yacht Lifting

A WARNING!

PERSONAL INJURY and/or PRODUCT or PROPERTY DAMAGE HAZARD!

- Lifting slings can slip on the hull, which could cause serious injury or death.
- Reduce the risk of sling slippage by *ALWAYS* securing the lifting slings together *BEFORE* lifting.

WARNING!

PERSONAL INJURY and/or PRODUCT or PROPERTY DAMAGE HAZARD!

NEVER lift your yacht using the cleats.

WARNING!

PERSONAL INJURY and/or PRODUCT or PROPERTY DAMAGE HAZARD!

- Water in the bilge can shift and change the balance of the load.
- If water is present in the bilge, pump the water out of the bilge areas *BEFORE* lifting your yacht.

PRODUCT or PROPERTY DAMAGE HAZARD!

- When lifting any boat, ALWAYS use a spreader bar.
- The spreader bar *MUST* be equal to the width of the boat at each lifting point.
- Make sure your yacht remains level during lifting. Engines can be damaged by water ingestion if the stern is lifted higher than the bow.
- *Always* follow the lift equipment's instructions and requirements.
- When lifting your yacht, *always* position the lifting slings at the port and starboard lifting sling label positions, as shown in the illustration.



Carbon Monoxide (CO)

À DANGER!
 Carbon monoxide gas (CO) is colorless, odorless, tasteless, and extremely dangerous. <i>ALL</i> engines, generators, and fuel burning appliances produce CO as exhaust. Prolonged exposure to low concentrations or very quick exposure to high concentrations <i>WILL</i> cause <i>BRAIN DAMAGE</i> or <i>DEATH</i>. Teak surfing, dragging, or water skiing within 20 feet of a moving water-craft can be fatal.

CO Facts

- CO poisoning causes a significant number of boating deaths each year.
- Called the "silent killer", CO is an extremely toxic, colorless, odorless and tasteless gas.
- CO can harm or even kill you inside or outside your yacht.
- CO can affect you whether you're underway, moored, or anchored.
- CO symptoms are similar to seasickness or alcohol intoxication.
- CO can make you sick in seconds. In high enough concentrations, even a few breaths can be fatal.
- Breathing CO blocks the ability of your blood to carry oxygen.
- The effects are cumulative. Even low levels of exposure can result in injury or death.

Factors that Increase the Effects of CO Poisoning

- Age
- Smokers or people exposed to high concentrations of cigarette smoke
- Consumption of alcohol
- Lung disorders
- Heart problems
- Pregnancy

Where & How CO Can Accumulate

Stationary conditions that increase CO accumulations include:



To correct stationary situations A and/or B:

- *Close all* windows, portlights and hatches.
- If possible, move your yacht away from source of CO.

Running conditions that increase CO accumulations include:



To correct running situations C and/or D:

- Trim bow down.
- *Open* windows and canvas.
- When possible, run yacht so that prevailing winds help dissipate exhaust.

How to Protect Yourself & Others From CO

- Know where and how CO may accumulate in and around your yacht (see above).
- Always maintain fresh air circulation throughout your yacht.
- Know where your engine and generator exhaust outlets are located and keep everyone away from these areas.
- *Never* sit on, or hang onto, the back deck or transom platform while the engines or generator are running.
- *Never* enter the areas under transom platforms where exhaust outlets are located.
- Although CO can be present without the smell of exhaust fumes, if exhaust fumes are detected on your yacht, take *immediate* action to dissipate these fumes.
- Treat symptoms of seasickness as possible CO poisoning. Get the person into fresh air *immediately*. Seek medical attention—unless you're sure it's not CO.
- Maintain the CO monitors that are installed inside your yacht. *NEVER* ignore any alarm. Replace monitors as recommended by the monitor manufacturer.
- Follow the checklists provided on the next page.
- Get a Vessel Safety Check.

For information about free VESSEL SAFETY CHECKS, visit www.vesselsafetycheck.org or contact your local U.S. Coast Guard Auxiliary or United States Power Squadrons®.

- U.S. Coast Guard Auxiliary: 1-800-368-5647 or on the Internet at: http://www.cgaux.org
- U.S. Power Squadrons: 1-888-FOR-USPS (1-888-367-8777) or on the Internet at: http://www.usps.org



CO Checklists

Trip Checklist

- Educate *all* passengers about the symptoms of CO poisoning and where CO may accumulate.
- U When docked, or rafted with another boat, be aware of exhaust emissions from the other boats.
- □ Make sure you know where the exhaust outlets are located on your yacht.
- Confirm that water flows from the exhaust outlets when the engines and generator are started.
- Listen for any change in exhaust sound, which could mean an exhaust component failure.
- Test the operation of each CO monitor by pressing the test button.

Monthly Checklist

- □ Make sure *all* exhaust clamps are in place and secure.
- Look for exhaust leaking from exhaust system components. Signs include rust and/or black streaking, water leaks, or corroded or cracked fittings.
- □ Inspect rubber exhaust hoses for burned, cracked, or deteriorated sections. *All* rubber hoses should be pliable and free of kinks.

Annual Checklist

Have a Trained Marine Technician:

- **□** Replace exhaust hoses if cracking, charring, or deterioration is found.
- **□** Ensure that your engines and generators are properly tuned, and well maintained.
- □ Inspect each water pump impeller and the water pump housing. Replace if worn. Make sure cooling systems are in working condition.
- □ Inspect *all* metallic exhaust components for cracking, rusting, leaking, or loosening. Make sure they check the cylinder head gasket, exhaust manifold, water injection elbow, and the threaded adapter nipple between the manifold and the elbow.
- Clean, inspect, and confirm proper operation of the generator cooling water anti-siphon valve (if equipped).

CO Monitors

WARNING!

- The 24-hour-load sub-main breaker on the battery management panel must be *On* for the CO monitors to work.
- Leave this breaker *On* at all times unless system maintenance requires turning it *Off*.
- This breaker bypasses the battery switches. Turning *Off* the battery switches will *Not* turn *Off* power to this breaker.
- For the location of the battery management panel, see the *Component Locations* section in *Chapter 2* of this *Owner's Manual*.

NOTICE

The stereo memory and CO monitors place a small, but constant drain on the house batteries. If your yacht will be unattended for an extended amount of time, plug into shore power with the battery charger turned *On*.

- *NEVER* disconnect the CO monitors.
- Read the manufacturer's instructions for your CO monitors. If you did not get the manufacturer's instructions, call (800) 383-0269 and they will be mailed to you.

More Information

For more information about preventing carbon monoxide poisoning on recreational boats and other boating safety tips, contact:

United States Coast Guard Office of Boating Safety (G-OPB-3)	National Marine Manufacturers Association (NMMA)	American Boat & Yacht Council, Inc. (ABYC)	
2100 Second Street SW	200 East Randolph Drive	613 Third Street	
Washington, DC 20593	Suite 5100	Suite 10	
www.uscgboating.org	Chicago, IL 60601-9301	Annapolis, MD 21403	
1-800-368-5647	www.nmma.org	www.abycinc.org	
	312-946-6200	410-990-4460	

For information about free VESSEL SAFETY CHECKS, visit www.vesselsafetycheck.org or contact your local U.S. Coast Guard Auxiliary or United States Power Squadrons®.

- U.S. Coast Guard Auxiliary: 1-800-368-5647 or on the Internet at: http://www.cgaux.org
- U.S. Power Squadrons: 1-888-FOR-USPS (1-888-367-8777) or on the Internet at: http://www.usps.org

Chapter 2: Locations

Exterior Views

Hull Views



Forward & Starboard Deck View



Aft Deck View



Command Bridge Helm Station



Lower Helm Station (If Equipped)



Component Locations

12-Volt DC Accessory Outlets:

• One is located at the command bridge helm.



• One is located on the ignition switch panel at the lower helm (if equipped).



• One is located on the forward side of the port hanging locker in the master stateroom.



• One is located aft of the hanging locker on the starboard wall of the guest stateroom.



• One is located on the starboard wall above the corner lounge in the salon.



12-Volt DC Circuit Breakers:

• The main circuit breakers are on the battery management panel (located on the aft wall of the utility room).

WARNING: The CO monitors and the bilge pumps will not work unless the 24-hour-load sub-main circuit breaker is *On*! Leave this breaker *On* at all times except when system maintenance requires turning it *Off*.



• The utility room sub-main breaker panel is located on the aft wall of the utility room.



• The salon sub-main breaker panel is located inside the electrical cabinet in the port aft corner of the salon.



• The stateroom submain breaker panel is located inside the starboard aft cabinet in the guest stateroom.





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Air Conditioners (4 total) (If Equipped):

- One is located under the mattress in the master stateroom.
- Access through the hatch in the bottom of the storage locker.



- One is located under the mattress in the guest stateroom.
- Access through the forward hatch.



- Two are located under the command bridge dash area.
- Access through the hatch under the glove box on the port side of the helm.



Batteries:

- The house batteries are located in the utility room.
- The engine starting batteries and the stern thruster batteries are located in the engine room.



• The bow thruster batteries are located in the box under the hallway floor hatch.



Battery Chargers:

- The battery chargers for the house and engine batteries are located on the aft wall of the utility room.
- The thruster battery converters are located on the forward wall of the utility room.



Battery Management Panel (Battery Switches):

- Located on the aft wall of the utility room.
- Access through the salon floor hatch.



Bilge Pumps (4 total):

- One is located in the bilge area under the guest stateroom.
- Access through the aft floor hatch in the guest stateroom.



- The auxiliary bilge pump is located under the utility room stairs.
- The autofloat switch and strainer are located in the box under the pump.
- Access the autofloat switch and strainer by removing the box lid.



- One is located in the box directly below the battery management panel in the utility room.
- Access by removing the bilge box hatch directly under the battery management panel.



• One is located aft of the generator in the engine room bilge area.



Bridge Cool Air Seawater Intake System (If Equipped): Located in the port forward bilge area of the engine room.



Bridge Cool Air Units (If Equipped):

- One is located under the port forward lounge seat on the command bridge.
- One is located under the port aft lounge seat on the command bridge.



CO Monitors (3 total):

• One is located in the ceiling above the bar in the starboard aft corner of the salon.



• One is located on the forward wall of the guest stateroom.



• One is located in the ceiling in the port aft corner of the master stateroom.





City Water Inlet: Located inside the transom storage hatch.



Depth Finder Transducer: Located in the engine room bilge, forward of the starboard engine.



Engine Cooling System Seawater Intake Seacocks: Located in the engine room bilge, forward of the batteries.



Engine Room: Access through the cockpit floor hatch.



Freshwater Fill Deck Fitting: Located at the aft end of the starboard deck trail.

NOTE: The port and starboard freshwater tanks are connected and both will fill when using this fitting.



Freshwater Pump:

Located on the port side of the utility room, aft of the water heater.





Freshwater Pump Breaker: Located on the right side of the 12-volt DC control box in the utility room.



Freshwater Tank Monitor: Located inside the electrical cabinet in the port aft corner

of the salon. **NOTE:** The key switches on

the 12-volt DC salon submain panel must be *On* in order to read the gauges.



Freshwater Tanks: Located in the utility room, inboard of the fuel tanks.



Freshwater Washdown Faucets (2 total):

• One is located inside the anchor locker on the starboard side of the forward deck.



• One is located inside the transom storage hatch.



Fuel Fill Deck Fittings: Located on the port and starboard sides of the aft deck area.



Fuel Tank Fittings:

• Access the port fuel tank fittings through the floor hatch under the port aft chair in the salon.



• Access the starboard fuel tank fittings through the floor hatch under the incliner on the starboard side of the salon.




Generator: Located in the center aft area of the engine room.

Generator Seawater Intake Seacock & Strainer: Located forward of the generator in the engine room bilge.

Heat Exchange Fan Switch (If Equipped): Located on the inboard side of the galley forward

cabinet, next to the hallway steps grab rail.



HEAT EXCHANGE FAN SWITCH GRAB RAIL

Heat Exchange Shut-off Valve (If Equipped): Located in the engine room, forward of the port engine.



Holding Tank: Located in the forward center bilge area of the utility room.



Holding Tank Monitor: Located inside the electrical cabinet in the port aft corner of the salon.

NOTE: The key switches on the 12-volt DC salon submain panel must be *On* in order to read the gauges.



Holding Tank Pump-out Deck Fitting (marked WASTE): Located on the starboard deck trail, forward of the freshwater fill deck fitting.









Macerator Switches (If Equipped): Located in the electrical cabinet in the port aft corner of the salon.



Macerator Underwater Discharge Seacock (**If Equipped**): Located in the utility room bilge area, starboard of the holding tank.



Marine Head Vacuum Flush Pumps:

- The master stateroom head's vacuum flush pump is located inboard of the water heater on the port side of the utility room.
- The guest head's vacuum flush pump is located inboard of the starboard fuel tank in the util-ity room.



Seawater Washdown Faucets (2 total) (If Equipped):

• One is located inside the anchor locker on the starboard side of the forward deck.



• One is located inside the transom storage hatch.



Seawater Washdown Intake Seacock (If Equipped): Located in the utility room bilge area, just forward of the starboard house battery.

Seawater Washdown Pump (If Equipped): Located on the starboard side of the utility room.



Seawater Washdown Pump Breaker (If Equipped): Located on the right side of the 12-volt DC control box in the utility room.



Shore Power Inlet(s): Located inside the transom storage hatch.



Spotlight: Located on the forward deck.





Spotlight Control Panel: Located at the command bridge helm and, if equipped, at the lower helm.

Sump Pump & Box:

- Located under the bottom hallway step.
- Access by removing the top of the step.







Trim Tab Hydraulic Fluid Reservoir & Pump: Located just aft of the generator muffler on the starboard side of the engine room.



Utility Room: Access the utility room through the salon floor hatch.





Wall Vacuum Outlet (If Equipped): Located on the port wall of the hallway,

just above the middle step.



Wall Vacuum Unit (If Equipped):

- Located under the bottom hallway step. •
- Access by removing the top of the step.





Water Heater: Located in the utility room, forward of the port fuel tank.







Chapter 3: Propulsion & Related Systems

Engines

NOTICE

Read the engine manual BEFORE starting or working on your engines.

While the topics listed below may be included in this *Owner's Manual* and in the *Cruiser & Yacht Owner's Manual Supplement*, *always* refer to the engine manual first for specific information on these important subjects:

- Engine Break-in Procedure
- Engine Starting and Stopping
- Gear Shifting

- Fuel and Oil Recommendations
- Engine Maintenance
- Engine Storage/Winterization

Engine Cooling System

WARNING!

FLOODING and SWAMPING HAZARD!

- Close all seacocks when leaving your yacht unattended for any length of time.
- If a seacock is left open, a hose failure could flood the bilge, swamp the batteries and the engines, and even sink your yacht.

SYSTEM DAMAGE HAZARD!

- Open the engine cooling system seacocks BEFORE starting the engines.
- Keep the engine cooling system seacocks *Open* while the engines are running.

Refer to the engine operation manual for cooling system details.

- *Open* the seawater intake seacock for each engine *before* starting the engines.
- Keep the seacocks *Open* while the engines are running.
- Check the cooling system's seawater strainers for leaks and debris *every time* you use your yacht.
- See the *Seawater Systems* section in *Chapter 6* of this *Owner's Manual* for instructions about cleaning the seawater strainers.



Exhaust System



- To reduce the chance of CO entering the living spaces, fill any gaps around engine room plumbing, cableways, exhaust systems, doors, hatches, and access panels.
- Read the Carbon Monoxide (CO) section in Chapter 1 of this Owner's Manual.
- *Always* consider the sea conditions *before* anchoring or shutting *Off* the engines.
- The exhaust system is designed to keep seawater out of the engines in most sea conditions.
- However, do *not* anchor the stern to sea or shut the engines *Off* if high seas might flood the exhaust system.



Bilge Blower Systems





- The bilge blowers remove explosive fumes from the engine room and utility room bilge areas.
- Fresh air is drawn into these areas through the vents.

To make sure the bilge areas are properly ventilated:

- Always run the bilge blowers for at least four minutes before starting the engines or the generator.
- Use the "sniff test" to check the bilge areas for fuel vapors *before* starting the engines or the generator.
- Continue to run the blowers until your yacht has reached cruising speed.
- Always run the blowers when operating your yacht below cruising speed.

Fuel System



- It is very important that the fuel system be inspected thoroughly the first time it is filled and at each subsequent filling.
- Read the fueling instructions in the engine operation manual and the *Cruiser & Yacht Owner's Manual Supplement*.

CAUTION

Avoid the storage or handling of gear near the fuel lines, fittings and tank.

NOTICE

- Air in the diesel supply system can stop an engine or severely restrict performance.
- If you suspect air in the fuel lines, refer to your engine operation manual for detailed instructions on how to bleed the system.

NOTICE

Carefully read the fuel section of both the *Cruiser & Yacht Owner's Manual Supplement* and the engine operation manual, paying special attention to the subject of *fuel recommendations*.

Fuel Fills & Vents

- The fuel fill deck fittings are marked DIESEL.
- If you have problems filling either fuel tank, see if the fuel fill hose or fuel tank vent hoses are kinked or collapsed.
- If there are no visible signs of a problem, contact your local dealer.



Electronic Fuel Shut-off Valves

- Your diesel engines are equipped with electronic fuel shut-off valves.
- When you start your engines, the electronic fuel shut-off valves open to allow fuel to the engines.
- When you turn off the engines, the electronic fuel shut-off valves close, stopping the fuel from going to the engines.
- If one of the electronic fuel shut-off valves malfunction, it has a manual override.
- Turn the manual override clockwise to open the electronic fuel shut-off valve.



Fuel Filter/Water Separators

NOTICE

Refer to the fuel filter/water separator manual for important service instructions.

Fuel Transfer Pump (If Equipped)

CAUTION ENVIRONMENTAL HAZARD! NEVER transfer fuel into a full (or nearly full) fuel tank. Fuel transferred into a full tank may spill overboard through the tank venting system.

The fuel transfer pump allows you to move fuel from one tank to another. Reasons for using the fuel transfer pump:

- To move fuel into an empty tank.
- To balance the fuel levels between each tank.
- 1. The house battery switch must be turned *On* for the fuel transfer pump to run.
- 2. **Before** transferring fuel, check the fuel gauges to make sure that fuel is not about to be transferred into a full (or nearly full) tank. For accuracy, check the fuel gauges when your yacht is **not** underway.
- 3. After checking the fuel levels, hold the fuel transfer switch *On* to the side you want to pump fuel to. NOTE: This switch must be *held On* throughout the entire fuel transfer process.
- 4. When the desired amount of fuel has been transferred, release the switch.
- If the fuel transfer pump does not run when you follow the steps above, check the pump's breaker on the 12-volt DC utility room sub-main circuit breaker panel (for the location of this panel, see the *Component Locations* section in *Chapter 2* of this *Owner's Manual*).



• If the pump is running, but you are having problems transferring fuel, see if the fuel transfer hose or fuel tank vent hose is kinked or collapsed. If there are no visible signs of a problem, contact your local dealer.

Oil Change System (If Equipped)

- The oil change system makes it easier to drain and refill the engine and generator oil.
- Read the oil change system instructions for information on the use of this system.



Fire Suppression Systems (If Equipped)

- The fire suppression systems are designed to put out engine room and utility room fires.
- *Before* using your yacht for the first time, read the fire suppression systems' instruction and maintenance manual and follow *all* warnings.
- The systems will discharge automatically whenever direct heat from a fire is detected in the engine room or utility room. **NOTE:** The systems can discharge separately.
- The systems can *only* be discharged *once*.
- After a system is discharged it *must* be refilled and refurbished *before* it can be used again.



Shaft-Transmission Alignment

CAUTION

SYSTEM DAMAGE HAZARD!

- If you suspect a shaft-transmission alignment problem, have a trained mechanic inspect the alignment as soon as possible.
- Continued use may lead to premature engine, transmission, shaft, shaft seal and/or hull damage!

Alignment between the engine transmission output shaft and the propeller is critical. The alignment was done at the factory and was rechecked by the dealer after your yacht had been in the water for 48 hours.

- Have a marine mechanic inspect the alignment after the first 30 hours of operation. From then on, have the alignment rechecked after every 60 hours of operation. At any time, if unusual noise or vibration is noticed, have the alignment inspected *immediately*.
- Shaft-transmission alignment should be done by a marine mechanic since it requires moving the engine and prop shaft.
- To insure proper alignment after a haul out or dry storage, wait 48 hours after launching *before* final alignment adjustments by a marine mechanic are made.

Shaft Log Packless Sealing System

Read the shaft seal instruction manual for maintenance and inspection details.



Chapter 4: Controls & Gauges

Steering

Hydraulic Steering System

- Your yacht features a hydraulic steering system.
- Check the fluid level in the hydraulic steering reservoir at each helm every time you use your yacht.
- Yacht steering is *not* self-centering.

Rudder Stuffing Gland

- The rudder stuffing gland is part of the assembly where the rudders emerge from the bottom of your yacht.
- The rudder stuffing gland should *not* leak any water.
- If a leak develops, it can usually be stopped by tightening the stuffing gland nuts *slightly*.
- Do *not* over tighten the stuffing gland nuts.
- If stuffing gland leakage becomes excessive, packing replacement can be done as follows:
- 1. Remove your yacht from the water.
- 2. Loosen the stuffing gland nuts and back the stuffing gland from the sleeve.
- 3. Remove the old packing.
- 4. Wrap new packing around the shaft.
- 5. Cut the rings with a razor blade at an angle approximately 30 degrees to the long axis of the shaft.
- 6. Stagger the ends of each ring around the shaft and insure that the rings are at the bottom in the sleeve.
- 7. Tighten the stuffing gland nuts until resistance is felt.



Autopilot (If Equipped)

A WARNING!

- *NEVER* leave the helm while the autopilot system is *On*!
- An experienced operator *MUST* monitor the autopilot system at *ALL* times and keep a visual lookout for other marine traffic and other hazards.

NOTICE

The autopilot system is ONLY an aid to navigation. It's accuracy can be affected by:

- Equipment failure or defects
- Environmental conditions
- Improper handling or use
- *Before* using the autopilot system, read the autopilot instruction manual(s).
- The autopilot will aid you in maintaining the chosen course of your yacht.
- To turn this system **On**, the house battery switch on the battery management panel **must** be switched **On**, the helm autopilot switch **must** be switched **On**, then power up the autopilot.

Shift/Throttle Controls

WARNING!

LOSS OF CONTROL HAZARD!

Improper maintenance of shift/throttle hardware may cause a sudden loss of control!

- Your yacht is equipped with DTS (digital throttle and shift) controls.
- Read *all* of the information about the shift/throttle controls in the shift/throttle controls' manual, the engine operation manual, and the *Cruiser & Yacht Owner's Manual Supplement*.

Engine Synchronization (If Equipped)

Follow the instructions in the synchronization section of the shift/throttle controls' manual.

Trim Tabs

- Read the trim tabs' owner's manual *before* using the trim tabs.
- The trim tabs are controlled by two rocker switches at the helm.
- Check and refill the trim tab hydraulic fluid reservoir as directed in the trim tabs' owner's manual.
- For the location of the fluid reservoir, see the *Component Locations* section in *Chapter 2* of this *Owner's Manual*.



Dual Thruster System



- This system features bow and stern thrusters that can help you maneuver your yacht while docking.
- The thrusters can be controlled from either helm.
- The thrusters can be controlled from either the switchpad or the joystick.
- Read the thruster's user manual *before* using the thrusters for the first time. Follow *all* user precautions carefully.



Gauges

Cleaning the Gauges

CAUTION

PRODUCT or PROPERTY DAMAGE HAZARD!

- Use ONLY mild soap and water to clean the gauge lenses and bezels.
- Use of other cleaners, including common window cleaning solutions, may cause the lenses to crack.
- Lenses cracked in this manner will NOT be covered by our warranty.

Gauge Fogging

- Moisture may occasionally find its way into the gauges causing lens fogging.
- Turning *On* the gauge lights will help dry the lenses.
- Fogging will not harm the gauges.

Radio Transmission Interference

VHF or other radio transmissions may cause brief erratic readings on the tachometers. This will not damage these gauges or affect their accuracy when the radio is not transmitting.

Twin Engine Readings

It is normal for tachometers and other gauges to have slightly different readings between engines.

Fuel Gauges

It is normal for the pointers on your fuel gauges to bounce as fuel sloshes back and forth in the fuel tanks.

SmartCraft Gauges

Your yacht is equipped with SmartCraft Digital gauges. Please refer to the owner's manual for the details of their operation.

Vessel View (If Equipped)

The Vessel View monitor will provide you with information about your yacht's propulsion system. *Before* using this system, read the instruction manual.

Video Monitoring System (If Equipped)

Your yacht may feature transom and engine room cameras. Refer to the manufacturer's manuals for operating instructions.



Chapter 5: Navigation & Communication Equipment

Read the manuals for *all* navigation & communication equipment *before* using these systems.

Compass

NOTICE

- Compass accuracy can be affected by many factors.
- Have a trained technician calibrate your compass.
- Make sure the technician gives you a deviation card which shows the corrections to apply in navigational calculations.
- Keep a copy of the deviation card at each helm.

Depth Finder

🔥 WARNING!

- Do *NOT* use the depth finder as a navigational aid to prevent collision, grounding, yacht damage or personal injury.
- When your yacht is moving, submerged objects will *NOT* be seen until they are already under your yacht.
- Bottom depths may change too quickly to allow time for your yacht to react.
- If you suspect shallow water or submerged objects, run your yacht at very slow speeds.

VHF Radio

- Your yacht may include a VHF (Very High Frequency) radio.
- As permitted by the FCC (Federal Communications Commission), the VHF radio can be used to access weather reports, summon assistance, or contact other vessels.
- Contact the FCC for licensing, rules and laws concerning VHF radio usage.

Radar (If Equipped)

🔥 WARNING!

- Radar is meant to help the navigator, *NOT* replace him/her.
- The operator is responsible for keeping a visual look-out for possible collision situations.
- No single navigation aid (including this radar) should be relied upon as the only method for navigating your yacht.

NOTICE

The radar system is ONLY an aid to navigation. It's accuracy can be affected by:

- Equipment failure or defects
- Environmental conditions
- Improper handling or use
- *Before* using the radar system, read the radar instruction manual(s).
- The marine radar system gives you a complete and accurate 360° radar view of other vessels, buoys, and landfall surrounding your vessel.
- To turn this system *On*, the helm sub-main breaker on the battery management panel *must* be switched *On*, then power up the radar/GPS chart plotter.

Global Positioning System (GPS) (If Equipped)

🛕 WARNING!

- The GPS system should NOT be relied upon as the ONLY aid to navigation.
- An experienced operator *MUST* monitor the GPS system at *ALL* times and keep a look-out for other marine traffic and possible collision situations.

NOTICE

The GPS system is only an aid to navigation. It's accuracy can be affected by:

- Equipment failure or defects
- Environmental conditions
- Improper handling or use
- *Before* using the GPS chart plotter, read the GPS instruction manual(s).
- GPS receivers provide reliable and accurate position data, anywhere in the world.
- To turn this system *On*, the helm sub-main breaker on the battery management panel *must* be switched *On*, then power up the GPS chart plotter.



Chapter 6: Plumbing

Bilge Pumps

NOTICE

Discharge of oil, oil waste or fuel into navigable waters is prohibited by law. Violators are subject to legal action by the local authorities.

- Your yacht has several bilge pumps for pump-ing water out of the bilge.
- The autofloat switches, which are either built into or located next to the bilge pumps, will turn **On** the bilge pumps if bilge water rises above a preset level.
- You can also turn *On* the bilge pumps using the switches at the helm.
- The bilge pumps are wired to the batteries via the 24-hour-load circuit breaker. Unless the batteries are dead, the bilge pump system should work even when your yacht is unattended.

WARNING: The CO monitors and the bilge pumps will not work unless the 24-hour-load sub-main circuit breaker is *On*! Leave this breaker *On* at all times except when system maintenance requires turning it *Off*.

High Water Alarm & Auxiliary Bilge Pump

The high water alarm warns you that there may be an excessive amount of water entering your bilge areas.

- FORWARD BILGE PUMP & AUTOFLOAT SWITCH AUXILIARY BILGE PUMP, PICKUP/STRAINER, & AUTOFLOAT SWITCH Contraction of the local division of the loc 1.401 MASTER DRAINAGE SYSTEM PIPE 100 Q 200 UTILITY ROOM AFT BILGE PUMP & AUTOFLOAT SWITCH AFT BILGE PUMP & AUTOFLOAT SWITCH NOTE: ALL BILGE PUMPS ARE IMPELLER TYPE EXCEPT THE AUXILIARY BILGE PUMP WHICH IS A DIAPHRAGM PUMP.
- If an excessive amount of water enters the bilge area, the high water alarm will sound and automatically turn *On* the auxiliary bilge pump.
- *Immediately* find and repair the source of the water leak.

Testing Bilge Pumps

- The bilge pumps and autofloat switches are vital to the safety of your yacht.
- As described below, test the bilge pumps and autofloat switches often.
- 1. One at a time, turn **On** the bilge pump switches at the helm.
- 2. Make sure that water in the bilge is pumped overboard.

If there is water in the bilge and a pump motor is running, but *not* pumping, inspect the discharge hose for a kink or collapsed area.

If the discharge hose looks okay, the bilge pump and/or strainer may be clogged with debris. Go to the websites below for cleaning and maintenance instructions:

www.attwoodmarine.com

www.johnson-pump.com

Testing Autofloat Switches

- The autofloat switches turn **On** the bilge pumps when bilge water rises above a preset level.
- The autofloat switches are either built into or located next to the bilge pumps they control.
- Test the autofloat switches often as follows:

Lift the float by twisting the test knob. The bilge pump should turn **On**.

- If the pump does not turn **On**, check the fuse on the 24-hour-load fuse block.
- If the fuse is good it may mean the switch is bad, or the battery is dead.

Seawater Systems

Seacocks

WARNING!

FLOODING and SWAMPING HAZARD!

- Close all seacocks when leaving your yacht unattended for any length of time.
- If a seacock is left open, a hose failure could flood the bilge, swamp the batteries and the engines, and even sink your yacht.

SYSTEM DAMAGE HAZARD!

- BEFORE using any system that has a seacock, make sure that the system's seacock is Open.
- Inspect and lubricate all seacocks annually.

Thru-hull inlet or outlet fittings near or below the waterline feature seacock valves. You can close a seacock to stop water entry:

- If the hose connected to the seacock fails, or;
- To work on equipment served by the seacock.

Seacocks are used on your yacht in seawater intake or liquid-discharge systems including, but not limited to:

- Engines
- Generator
- Air conditioners (if equipped)
- Seawater washdown (if equipped)

Before using any system with a seacock, make sure the seacock is Open and stays Open until the system is shut Off.

Seawater Strainers

- FLOODING HAZARD!
- *BEFORE* taking apart a seawater strainer for cleaning or other work, *Close* the seacock that sends seawater to that strainer.
- Failure to close the seacock before taking apart the seawater strainer may allow large amounts of water to flood the bilge, which could swamp the batteries and the engines, and even sink your yacht.
- Keep the seacock *Closed* until the seawater strainer is completely reassembled.

SYSTEM DAMAGE HAZARD!

- After putting the seawater strainer back together, make sure that the seacock valve is *Open BEFORE* using the component/system.
- Seawater strainers are used to filter incoming seawater in *some* seawater intake systems. NOTE: Not all seawater intake systems have seawater strainers.
- If equipped, the seawater strainer is located near the seawater intake system's seacock.
- Check the strainers for leaks and/or debris *every time* you use your yacht.
- Refer to the seawater strainer instruction sheet for cleaning and maintenance information.



Seawater Washdown (If Equipped)

WARNING!

FLOODING and SWAMPING HAZARD!

- *NEVER* leave your yacht unattended while the seawater washdown system is running.
- Any leak or break in this system may allow large amounts of water to flood the bilge, which could swamp the batteries and the engines, and even sink your yacht.
- *Close* the intake seacock when leaving your yacht unattended for any length of time.

CAUTION

SYSTEM DAMAGE HAZARD!

BEFORE turning On the seawater washdown system, make sure the intake seacock is Open.



- Always make sure the seawater intake seacock is **Open before** turning the seawater washdown system **On**.
- Turn *On* the seawater washdown pump circuit breaker to pressurize this system (the utility room sub-main breaker on the battery management panel must also be *On*).
- For the location of the seawater washdown pump circuit breaker, see the *Component Locations* section in *Chapter 2* of this *Owner's Manual*.



Freshwater System

A WARNING!

- ONLY use safe drinking (potable) water in your yacht's freshwater system.
- *ONLY* use FDA approved "drinking water safe" hoses when filling the freshwater tank or connecting to city water.
- NEVER use a common garden hose for drinking water.
- Read the Freshwater System section in the Cruiser & Yacht Owner's Manual Supplement.
- Your yacht is equipped with a pressure type (demand) freshwater (potable) system.
- Pressurize the freshwater system by either turning *On* the freshwater pump circuit breaker or connecting to city water.
- See the *Component Locations* section in *Chapter 2* for the locations of the freshwater pump circuit breaker and the city water inlet.
- *Always* turn *Off* the city water supply on the dock before leaving your yacht unattended.
- Turn *Off* the freshwater pump circuit breaker when your yacht is not in use or when the freshwater tank is empty.
- Inspect and clean the freshwater filter often (located on the freshwater pump).
- If your yacht is to be left unattended for a long period of time, pump the freshwater tank dry to prevent stored water from becoming stagnant and distasteful.
- If the freshwater system needs to be disinfected, ask your dealer about the treatments available.



Transom Shower

- Read the manufacturer's instructions *before* using the transom shower for the first time.
- To use the transom shower, your yacht *must* be connected to city water, or the freshwater pump switch *must* be turned *On*.



City Water Inlet

🛕 WARNING!

FLOODING and SWAMPING HAZARD!

- *ALWAYS* turn *Off* the city water supply on the dock before leaving your yacht unattended.
- Any leak or break in this system may allow large amounts of water to flood the bilge, which could swamp the batteries and the engines, and even sink your yacht.
- Read the *City Water Hookup* portion of the *Freshwater System* section in the *Cruiser & Yacht Owner's Manual Supplement.*
- Turn *Off* the freshwater pump's 12-volt DC breaker *before* pressurizing the freshwater system with a city water supply.



Freshwater System Winterization

- 1. Turn *Off* the water heater breaker on the 110-volt AC master panel.
- 2. Turn *Off* the freshwater pump breaker.
- 3. Remove the transom shower head from the hose and hang the hose over the side or into a large bucket (at least 10 gallon capacity).
- 4. Turn *On* the freshwater pump breaker.
- 5. When water stops coming out of the transom shower hose, turn *Off* the freshwater pump breaker, and reinstall the transom shower head on the hose.
- 6. Remove all of the remaining water from the lines using the compressed air method and/or the gravity draining method (described below).
- 7. Pour at least 2 gallons of RV antifreeze into the freshwater tank. *Only* use RV antifreeze in your freshwater system. *Never* use engine antifreeze or any other products or chemicals in your freshwater system.
- 8. Turn *On* the freshwater pump breaker.
- 9. Turn on the transom shower until you see antifreeze coming out of the shower head.
- 10. Turn *Off* the freshwater pump breaker.

To prep the freshwater system for use after storage:

- 1. Perform steps one through five above except, in step five do not turn off the freshwater pump breaker, and do not reinstall the shower head.
- 2. Instead, a gallon at a time, add freshwater to the tank and pump it through the system.
- 3. Continue this process until the water flowing out of the shower hose is clear.
- 4. Reinstall the transom shower head on the hose, and fill the freshwater tank.

Compressed Air Water Removal Method

CAUTION

FRESHWATER SYSTEM DAMAGE HAZARD!

- A faucet *MUST* be *Open* when compressed air is blown through the freshwater system.
- NEVER blow compressed air through the water system when ALL of the faucets are Closed.

Using an air compressor with an air hose and nozzle:

- 1. Remove the water line from the outlet side of the freshwater pump (opposite side from filter).
- 2. *Open* the faucet that is furthest away from the freshwater pump.
- 3. Place the air nozzle against the end of the just removed water line and blow air through the system.
- 4. When water stops coming out of the faucet, stop the air and *Close* the faucet.
- 5. One at a time, repeat this process on *all* faucets and showers.
- 6. Reinstall the water line to the outlet side of the freshwater pump (opposite side from filter).



Gravity Draining Water Removal Method

- 1. Open all faucets and showers.
- 2. Remove the drain plug from the tee fitting on the freshwater tank connecting pipe.
- 3. When the water has stopped draining from the freshwater tanks and the water lines, replace the drain plug.

Water Heater

🚹 WARNING!

SCALDING HAZARD!

Water heated by the water heater can be hot enough to scald the skin.

WATER HEATER DAMAGE HAZARD!

- Do *NOT* turn *On* the water heater electrical circuit on the 110-volt AC master panel until the water heater tank is *COMPLETELY* filled with water.
- The tank is full if water flows from the tap when the hot water is turned *On* in the galley.
- Even brief water heater operation with a dry tank *WILL* damage the heating elements.
- Warranty replacements will *NOT* be made on elements damaged in this manner.
- Turn the power *Off* and drain the water heater when the chance of freezing exists (see winterizing instructions below).

NOTICE

If 110-volt AC power is being provided by shore power or generator power, but the water heater is not working:

- Make sure the water heater circuit breaker on the 110-volt AC master panel is switched On.
- If the circuit breaker is *On*, but the water heater is still not working, ask your dealer how to check the push-to-reset circuit breaker located on the water heater.
- Read the water heater instruction manual and heed the warnings above.
- The water heater is connected to the 110-volt AC power system.
- To heat the water, turn **On** the water heater breaker on the 110-volt AC master panel.

Winterizing the Water Heater

CAUTION

WATER HEATER DAMAGE HAZARD!

- *NEVER* turn *On* the water heater breaker on the 110-volt AC master panel while the water heater tank is empty.
- Even brief water heater operation with a dry tank *WILL* damage the heating elements.
- Warranty replacements will *NOT* be made on elements damaged in this manner.
- To prevent damage to the water heater after winterizing, always label the breaker switch on the 110-volt AC master panel as 'winterized'.

NOTICE

The freshwater system *MUST* be drained *BEFORE* winterizing the water heater (see the *Freshwater System Winterization Instructions* earlier in this section).

- 1. Turn *Off* the water heater breaker.
- 2. Disconnect the hose (A) attached to the pressure relief valve (B).
- 3. If there is any water in this hose, drain it into the bilge or into a bucket.
- 4. *Open* the pressure relief valve (B).
- 5. *Open* the drain valve (C).
- 6. Attach a tag to the water heater breaker to indicate that the tank is empty.
- NOTE: Your yacht came with a tag attached to the water heater breaker. It is suggested that you keep this tag and re-use it when winterizing.
- Leave the pressure relief and drain valves *Open* until you fit out your yacht after storage.



Preparing the Water Heater for Use After Yacht Storage



- *NEVER* turn *On* the water heater breaker on the 110-volt AC master panel while the water heater tank is empty.
- To test if the tank is full, turn *On* a hot water faucet. If water flows from the tap, the water heater tank is full.
- Even brief water heater operation with a dry tank *WILL* damage the heating elements.
- Warranty replacements will *NOT* be made on elements damaged in this manner.

When you are ready to resume use of your yacht after it has been in storage, prepare the water heater for use as follows:

- 1. *Close* the drain valve (C).
- 2. *Close* the pressure relief valve (B).
- 3. Connect the hose (A) to the pressure relief valve (B).
- 4. Fill the water heater tank with freshwater.
- Remove the 'winterized' tag on the water heater breaker on the 110-volt AC master panel AFTER the water heater tank is COM-PLETELY filled with freshwater.
- 6. Turn *On* the water heater breaker.



Drain Systems

Deck Drains

- Water on the deck is drained overboard through the deck drains.
- Keep the deck drains free of debris.

Gray Water Drain System

- Gray water above the waterline is gravity drained overboard through the master drainage system (see next page).
- Gray water below the waterline drains into a sump pump box (see below).

Sump Pump Drain System

- The head floors, showers and (if equipped) stateroom air conditioners condensation drain into the sump pump box.
- The sump pump box has an autofloat switch.
- When the drain water rises to a preset level, the autofloat switch turns **On** the sump pump, and the drain water is pumped overboard through the master drainage system.



Sump Box Cleaning

Periodically clean the sump box, filter, and pump as follows:

- 1. Release the tabs (A) on one side of the box.
- 2. Rotate the lid (B) up and remove it from the box.
- 3. Remove any debris from the box and the filter.
- 4. Clean the sump pump. (Go to www.attwoodmarine.com for sump pump cleaning instructions.)
- 5. Replace the lid by carefully setting the lid gasket (C) onto the box edges and pressing down until all tabs snap into place.

Sump System Winterization

Drain the sump pump system in the winter months when not in use.

- 1. Disconnect and drain *all* lines to the unit.
- 2. Loosen the hold-down screws (D), then slide the box and lift.
- 3. Turn the box upside down to remove the rest of the water.
- 4. Reinstall by positioning the mounting feet (E) over the screws, slide box into position, then tighten the holddown screws (D) and reconnect the system.





Master Drainage System View



Marine Heads & Holding Tank

NOTICE

Check with local authorities about the legal use of marine head systems.

Vacuum Flush Head System

WARNING!

OVERFILLED HOLDING TANK HAZARDS!

NEVER overfill the holding tank! An overfilled holding tank is both a serious public health hazard and a product/property damage hazard!

- Any toilet flushing after the holding tank is full will force clogging-waste into the tank's vent system.
- If the vent system becomes clogged, further toilet flushing will dangerously pressurize the holding tank.
- The possible hazards of a pressurized holding tank range from human waste leaking through damaged tank fittings, all the way up to an explosive rupture of the tank.

Perform the following steps to avoid overfilling the holding tank:

- Frequently check the holding tank monitoring gauge.
- Regularly verify the monitoring gauge readings by looking at the side of the tank to see the content level.
- Use restrooms onshore whenever possible to reduce the amount of waste flushed into the holding tank.
- Empty, flush out, and add a marine holding tank deodorizer to the holding tank after *EVERY* trip, and at *EVERY* opportunity during long trips.
- Before using your vacuum flush head, read the vacuum flush head's operation and maintenance manual.
- The vacuum flush head system uses freshwater from the freshwater tank and a vacuum pump to flush waste from the toilet into the holding tank.
- The holding tank is plumbed to a fitting on the deck for dock-side pump-out.
- Before each trip make sure the holding tank vent system is working properly. Check for obstructions such as insect nests at the vent thru-hull fitting.
- *IMMEDIATELY* replace the vent filter if:
 - a. odor is present when flushing.
 - b. holding tank has been overfilled.
 - c. holding tank is difficult to empty.


- Only human waste and rapid-dissolving boat or RV toilet tissue can be safely flushed into your holding tank. *NEVER* flush anything else.
- Use ONLY rapid-dissolving boat or RV toilet tissue. NEVER use residential-type tissue.
- Use restrooms onshore when possible. By using onboard facilities only when no other option is available, you will help prevent overfilling of your holding tank.
- To check the content level of the holding tank, look at the monitoring gauge (for the location of this gauge, see the *Component Locations* section in *Chapter 2* of this *Owner's Manual*).
- Empty the holding tank at every opportunity.

Holding Tank Cleaning Tip

If possible, perform the following steps near the end of each trip to help clean and flush the holding tank:

- 1. Several miles from the end of each trip, stop at a pump-out station with a non-potable water source.
- 2. Pump-out the holding tank.
- 3. Fill the holding tank 1/2 full of fresh non-potable water. **NOTE:** *Never* use a potable (drinkable) water source to perform this step.
- 4. Get back underway. The agitation while cruising home will help clean the tank.
- 5. Empty, flush out, and add a marine holding tank deodorizer to the tank before docking or mooring your yacht.

Winterizing the System

Read the marine head's operation and maintenance manual for winterizing instructions.

Macerator (If Equipped)

To use the macerator to pump waste directly overboard (where laws permit):

- 1. *Open* the underwater discharge valve.
- 2. Press both macerator switches at the same time to run the pump.
- 3. Stop running the macerator as soon as the holding tank is empty.
- 4. *Close* the underwater discharge valve when you are done pumping.
- For the locations of the underwater discharge valve and the macerator switches, see the *Component Locations* section in *Chapter 2* of this *Owner's Manual.*





Air Conditioners (If Equipped)

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DANGER!

- CARBON MONOXIDE POISONING HAZARD!
 - Dangerous carbon monoxide gas (CO) can be brought into your yacht through the air conditioning system.
 - Read the Carbon Monoxide (CO) section in Chapter 1 of this Owner's Manual.

WARNING!

FLOODING and SWAMPING HAZARD!

- *Close* all seawater intake seacocks when leaving your yacht unattended for any length of time.
- If a seacock is left open, a hose failure could flood the bilge, swamp the batteries and the engines, and even sink your yacht.

CAUTION

SYSTEM DAMAGE HAZARD!

The air conditioning system's seawater intake seacock *MUST* be *Opened BEFORE* turning *On* the air conditioner and *MUST* stay *Open* during use.



- Read the air conditioner manual *before* using the air conditioning system.
- *Before* using the air conditioning system, make sure the breakers on the 110-volt AC master panel are turned *On* and that the system's seawater intake seacock is *Open*.
- The seacock *must* remain *Open* while the air conditioner is in use.
- Check the seawater strainer for debris *before* each use of the air conditioning system.
- If the strainer needs to be cleaned out, follow the directions in the *Seawater Systems* section in *Chapter 6* of this *Owner's Manual.*



Bridge Cool Air (If Equipped)



WARNING!

FLOODING and SWAMPING HAZARD!

- *Close* all seawater intake seacocks when leaving your yacht unattended for any length of time.
- If a seacock is left open, a hose failure could flood the bilge, swamp the batteries and the engines, and even sink your yacht.

SYSTEM DAMAGE HAZARD!

The bridge cool air system's seawater intake seacock *MUST* be *Opened BEFORE* turning *On* the bridge cool air system and *MUST* stay *Open* during use.



- Read the manufacturer's instruction manual *before* using the bridge cool air system.
- *Before* using the bridge cool air system, turn *On* the breakers on the 110-volt AC master panel, and *Open* the seawater intake seacock and drain valve.
- The seacock and drain valve *must* remain *Open* while the bridge cool air system is in use.
- Check the seawater strainer for debris *before* each use of the bridge cool air system.
- If the strainer needs to be cleaned out, follow the directions in the *Seawater Systems* section in *Chapter 6* of this *Owner's Manual*.



Heat Exchanger Cabin Heater (If Equipped)

Your yacht may feature a heat exchanger cabin heater. This heater runs directly off the port engine. *Before* using the heat exchanger cabin heater:

- 1. Read the manufacturer's instruction manual.
- 2. Make sure the circulation loop shut-off valve is *Open*.
- 3. Turn *On* the circuit breaker for the heater fan.
- If the heat exchanger circulation loop is **Open** and the port engine is running the heater wil
- TO/FROM PORT ENGINE VALVE HEATER HEATER

engine is running, the heater will radiate heat even if the heater fan is turned Off.

• All circulation to the heater can be shut Off by Closing the circulation loop shut-off valve.

Electric Heaters (If Equipped)

- Read the manufacturer's instruction manual *before* using the electric heaters for the first time.
- Turn *On* the breaker(s) on the 110-volt AC master panel *before* using the electric heaters.



Chapter 8: Deck Equipment

Cleats

WARNING!

PERSONAL INJURY and/or PRODUCT or PROPERTY DAMAGE HAZARD! *NEVER* lift your yacht using the cleats.

Carefully read the section on towing in the *Cruiser & Yacht Owner's Manual Supplement* before towing anything behind your yacht or having your yacht towed by another vessel.

Windlass

DANGER!

PERSONAL SAFETY & PRODUCT DAMAGE HAZARD!

An unsecured anchor could accidentally release while your yacht is moving, damaging your yacht and causing serious injury or death.

After retrieving the anchor:

- Secure the anchor with an anchor safety strap, or a chain stopper.
- Switch *OFF* the windlass circuit breaker to prevent accidental operation.

PRODUCT DAMAGE HAZARD!

Do *NOT* rely on the windlass alone to hold your yacht at anchor. After setting the anchor, tie the rode off to a cleat or equivalent strong point.

Do *NOT* pull your yacht to the anchor using the windlass, or continue running the windlass if it has stalled or is overloaded.

- Read and follow the manufacturer's instruction manual *before* using the anchor windlass for the first time.
- The windlass can be controlled from a switch at the helm or from the deck foot switches.
- Make sure that the windlass circuit breaker is turned *On before* using the anchor windlass.
- To raise the anchor, use engine power (*not* the windlass) to move your yacht to, and directly above, the anchor.
- Dislodge the anchor from the bottom by pulling it straight up with the windlass.
- Before getting underway, make sure the anchor is secured and the windlass circuit breaker is turned Off.



Radar Wing (If Equipped)

🚹 CAUTION

PRODUCT DAMAGE HAZARD!

- When installing accessories on the radar wing, the maximum hole size diameter is 3/4 of an inch (0.75").
- Larger hole sizes will affect the structural integrity of the radar wing.

Gangway (Passerelle) (If Equipped)

The gangway manufacturer's instruction manual contains important operating and safety information.

- Read the manufacturer's instruction manual *before* using the gangway for the first time.
- Make sure that the gangway breaker on the 12-volt DC battery management panel is turned *On before* using the gangway. For the location of the 12-volt DC battery management panel, see the *Component Locations* section in *Chapter 2* of this *Owner's Manual*.

Bimini Tops & Enclosures (If Equipped)



PRODUCT or PROPERTY DAMAGE HAZARD!

Take down and securely stow ALL canvas & vinyl BEFORE your yacht is transported by road.

NOTICE

BEFORE cleaning and/or stowing your canvas or vinyl, read the sections later in this chapter, *Canvas Care* and *Clear Vinyl Care*.

NOTICE

Bimini top installation is a two-person job.

- Your yacht features either a hardtop or a radar wing. Bimini top and enclosure options vary.
- Make sure your selling dealer fully explains the installation procedures for your particular needs.
- Photos of typical bimini top hardware (if equipped) are shown for your information.
- When installing your bimini top (if equipped), the jaw slides should *not* need to be adjusted.
- If you decide to adjust the jaw slide positions, get the correct measurements from your selling dealer.



Canvas Care (see also 'Clear Vinyl Care' on next page)

- After each use, especially in saltwater, rinse the canvas with cold freshwater.
- Before stowing, let the canvas air-dry completely.
- The canvas can be rolled or folded for stowage.

Cleaning the Canvas

NEVER use detergents when washing the canvas. Detergents can destroy the water repellency and mildew/UV resistant finish of your canvas.

Regularly clean the canvas to prevent dirt, pollen, and etc. from embedding in the fabric. Generally, it is easiest to wash the canvas while it is installed on your yacht.

- 1. Use a soft-bristled brush to remove all dust and loose dirt.
- 2. Hose down the canvas with freshwater.
- 3. Gently wash the canvas with a solution of lukewarm water (no more than 100° F) and non-detergent mild soap, such as Ivory Snow®, Dreft®, or Woolite®.
- 4. Rinse thoroughly to remove the soap.
- 5. Before stowing, let the canvas air-dry completely.

Stubborn Stains

CAUTION

- Soaking in bleach solutions may remove the waterproof finish of the fabric and may also decrease the life of the polyester thread used in the canvas.
- If necessary, a water repellent treatment should be reapplied to your canvas. Ask your dealer about the treatments available for your yacht's canvas.

Some stubborn stains may resist normal washing and you can try the following methods. However, these methods may remove the waterproof finish of the fabric and may also decrease the life of the polyester thread used in the canvas. Reapply a water repellent treatment as necessary.

Method 1

- 1. Add 1/8 cup (1 oz.) of non-chlorine bleach to one gallon of water and mix thoroughly.
- 2. Thoroughly wet the canvas and then gently scrub the stained area with the weak bleach solution.
- 3. Rinse with cold water to remove all of the solution.

Method 2

- 1. Add 1/2 cup (4 oz.) of **non-chlorine** bleach and 1/2 cup (4 oz.) Ivory Snow®, Dreft®, or Woolite® to one gallon of water and mix thoroughly.
- 2. Soak the canvas in this solution for about 20 minutes.
- 3. Rinse with cold water to remove all of the solution.

Clear Vinyl Care

CAUTION

- *NEVER* store the clear vinyl pieces wet, as this will cause a milky film to develop.
- NEVER fold or crease the clear vinyl pieces as cracking will occur.
- Clear vinyl is *NOT* intended for use when your yacht is in storage or being moored.
- Clear vinyl does NOT hold up well against ultraviolet rays.
- Under direct sunlight conditions, do *NOT* let the clear vinyl touch the framework. The framework radiates heat and can burn the clear vinyl.
- After each use, especially in saltwater, rinse the clear vinyl with cold freshwater.
- *Before* stowing, the clear vinyl must be completely dry. Air-drying is best, but you can also carefully dry the vinyl with a chamois or soft cotton cloth.
- The clear vinyl can be rolled or laid out flat for stowage.
- *Never* fold or crease the clear vinyl parts as cracking *will* occur.

Cleaning Clear Vinyl

Regularly clean the clear vinyl to prevent dirt, pollen, and etc. from marring the surface. Generally, it is easiest to clean the clear vinyl while it is installed on your yacht.

- 1. Hose down the clear vinyl with freshwater.
- Using a soft cotton cloth (paper towels are abrasive and should *never* be used on clear vinyl), gently wash the clear vinyl with soap and water.
- 3. Rinse thoroughly to remove the soap.
- 4. *Before* stowing, the clear vinyl must be completely dry. Air-drying is best, but you can also carefully dry the vinyl with a chamois or soft cotton cloth.
- Ask your dealer about products available to keep the clear vinyl polished and looking new.

Hard Polycarbonate Bridge Enclosure Care

- Follow the 'cleaning clear vinyl' instructions above. Use only mild detergents (Woolite®, Joy®, etc.).
- Ask your dealer about products available to keep the hard polycarbonate polished and looking new.
- The hard polycarbonate can be stored flat or standing. It cannot be rolled or folded.



Chapter 9: Appliances & Entertainment Systems

NOTICE

Always keep an approved ABC-type fire extinguisher near stoves and grills.

All appliances and entertainment systems installed on your yacht come with their own manuals. These manuals contain detailed instructions and important safeguards. Read these manuals before using your yacht's appliances and entertainment systems.

NOTE: When using shore power or generator power, make sure the 110-volt AC breaker is turned **On** for the appliance or entertainment system you wish to use.

Galley & Salon Appliances

Electric Stove



contact with heated units or areas near the units (burner tops, main frame sides and back, sea rails and pot holders) until they have had sufficient time to cool.

Refrigerator

The refrigerator runs on 12-volt DC power unless 110-volt AC power is being supplied by shore power or generator power and the refrigerator's circuit breaker on the 110-volt AC master panel is **On**.

Icemaker (If Equipped)

The icemaker runs on 110-volt AC power, supplied by either shore power or generator power. The icemaker's circuit breaker on the 110-volt AC master panel must be switched **On**.

Coffeemaker

WARNING! **BURN/SCALDING HAZARD!** Read the coffeemaker's instruction manual BEFORE using. Do NOT use the coffeemaker while underway.

Water heated by the coffeemaker can be hot enough to scald the skin.

Bridge Appliances

Electric Grill (If Equipped)



Refrigerator (If Equipped)

The bridge refrigerator runs on 12-volt DC power only. The bridge refrigerator's circuit breaker is on the command bridge helm sub-main push-to-reset breaker panel.



Audio & Visual Equipment



AM radio reception may be impaired anytime the engine is running.

Dockside Television & Telephone Inlet

Plug a dockside source into the TV/telephone inlet if you want to watch cable TV or use a telephone.



Satellite TV System (If Equipped)

Your yacht may feature a satellite TV system. Refer to the manufacturer's manuals for operating instructions.



Chapter 10: Lights

Care & Maintenance

All of the lights installed on your yacht are of top quality, but you should be aware that failure may periodically occur for a variety of reasons:

- 1. There may be a blown fuse *replace the fuse*.
- 2. The bulb may be burned out carry spare replacement bulbs, making sure the wattage is correct.
- 3. A wire may be damaged or may have come loose repair as required.
- 4. The bulb base may be corroded *clean the base and coat it with non-conductive electrical lubricant*.

Interior & Exterior Lights

CAUTION

- Be conservative in the use of battery power.
- Prolonged use of cabin interior lights (overnight) WILL result in a drained battery.
- The lights are powered by your yacht's 12-volt DC system.
- The house battery switch must be in the **On** position for the lights to work.

Navigation Lights

Avoid the storage of gear where it would block navigation lights from view.

NOTICE

Running lights are legally required to show vessel direction and right-of-way at night.

Spotlight

Read the spotlight's operating instructions *before* using the spotlight.



Chapter 11: Electrical Systems

A DANGER!

EXTREME FIRE, SHOCK and EXPLOSION HAZARD!

- *NEVER* install non-ignition protected switches or other arcing devices in the fuel compartments or near other fuel sources.
- *NEVER* replace marine parts with automotive parts. Marine electrical, ignition, and fuel system parts are designed and manufactured to comply with rules and laws that minimize the risks of fire and explosion.
- *NEVER* change the electrical systems or relevant drawings.
- *ALL* electrical system maintenance and repair work, including installing or replacing the batteries, *MUST* be done by certified marine electricians.
- Turn Off ALL battery switches BEFORE working in engine or generator spaces.

WARNING!

FIRE and EXPLOSION HAZARD!



Fuel vapors can explode! *BEFORE* turning on electrical devices or working on the electrical system:

- 1. Check the bilge areas for fuel vapors or leaking fuel. If you see leaking fuel or smell fuel vapors:
 - a. Do *NOT* start the engines or generator, do *NOT* turn *On* any electrical devices, put out *ALL* cigarettes, cigars, and other sources of flame or ignition.
 - b. Get everyone off your yacht.
 - c. Get trained help to find and fix the problem.
- 2. Run the bilge blowers for at least four minutes *BEFORE* starting engines or generator, working on electrical system, or turning on electrical devices.

CAUTION

SHOCK and ELECTRICAL SYSTEM DAMAGE HAZARD!

When the engines are running, *NEVER* turn *Off* the main battery switches or disconnect the battery cables. Doing either could cause damage to your yacht's engines and/or electrical system components.

NOTICE

Electrical connections are prone to corrosion. To reduce corrosion-caused electrical problems:

- Keep ALL electrical connections clean.
- Apply a spray-on protectant that is designed to protect connections from corrosion.

12-Volt/24-Volt DC Systems

House & Engine Batteries

- The house and engine batteries supply electricity for lights, 12-volt accessories, engine starting and generator starting.
- The *Electrical* section in *Chapter 8* of the *Cruiser & Yacht Owner's Manual Supplement* provides battery care and maintenance instructions.

House Battery Watering System

NOTICE

Your house batteries are essential components of your 12-volt DC system. They *must* be maintained properly.

This system allows you to fill your house batteries from a single fill point without having to remove the battery caps. **NOTE:** Read the manufacturer's instructions *before* using the battery watering system for the first time.

Thruster Batteries

- The thruster batteries (12-volt batteries in a 24-volt battery bank) provide 24-volt power to the bow and stern thrusters.
- The thruster batteries are sealed, high-performance, service-free, AGM (Absorbed Glass Mat) batteries. These batteries are *NOT* interchangeable with the other batteries on your yacht.
- When necessary, always replace the thruster batteries with the same size AGM batteries.
- The bow thruster batteries are housed in a battery box. The battery box lid, which features a gas venting hose, must remain on the box at all times. For the location of the thruster battery box, see the *Component Locations* section in *Chapter 2* of this *Owner's Manual*.

Battery Switches



SHOCK and ELECTRICAL SYSTEM DAMAGE HAZARD!

When the engines are running, *NEVER* turn *Off* the main battery switches or disconnect the battery cables. Doing either could cause damage to your yacht's engines and/or electrical system components.

NOTICE

Make sure your selling dealer fully explains how to use the battery switches.

- A separate battery switch is provided for each battery (or battery bank).
- The battery switches are located on the battery management panel (for the location of this panel, see the *Component Locations* section in *Chapter 2* of this *Owner's Manual*).
- Turn the battery switches to the *Off* position whenever your yacht will be unoccupied for long periods of time.



Emergency Battery Parallel Switch

- If an engine will not start because of a dead battery, the battery parallel switch allows you to use the other batteries for engine starting.
- A battery parallel switch is provided at each helm (see photos on right).

NOTE: The battery parallel system fuse is located on the fuse block inside the 12-volt DC control box in the utility room.



Fuses & Circuit Breakers

The fuses and circuit breakers are located on the following:

- Battery management panel.
- 12-volt DC utility room submain breaker panel.
- 12-volt DC salon sub-main breaker panel.
- 12-volt DC stateroom submain breaker panel.
- 12-volt DC helm electronics fuse block.
- 12-volt DC 24-hour-load fuse block.

For the locations of these panels and fuse blocks, see the *Component Locations* section in *Chapter 2* of this *Owner's Manual*.

NOTE: Some equipment may have secondary fuse protection at the unit, behind the battery management panel, or at the batteries.

NOTE: When replacing fuses, always replace with a fuse of the same amperage.

24-hour-load Sub-main Circuit Breaker

- Standby-loads, such as CO monitors, automatic bilge pumps, and stereo memory, are protected by the 24-hour-load sub-main circuit breaker on the battery management panel.
- This breaker bypasses the battery switches. Turning *Off* the battery switches will not turn off power to this breaker.
- Leave this breaker **On** at all times unless system maintenance requires turning it **Off**.

BATTERY MANAGEMENT 0 0 0 OUSE O STBD 24-HOUR-LOAD SUB-MAIN CIRCUIT BREAKER 3 (\cdot) ... 3 BATTERY 0 BLOWER #1 05 MAIN CABIN BLOWER #2 T STATE ROOM RANSFER HELM 51 S SUBMAIN WINDLASS Ţ -35 BREAKER PLANES ACCY 5) <u>م</u> 3 BREAKER CARLE MASTER T 0 BATTERY MANAGEMENT PANEL FRESH WATER PUMP () T ACCY #1 A **FA** 12 V 12-VOLT DC UTILITY ROOM SUB-MAIN PANEL (1) HOUSE (an C SALON 11/20-- 0 PORT (-1 II) -C GINELATON 0.1 III pr D III M 11 - 11 11 1 ŌIJ 11 02 III in t 12 11 01 12-VOLT DC SALON SUB-MAIN PANEL 12-VOLT DC STATEROOM SUB-MAIN PANEL ⊡@ Ð **.**.) (• **.**. . . $\bigcirc \pm \bigcirc \pm \odot$ ◙⊞⊚⊞⊚

> HELM ELECTRONICS FUSE BLOCK

24-HOUR-LOAD FUSE BLOCK

12-Volt DC Accessory Outlets (10 AMP)

Do *NOT* use the 12-volt DC accessory outlets with a cigarette or cigar lighter. High temperatures may melt the outlets.

- The command bridge helm and lower helm (if equipped) 12-volt DC accessory outlets are protected by a 10-amp breaker on the 12-volt DC helm sub-main breaker panel.
- These outlets can be used with any 12-volt device which draws 10-amps or less.
- For the locations of these outlets, see the Component Locations section in Chapter 2 of this Owner's Manual.

12-Volt DC Accessory Outlets (15-AMP)

Do *NOT* use the 12-volt DC accessory outlets with a cigarette or cigar lighter. High temperatures may melt the outlets.

- The salon 12-volt DC accessory outlet is protected by a 15-amp breaker on the 12-volt DC salon sub-main breaker panel.
- The stateroom 12-volt DC accessory outlets are protected by a 15-amp breaker on the 12-volt DC stateroom submain breaker panel.
- These outlets can be used with any 12-volt device which draws 15-amps or less.
- For the locations of these outlets, see the Component Locations section in Chapter 2 of this Owner's Manual.

Alternators

The engine alternators will keep the batteries properly charged when running at cruising speeds.

Battery Chargers

CAUTION

- The battery charging systems (alternator and battery chargers) installed on your yacht are designed to charge conventional lead-acid batteries.
- *BEFORE* installing gel-cell or other new technology batteries, consult with the battery manufacturer about charging system requirements.
- *NEVER* replace your house or engine batteries with your thruster batteries.
- Your house and engine batteries are charged by the battery chargers.
- *Before* using the battery chargers, read *all* instructions and warnings: (1) on the battery chargers, (2) on the batteries, and (3) in the battery charger manual.
- The battery chargers will automatically charge your yacht's house and engine batteries when 110-volt AC power is being provided by shore power or generator power, *and* the battery charger circuit breaker on the 110-volt AC master panel is On.
- The battery switches can be in any position during charging.
- You may use 12-volt DC powered electrical systems, such as the lights and stereo when charging the batteries, but there will be a corresponding drop in charger performance.

Thruster Battery Converters

- The thruster battery converter systems (alternator and battery converters) installed on your yacht are designed to charge AGM (Absorbed Glass Mat) batteries.
- NEVER replace the thruster batteries with any other type of battery.
- *NEVER* replace the thruster batteries with your house or engine batteries.
- The thruster batteries are charged by 12-volt DC to 24-volt DC converters.
- *Before* using the thruster battery converters, read *all* instructions and warnings: (1) on the battery converters, (2) on the batteries, and (3) in the battery converter manual.
- The thruster battery converters will automatically charge your yacht's thruster batteries as long as the thruster battery circuit breakers are **On** and either: (1) the engines are running, or (2) 110-volt AC power is being provided by shore power or generator power.
- The thruster battery converter circuit breakers should be left **On** at all times except during maintenance, such as battery replacement. For the locations of the thruster battery circuit breakers, see the *Battery Systems* diagram in *Chapter 11* of this *Owner's Manual*.

110-Volt AC System

🔥 WARNING!

FIRE and ELECTRICAL SYSTEM DAMAGE HAZARD!

NEVER bypass the power source lockouts. Using both shore power and generator power at the same time *WILL* cause major electrical system damage and could start a fire!

- The power source lockouts on the 110-volt AC master panel prevent the use of shore power and generator power at the same time.
- NEVER bypass the power source lockouts.

WATER HEATER DAMAGE HAZARD!

- Do *NOT* turn *On* the water heater circuit breaker on the 110-volt AC master panel until the water heater tank is *COMPLETELY* filled with water.
- The tank is full if water flows from the tap when the hot water is turned *On* in the galley.
- Even brief water heater operation with a dry tank *WILL* damage the heating elements.
- Warranty replacements will NOT be made on elements damaged in this manner.

NOTICE

- Whether using shore power or generator power, using several 110-volt AC accessories at the same time can result in an overloaded circuit.
- You may have to turn Off one or more accessories to use another accessory.
- To gain a basic understanding of your yacht's 110-volt AC system, read the handbook, *A Boater's Guide To AC Electrical Systems*. If this handbook is not in your owner's packet, call 360-403-2198 and the handbook will be mailed to you.
- The 110-volt AC system can be energized by shore power or generator power.
- The individual breakers on the 110-volt AC master panel *must* be turned *On* to supply power to the accessories you wish to use.
- The 110-volt AC master panel may contain circuit breakers for accessories that are not available for your yacht.



Shore Power



- Use ONLY compatible shore power connectors and NEVER alter the connectors.
- Turn *Off ALL* breakers and switches on the 110-volt AC master panel *BEFORE* plugging in or unplugging the shore power cord.
- To prevent shock or injury from dropping a "hot" cord into the water:
 - a. *ALWAYS* plug the shore power cord into the yacht inlet first, and then into the dockside outlet.
 - b. When unplugging from shore power, *ALWAYS* unplug the shore power cord from the dockside outlet first.
- *NEVER* leave the shore power cord plugged into the dockside outlet *ONLY*.
- *ONLY* use shore power cords approved for marine use. *NEVER* use ordinary indoor or outdoor extension cords.

WARNING!

SHOCK and ELECTRICAL SYSTEM DAMAGE HAZARD!

- Monitor the polarity indicator lights *EVERY TIME* you connect to shore power.
- If a reversed polarity light turns on when you are connecting to shore power, do *NOT* turn on the main breaker switches.
- Instead, *IMMEDIATELY* unplug the shore power cord (*ALWAYS* from the dockside outlet first) and alert marina management.

WARNING!

SHOCK and ELECTRICAL SYSTEM DAMAGE HAZARD!

- *BEFORE* each use, check the shore power cord(s) for defects or damage.
- NEVER use damaged or faulty cords since the danger of fire and electrical shock exists.
- Do *NOT* pinch shore power cords in doors or hatches, or coil the shore power cord too tightly, since these situations can generate enough heat to result in a fire.
- If a shore power cord is dropped into the water, *COMPLETELY* dry the blades and contact slots *BEFORE* using.

LECTRICAL SYSTEM DAMAGE HAZARD!

- *NEVER* connect to dockside power outside of North America unless you have purchased the international electrical conversion option.
- Using several 110-volt AC accessories at the same time can result in an overloaded circuit. You may have to turn *Off* one or more accessories to use another accessory.
- Use double insulated or three-wire protected electrical appliances whenever possible.

- Your yacht is equipped with two (2) 110-volt/30-amp shore power inlets or one (1) 220-volt/50-amp shore power inlet.
- The 110-volt/30-amp shore power inlets provide 110-volt/30-amp power to each shore power master breaker.
- The 220-volt/50-amp shore power inlet provides 110-volt/50-amp power to each shore power master breaker.
- Dual shore power inlets are labeled LINE 1 and LINE 2, which corresponds to the SHORE POWER 1 and SHORE POWER 2 master breakers on the 110-volt AC master panel.
- LINE 1 and LINE 2 are independent of each other except when the parallel switch is used.

Connecting to Shore Power



- Instead, *IMMEDIATELY* unplug the shore power cord (*ALWAYS* from the dockside outlet first) and alert marina management.
- 1. Review all hazard information at the beginning of this section, *Shore Power*.
- 2. Turn *Off* all breakers and switches on the 110-volt AC master panel.
- 3. Attach the shore power cord(s) to the yacht inlet(s) first, then to the dockside outlet(s).
- 4. Switch the SHORE POWER 1 and/or SHORE POWER 2 master breakers *On*.
- 5. As needed, turn *On* the individual component breakers on the 110-volt AC master panel.

Shore Power Cable Hoist (If Equipped)

- The shore power cable hoist allows you to easily feed out and reel in the shore power cable.
- *Before* using the shore power cable hoist, read the cable hoist manual.



Parallel Switch (If Equipped with Dual Shore Power)

NOTICE

- When using the parallel switch do *NOT* exceed 30 total amps.
- The amperage of each component breaker is shown on the breaker itself.
- The voltage on each line can be read on the voltmeter on the 110-volt AC master panel.

When only one dockside outlet is available, you can use the parallel switch to provide power to both lines.

- 1. Connect to shore power as described in the Connecting to Shore Power section on the previous page.
- 2. Switch the parallel switch (transfers power from line 1 to line 2) *On* instead of the "SHORE POWER 2" master breaker.
- 3. Turn *On* the individual component breakers as required.

Generator



WARNING!

FIRE and EXPLOSION HAZARD!

Fuel vapors can explode! *BEFORE* starting the generator:

- 1. Check the bilge areas for fuel vapors or leaking fuel. If you see leaking fuel or smell fuel vapors:
 - a. Do *NOT* start the generator or the engines, do *NOT* turn *On* any electrical devices, and put out *ALL* cigarettes, cigars, and other sources of flame or ignition.
 - b. Get everyone off your yacht.
 - c. Get trained help to find and fix the problem.
- 2. Run the bilge blowers for at least four minutes *BEFORE* generator or engine starting, electrical system work, or turning on electrical devices.
- If you smell fuel vapors and the generator is already running:
 - a. Shut Off the generator and turn Off ALL electrical devices.
 - b. Put out ALL cigarettes, cigars, and other sources of flame or ignition.
 - c. Get trained help to find and fix the problem.

WARNING!

FLOODING and SWAMPING HAZARD!

- *Close* all seawater intake seacocks when leaving your yacht unattended for any length of time.
- If a seacock is left open, a hose failure could flood the bilge, swamp the batteries and the engines, and even sink your yacht.

SYSTEM DAMAGE HAZARD!

- *ALWAYS* make sure the generator's seawater intake seacock is *Open BEFORE* starting, and during running of the generator.
- *NEVER* run the generator starter for more than 30 seconds. If the generator does not start, wait at least 30 seconds *BEFORE* trying again.
- After the generator starts, let the generator stabilize *BEFORE* turning *On* the component breakers on the 110-volt AC master panel.

NOTICE

Follow the starting and stopping instructions in the generator's operation manual.

- When your yacht is not connected to shore power, the generator can supply 110-volt/60-hertz power.
- Before using the generator, read the generator operation manual for pre-start checks and break-in procedures.
- Refer to the generator manual for starting/stopping instructions.

Important generator notes:

- Polarity has been established in the installation of the generator. Therefore the polarity lights will *not* function when using the generator.
- Fuel to run the generator is supplied from the port fuel tank.
- Periodically replace the filter on the generator to make sure it remains clean and free of debris.
- Diesel generators also have a fuel filter/water separator. Service instructions are provided on the fuel filter/water separator.
- The coolant mixture installed at the factory consists of equal parts of water and antifreeze (Ethylene Glycol).
- Check the generator's seawater strainer for leaks and/or debris *before* each use.

Combo-sep Generator Muffler

- The combo-sep muffler has two exhaust hoses. The hose equipped with a seacock discharges the exhaust water while the other hose discharges the exhaust gas.
- The seacock's purpose is to balance the flow of the exhaust gas and water (see **Balancing the Combo-sep Exhaust** below).

Balancing the Combo-sep Exhaust

For proper system operation follow the steps below to balance the flow of the exhaust gas and water in this two hose system:

- 1. Fully open the water drain exhaust's seacock.
- 2. Start the generator and make sure it is running and stabilized at its normal power and load setting.
- 3. Observe the flow of water from the water drain thru-hull fitting. The bubbling at the exit point is exhaust gas mixed with the water.
- 4. Close the seacock in small increments until the bubbles at the exit point disappear. NOTE: After each small adjustment of the seacock, wait at least 30 seconds to one minute before checking for bubbles.
- 5. Now observe the upper gas exhaust thru-hull. Although the exhaust from the upper thru-hull will never be completely dry, it should be free of any large water droplets.



Electrical Routings

12-Volt DC Deck Electrical Harnesses



12-Volt DC Hull Electrical Harnesses



12-Volt DC Command Bridge Electrical Harnesses



12-Volt DC Bridge Hardtop Electrical Harness (If Equipped)



12-Volt DC Radar Wing Electrical Harness (If Equipped)



Battery Systems



MERIDIAN YACHTS

Bonding Harnesses



110-Volt AC Electrical Harnesses



Important Records

Selling Dealer		Plumbing		
Name Of Dealershi)	Freshwater Tank Capacity	Waste Holding Tank Capacity	
Address				
Phone/FAX/E-mail		Key Numbers		
Sales Manager		Cabin	Ignition	
Service Manager		Other	Other	
Engines		Electronics		
Manufacturer	Model Name/Number	Manufacturer	Model Name/Number	
Port Engine Serial Number Starboard Engine Serial Number		Serial Number		
Oil Type/SAE Quarts per Engine	Filter Type	Manufacturer	Model Name/Number	
Propellers		Serial	Number	
Manufacturer	Pitch	Manufacturer	Model Name/Number	
Model Number		Serial	Number	
Generator		Manufacturer	Model Name/Number	
Manufacturer	Model Name/Number	Serial	Number	
Serial Number		Manufacturer	Model Name/Number	
Oil Type/SAE Quarts Filter Type Se		Number		
Fuel System		Manufacturer	Model Name/Number	
Fuel Capacity	Filter Type	Serial	Number	

Float Plan

Before leaving on each cruise, fill out a copy of this float plan (or similar) and leave it with a *reliable* person whom you can depend on to contact the Coast Guard or other rescue organization, if you do not return as scheduled.

Description of Yacht

Reg	jistration/Documentation N	umber		Full Name	
Length	Make	Туре	Age	Health	Phone Number
Hull Color		Trim Color			
				Full Name	
Fuel Capacity	Engine Type	Number of Engines	420	Health	Phone Number
			Age	Health	Phone Number
	Distinguishing Features				
	Distinguishing Features			Full Name	
	Diemitgenermitg i Galaree				
			Age	Health	Phone Number
perator of	Yacht				
				Full Name	
	Full Name				
			Age	Health	Phone Number
Male or Female	Age	Health			
				Full Name	
	Address				
	Address		Age	Health	Phone Number
	Address				
	Phone/FAX/E-mail			Full Name	
	Operator's Experience		Age	Health	Phone Number
	la a a val			Full Name	
ersons On	board				
			Age	Health	Phone Number
	Full Name				
Age	Health	Phone Number		Full Name	
J					
			Age	Health	Phone Number
	Full Name				
Age	Health	Phone Number		Full Name	
, '9°	. iouitri				
			Age	Health	Phone Number

Survival Equipment

Number of PFDs	Flares (Yes/No)	Mirror (Yes/No)	Stopo	over 4
Smoke Signals (Yes/No)	Flashlight (Yes/No)	Food (Yes/No)	Arrive No Later Than: Date	Arrive No Later Than: Time
Water (Yes/No)	Anchor (Yes/No)	Raft/Dinghy (Yes/No)	Stope	over 5
			Зюрс	iver 5
Paddles (Yes/No)	EPIRB (Yes/No)	Other	Arrive No Later Than: Date	Arrive No Later Than: Time
Other	Other	Other		
Marine Radio (Yes/No)	Туре	Frequencies	Stope	over 6
			Arrive No Later Than: Date	Arrive No Later Than: Time
Vehicle Desc	cription			
			Stopc	over 7
Make		Model	Arrive No Later Than: Date	Arrive No Later Than: Time
Color	,	License Number		
w	Ihere is the Vehicle Parked	1?	Stopo	over 8
			Arrive No Later Than: Date	Arrive No Later Than: Time
Trip Expecta	tions			
			Stope	over 9
	Departing From		Arrive No Later Than: Date	Arrive No Later Than: Time
Departure Date		Departure Time		
			Stopo	ver 10
	Stopover 1		Arrive No Later Than: Date	Arrive No Later Than: Time
Arrive No Later Than:	Date Arrive	e No Later Than: Time		
			Final Destination Port (If I	Different Than Home Port)
	Stopover 2		Arrive No Later Than: Date	Arrive No Later Than: Time
Arrive No Later Than:	Date Arrive	e No Later Than: Time	If not returned by the date the Coast Guard or other 1	and time listed above, cal ocal authority.
	Stopover 3			
Arrive No Later Than:	Date Arriv	e No Later Than: Time	Coast Guard F	Phone Number
Anno no Eator man.			Local Authority	Phone Number

Owner's Notes

Owner's Notes

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