

# *Owner's Manual*

## *560 Sedan Bridge*

### *Welcome*

Congratulations on becoming the new owner of the world's most prestigious boat. We at Sea Ray® Boats, Inc. welcome you into our worldwide and ever-expanding family of boating enthusiasts.

The Owner's Manual Packet, to be kept on board your Sea Ray, gives you important information on all the features of your Sea Ray, for years of trouble-free boating take the time to carefully review the information in your Owner's Manual Packet and really get to know your boat.

**Have everyone who will operate your boat read this manual.**

The Owner's Manual Packet contains the following:

- **Owner's Manual:** The Owner's Manual gives you important operating and safety information, as well as reminding you about your responsibilities as a boat owner/operator.

- **Original Equipment Manufacturer (OEM) Information:** This section of your Owner's Manual Packet contains information from the manufacturers of equipment installed on your boat. Examples include the engine, engine control and steering system. Throughout the Owner's Manual you will be referred to information provided by manufacturers of specific systems.

Because your purchase represents a substantial investment, we know you will want to take the necessary measures to protect its value. We have outlined a program for proper operation, periodic maintenance and safety inspections. We urge you to follow these recommendations. If you have questions which are not fully covered by the Owner's Manual Packet, please consult your authorized dealer for assistance.

*Thank You For Selecting A Sea Ray®!*

*Bon Voyage*

*Sea Ray* 



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# INTRODUCTION

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## 1. THIS MANUAL

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

- Gives you basic safety information;
- Describes the features of your boat;
- Describes the equipment on your boat;
- Describes the fundamentals of boat use; and
- Contains service and maintenance information.

**You must learn to operate this boat as well as read, understand and use this manual.**

What this manual does not give you is a course in boating safety, or how to navigate, anchor or dock you boat. Operating a power boat safely requires more skills, knowledge and awareness than is necessary for a car or truck.

## 2. YOUR RESPONSIBILITIES

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

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

## 3. SOURCE OF INFORMATION

In North America, contact one of the following for boating courses:

- U.S. Coast Guard Auxiliary
- U.S. Power Squadron
- Canadian Power and Sail Squadrons
- Red cross
- State Boating Offices

- Yacht Club

Contact your dealer or the Boat/U.S. Foundation at 1-800-336-2628

Outside of North America, contact your boat dealer and/or your governmental boating agency for assistance.

A book that provides a comprehensive background in boating is Chapman - Piloting, Seamanship and small Boat handling, by Elbert S. Maloney, published by Hearst Marine.

## 4. DEALER RESPONSIBILITIES

In addition to a pre-delivery check and service of the boat, your dealer is to give you:

- A description and demonstration of the safety systems, features, instruments and controls on your boat;
- An orientation in the general operation of your boat;
- An "In Service Form" completed by you and the dealer after your inspection of the boat;
- A review of all warranty information and how to obtain warranty service;
- The complete Owner's Manual Packet.

If you do not receive all of these materials, or have any questions, contact your dealer or call 1-800-BOATS.

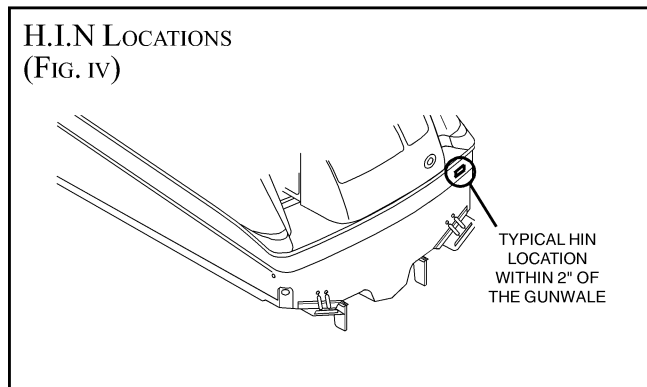
## 5. WARRANTIES

Your boat comes with several warranties. Each component and/or system on your boat has its own warranty that will be found with the specific information and manual for that component. These are included with your Owner's Manual Packet. Locate and read the individual warranties; then put them together for easy future reference. The Sea Ray® warranty is on the warranty information card in your packet and is repeated on the next page.



## 6. HULL IDENTIFICATION NUMBER (HIN)

The “Hull Identification Number” located on the starboard side of the transom, is the most important identifying factor and must be included in all correspondence and orders. Failure to include it creates delays. Also of vital importance are the engine serial numbers and part numbers when writing about or ordering parts for your engine. Refer to the Engine



Operator's Manual for locations of engine serial numbers and record them for future reference.

## 7. MANUFACTURER'S CERTIFICATION

A CE mark means that your Sea Ray® Boat has been certified to meet the applicable International Organization for Standardization directives.

NMMA certification means that your Sea Ray® Boat has been judged by the National Marine Manufacturers Association to be in compliance with applicable federal regulations and American Boat and Yacht Council standards.

The following information is furnished in compliance with ISO directives and RSG guidelines in effect as of the date of publication of this manual. Sea Ray® will provide additional information as standards are amended. The following information, required for export of the vessel, must be filled out by the dealer.

Boat Model: \_\_\_\_\_  
Design Category: ☐ Ocean ☐ Offshore  
☐ Inshore ☐ Sheltered Waters  
Hull Identification Number: \_\_\_\_\_  
Maximum Recommended Load: \_\_\_\_\_  
Recommended Number of Passengers: \_\_\_\_\_  
Maximum Rated Engine Power: \_\_\_\_\_  
Engine Installed  
Manufacturer: \_\_\_\_\_  
Model and Number: \_\_\_\_\_  
Weight of Craft  
W/Engine & Permanently Attached Items: \_\_\_\_\_  
Without Engine: \_\_\_\_\_

## 8. SERVICE, PARTS AND REPAIR FOR YOUR BOAT

When your boat needs service, parts or repair, take it to an authorized Sea Ray® dealer. To find a dealer in your area call:

1-800-SRBOATS  
Fax: 1-314-213-7878  
Domestic/International

To find repair and parts facilities for the equipment installed on your boat, refer to the manual for that component.

If a problem is not handled to your satisfaction:

1. Discuss any warranty-related problems directly with the service manager of the dealership or your sales person. Give the dealer an opportunity to help the service department resolve the matter for you.
2. If a problem arises that has not been resolved to your satisfaction by your dealer, contact Sea Ray® Boats at 1-800-SRBOATS and the appropriate customer service department information will be provided to you.





## ABOUT YOUR LIMITED WARRANTY

Sea Ray offers an express Limited Warranty on each new Sea Ray purchased through an authorized Sea Ray dealer. A copy of the Limited Warranty was included in your owner's packet. If for any reason, you did not receive a copy of the Limited Warranty, please contact your local dealer or call 1-800 SR BOATS for a replacement copy. ♦

Under the Limited Warranty, Sea Ray covers structural fiberglass deck or hull defects which occur with five (5) years of the date of delivery and parts found to be defective in factory material or workmanship within one (1) year of the date of delivery. In addition, laminate blisters resulting from defects in factory material or workmanship are covered for five (5) years on a pro-rated basis.

Sea Ray's obligation under the Limited Warranty is limited to repair or replacement of parts that are judged defective by Sea Ray and does not include transportation, haul out, or other expenses. The foregoing is the **sole and exclusive** remedy provided by Sea Ray.

The Limited Warranty does not cover engines, stern drives, controls, propellers, batteries, trailers, or other equipment or accessories carrying their own individual warranties, nor does the Limited Warranty cover engines, parts or accessories not installed by Sea Ray. The Limited Warranty does not cover cosmetic gel coat finish. Boats used for commercial purpose are excluded from coverage. **See the Sea Ray Express Limited Transferable Warranty for other exclusions.**

**SEA RAY EXPRESSLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. NEITHER SEA RAY NOR THE SELLING DEALER SHALL HAVE ANY RESPONSIBILITY FOR LOSS OF USE OF THE BOAT, LOSS OF TIME, INCONVENIENCE, COMMERCIAL LOSS OR CONSEQUENTIAL DAMAGES.**

The unexpired term of the Limited Warranty may be transferred to a subsequent owner upon the new owner's written request to Sea Ray Division of Brunswick Corporation, 2600 Sea Ray Blvd., Knoxville, Tennessee, 37914 and payment to Sea Ray of Fifty Dollars (\$50.00).

**Thank you for your decision to buy a Sea Ray.**

- ♦ The Sea Ray Express Limited Transferable Warranty is subject to change at any time at Sea Ray's discretion. The information contained herein is general information about the Limited Warranty for the owner's general knowledge, but does not alter or amend the terms of the Limited Warranty.



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# SECTION 1 • SAFETY

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## SAFE boating means:

- Knowing the limitations of your boat;
- Following the rules of the road;
- Keeping a sharp lookout for people and objects in the water;
- Not boating in water or weather conditions that are beyond the boat's and the operator's capability;
- Never boating when the operator is under the influence of drugs or alcohol;
- Being aware of your passenger's safety at all times; and
- Reducing speed when there is limited visibility, rough water, nearby people in the water, boats, or structures.

Boating in beautiful weather and calm water conditions can be a wonderful experience. Pleasurable boating, however, requires considerably greater skills than operating a land vehicle. To obtain these skills, you must:

- Take a Coast Guard, U.S. Power Squadron or equivalent boating safety course. **Call the Boat/U.S. Foundation at 1-800-336-2628 for information on available courses.**
- Get hands-on training on how to operate your boat properly.

In addition:

- Maintain your boat and its safety and other systems as recommended in this manual.
- Have the boat inspected by a qualified mechanic or dealer, at least annually.
- Ensure that the Coast Guard required safety equipment is on board and functions. (See page 1.2).

## 1. SAFETY LABELS

Safety precautions are given throughout this manual and labels are mounted at key locations throughout the boat. This safety information advises the owner/operator and passengers of imperative safety precautions to follow when operating and/or servicing equipment. engine serial numbers and part numbers when writing about or ordering parts for your engine. Refer to the Engine Operator's Manual for locations of engine serial numbers and record them for future reference.

- Figure 1.15.1-1.17.1 shows the location of the safety labels on your boat.
- Do not remove or obstruct any safety label.
- Replace any label which becomes illegible. Replacement safety labels can be obtained by calling your dealer or Sea Ray at 1-800-SRBOATS for information on how to contact the manufacturing facility for your boat.

The meaning associated with each of the four basic types of label is:

### DANGER

**DANGER** – Immediate hazards which **WILL** result in severe personal injury or death if the warning is ignored.

### WARNING

**WARNING** – Hazards or unsafe practices which **COULD** result in severe personal injury or death if the warning is ignored.

### CAUTION

**CAUTION** – Hazards or unsafe practices which could result in minor injury or product or property damage if the warning is ignored.

### NOTICE

Information which is important to proper operation or maintenance, but is not hazard-related.



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## SECTION 1 • SAFETY

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### 2. LEGALLY MANDATED MINIMUM REQUIRED EQUIPMENT

**Consult your national boating law enforcement agency.**

The following equipment is the minimum required by the U.S. Coast Guard for a boat under 26' [7.9 meters] in length.

**Personal Flotation Devices (PFD's):** One Coast Guard approved Type I, II or LLL device is mandatory for each person aboard. One throwable Type LV device is also required to be on board. A Type V device is acceptable if worn for approved use. See Page 1.4 for a description of these PFD classifications. **Always wear a PFD when boating.**

**Fire Extinguisher - Portable:** If no fixed fire extinguishing system is installed in the engine and generator spaces, the U.S. Coast Guard requires **one** (1) **Type B-1** fire extinguisher be on board. The American Boat and Yacht Council (ABYC) recommends that you have **two** (2) Type **ABC** fire extinguishers on board. One is to be located at the helm station and the other in the cabin, near the cockpit door.

**Whistle, Horn:** You must have on board some means of making a loud sound signal, for example, whistle or horn.

**Visual Distress Signals:** If you operate your boat in coastal waters or on the Great Lakes, you must have visual distress signals for day and night use on board. At least three (3) U.S. Coast Guard approved pyrotechnic devices marked with date showing service life must be carried, be readily accessible, in serviceable condition and not expired. Store pyrotechnic signals in a well-marked waterproof container in a dry location.

**Other:** Your Sea Ray is equipped with the required navigation lights, engine exhaust and ventilation systems.

### 3. FIRE EXTINGUISHING SYSTEM

Your boat is equipped with an automatic fire extinguisher system. Located in the engine compartment. In the event of a fire, the heat sensitive automatic head in the engine compartment will release a fire-extinguishing vapor, totally flooding the area.

The dashboard contains an indicator light for the automatic fire extinguishing system. The light will be ON when the ignition is on and indicates that the system is ready. If the light goes out while the ignition is on, the system has discharged.

**WHEN DISCHARGE OCCURS, IMMEDIATELY SHUT DOWN ALL ENGINES, POWERED VENTILATION, ELECTRICAL SYSTEMS AND EXTINGUISH ALL SMOKING MATERIALS. DO NOT IMMEDIATELY OPEN THE ENGINE COMPARTMENT!! THIS FEEDS OXYGEN TO THE FIRE AND THE FIRE COULD RESTART.**

Wait at least fifteen (15) minutes before opening the engine compartment. This permits the fire-extinguishing vapor to "soak" the compartment long enough for hot metals and fuels to cool. Have portable extinguishers at hand and ready to use in case the fire reignites. Do not breathe fumes or vapors caused by the fire.

### 4. CARBON MONOXIDE

Symptoms of carbon monoxide poisoning are dizziness, ears ringing, headaches, nausea and unconsciousness. A poisoning victim's skin often

#### DANGER

**Fumes from engine, generators, and other equipment and appliances using burning fuel contain carbon monoxide.**

**Carbon Monoxide can kill you.**

**Open all doors, curtains, windows, and hatches to let fresh air circulate, when running engine, generator or burning any fuel when boat is anchored, moored or docked.**





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## SECTION 1 • SAFETY

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### DANGER

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

### DANGER

Sleeping on boat requires a operating Carbon Monoxide detection system in each sleeping location.

turns cherry red. Because carbon monoxide gas (CO) is odorless, colorless and tasteless, it is unlikely to be noticed until a person is overcome.

Dangerous concentrations of carbon monoxide will be present if:

- the engine and/or generator exhaust systems leak;
- insufficient fresh air is circulating where people are present; and
- fumes move from the rear of the boat into the cockpit and cabin area.

Figure 1.4.1 gives examples of boat operating conditions that can lead to high concentrations of carbon monoxide gas.

To minimize the danger of CO accumulation when the engine and/or generator are running, or using burning fuel applications.

- Be sure to have sufficient ventilation when using canvas or window-type side curtains when underway, anchored, moored or docked.
- If the convertible top is installed, operate with the forward hatch open and leave cabin door open.
- Operate all burning fuel appliances, such as charcoal, propane, LPG, CNG or alcohol cooking devices in areas where fresh air can circulate. Do not use such devices where there is no noticeable air movement, especially in the cabin, when anchored, moored or docked.

- Do not idle engine without moving boat for more than 15 minutes at a time.
- Inspect the exhaust system regularly. (See Section 8, Required Inspection, Service and Maintenance.

If CO poisoning is suspected, have the victim breathe fresh air deeply. If breathing stops, resuscitate. A victim often revives, then relapses because organs are damaged by lack of oxygen. Seek immediate medical attention.

### A. CARBON MONOXIDE MONITOR

Your boat has carbon monoxide (CO) monitors mounted throughout the boat. The CO monitor is an electronic instrument that detects CO. When there is a buildup of CO, the monitor will alert the occupants by a flashing DANGER light and alarm. The CO monitor is wired through a breaker on the DC distribution panel.

It is extremely important that you become totally familiar with your CO monitor and its functions.

Read and understand the CO monitor information and operating instructions located in your Owner's Manual Packet.

## 5. LIFESAVING EQUIPMENT

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

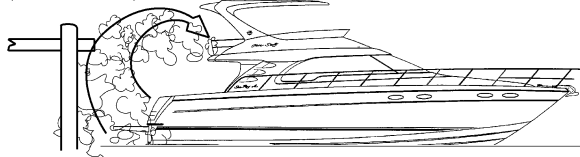
Boat operators are required to carry one wearable personal flotation device (Type I, II, III or V) for every person on board. Boats must also have at least one throwable device (Type IV).

The law requires that PFD's must be readily accessible, if not worn. "Readily accessible" means removed from storage bags and unbuckled. But,



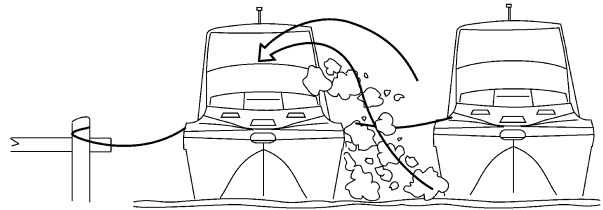
# SECTION 1 • SAFETY

## EXAMPLES OF HOW HIGH LEVELS OF CARBON MONOXIDE MAY ACCUMULATE (FIG. 1.4.1)



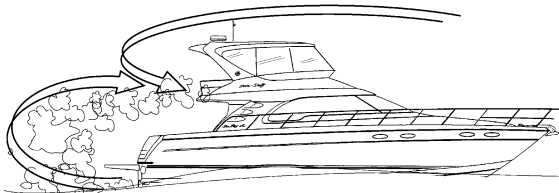
BLOCKING HULL EXHAUSTS. OPERATING AT SLOW SPEED OR DEAD IN THE WATER.

ILLUSTRATION #A



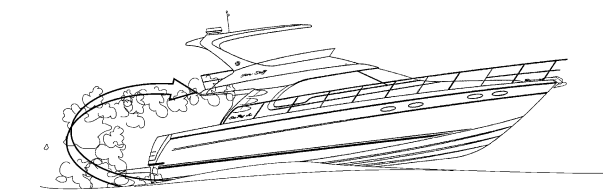
OPERATING ENGINE AND/OR GENERATOR IN CONFINED SPACES.

ILLUSTRATION #D



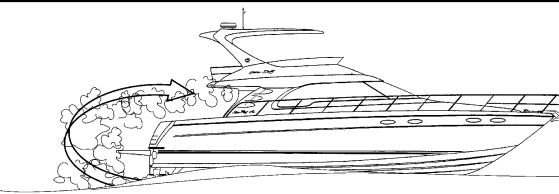
USING CANVAS CURTAINS.

ILLUSTRATION #B



OPERATING WITH THE BOW HIGH.

ILLUSTRATION #E



WINDS BLOWING EXHAUST TOWARD BOAT OCCUPANTS.

ILLUSTRATION #C

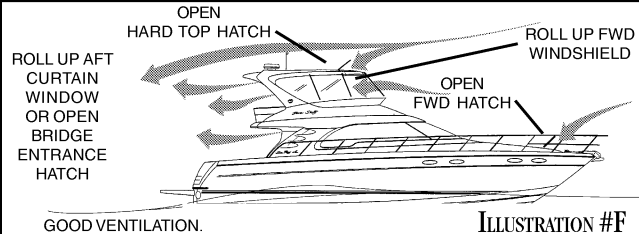


ILLUSTRATION #F

children and nonswimmers must wear PFDs at all times when aboard. It is common sense to have everyone on board wearing PFDs. A throwable device must also be right at hand and ready to toss.

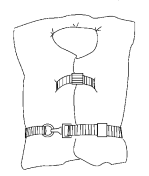
### A. PFD CLASSIFICATIONS

(FIG. 1.4.2)



Off-Shore Life Jacket (Type I) – most buoyant, it is designed to turn an unconscious person face up; used in all types of waters where rescue may be slow, particularly in cold or rough conditions.

(FIG. 1.4.3)



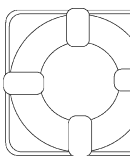
Near-Shore Life Vest (Type II) – “keyhole” vest with flotation-filled head and neck support is also designed to turn a person face up, but the turning action is not as pronounced; used in calm, inland waters or where quick rescue is likely.

(FIG. 1.4.4)



Flotation Aid (Type III) – vest is designed so conscious wearers can turn face up; often designed for comfort while engaged in sports such as skiing.

(FIG. 1.4.5)



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

(FIG. 1.4.6)



Special-Use Devices (Type V) – sailboat harnesses, white-water vests, float coats, and hybrid vests which have minimum inherent buoyancy and an inflatable chamber.

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## SECTION 1 • SAFETY

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Before purchasing PFDs, ensure that there is an attached tag indicating they are approved by the U.S. Coast Guard or by your national boating law enforcement agency.

**Children and nonswimmers must wear PFDs at all times when aboard.** All passengers and crew should wear them. A loose PFD is often useless in an emergency.

The operator is responsible for instructing everyone aboard on the location and use of PFDs.

Size PFDs for the wearer. Children require special attention in the use of PFDs.

Test PFD buoyancy at least once a year.

### 6. ADDITIONAL RECOMMENDED EQUIPMENT FOR SAFE OPERATION

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

- First aid kit
- Visual distress signals for day and night use (required in some areas; consult local regulations)
- Charts of your intended cruising area
- Compass
- GPS or Loran position locating devices
- Marine VHF radio with weather channels
- Emergency position-indicating radio beacon (EPIRB)
- Manual bilge pump
- Moisture repellant
- Anchors, chain and line (The anchors must be properly sized for your boat. Ask your dealer or marine supply store for recommendations).
- Mooring lines
- Fenders
- Boat hook

- Waterproof flashlight(s)
- Extra batteries for flashlights and portable electronic devices
- High power spotlight, if you intend to boat at night
- Spare keys
- Instruction manuals for engine and accessories
- Lubricating oil
- Tool kit:
  - Assorted screwdrivers (Phillips and flat blade)
  - Pliers (regular, vise-grip, and tongue & groove)
  - Wrenches (box, open-end, allen, adjustable)
  - Socket set (metric or U.S. Standard as appropriate)
  - Electrical tape and duct tape
  - Hammer
  - Utility Knife
- Spare parts kit (spark plugs, fuses, hose clamps and ask your dealer to recommend other parts)
- Extra propeller

### 7. IMPAIRED OPERATION

Drugs and/or alcohol will prevent you from operating your boat safely. This single factor is involved in more marine accidents and deaths than any other. The detrimental effects of alcohol and drugs are increased by the wind, waves and sun, quickly impairing your ability to react properly and promptly in an emergency.



#### WARNING

**Drugs and/or alcohol impair the operator's ability to control the boat safely.**

**Death or serious injury can result from improper boat operation.**

### 8. LOAD CAPACITY

The certification plate (See fig. 1.6.1) located near the helm indicates maximum weight and number of persons your boat can handle under calm sea conditions. **Do not exceed the load capacities**

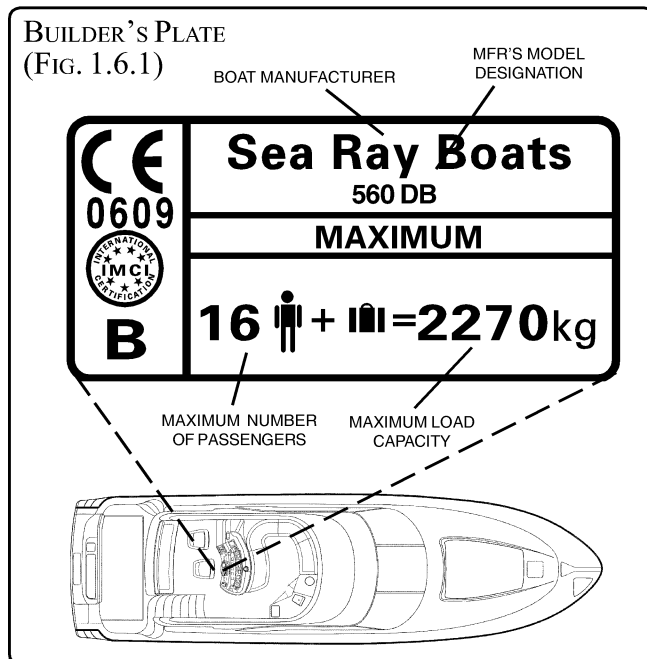


## SECTION 1 • SAFETY

**stated.** The number of people on board must be reduced if you go out in poor weather and rough water.

The information present on the certification plate does not relieve the operator from responsibility. Use common sense and sound judgement when placing equipment and/or passengers in your boat.

- Do not load to capacity in poor weather or rough water.



### ! WARNING

When engine is running, keep passengers away from areas not designed for riding, such as seat backs, bow, gunwales, transom platform, swim platform, front and rear decks and on sun pads.

Passengers can fall overboard if not seated properly on the seats provided.

### ! DANGER

Never carry more weight or passengers than indicated on the certification plate, regardless of weather or water conditions.

The boat can capsize, swamp or sink.

- The number of seats does not indicate how many people a boat can carry in poor weather and rough water.
- Above idle speed, all passengers must be seated on the seats provided.

## 9. POWER CAPACITY

Do not exceed the maximum engine power rating stated on the certification plate. Your boat will be difficult to handle and will be less stable.

Your Sea Ray® has been equipped with a propeller which our tests have shown to be the best suited for general use with our engine under normal conditions and load. Do not change the pitch of your propeller without getting your dealer's recommendations first. If you change to a different propeller pitch, **under no circumstances use a propeller which allows the engine to operate at higher than recommended RPM.** (your engine manual specifies the maximum recommended (RPM)).

To maintain rated power, propellers should be free of nicks, excessive pitting and any distortions that alter them from their original design. Badly damaged propellers should be replaced, but those that are chipped, bent or merely out of shape can be reconditioned by your marine dealer.

It is advisable to carry an extra propeller aboard in case you damage the one in use.

## 10. STABILITY

Your boat was manufactured to specific stability and flotation standards for the capacity shown on the

### ! WARNING

Distribute passengers and gear as uniformly as possible from front to rear and left to right.

The manufacturer's load rating is the maximum allowed under calm conditions.

Reduce boat loading if weather, water or other conditions are adverse.



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## SECTION 1 • SAFETY

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certification plate. Any increase from the recommended load capacities will put your boat in jeopardy of capsizing, swamping and/or sinking.

### IN ADDITION:

- Stability may be substantially reduced if equipment is added above the deck.
- Stability is substantially reduced by loose fluids or weight within the hull. Keep bilge area as dry as possible, and close all openings, hatches and windows in rough weather.

## 11. MAINTAIN CONTROL

On the water there are no marked traffic lanes, no traffic signs or lights, and boats have no turn signals. The boat operator must keep her or his attention focused not only on what's ahead but what's on the left, right and behind the boat.

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

Your passengers are relying on you to operate and maneuver the boat safely so that they are not in danger of going overboard. If you turn too quickly, increase or decrease speed abruptly, your passengers are at risk of being thrown overboard or thrown about the boat.

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

### A. GENERAL CONSIDERATIONS

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

- Instruct passengers on location and use of safety equipment and procedures.
- Instruct passengers on the fundamentals of operating your boat in case you are unable to do so.
- You are responsible for passenger's actions. If they place themselves or the boat in danger, immediately correct them.

**Observe the safety rules listed below.**

## 12. WEATHER

There are four design categories of boats based upon their ability to withstand wind and sea or water conditions:

### A. Ocean

Wind speed: above 40 knots (46 mph)

### WARNING

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

- **Anyone who controls the boat must have taken a boating safety course and have trained in the proper operation of the boat.**
- **Always operate the boat at speeds that will not put people or property in danger.**
- **Be constantly aware of conditions in all directions when underway and before turning.**
- **Reduce speed, use a lookout to identify possible hazards or difficulties, and turn on navigation lights when:**
  - visibility is impaired;
  - in rough water; and
  - in congested waterways.
- **Watch your wake. It can capsize a small boat or damage moored boats or other property. You are responsible for damage caused by your wake.**



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## SECTION 1 • SAFETY

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Wave height: above 4 meters (13 feet)  
Boat may be used for extended ocean voyages.

### B. Offshore

Maximum wind speed: 40 knots (46 mph)  
Maximum wave height: 4 meters (13 feet)  
Boat can be used offshore, but not for extended ocean voyages.

### C. Inshore

Maximum wind speed: 27 knots (31 mph)  
Maximum wave height: 2 meters (6.5 feet)  
Boat use is limited to coastal waters, large bays, estuaries, lakes and rivers.

### D. Sheltered waters

Maximum wind speed: 15 knots (18 mph)  
Maximum wave height: 0.5 meters (1.5 feet)  
Boat use is limited to small lakes, rivers and canals.

### Your 560 DB is Design Category B.

The wind speed and wave height specified as the upper limit for your category of boat does **not** mean that you or your passengers can survive if your boat is exposed to these conditions. It is only the most experienced operators and crew that may be able to operate a boat safely under these conditions. You

#### DANGER

DO NOT ATTEMPT TO BOAT IN  
SEVERE WEATHER CONDITIONS

DEATH OR SERIOUS INJURY CAN OCCUR

GET TO SHORE BEFORE  
THE WEATHER TURNS BAD

must always be aware of weather conditions and head for port or protected waters in sufficient time to avoid being caught in high winds and rough water.  
**Do not take chances!**

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

information, or listen to the NOAA weather reports for the latest weather conditions or any impending deterioration of the weather before setting out and while underway. Following are a few basic weather-related rules:

- Check the weather forecast and the water conditions before leaving and while underway.
- A sudden change in wind direction or speed or an increase in wave height indicates deteriorating weather.
- Have everyone wear a personal flotation device.
- If a storm approaches, immediately seek a safe harbor.
- If a storm hits, have everyone sit in the cabin or on the cockpit deck in the boat. head the bow into the wind with enough power to maintain slow headway.
- If you encounter fog, determine your position, set a safe course, slow down and alert other boats of your presence with a sound signal.
- If a lightning storm approaches, the safest action is to dock and disembark. If you cannot return to shore, have passengers go **inside** the cabin and remain there until the storm passes.
- Lightning seeks a ground when it strikes. The best protection is a properly grounded lightning rod placed high enough over the deck to provide a protective umbrella over the hull. Depending upon the likelihood of your being in a lightning storm, consult your dealer for installation of a lightning rod. Stay clear of the lightning rod, all attached wiring and all metal parts of the boat.

#### WARNING

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

You must know where the hazards are and avoid them.

In uncharted waters, boat very slowly and post a lookout.



## SECTION 1 • SAFETY

- Stay out of the water during a lightning storm. If caught swimming during a storm, get back into the boat and remain there until the storm passes.

### 13. CHART YOUR COURSE

To avoid boating in unsafe areas where there are underwater obstructions, shallow water, unnavigable conditions such as dangerous currents, and others, **you must chart a course**. This means having and using the National Oceanic and Atmospheric Administration (NOAA) charts for coastal waters, observing and understanding all navigational aids, using the knowledge and guidance of experienced boaters, and being aware of the tide times where appropriate.

#### WARNING

Shut engine off if an object is struck or if you run aground.

Check for hull leaks and drive line damage, before restarting engines.

Use hand pump if bilge pumps don't remove water.

Boat very slowly, if you must proceed with a damaged drive line.

If you are in an unfamiliar area without knowledge of the hazards, proceed very slowly and have someone watch for hazards.

**Let others know where you are going.** A float plan describes your intended cruising course and itinerary, boat description, and your expected time and date of return. Give the float plan to a friend or relative, so they can give the information to a national boat agency, like the U.S. Coast Guard, in the event you fail to return.

### 14. WATER SPORTS

#### A. SWIMMING

- Do not permit anyone to swim from a moving boat, or a boat with an engine running.

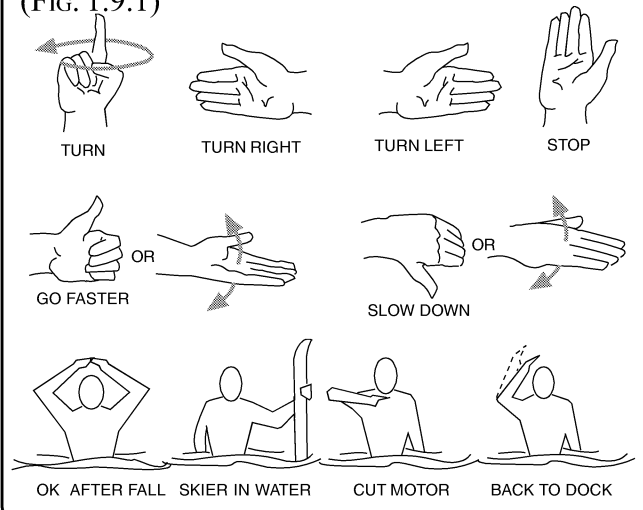
- Many localities prohibit swimming from boats except in designated areas.
- Make sure boat's engines are turned off before allowing people to swim anywhere near your boat. Shut the engine OFF and remove the key from the ignition switch so that nobody will accidentally start the engine while swimmers are nearby.
- Turn off engines when taking swimmers or skiers aboard or when they are entering the water. Never permit use of the transom or swim platform while engines are running.
- Slow down and look for swimmers or skiers when cruising in an area where there might be persons in the water.

#### B. SKIING

While it is unlikely that anyone would ski behind your 560 DB, it is advised that you become familiar with water skiing safety and hand signals. You will, on occasion, find yourself in the vicinity of water skiing activity.

- Anyone who water skis must know how to swim.
- Never drive the boat directly behind a water skier. At 22 knots (25 m.p.h.), it takes only 5 seconds to overtake a fallen skier who was 60 meters (200 feet) in front.

SKIING SIGNALS  
(FIG. 1.9.1)



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## SECTION 1 • SAFETY

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- Keep a downed skier in sight and on the operator's side of the boat when approaching the skier. Never back up to anyone in the water.
- Learn the signals to communicate with a skier. The skier is to control the boat through hand signals (Fig. 1.9.1).

**Turn** – Arm raised, circle with index finger extended.

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

**Back to Dock** – Pat top of head.

**Cut Motor** – Draw finger across throat.

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

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

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

**Stop** – Raise arm with palm vertical and facing forward.

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

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

**OK After a Fall** – Clasp hands together overhead.

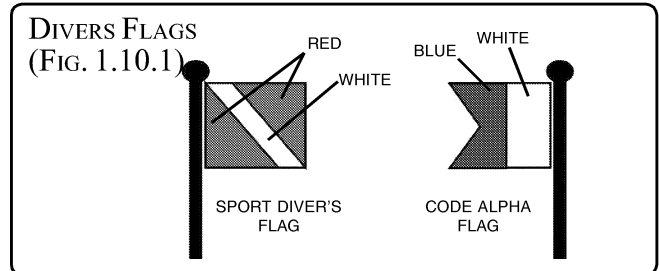
- If the skier suddenly releases the tow rope, it can backlash into cockpit. Spotters who are watching the skier must be aware of this fact and be prepared to deflect the rope by hand to avoid injury.

### C. DIVING

- Recognize and respect diving flags (Fig. 1.10.1). Keep at least 30 meters (100 feet) away.

**Sport Divers Flag** – Red flag with diagonal white stripe marks a diver in the water.

**Code Alpha Flag** – Blue and white pennant designates boat being used in dive operations.



### IN GENERAL

When engaged in water sports, be safe and courteous to others sharing the water:

- Be considerate to fishermen.
- Do not water ski in congested areas.
- Keep the boat and skier away from navigation markers.
- Stay well clear of other boats and skiers.

### ASSISTING OTHER BOATERS

All boaters have a legal obligation to help other boaters who are in distress, as long as rendering assistance does not endanger you, your passengers or your boat.

## 15. EMERGENCY SITUATIONS

Prevention is the safest approach. We hope that you are never involved in an emergency situation.

If you are involved in an emergency situation, it is imperative that you know how to react, in order to protect the lives in your care.

### A. MEDICAL EMERGENCY

You may be far from professional medical help when you are boating. At least two people on board your boat should be CPR certified, and should have taken a first aid course. Equip your boat with a first aid kit.



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## SECTION 1 • SAFETY

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### B. WATER RESCUE

A person who has fallen overboard will die from hypothermia in water temperatures below 70°F if not rescued quickly. Water rescue consists of three steps: returning to the victim, making contact with the victim, and getting the victim back on board.

#### RETURNING TO THE VICTIM

- Immediately make everyone aware of the incident and keep the victim in sight.
- Slow the boat and keep pointing toward the person overboard. At night, direct the best available light source at the person.
- Throw a life preserver, even if the person is wearing a PFD. It will serve as another marker.

#### MAKING CONTACT

- Stop or slow the boat and circle toward the victim.
- Try to approach heading into the wind or into the waves.
- Keep the victim constantly in sight.
- When almost alongside, stop the engine in gear to prevent propeller “windmilling.”

#### GETTING BACK ABOARD

- Try to reach the victim with a pole, or by throwing a life preserver. Do not swim to rescue the victim, except as a last resort.
- Assist the person in boarding the boat. The person should normally be brought in over the stern.
- If the person is injured or cannot get into the boat, a rescuer should put on a PFD with a safety line attached to the boat and enter the water to assist the victim.
- Handle the victim with care. Spinal injuries may have occurred.

### C. FIRE

Fire is a serious boating hazard. Boats will burn quickly. Do not remain on board and fight a fire for more than a few minutes. If the fire cannot be extinguished within a few minutes, abandon the boat.

Have fire extinguishers handy. A small fire can be extinguished quickly with the right size and type of fire extinguisher.

- Extinguish smoking materials, shut off blowers, stoves, engines and generators.
- Throw burning materials overboard, if possible.
- If the fire is accessible, empty the contents of fire extinguishers at the base of the fire.
- If the fire is in the engine compartment and you have an automatic extinguisher for the engine, wait 15 minutes before opening the compartment. Have a portable extinguisher ready in case the fire flares up.
- Signal for help.
- Grab distress signals and survival gear. Put on PFDs. Prepare to abandon ship.

### D. FLOODING, SWAMPING AND CAPSIZING

In the event of flooding, swamping or capsizing:

- Try to shut off engines, generators and blowers, before leaving the boat.
- Have everyone put on Personal Flotation Devices (PFD's).
- Account for all who were on board.
- If the boat is floating stay with the boat. Hang on, or climb on the boat and signal for help.
- Only as a last resort should you attempt to swim to shore - it is further away than it looks and you can tire and drown.



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## SECTION 1 • SAFETY

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### E. COLLISIONS AND LEAKING

In the event of collision and leaking:

- Slow down or stop to reduce water intake, unless maintaining speed will keep the hole above water.
- Switch on bilge pumps.
- Operate the manual bilge pump if the powered bilge pumps can't handle the water flow.
- Account for everyone on board and check for injuries.
- Have everyone put on PFDs.
- Stay with the boat.
- Signal for help.
- If a leak patch is attempted, it should be done from the outside.
- In the event of a collision, you are required to file an accident report. Contact a state enforcement agency or the nearest Coast Guard office. If you are boating outside of U.S. waters, consult the nation you are visiting for accident reporting requirements.

### F. GROUNDING

In the event of running aground:

- Check for leaks. If water is coming in, stop the intake of water before attempting to get the boat free.
- Inspect for damage to the hull, propulsion and steering systems.
- Determine if the tide, wind and current will drive the boat harder aground or will help to free it.
- Determine the water depth all around the boat, and the type of bottom (sand, mud, rocks, etc.). If it can be done without exposing persons to risk of injury, the boat should be moved away from hard obstructions and toward open water with soft ground.

- Do not attempt to have your boat towed by other than a trained and competent service, such as the Coast Guard or a salvage company. Recreational craft are not designed to tow other recreational craft.

### G. PROPULSION, CONTROL OR STEERING

#### FAILURE:

If the drive train fails, or controls or steering do not respond properly at all:

- Shut off engine.
- Put out the anchor to prevent drifting.
- Determine whether or not you can repair the problem yourself. See the proper manuals for assistance in troubleshooting the engine, steering and engine controls.
- If you are not sure you can fix the problem, or if conditions are adverse, signal for help.

## 16. SAFETY HOTLINES

**The safety information in the preceeding pages gives only the general areas of concern for boating safety. It is not intended to be, nor can it be, exhaustive. You must take a boating safety course, and get hands-on instruction in the proper and safe operation of your boat from experienced persons before cruising.**

The U.S Coast Guard offers many pamphlets on safety and other information not covered in this book. Contact your local Coast Guard unit or call the toll-free safety hotlines below for information.

- U.S. Coast Guard 1-800-368-5647
- Canadian Coast Guard 1-800-267-6687

In other countries, ask your marine dealer for information on how to contact the national boating law enforcement agency.



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## SECTION 1 • SAFETY

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### 17. INTERNATIONAL REQUIREMENTS

This vessel and its systems have been constructed in accordance with standards and specifications in effect at the time of manufacture as published by the various regulatory authorities listed below.

1. Ministere De La Mer - France
2. Registro Italiano Navale - Italy
3. Det Norske Veritas - Norway
4. Securite des Nauires - Canada
5. J.C.I. (Japan Craft Inspection) - Japan
6. N.K.K. (Nippon Kaiji Kyokai) - Japan
7. B.S.I. (British Standards Institute) - England
8. Ministerio Obras Publicas Y Transporters - Spain
9. EC Recreational Craft Directive - European Community.

Further information concerning these requirements may be obtained from Sea Ray® Customer Service: 1-800-SRBOATS.

### 18. NAUTICAL TERMS

**Abeam** – object 90 degrees to center line on either side of boat.

**Abaft** – a point on a boat that is aft of another.

**Aft** – toward the rear or stern of the boat.

**Beam** – the width of a boat.

**Bow** – the fore part of a boat..

**Bow Eye** – Bolt with looped head mounted on extreme forward part of bow.

**Bulkhead** – vertical partition in a boat.

**Chine** – meeting juncture of side and bottom of boat.

**Chock** – deck fitting, used as guides for mooring or anchor lines. Also, a wedge to stop wheels from rolling.

**Cleat** – deck fitting with arms or horns on which lines may be made fast.

**Cockpit** – an open space from which a boat is operated.

**Deck** – upper structure which covers the hull between gunwales.

**Draft** – depth of water required to float boat and its propulsion system.

**Fathom** – six feet.

**Fenders** – rope or plastic pieces hung over the side to protect the hull from chafing.

**Freeboard** – height of exposed hull from water line to deck.

**Ground tackle** – general term referring to anchors, anchor lines, etc.

**Gunwale** (pronounced gun'l) – meeting juncture of hull and deck.

**Hatch** – an opening in deck to provide access below.

**Head** – toilet or toilet area in a boat.

**Headroom** – vertical distance between the deck and cabin or canopy top.

**Helm** – steering console.

**Hull** – the basic part of a boat that provides buoyancy to float the weight of the craft and its load.

**Keel** – the major longitudinal member of a hull; the lowest external portion of a boat.

**Knot** – unit of speed in nautical miles per hour.

**Lee** – the side that is sheltered from the wind.

**PFD** – Personal Flotation Device; life preserver.

**Port** – term designating left side of the boat.

**Rudder** – Movable fixture at the stern used for steering.

**Scupper** – hole permitting water to drain overboard from deck or cockpit.

**Sheer** – curve or sweep of the deck as viewed from the side.

**Snub** – to check or tighten a line suddenly.

**Starboard** – term designating right side of the boat

**Stern** – the aft end of a boat.

**Stern drive** – outboard unit of an inboard/outboard (I/O) engine installation.

**Stringer** – longitudinal members fastened inside the hull for additional structural strength.

**Transom** – transverse part of stern.

**Wake** – disturbed water that a boat leaves behind as a result of forward motion.

**Windward** – toward the direction from which the wind is blowing.



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## SECTION 1 • SAFETY

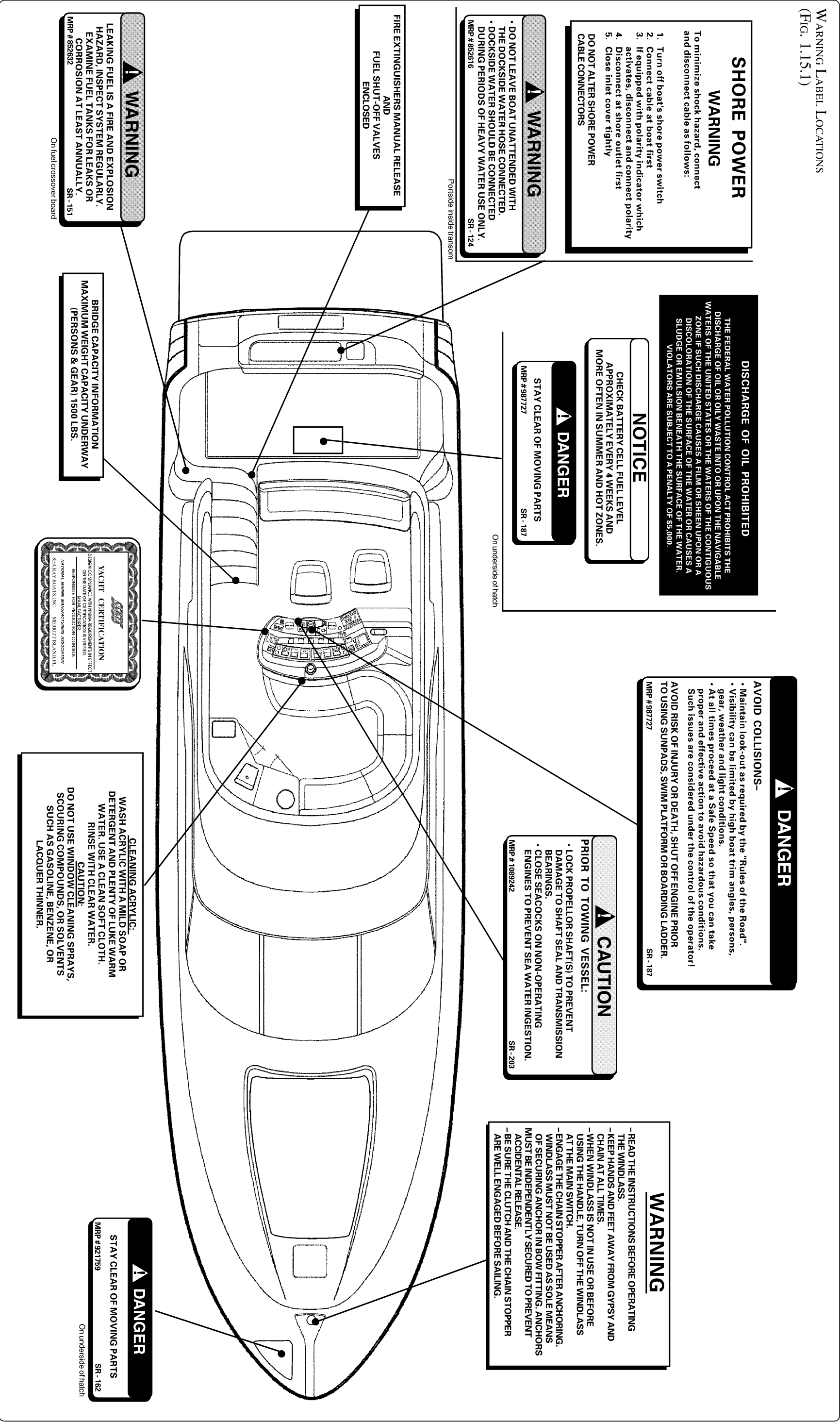
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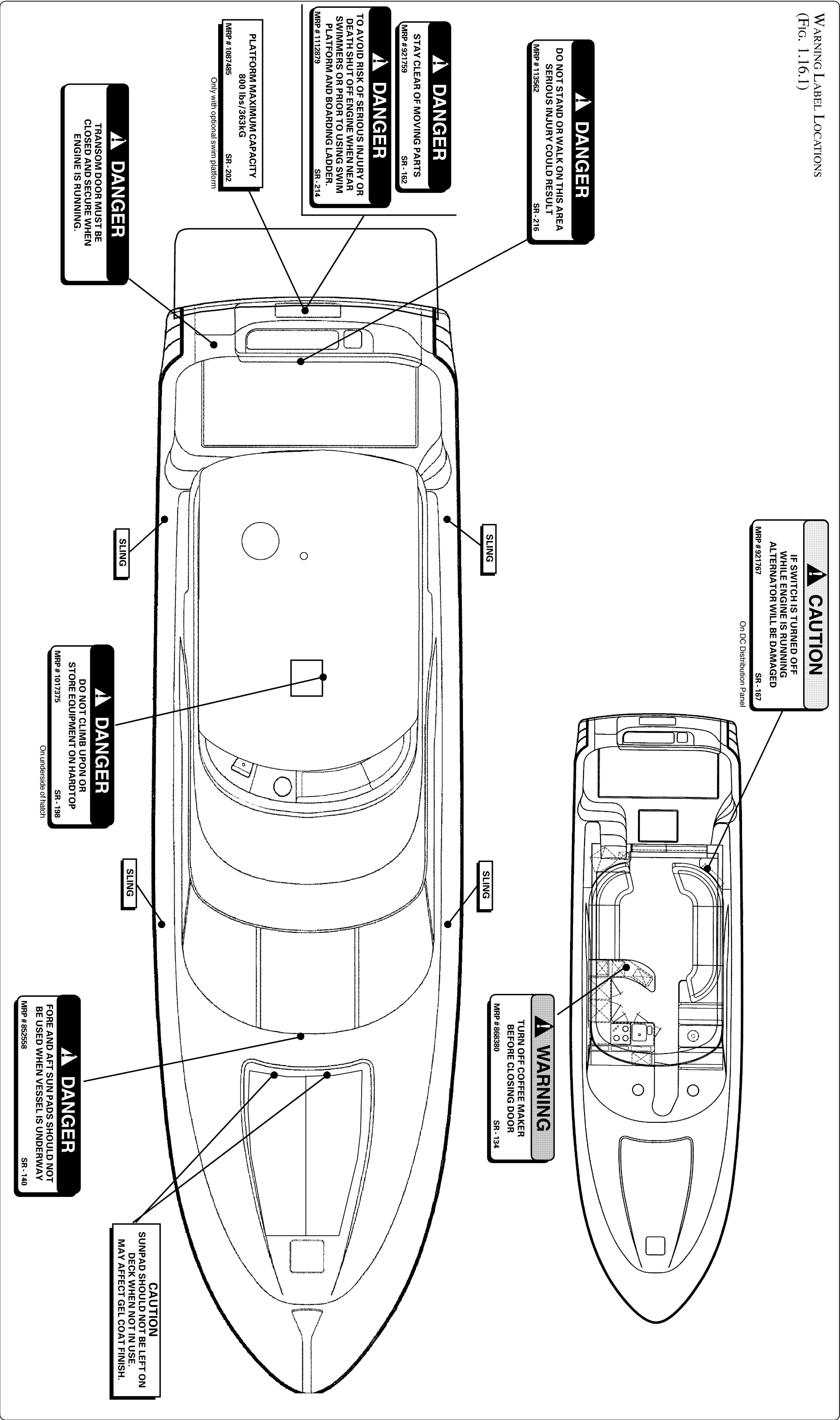
19. 560 DB Warning Label Locations

WARNING LABEL LOCATIONS  
(Fig. 1.15.1)



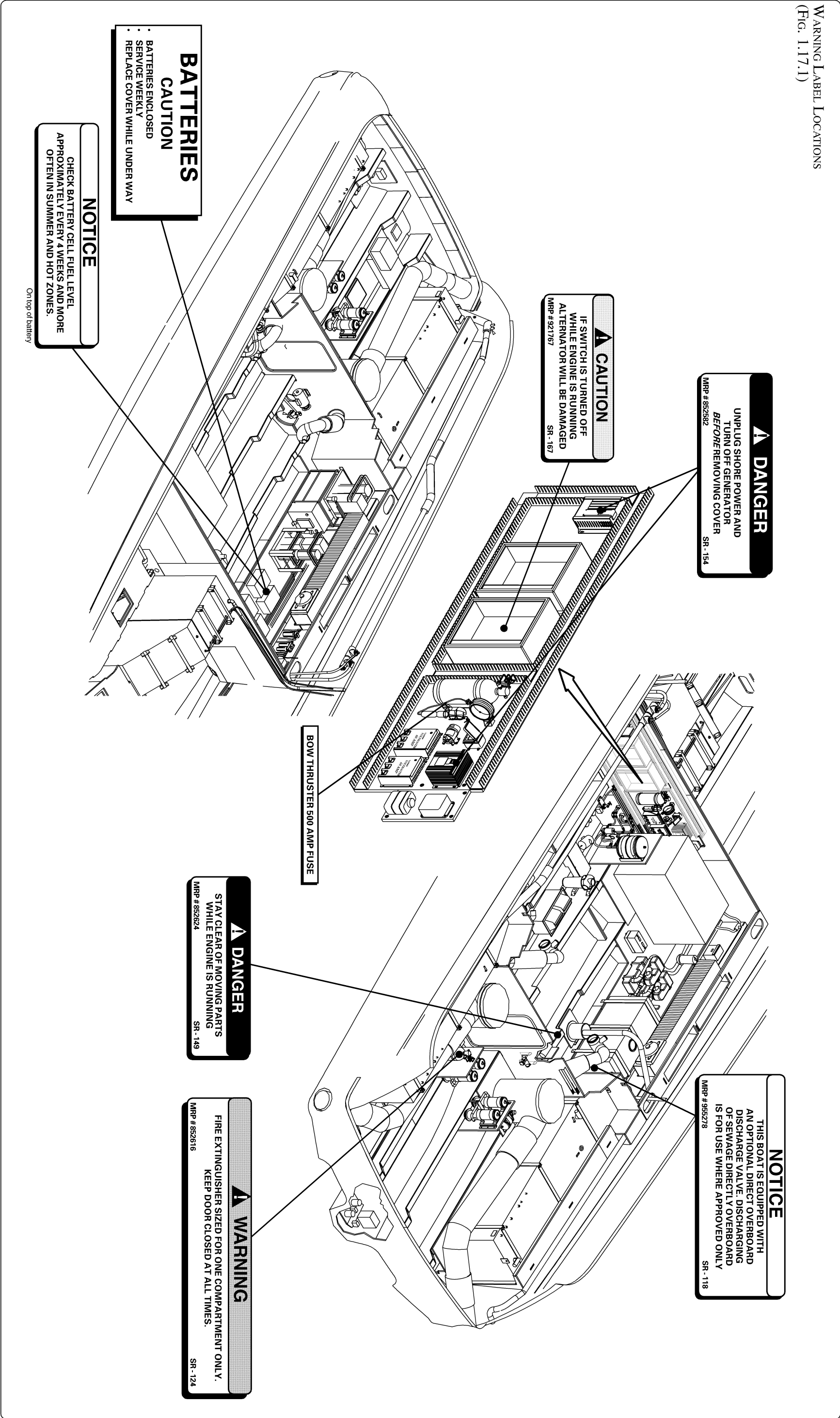
# 560 DB Warning Label Locations

WARNING LABEL LOCATIONS  
(FIG. 1.16.1)



560 DB Warning Label Locations

WARNING LABEL LOCATIONS  
(Fig. 1.17.1)







## SECTION 2 • GENERAL BOAT ARRANGEMENT

### 1. DOCKING/LIFTING/STORAGE

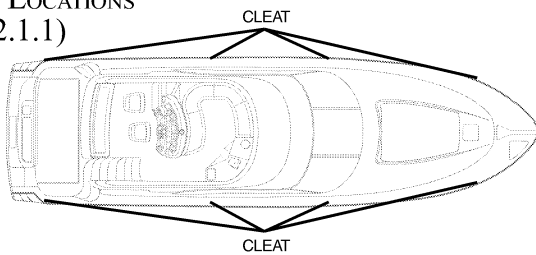


#### CAUTION

Do Not use cleats for lifting.

**BOW AND STERN CLEATS:** (See Figure 2.1.1)  
Cleats must not be used for lifting the boat, they are intended for docking or mooring use only.

CLEAT LOCATIONS  
(FIG. 2.1.1)



When lifting the boat always keep the bow higher than the stern to drain the exhaust lines and to prevent water from running forward through the manifold and into the engine where it can become trapped. It may seem expedient to lift only the stern when changing a propeller, but this can result in water entering the engine cylinders, causing hydrostatic lock and resulting in possible engine failure. Even a small amount of water in the engine can cause rust and is to be avoided.

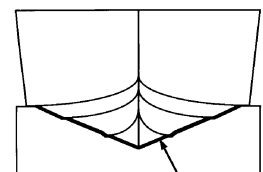
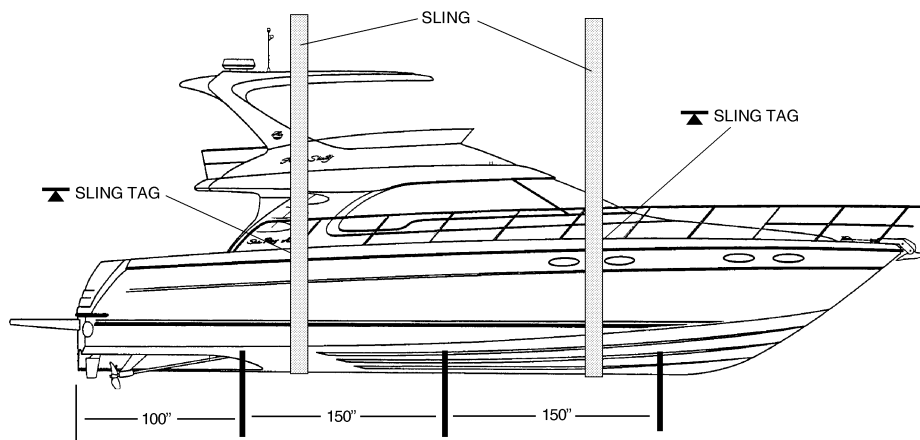
With fiberglass boats, severe gelcoat crazing or more serious hull damage can occur during launching and hauling if pressure is created on the gunwales by the slings. Flat, wide belting-type slings and spreaders long enough to keep pressure from the gunwales are necessary. Cable-type slings should be avoided. Do not place the slings where they may lift on the propeller shaft or other underwater fittings. The slings should be placed directly over the sling tags imprinted on the deck (See Figure 2.1.2) to assure the least amount of stress on the hull.

Never hoist the boat with an appreciable amount of water in the bilge. Fuel and water tanks should preferably be empty, especially if of large capacity.

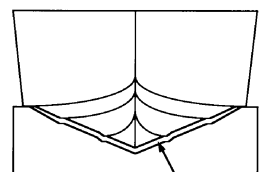
#### A. SUPPORTING THE BOAT

A cradle is the ideal support for the boat whenever it is not in the water. Properly designed and constructed, it will provide support at the proper points, which is essential to avoid stress on the hull. Boat placement on the cradle should line up as closely as possible to the sling tags on the side of the deck. Do not rest boat on underwater fittings.

PROPER LIFTING AND STORAGE OF THE 560 DB  
(FIG. 2.1.2)



RIGHT (NO GAP)



WRONG (GAP)



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## SECTION 2 • GENERAL BOAT ARRANGEMENT

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### 2. PASSENGER LOCATIONS

1. When the boat is moving, all passengers must be in the cockpit area or in the cabin and must be on seating provided or, if standing, holding on firmly (See Figure 2.3.1).

#### **WARNING**

**Boat motion can be erratic.**

**You can fall overboard or be injured by hitting something in or on the boat.**

**All persons must be in cockpit area or cabin and be prepared for sudden boat movement.**

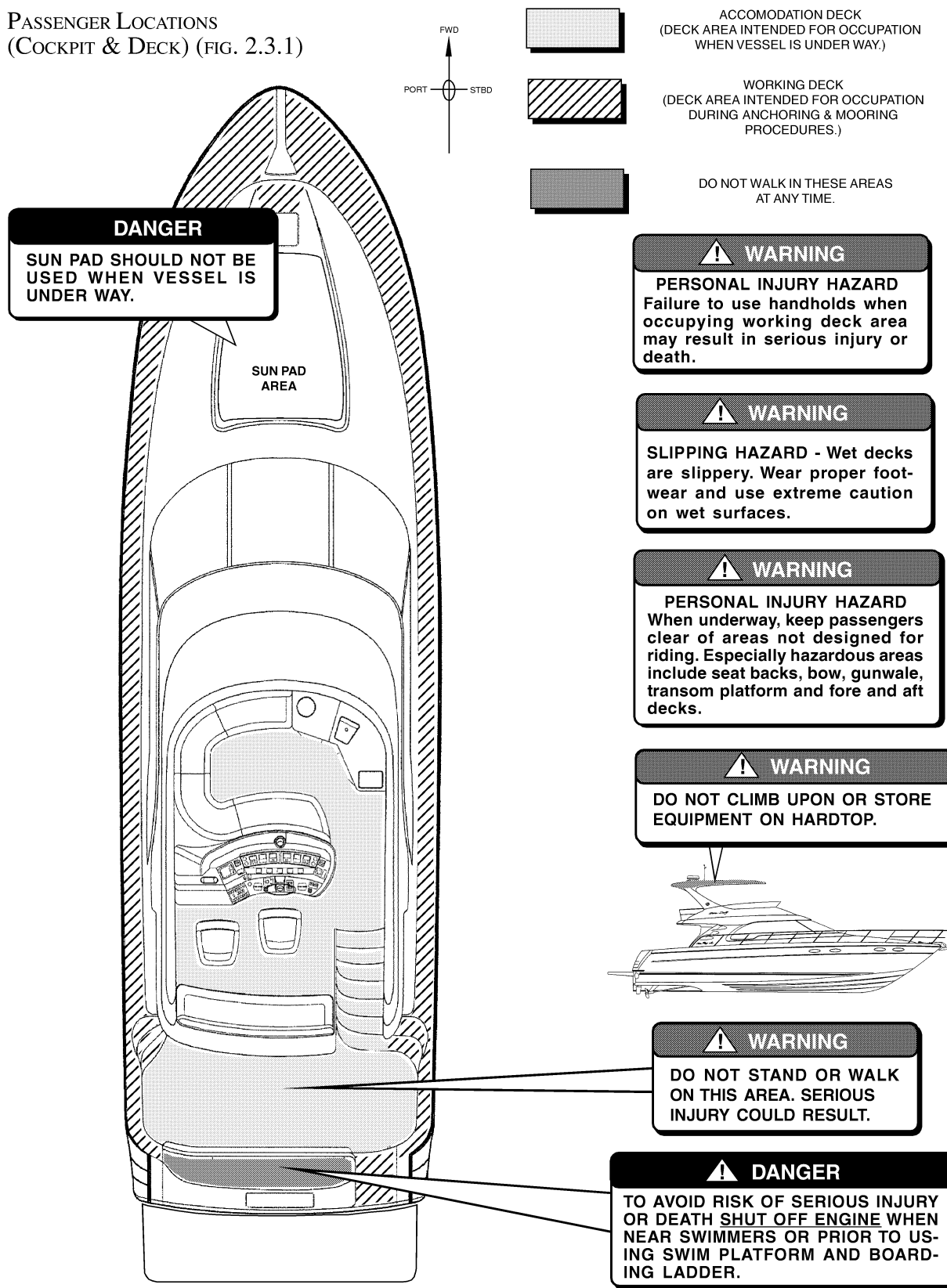
**Use front or bow deck area only during anchoring, mooring or emergencies.**

While the person at the wheel must alert passengers before any sudden or erratic boat movement, such as crossing wakes, rapid turns, sudden acceleration or deceleration, etc., an emergency action may be necessary before passengers can be warned. All passengers must be prepared for rapid boat movement and be able to hold on to prevent loss of balance.

2. When persons are on the working deck area, for anchoring, mooring or in emergencies, they must be holding on and be positioned so as to prevent falling. In bad weather and/or rough water, if it is essential to be on deck, persons should be closely tied to cleats, railing stanchions or other securely fastened boat hardware.
3. Engines must be turned off if the boat is near swimmers or persons are on the swim platform or the swim ladder.

## SECTION 2 • GENERAL BOAT ARRANGEMENT

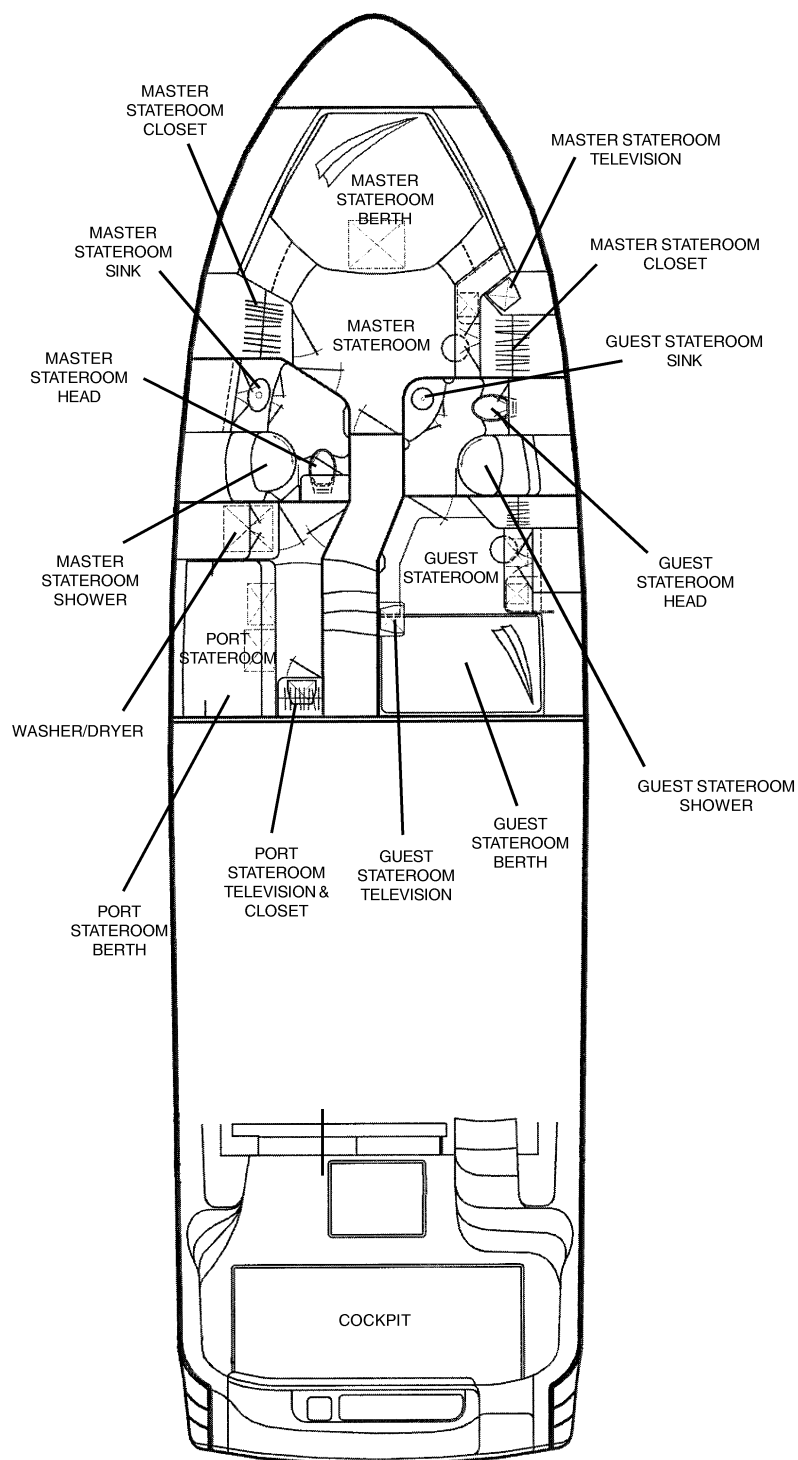
PASSENGER LOCATIONS  
(COCKPIT & DECK) (FIG. 2.3.1)



## SECTION 2 • GENERAL BOAT ARRANGEMENT

### 3. FLOOR PLAN

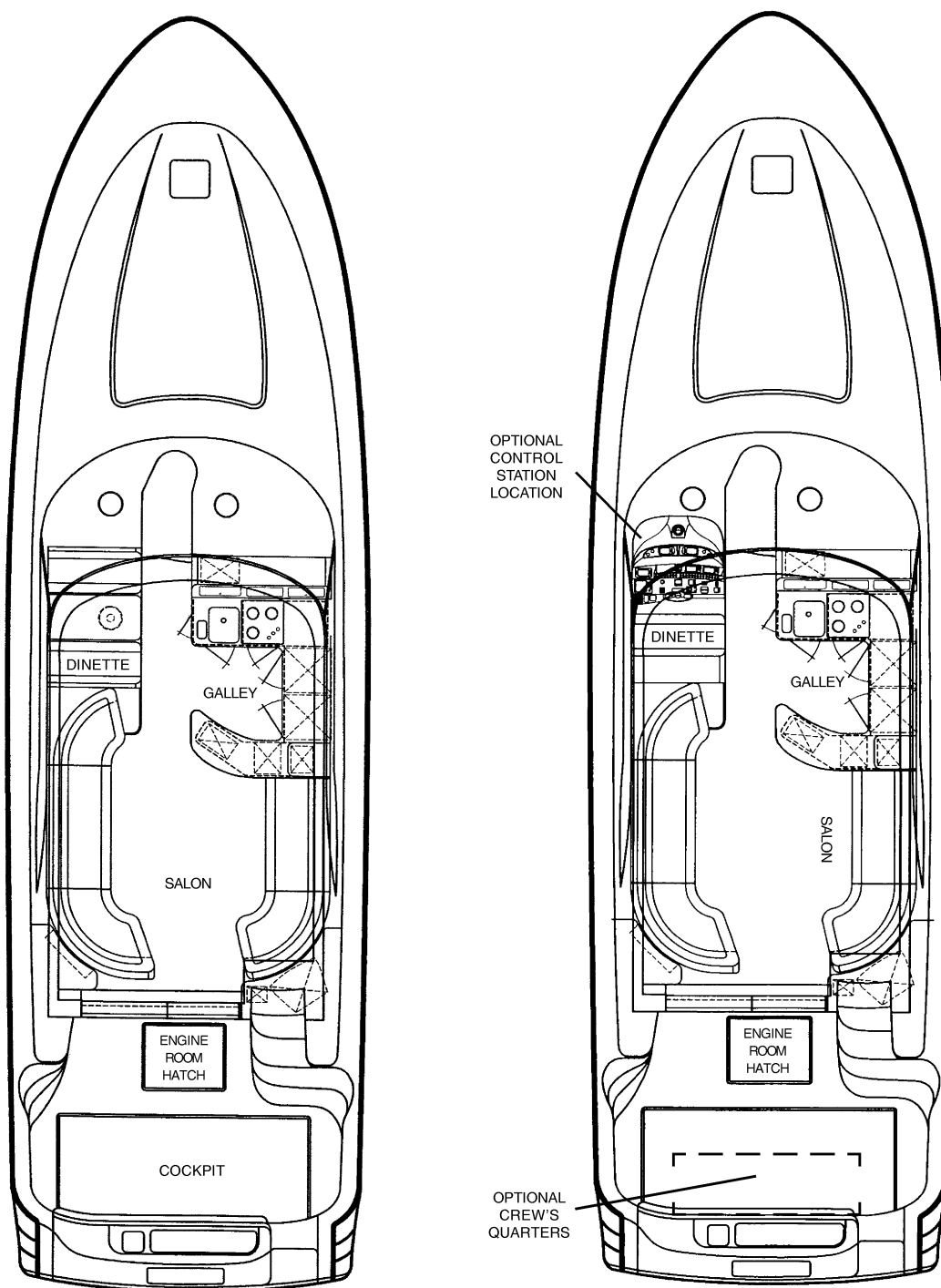
LOWER LEVEL  
(FIG. 2.4.1)



## SECTION 2 • GENERAL BOAT ARRANGEMENT

### FLOOR PLAN

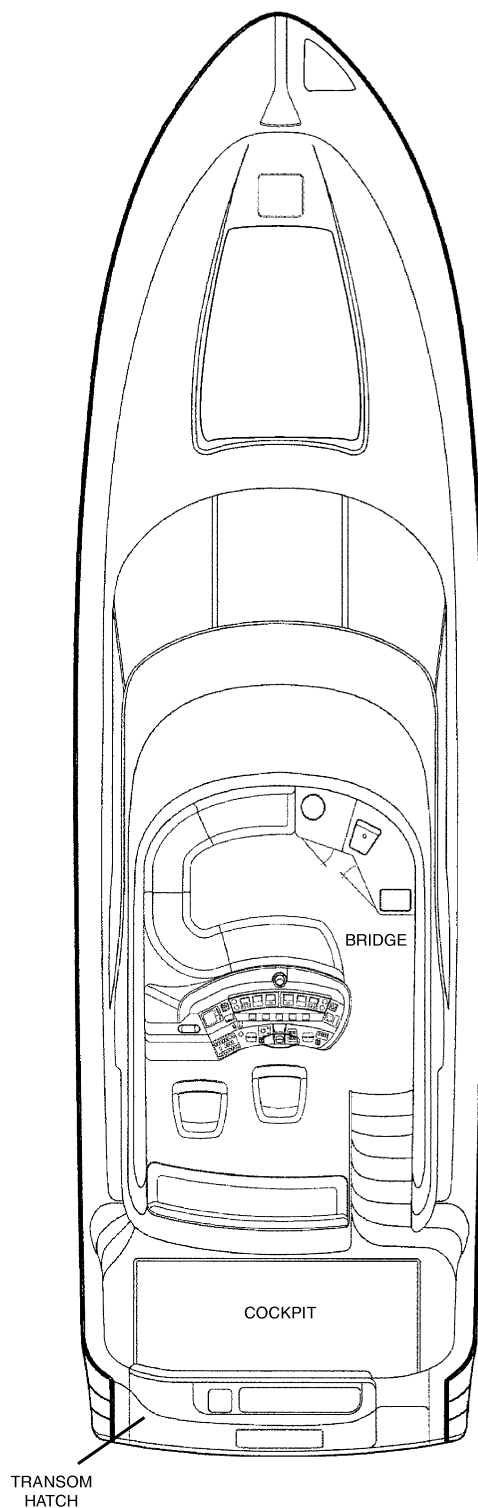
MID LEVEL  
(FIG. 2.5.1)



## SECTION 2 • GENERAL BOAT ARRANGEMENT

### FLOOR PLAN

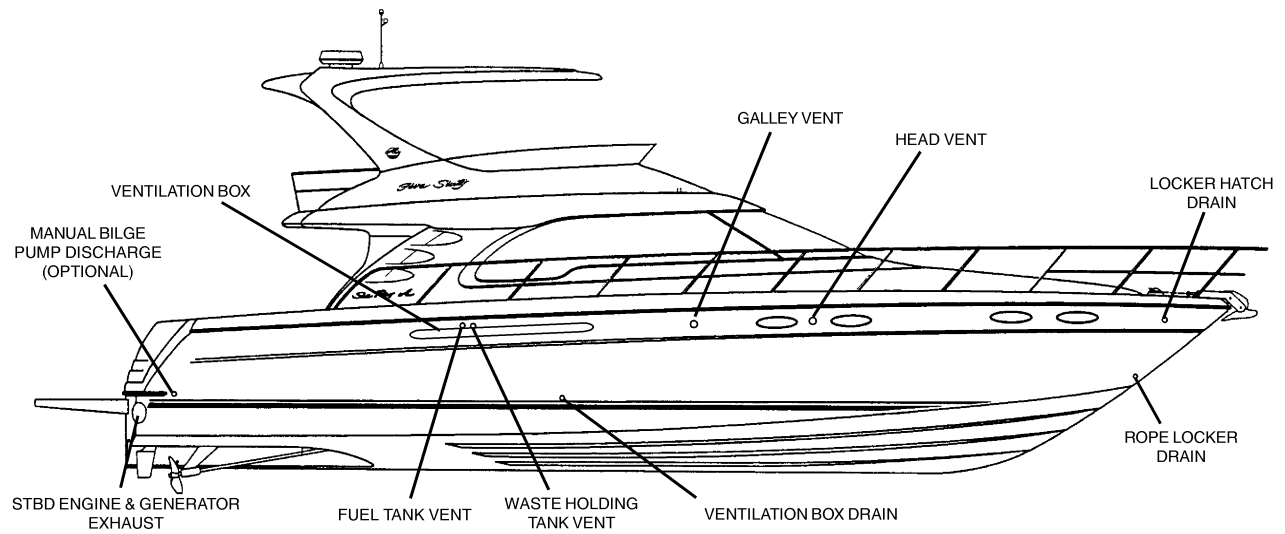
BRIDGE  
(FIG. 2.6.1)



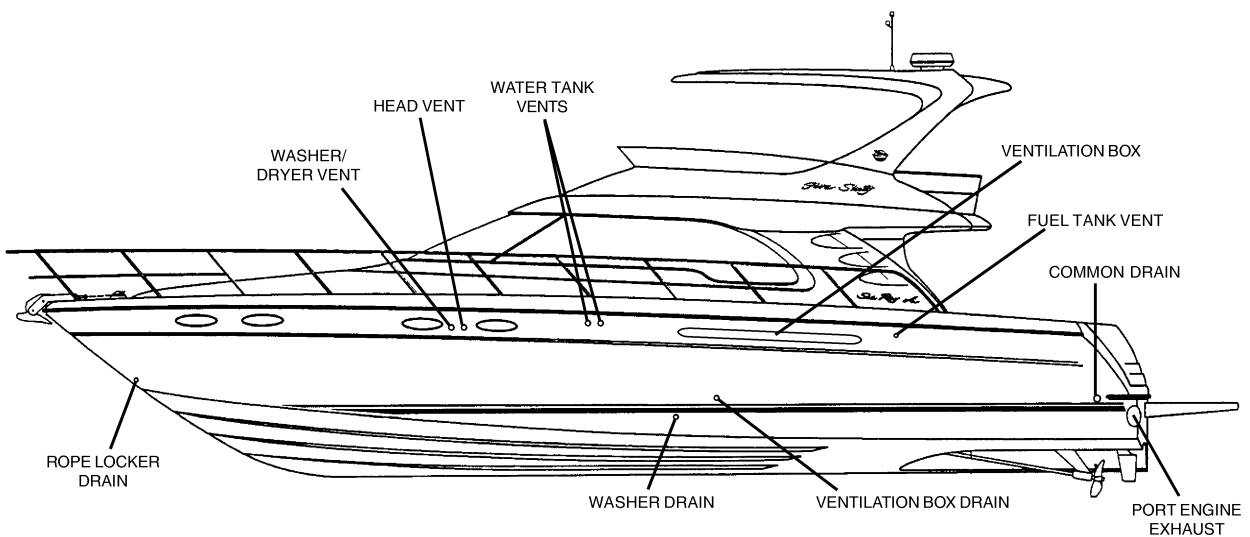
## SECTION 2 • GENERAL BOAT ARRANGEMENT

### 4. FUNCTION AND LOCATION OF THROUGH-HULL FITTINGS AND CUTOUTS

STARBOARD THROUGH-HULL FITTINGS  
(FIG. 2.7.1)



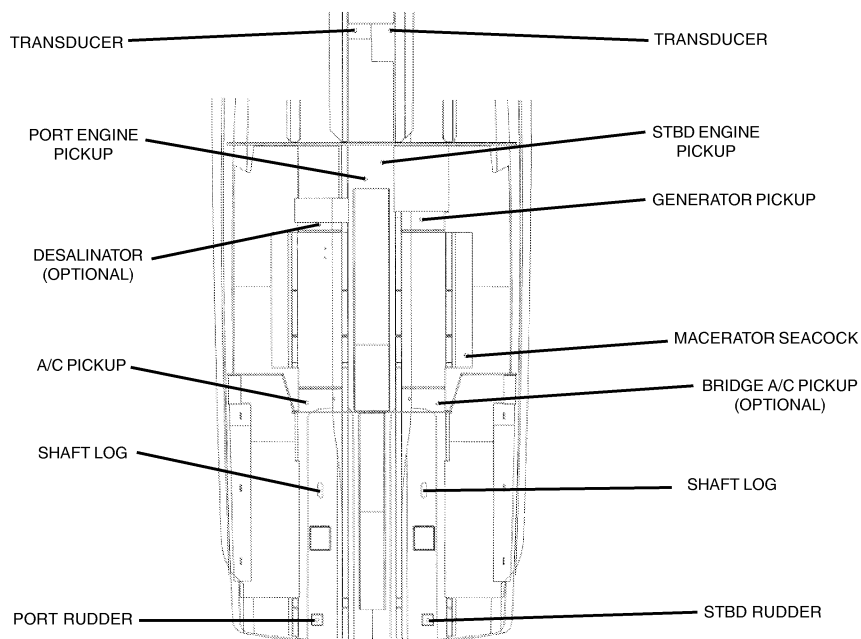
PORT THROUGH-HULL FITTINGS  
(FIG. 2.7.2)



## SECTION 2 • GENERAL BOAT ARRANGEMENT

### FUNCTION AND LOCATION OF THROUGH-HULL FITTINGS AND CUTOUTS

THROUGH-HULL FITTINGS  
(FIG. 2.8.1)

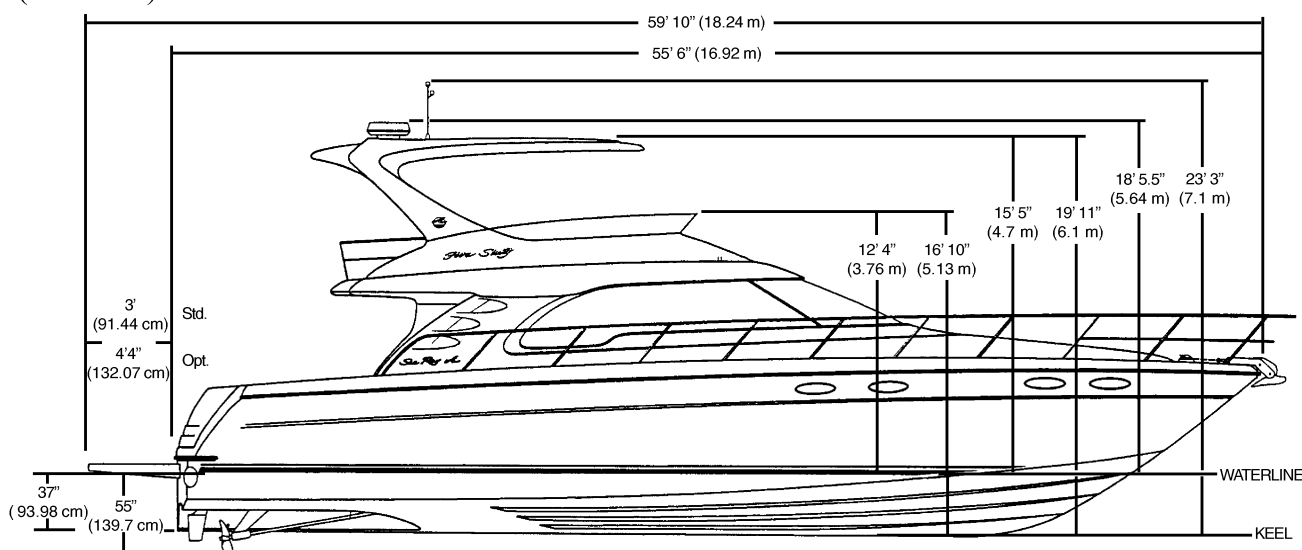




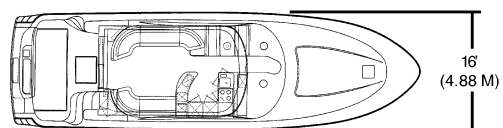
## SECTION 2 • GENERAL BOAT ARRANGEMENT

### 5. BASIC BOAT DIMENSIONS AND CLEARANCES

BOAT DIMENSIONS AND CLEARANCES  
(FIG. 2.9.1)



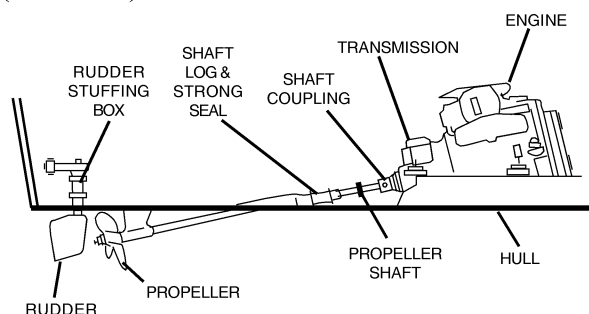
|                             |         |                |
|-----------------------------|---------|----------------|
| Overall Length -----        | 55' 6"  | 16.92m         |
| w/Std. Swim Platform -----  | 58' 6"  | 17.83m         |
| w/Opt. Swim Platform -----  | 59' 10" | 18.24m         |
| Beam -----                  | 16' 0"  | 4.88m          |
| Draft-----                  | 57"     | 144.78cm       |
| Dry Weight (lbs.)-----      | 50,000  | 22,680 kg      |
| Fuel Capacity (gal.) -----  | 800     | 3028 (liters)  |
| Water Capacity (gal.) ----- | 200     | 750.0 (liters) |
| Holding Tank (gal.) -----   | 68      | 257.4 (liters) |
| Dead Rise -----             | 15°     | 15°            |



### 6. PROPULSION SYSTEM

The inboard engines on the 560 DB are the heart of your Sea Ray® boat. Proper attention to and maintenance of your engines will assure you of many hours of pleasurable, safe boating and will prevent unnecessary engine problems. You must therefore become thoroughly familiar with all aspects of the engine's proper operation outlined in the Engine Operator's Manual. A general maintenance program consists of proper lubrication, cleaning of fuel filters, fuel lines and air filters. **When**

STANDARD PROPULSION  
(FIG. 2.9.2)



## SECTION 2 • GENERAL BOAT ARRANGEMENT

washing down, or at any other time, take care that water does not enter the air inlets. Water entering the air inlets when the engines are not operating may go directly into the cylinders, resulting in rust and possibly internal engine damage.

**The engines are warranted directly by the engine manufacturer, not Sea Ray®.**

Sea Ray® strongly urges you to fully comply with the manual provided by the engine manufacturer. Follow the recommended maintenance and warranty schedule in your Engine Operator's Manual included in the owner's packet. Engine abuse or improper maintenance may adversely affect the claims made under the independent warranty provided by the engine manufacturer.

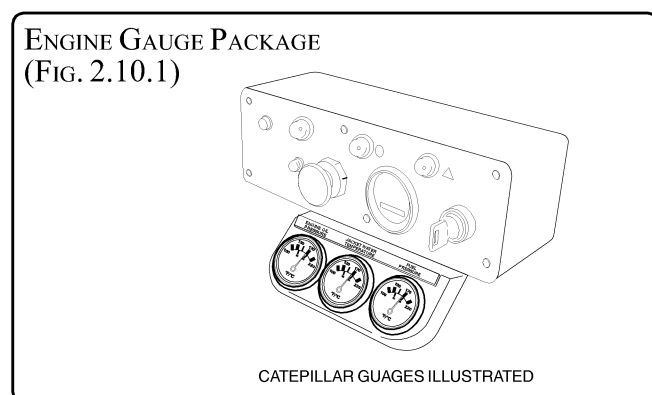
### A. ENGINE GAUGE PACKAGE

Each of your engines have been equipped with an engine gauge package (Figure 2.10.1). This package is provided as a safety feature in the event of an electrical malfunction resulting in the helm gauges becoming inoperative.

#### A. LOCATION

The engine gauge package is located on the inboard side of each engine.

Gauge packages may differ with different engine options. Refer to your Engine Operator's Manual for proper gauge readings and gauge package location.



## 7. PROPELLERS

Your Sea Ray® has been equipped with propellers which our tests have shown to be the best suited for general use under normal conditions and load.

Under no circumstances use a propeller which allows the engine to operate at higher than maximum RPM for your engine.

REFER TO ENGINE OPERATOR'S MANUAL FOR MORE DETAILED INFORMATION.

## 8. DESCRIPTION OF MAJOR CONTROLS

### A. GEAR SHIFTS AND THROTTLE CONTROLS

Standard on the 560 DB are dual hydraulic gear shift and throttle engine controls. However, your yacht may be equipped with hydraulic or electric throttle control(s). There are different functions and operating and maintenance instructions which must be followed. Read and understand the information in the Owner's Manual Packet for your yacht model's gear and throttle control.

Your yacht has start in-gear protection. For safety's sake and as a good habit to get into, always put the gear selector in the NEUTRAL position and the

### ! WARNING

Shift selector(s) to NEUTRAL before starting engines.

Shift only when engine is at IDLE.

Reversing at high speeds can cause flooding/swamping due to water being pushed over the transom.

### ! CAUTION

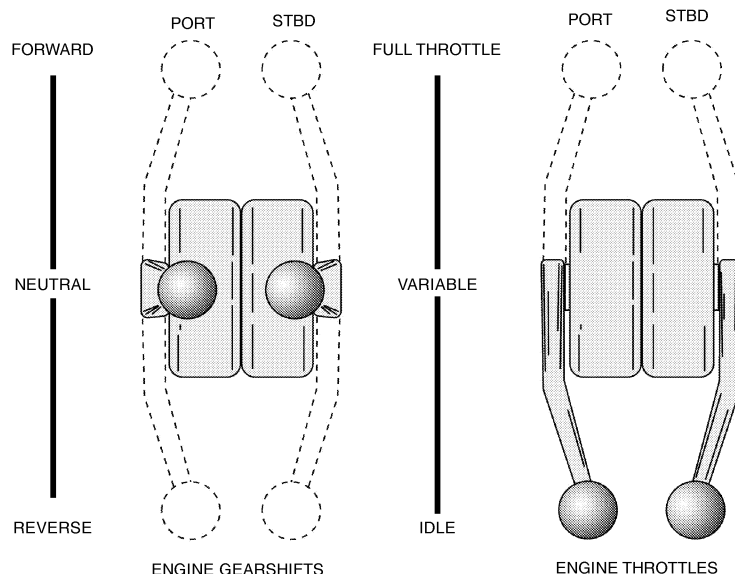
Shift quickly; easing into gear can damage the transmission.

Hydraulic controls FORWARD and REVERSE positions should always be in full travel extremes in either direction for positive engagement and minimum wear.



## SECTION 2 • GENERAL BOAT ARRANGEMENT

ENGINE SHIFT AND THROTTLE FUNCTIONS (HYDRAULIC)  
(FIG. 2.11.1)



throttle selector in the IDLE position before starting the engines.

### B. GEAR SHIFTS AND THROTTLE CONTROLS (HYDRAULIC)

The gear shift lever for each engine (twin lever controls on port side of the control station) (See Figure 2.11.1) has three positions: FORWARD, NEUTRAL and REVERSE. The control lever must be in the NEUTRAL (center) position when starting the engine(s). A positioning indent can be felt when the control is in exact NEUTRAL. FORWARD and REVERSE positions should always be in full travel extremes in either direction for a positive engagement and minimum wear.

The throttle controls (twin lever controls on starboard side of control station) (See Figure 2.15.1) regulate the RPM of the engines. Periodically check and seasonally lubricate the linkage with medium weight oil.

**NOTE:** Prior to starting engines, put throttles at IDLE and gearshifts in NEUTRAL.

#### A. OPERATION (FIG. 2.11.1)

##### 1. Throttle Levers:

Forward motion - increases Throttle

Aft Motion - Decreases Throttle

##### 2. Gearshift Levers:

Forward Position - FORWARD

Center Position - NEUTRAL

Aft Position - REVERSE

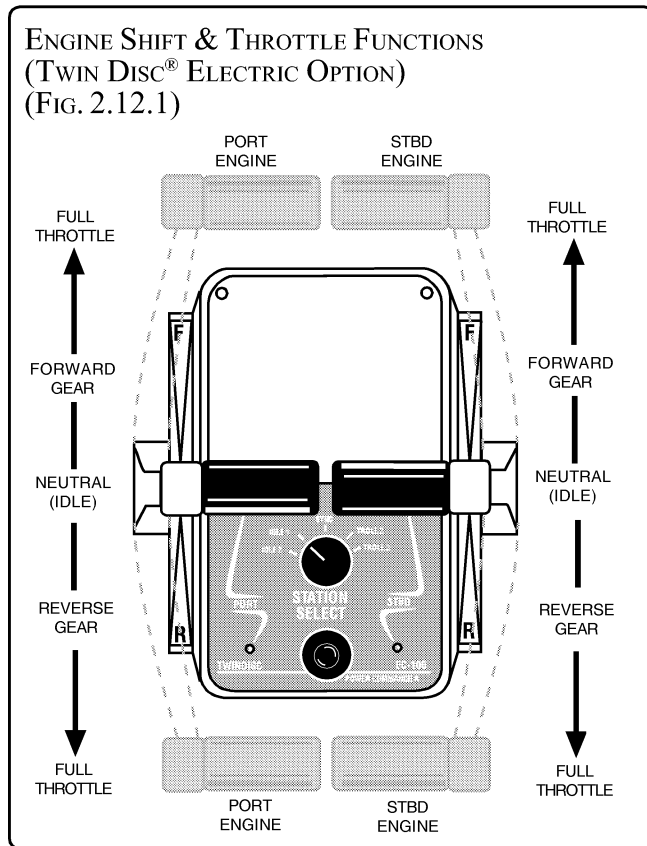
#### B. MAINTENANCE

The clutch and throttle lever bodies are made of anodized aluminum. To clean them, a warm soapy water solution should be used. DO NOT use an abrasive compound.

**NOTE:** Refer to your engine Owner's Manual to operate the throttle arm by hand for maintenance.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

## SECTION 2 • GENERAL BOAT ARRANGEMENT



### A. OPERATION (FIG. 2.12.1)

1. The port lever operates the gear and throttle for the port engine and the starboard lever operates the gear and throttle for the starboard engine.
2. Moving the lever forward to the first indent engages the forward gear. Moving the lever backwards to the first indent engages the reverse gear.

### **! WARNING**

Shift selector(s) to **NEUTRAL** before starting engines.

Shift only when engine is at **IDLE**.

**Reversing at high speeds can cause flooding/swamping due to water being pushed over the transom.**

3. Moving the levers further forward or backwards increases throttle and boat speed.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### C. GEAR SHIFTS AND THROTTLE CONTROLS (ELECTRIC OPTION - TWIN DISC®)

Your boat may be equipped with Twin Disc® electric gear shifts and throttle controls as optional equipment (Figure 2.12.1). They are located on the control station. Electric controls offer many advantages, including ease of shifting, no mechanical linkages, and much more. Sea Ray® recommends that you read the Owner's Manual for electric control options on your 560 DB to take full advantage of this option.

**NOTE:** Prior to starting engines (diesel):

- Shift throttle and gear levers into the **NEUTRAL** position.
- Ensure that the boat's DC power is **ON**.
- Follow the engine **START** sequence according to the Engine Owner's Manual. Also see Section 3-Using Your Boat; Pg. 3.4.

### D. ENGINE SYNCHRONIZERS

When the engine synchronizers are in operation, any engine speed differential is immediately sensed and automatically corrected. A single throttle movement is all that is necessary to ensure that both engines maintain identical RPM.

The standard helm for the 560 DB is equipped with Glendenning synchronizers and hydraulic gearshift and throttle controls. The optional helms offer synchronizers that accompany the electronic gauge and electric gearshift and throttle controls package (i.e. Twin Disc®). If you have this option, refer to your Owner's Manual Packet for the correct operating instructions for your 560 DB engine synchronizers.

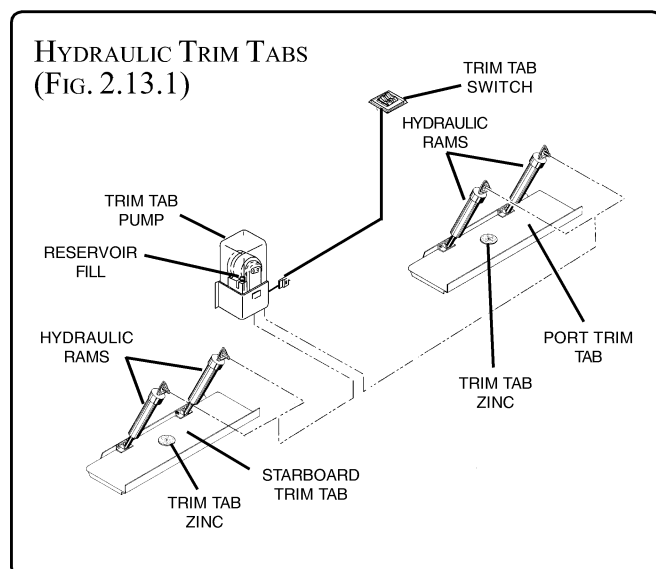
### **! WARNING**

#### **MANEUVERING/CONTROL HAZARD**

**Ensure continuous visibility of other boats, swimmers, and obstacles during bow-up transition to planing.**



## SECTION 2 • GENERAL BOAT ARRANGEMENT



### A. GLENDENNING SYNCHRONIZERS:

1. Have both engines running and advance speed slightly above idle.
2. Turn ON synchronizer switch located on the control station switch panel (Figure 2.16.1).
3. Move slave (starboard) engine throttle lever to maximum speed position. Since the synchronizer is now controlling the slave engine, the lever is "limp" or noneffective. Advancing the slave engine lever eliminates the synchronizer of undue strain in moving the entire control system.

### E. HYDRAULIC TRIM TABS

The trim tabs on your Sea Ray® are operated with a rocker type momentary switch at the control station (Figure 2.15.1). They are protected by a circuit breaker on the control station breaker panel which must be ON to use the trim tabs (Figure 2.16.2).

To trim the bow of your boat down, push the top halves of BOTH rockers down in momentary bursts. If you hold the rockers down, you will over trim the boat and the bow will dig in. To correct over-trimming, push bottom halves of BOTH rockers to obtain desired planing angle.

| RUNNING ATTITUDE | LIST      | PUSH                       |
|------------------|-----------|----------------------------|
| BOW UP           | .....     | TOP OF BOTH ROCKERS        |
| BOW UP           | PORT      | TOP OF STARBOARD ROCKER    |
| BOW UP           | STARBOARD | TOP OF PORT ROCKER         |
| BOW DOWN         | PORT      | BOTTOM OF STARBOARD ROCKER |
| BOW DOWN         | STARBOARD | BOTTOM OF PORT ROCKER      |

The two trim tabs on the transom of your boat can also be used to trim the list of your boat (See chart below) that may be caused by improper storage of gear, too many people on one side or a strong cross wind. Operation of the rocker switch should be momentary bursts to achieve proper attitude of the hull.

When running wide open, most boats do not require any trim unless heavily loaded.

In heavy following seas or when running in an inlet, best maneuverability is obtained with a bow high attitude. To be sure the tabs are full up in the zero position, push the bottom halves of BOTH rockers for several seconds.

The trim tab pumps are located on the aft bilge bulkhead, mounted on the inside of the transom. To service the units, remove the tinted plastic cover to gain access to reservoir fill plug and motor parts. Hydraulic trim tabs use Type A Dexron II automatic transmission fluid, which should be filled up to the FULL mark on the pump base. **Add fluid with the trim tabs in the up position only.**

Your boat is designed to plane at a particular speed and weight distribution. As speed decreases or weight increases, the stern will settle lower in the water and the hull will push a hill of water, increasing drag and requiring more power to move through the water.

Hydraulic trim tabs are adjusted independently of each other, enabling adjustment of bow attitude up and down as well as to correct for side to side list. Trim tabs also provide attitude adjustment at lower speeds.

## SECTION 2 • GENERAL BOAT ARRANGEMENT

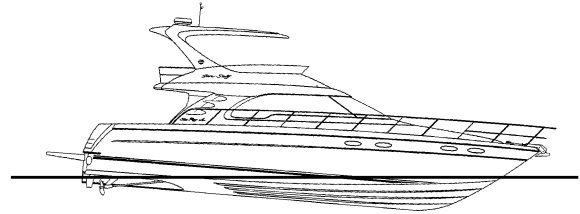
### A. A PROPERLY TRIMMED BOAT:

- Operates at a correct running attitude of a 3 to 5 degree angle to the water (bow slightly up).
- Reduces drag and increases fuel efficiency.
- Preserves good forward visibility.
- Increases safety.

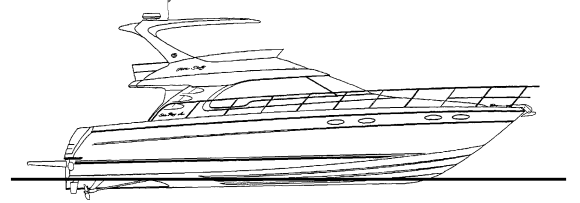
Use short bursts of rocker switches to adjust trim tabs. Pushing switches too far at once may cause sudden steering problems. Adjusting one trim tab more than the other will adjust list caused by improper equipment storage, too many people on one side or a strong cross wind.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

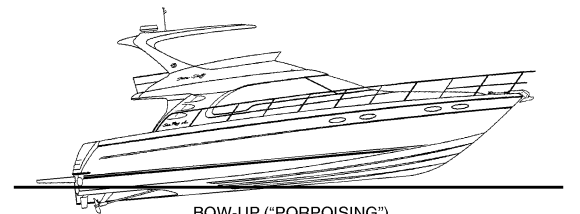
### EFFECTS OF TRIMMING (FIG. 2.14.1)



BOW-DOWN ("PLOWING")

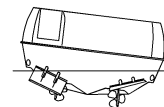


PROPER TRIM (3-5° BOW-UP ANGLE)

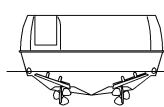


BOW-UP ("PORPOISING")

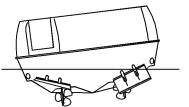
### EFFECTS OF PORT AND STBD TRIM TAB ADJUSTMENT



PORT TAB DOWN  
PORT STERN UP  
STBD BOW DOWN



BOTH NEUTRAL  
NO CHANGE IN LIST

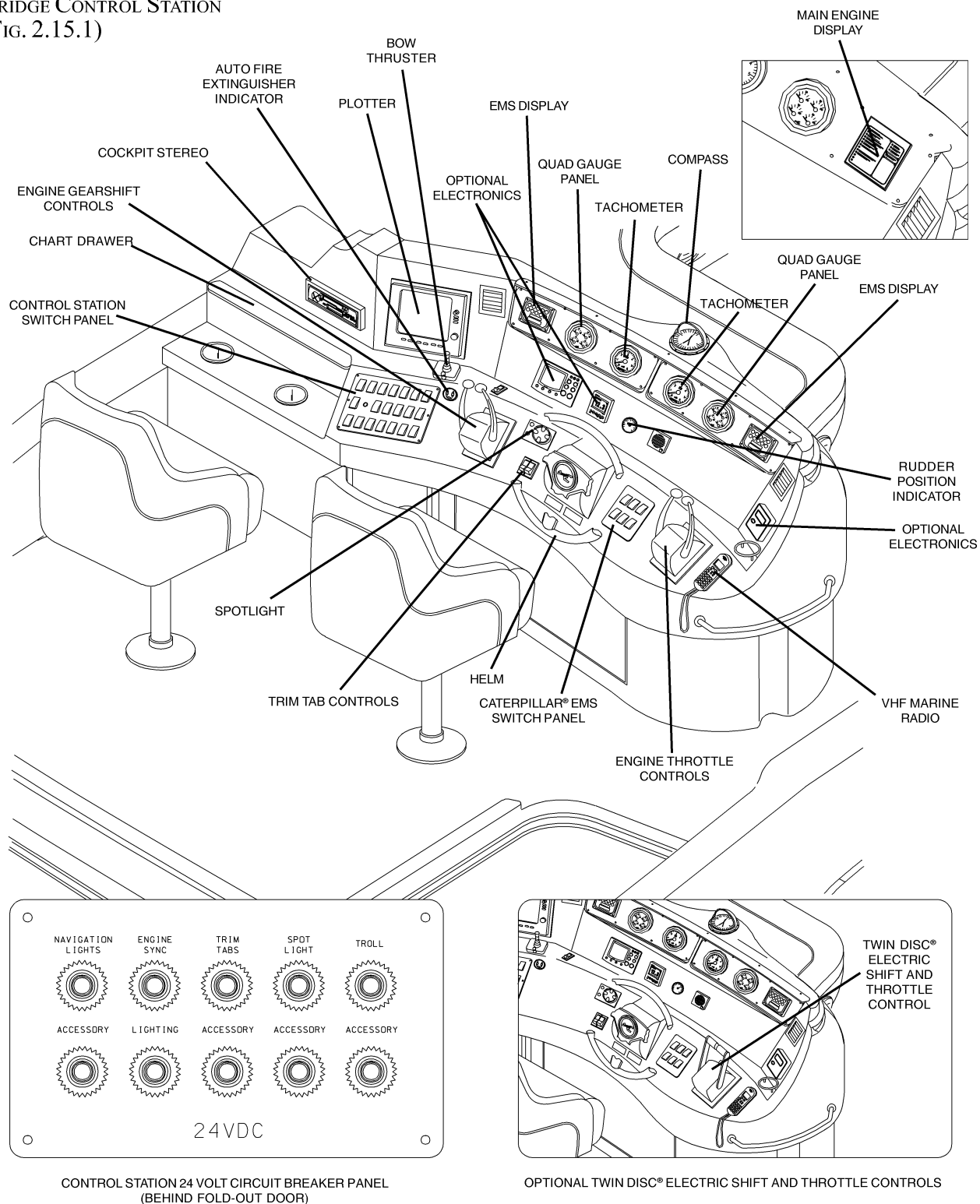


STBD TAB DOWN  
STBD STERN UP  
PORT BOW DOWN

## SECTION 2 • GENERAL BOAT ARRANGEMENT

### 9. HELM GAUGE AND SWITCH LAYOUT

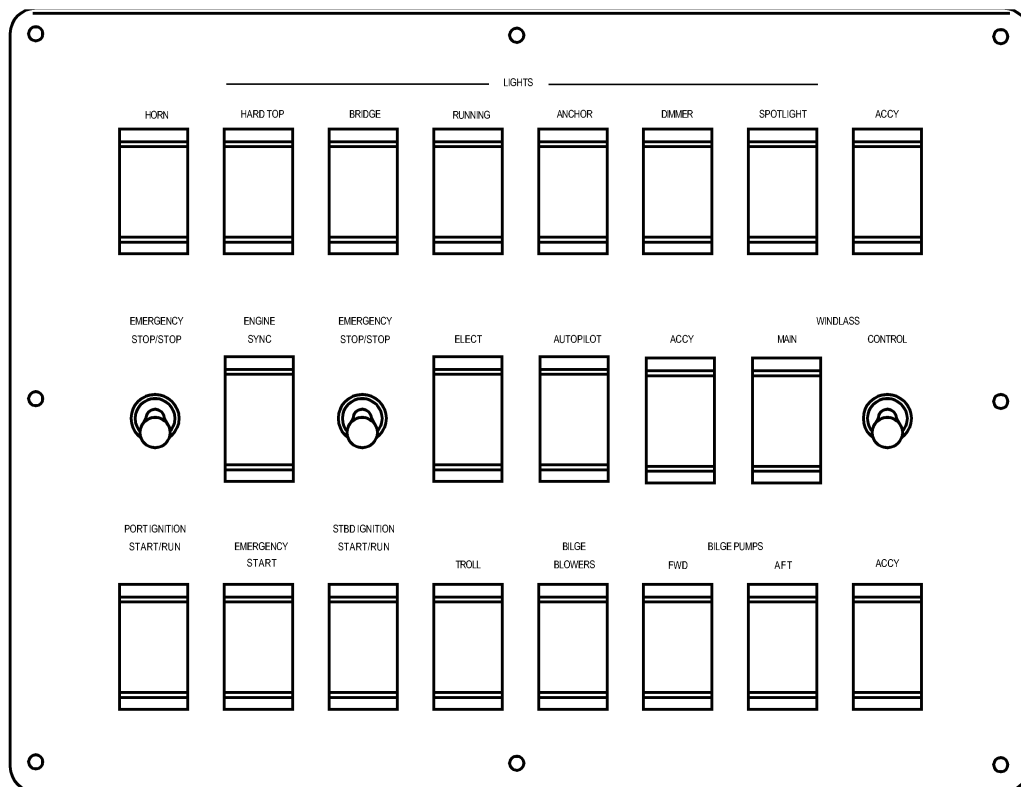
BRIDGE CONTROL STATION  
(FIG. 2.15.1)



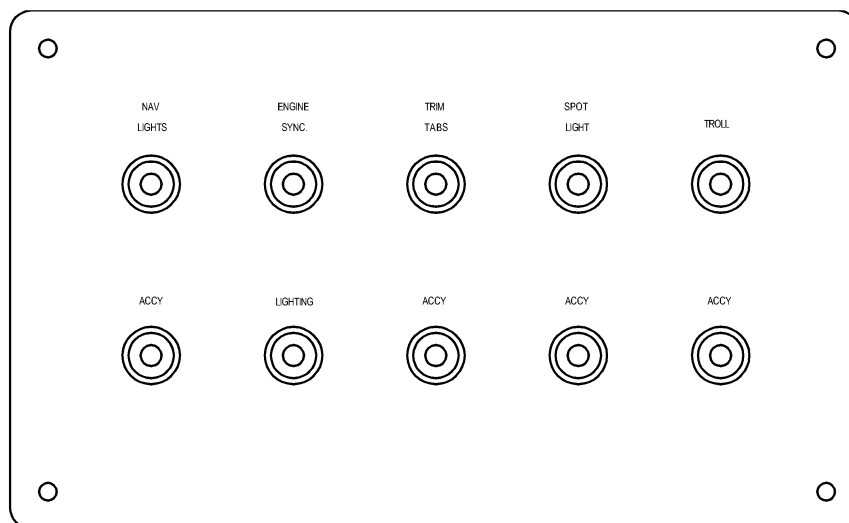
## SECTION 2 • GENERAL BOAT ARRANGEMENT

### HELM GAUGE AND SWITCH LAYOUT

BRIDGE CONTROL STATION SWITCH PANEL  
(FIG. 2.16.1)



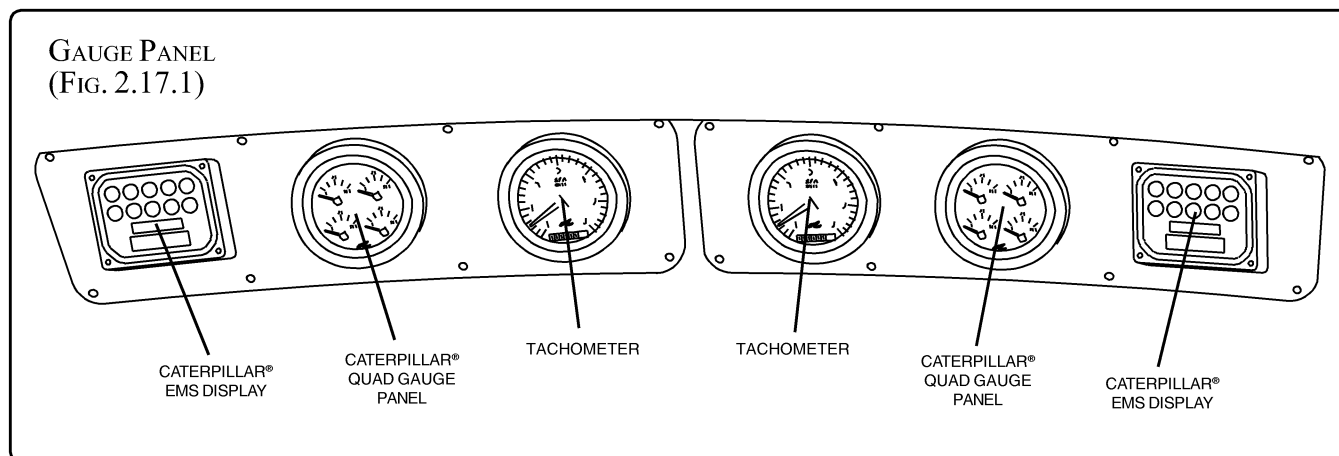
UPPER CONTROL STATION BREAKER PANEL  
(FIG. 2.16.2)





## SECTION 2 • GENERAL BOAT ARRANGEMENT

GAUGE PANEL  
(FIG. 2.17.1)



### 10. IMPORTANT GAUGES

#### A. ENGINE MONITORING SYSTEM (EMS) (OPTIONAL)

Your yacht is equipped with the Caterpillar® Engine Monitoring System (EMS) which incorporates three individual gauge units per engine (See Fig. 2.17.1). They are:

Main EMS Gauge

Quad Gauge

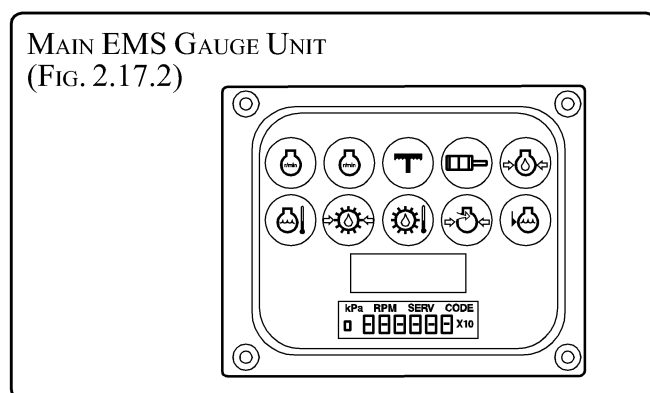
Tachometer

Refer to the Owner's Manual Packet for more information about your gauge display operation and instructions.

#### MAIN EMS DISPLAY

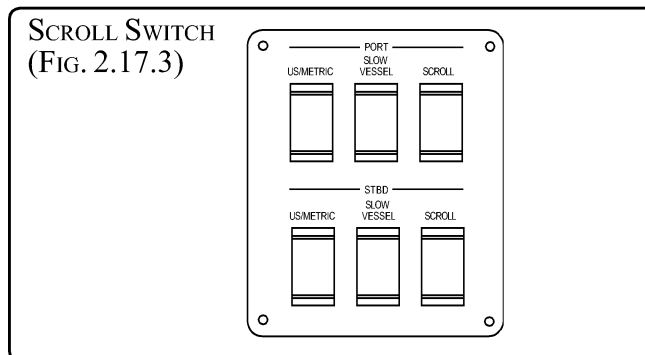
EMS is an electronic monitoring system designed to display various engine/transmission parameters.

MAIN EMS GAUGE UNIT  
(FIG. 2.17.2)



The main EMS gauge (Figure 2.17.2) has ten (two rows of five) indicators to display system related diagnostics. A digital LCD is functional to scroll through the different engine/transmission parameters monitored. **A port and starboard scroll switch is located on the lower control station switch panel (See Fig. 2.17.3).**

SCROLL SWITCH  
(FIG. 2.17.3)



The parameters monitored by the EMS include the following functions:

Engine Overspeed (Main and Back-up Speed Sensors)

Engine Oil Pressure

Engine Coolant Temperature and Coolant Level

Transmission Oil Pressure and Oil Temperature

Percent Load (Actuator)

Fuel Rate (Throttle)

Engine Hours

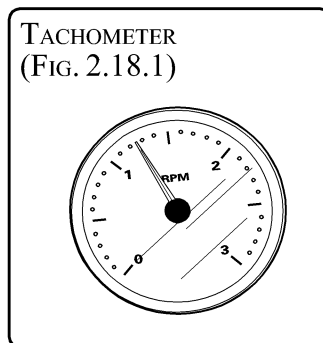
## SECTION 2 • GENERAL BOAT ARRANGEMENT

### B. HOURMETER

The hourmeters measure cumulative hours of operating time. There are hourmeters on top of each Caterpillar® engine and an hourmeter readout on the main EMS display (See Figure 2.17.2) by method of scrolling. They should be used to keep a careful log of engine maintenance as well as performance data and fuel consumption. Do not leave ignition key on with the engines off, as this will increase the engine hours on the hourmeter. The generator hourmeter is located on the generator gauge panel (Figure 6.19.1).

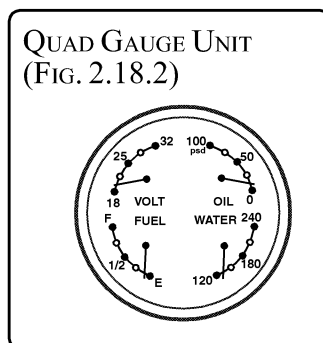
### C. TACHOMETER

The tachometer (See Figure 2.18.1) indicates the revolutions per minute (RPM) of the engine. (It does not indicate the speed of the boat.) Your Engine Operator's Manual indicates the maximum full throttle RPM at which your engine should operate. This must not be exceeded or serious engine damage will occur. The tachometer should also be used to determine the most comfortable and economical cruising RPM.



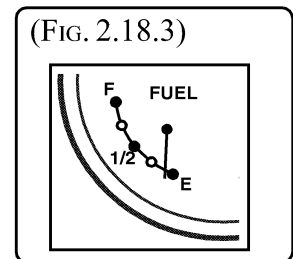
### D. OIL PRESSURE, WATER TEMPERATURE, VOLTMETER AND FUEL GAUGES

Your yacht is equipped with a quad gauge unit which displays, in analog format, engine oil pressure, water temperature, voltage and respective port and starboard fuel tank levels. (See Figure 2.18.2)



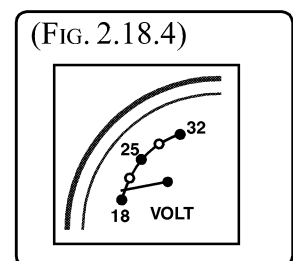
### FUEL GAUGE

The fuel gauge indicates the amount of fuel in the fuel tank. The most accurate reading of the fuel gauge is at idle speeds when your boat is in an approximately level position. At slow plane, when your boat is in a bow up position the gauge will read inaccurately because the fuel in the tanks travel to the rear of the tanks and away from the fuel sending unit. Because gauge readings are approximate, they should be compared to the hours of use versus known fuel consumption (GPH).



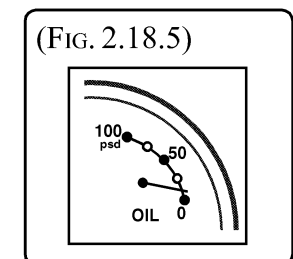
### VOLTMETER

The voltmeter gauge indicates battery bank voltage. Each engine operating voltage will range between 24.0 to 28.5 volts when the alternator is charging. Significantly higher or lower readings indicate a battery problem, alternator malfunction or heavy battery drain.



### OIL PRESSURE GAUGE

The oil gauge is often the best indicator of engine problems or difficulties. Maximum pressure is controlled by a preset valve in the oil pump. Note the reading which this gauge records after the break-in-period, as it is the "norm" which can be used as reference during the life of the engine. **IF A COMPLETE LOSS OF OIL PRESSURE OCCURS, TURN ENGINE OFF AT ONCE.** Continued running after loss of pressure will cause engine damage. First, manually check the oil level. If low oil level is not the cause, consult your Sea



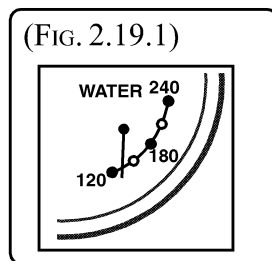
## SECTION 2 • GENERAL BOAT ARRANGEMENT

Ray® dealer. **DO NOT RESTART THE ENGINE UNTIL THE PROBLEM HAS BEEN CORRECTED.**

Slight fluctuations in gauge readings are not uncommon during operation and may be due to the characteristics of the lubricating oil. Greater fluctuations should be investigated. The cause may be a clogged oil filter element which should be replaced with every oil change.

### WATER TEMPERATURE GAUGE

The water temperature gauge indicates temperature of the cooling water circulating inside the engine. Your engine is equipped with a thermostat so a predetermined engine temperature should be reached soon after starting the engine and maintained thereafter while the engine is running. Refer to your Engine Operator's Manual for proper gauge readings. **If the temperature approaches above normal on your gauge, shut down engine at once.**



or remove equipment from the vicinity of the compass, you cannot rely on the compass reading. The compass must be readjusted by a qualified person after equipment is added or removed from the vicinity of the compass.

**NOTE:** The compass roses shown on navigational charts have both true North and magnetic North directions superimposed. Make certain you plot course compass directions from the magnetic North compass rose.

When not in use, the compass should be protected from excessive and prolonged sunlight. If your compass becomes sluggish or erratic, it should be serviced by an authorized repair station.

To keep the plexiglass dome free from scratches, remove salt deposits and dust with a damp cloth. An occasional treatment with paste wax will help preserve the dome surface.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### F. SYSTEMS MONITOR

The Systems Monitor consists of a Display Control Module (DCM) located at the control station and a Bilge Interface Module (BIM) located on the bilge

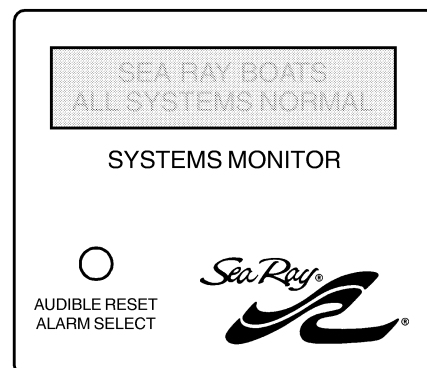
### E. MAGNETIC COMPASS

Your compass (See Figure 2.15.1), properly corrected, will indicate magnetic North (not true North). A compass must be adjusted by a qualified person. The reason for this is that nearby instruments or objects containing magnets or current-carrying electrical wires will influence the compass reading. This is especially true if you add electronic devices to the helm station.

After your compass has been professionally adjusted. You will be given a deviation card or chart indicating the correction to be applied when laying out a compass course or making navigational calculations. **Keep this correction card or chart at the helm.**

**NOTE:** The compass adjustment is only good for the equipment arrangement that existed at the time of the adjustment. If you place different equipment

SYSTEMS MONITOR DISPLAY CONTROL MONITOR (DCM)  
(FIG. 2.19.2)



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## SECTION 2 • GENERAL BOAT ARRANGEMENT

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component board (See Fig. 6.4.2). The DCM and BIM are connected to each other by a coax cable and the BIM is continuously looking at all inputs for an alarm condition.

The Systems Monitor is connected directly to the 24 volt battery bank through a circuit breaker and continuously monitors two emergency high water pumps, two bilge pumps and the bilge heat detector. The engine and generator functions are only active when ignition voltage is turned on. The circuit breaker is on the main DC breaker panel located on the bilge component board (See Fig. 6.4.2).

The BIM collects signals from critical engine functions, generator oil pressure, bilge pumps, high water emergency bilge pumps and bilge heat detection and transmits that information to be displayed on the DCM.

The features of the DCM include a two line LCD display with backlighting of the display, audible alarm and an Audible Reset/Alarm Select push button switch.

The LCD display will read in two lines. For example, at normal operation it will read:

SEA RAY BOATS  
ALL SYSTEMS NORMAL

**NOTE:** Some functions only read on one line. See page 2.22 (DCM functions) for all DCM display readouts.

Backlighting of the LCD is achieved by turning ON the navigation lights switch. Intensity is controlled by the electronic dimmer control. Both are located on the control station switch panel.

### AUDIBLE ALARMS

An audible alarm will sound to alert the operator to look at the DCM and determine the high level fault. Only high level faults such as critical engine functions, generator, emergency pumps and bilge heat detector will have an audible alarm. The forward

and aft bilge pumps do not have an audible alarm, instead the DCM will display those functions.



### CAUTION

Never ignore an alarm.

### AUDIBLE RESET/ALARM SELECT

The **Audible Reset/Alarm Select** push button switch on the DCM is a dual purpose switch. It enables the operator to reset an audible alarm or to manually scroll the display during multiple alarms.

The **Audible Reset** is used to temporarily quiet an alarm that is displayed on the LCD. If that function is not corrected within 30 seconds, the audible alarm will sound again. Pushing the switch again will permanently quiet (turn off) the audible alarm for that function. The LCD will still display that fault until it is corrected.

The **Alarm Select** is active only during multiple alarms. For example, if the engine oil pressure, forward emergency pump and transmission temperature had faults at the same time, the systems monitor would sound an audible alarm and would display the alarm with the highest priority. Each push of the switch will show the new alarm and then the LCD will automatically scroll through the multiple alarm functions approximately every three (3) seconds. By pushing on the switch, the operator will be able to manually scroll the LCD for faulting functions.

To monitor critical engine functions and generator oil pressure:

1. The 24 volt main battery solenoid switches must be energized either at the main DC breaker panel on the aft port engine room component board or the DC distribution panel on the port side just aft of the salon.
2. At the DC distribution panel, turn the port and starboard master ignition key switches to the ON position.



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## SECTION 2 • GENERAL BOAT ARRANGEMENT

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3. At the control station, locate the port and starboard START/RUN switches. Without starting the engines, push the START/RUN switches to the RUN position. The Display Control Monitor (DCM) will display:

SEA RAY BOATS  
ALL SYSTEMS NORMAL

**NOTE:** The generator and Detroit diesel engines will have an alarm as soon as ignition is turned on.

4. Start the engines per the engine start instructions in Section 3, page 3.4.
5. Start the generator per the generator start instructions in Section 3, page 3.8.

With the main engines and generator engine running, the yacht's Systems Monitor is fully activated. When the engine and generator engine ignition is turned OFF, approximately five (5) minutes

later the LCD will go into a "Sleep Mode" and the display will be blank. Engine and generator functions are disabled

because they are unnecessary, however, the bilge heat detector and all pumps are still being monitored.

The following DCM Function Table will name each function, describe the function and show how it is displayed on the DCM.

If your Systems Monitor does not operate or display functions correctly per the instructions provided, recycle the circuit breaker by pushing the circuit breaker to the OFF position and then pushing it to the ON position. Use a small tool that will fit through the hole to push the breaker to the OFF position.



## SECTION 2 • GENERAL BOAT ARRANGEMENT

### 11. DISPLAY CONTROL MODULE (DCM) FUNCTION TABLE

| Function   | Description   | DCM   |
|--|---|---|
| Normal Operation   | No Alarms   | SEA RAY BOATS<br>ALL SYSTEMS NORMAL                     |
| BIM Coax Cable to DCM  | Cable Connection Fault  | DATA LINK FAILURE<br>ALARM SYSTEM OFF-LINE              |
| Bilge Heat Detector *  | Sense Extreme (190°) Heat in the Bilge or a 15° Increase in Temperature | HEAT DETECTOR<br>(No second line reading)               |
| Forward Emergency *  | Forward Emergency Pump Under the Master Stateroom Hatch is Running      | PUMP ALARM<br>FORWARD EMERGENCY                         |
| Aft Emergency *  | Aft Emergency Pump in the Engine Room is Running                        | PUMP ALARM<br>AFT EMERGENCY                             |
| Forward Bilge  | Forward Bilge Pump in the Engine Room is Running                        | PUMP ALARM<br>FORWARD BILGE                             |
| Aft Bilge  | Aft Bilge Pump in the Engine Room is Running                            | PUMP ALARM<br>AFT BILGE                                 |
| Oil Pressure *   | Engine Oil Pressure Too Low   | PORT (OR STBD) ENGINE ALARM<br>OIL PRESSURE             |
| Water Temperature *  | Engine Cooling System Too Hot   | PORT (OR STBD) ENGINE ALARM<br>WATER TEMPERATURE        |
| Transmission Temperature *   | Transmission Cooling System is Hot                                      | PORT (OR STBD) ENGINE ALARM<br>TRANSMISSION TEMPERATURE |
| Exhaust Temperature *  | Engine Malfunction, Exhaust Too Hot                                     | PORT (OR STBD) ENGINE ALARM<br>EXHAUST TEMPERATURE      |
| Fuel Filter Condition *  | Fuel Filter Needs Cleaning  | PORT (OR STBD) ENGINE ALARM<br>FUEL FILTER CONDITION    |
| Generator Alarm *  | Generator Oil Pressure is Low<br>Generator Stopped Running              | GENERATOR ALARM<br>(No Second Line Reading)             |
| CAT Diagnostics *<br>Caterpillar Electric Engines Only   | For CAT Diagnostic Engines  | PORT (OR STBD) ENGINE ALARM<br>CAT DIAGNOSTIC           |
| The CAT Diagnostic feature is for Caterpillar electronic engines and will refer the operator to look at the port or starboard Caterpillar Engine Monitoring System (EMS) on the gauge panel at the helm. See Fig. 2.15.1 for EMS gauge location and Fig. 2.17.2 and text for more information on the EMS gauge unit. |   |   |

\* function has an audible alarm.



## SECTION 2 • GENERAL BOAT ARRANGEMENT

### 12. NAVIGATION AND ANCHOR LIGHTS

#### A. CONSOLE DIMMER

There is a DIMMER control switch located on the control station switch panel (Figure 2.16.1) which controls the intensity of the gauge and switch panel lights. The gauge and switch panel lights are energized when the navigation running lights are turned on.

Navigation lights **MUST** be on while underway from sunset to sunrise or in conditions of reduced visibility. “Underway” means the boat is not docked or at anchor. Trolling or drifting with engine off is considered “underway” and navigation lights must be used.

If you are anchored in open water, i.e. where other boats can approach yours, you must display your anchor light: a white light that can be seen from all possible directions, i.e. 360 degrees.

Read the “Federal Requirements and Safety Tips for Recreational Boats” provided in your kit.

#### TO OPERATE THE RUNNING LIGHTS:

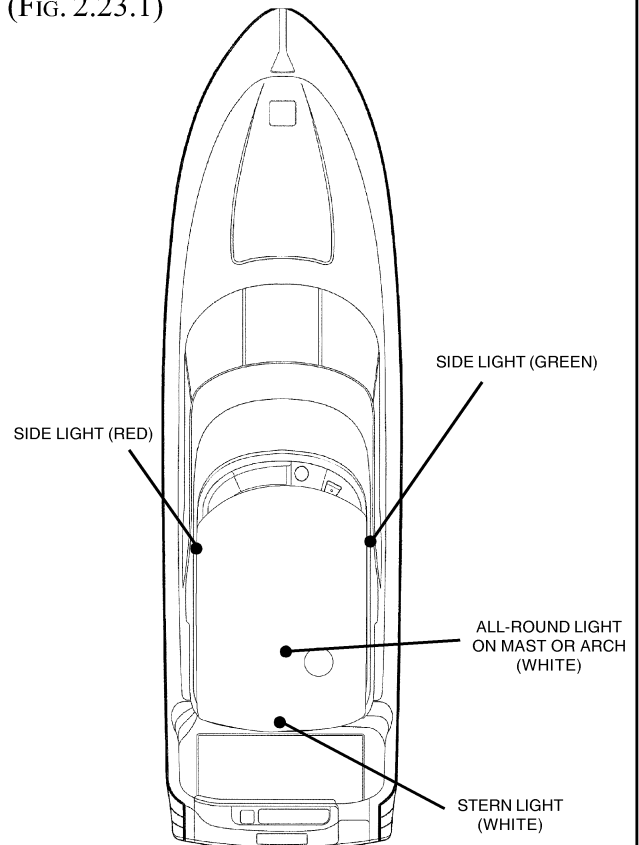
Push RUNNING switch on control station switch panel to the ON position.

#### TO OPERATE THE ANCHOR LIGHTS:

Push ANCHOR switch on control station switch panel to the ON position.

Your boat is equipped with a sport spoiler. If you opt to install additional equipment on the spoiler or optional hard top, it then becomes your responsibility to reevaluate your lighting situation to make certain the navigation lights on your boat meet government navigational lighting requirements. You will most likely have to raise the mast light. Consider the weight of the equipment you install; be certain it is not too heavy for your sport spoiler or optional hard top.

NAVIGATION LIGHTS  
(FIG. 2.23.1)

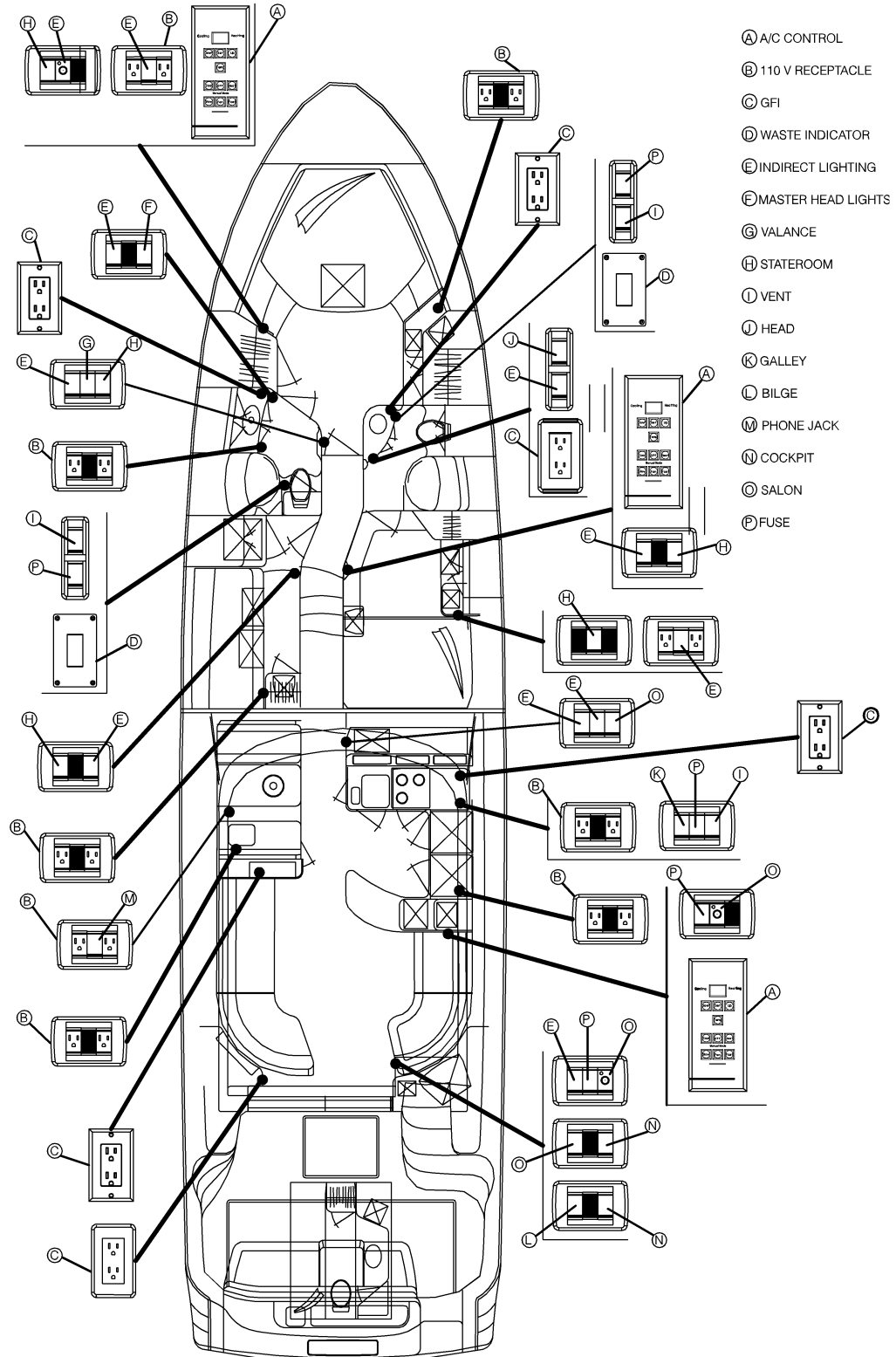


LIGHTING REQUIREMENTS FOR BOATS 12 METERS  
IN LENGTH OR LONGER

## SECTION 2 • GENERAL BOAT ARRANGEMENT

### 13. RECEPTACLE & SWITCH LAYOUT

560DB LAYOUT  
(FIG. 2.24.1)

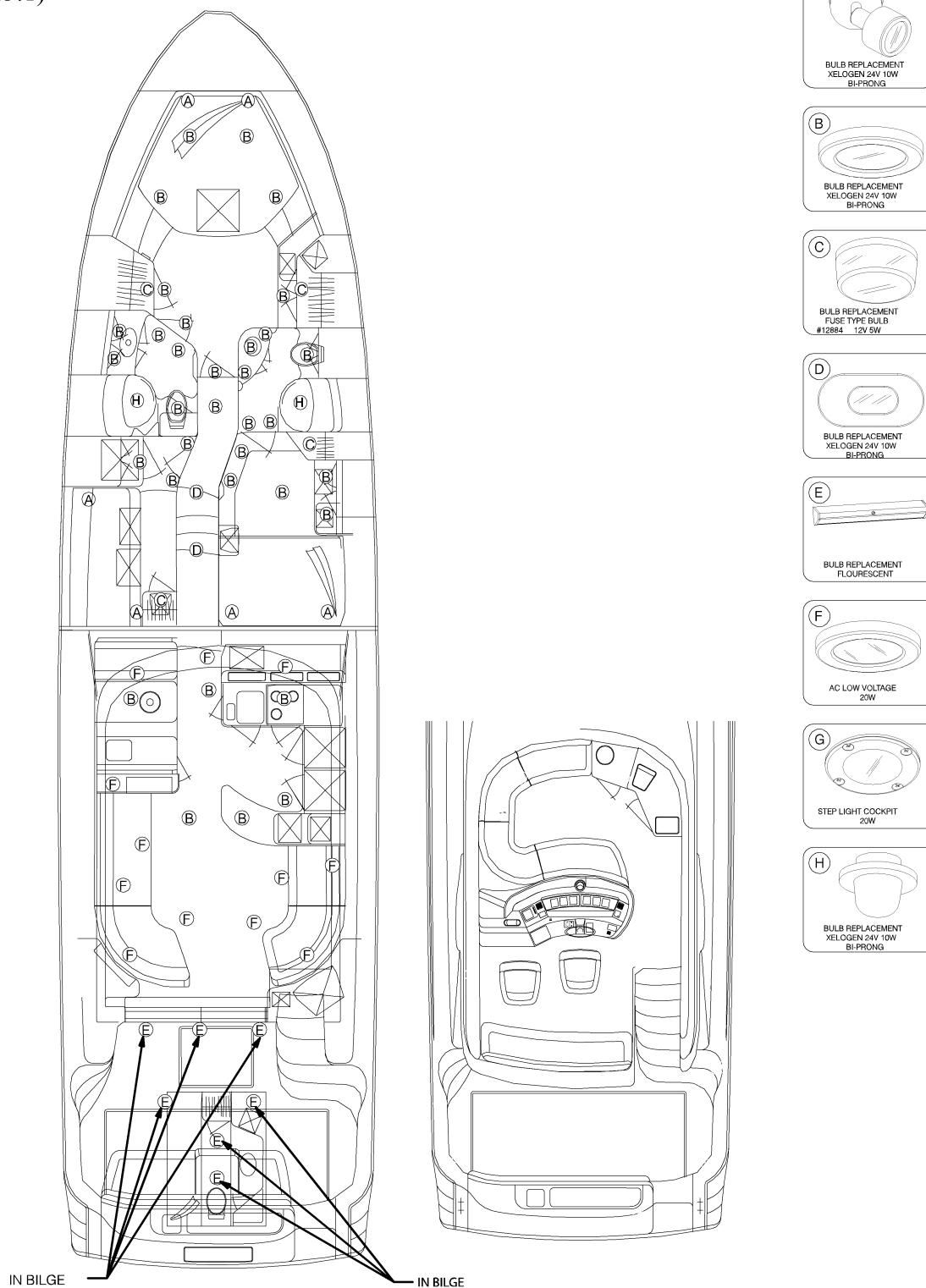




## SECTION 2 • GENERAL BOAT ARRANGEMENT

### 14. LIGHTING

560DB LAYOUT  
(FIG. 2.25.1)

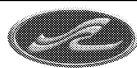


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## SECTION 2 • GENERAL BOAT ARRANGEMENT

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## SECTION 3 • USING YOUR BOAT

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### 1. PREPARING TO DEPART

As the owner/operator of a Sea Ray® yacht, you are responsible for the safe operation of your boat and the safety of your passengers. Always be sure that required documents, navigational equipment and Coast Guard required safety equipment is aboard and in proper working order.

#### GENERAL

1. **Weather forecast** - Safe conditions existing for length of trip.
2. **Passengers/Crew** - Instructed in duties for getting underway and fitted for a correct size PFD. One (1) PFD for every person aboard.
3. **Tool Box** - Stocked with a variety of appropriate tools.
4. **Lines, Fenders and Anchor** - Ready for use.
5. **Float Plan** - shared with friend or relative not on trip.
6. **Navigation Charts** - Available for trip.

#### BOAT SYSTEMS

1. **Equipment** - Make sure all equipment is stored properly.
2. **Radio and Navigation Equipment** - Check for proper working condition.
3. **Bilge/Engine Compartment** - "Sniff" the bilge/engine compartment for fuel odor. Run the bilge blowers for at least Four (4) minutes. Confirm air flow through hull vents.
4. **Bilge Pumps** - Assure that all bilge pumps function properly.
5. **Shore Power Cable** - Disconnected from dockside power inlet.
6. **Trim Tabs** - Full range of motion. No excessive play or binding.
7. **Fresh Water Tank** - Filled and sanitized.
8. **Head System Holding Tank** - Empty

9. **Seacocks** - Open (handle parallel to hose).

#### ENGINE

1. **Fuel** - Be sure that you have sufficient recommended fuel for the trip.
2. **Fuel System** - Check for leaks.
3. **Racor Fuel Filters** - Check that filters are clean, tight and free of water.
4. **Fluid levels** - Check engine oil and steering fluid levels.
5. **Coolant Drain Plugs** - Secured
6. **Batteries** - Fully charged (Check water cell levels).
7. **Battery Switches** - Check for proper working condition.
8. **Fuel valves** - Open
9. **Engine Alarm** - Test. Should sound after a few seconds.
10. **Gear Shift and Throttle Controls** - Full range of motion. In NEUTRAL and IDLE positions.

### 2. WHILE UNDERWAY

#### GENERAL

1. **Passengers/crew** - Safely seated with PFD's on or immediately accessible. Keep passengers safe.
2. **Lines, fenders and anchor** - Safely stowed.
3. **Operation** - Gradual acceleration/deceleration and turning.
4. **Surroundings** - Be aware of other boats, swimmers, floating debris, etc. at all times.
5. **Carbon Monoxide (CO)** - Operate so as to prevent buildup.
6. **Weather** - Monitor frequently.
7. **Navigation** - Adhere to navigational aids in the water and on shore.



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## SECTION 3 • USING YOUR BOAT

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8. **Fuel** - Check consumption regularly.

### BOAT SYSTEMS

1. **Trim Tabs** - Bring boat to "On Plane".
2. **Navigation lights** - On at night or in reduced visibility.

### ENGINE

1. **Tachometers** - Engines operating in safe RPM range (refer to the Engine Owner's Manual for your specific engine).
2. **Engine Gauges** - Monitor continually.
3. **Engine Operation** - Check idle and shift. Listen for abnormal noises and visually check the engine compartment while underway.

## 3. RETURNING TO PORT

### GENERAL

1. **Passengers/crew** - Instructed in duties for line handling.
2. **Lines, fenders and anchor** - Ready for use.

### BOAT SYSTEMS

1. **Anchor Light** - ON if necessary.
2. **Bilge/Engine Compartment** - "Sniff" the bilge/engine compartment for fuel odor. Run the bilge blowers if necessary. Check for water in the bilge. Run bilge pumps if necessary.

### ENGINES

1. **Gearshift & Throttle Controls** - Bring to NEUTRAL and IDLE positions.
2. **Tachometers** - Idle the engines for five (5) minutes to cool down.
3. **Ignition** - Depress EMERGENCY STOP/STOP switches on the helm switch panel when engines are cooled down.
4. **Engine Operation** - Check idle and shift. Listen for abnormal noises.

## 4. SECURING THE BOAT

### GENERAL

1. **Shore Power Cables** - Connected to dockside power inlet.
2. **Fenders and Lines** - Fenders in place, lines tied securely to dock.
3. **Equipment** - Dry and stored.
4. **Float Plan** - Notify person who had float plan that you have returned.
5. **Canvas** - Properly install canvas covers
6. **Hull** - Inspect for damage

### BOAT SYSTEMS

1. **Seacocks** - Closed (handle perpendicular to hose).
2. **Helm Switch Panel** - All switches in the OFF position.
3. **Gearshift/Throttle Controls** - In the NEUTRAL and IDLE position.
4. **Navigation Lights** - Turned OFF.

### ENGINES

1. **Ignition** - Switched in the OFF position (lights off) and master ignition keys removed from DC distribution panel.
2. **Battery Switches** - In the OFF position.
3. **Fuel Valves** - Closed (handle perpendicular to hose).

## 5. FUELING THE BOAT

|                          |
|--------------------------|
| <b>NOTICE</b>            |
| <b>RECOMMENDED FUEL:</b> |
| <b>#2 Diesel Fuel</b>    |

Certain precautions must be carefully and completely observed every time a boat is fueled,



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## SECTION 3 • USING YOUR BOAT

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even with diesel fuel. Diesel fuel is nonexplosive but it will burn.

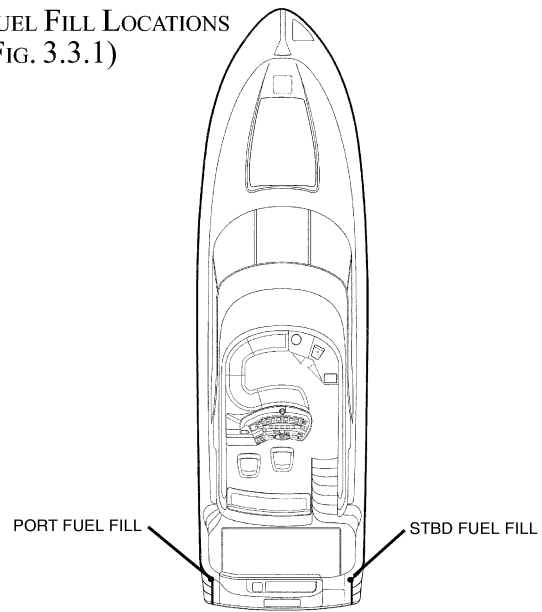
### A. GENERAL

- Fuel during daylight.
- Fire extinguisher – close at hand.
- Mooring – boat tied securely to fueling pier.
- Crew – at least one knowledgeable person present.
- Passengers – unnecessary people off the boat.
- Engines – stopped.
- Electrical equipment, including blowers – power off.
- Close all hatches, doors and keep engine compartment closed to prevent fumes from entering the cabin or cockpit areas.
- Smoking material – extinguished.
- Inboard tanks – grounded.
- Filler pipe – marked DIESEL.
- Fuel nozzle – in contact with filler pipe to prevent static sparks.
- Avoid spills – fill less than rated capacity of tank; allow for fuel expansion.
- Trim – fuel weight distributed equally.

### B. FILLING THE TANK

- Check the fill plate label to ensure that fuel is placed **ONLY** in the fuel tank. The fuel fill plates are located on the port and starboard deck walkways (Figure 3.3.1).
- Know your fuel capacity and consumption. Record the amount of fuel used since your last fill up, and compute the engine's hourly fuel usage. As a fuel gauge backup check, deduct the average hourly fuel usage from fuel tank capacity.

FUEL FILL LOCATIONS  
(FIG. 3.3.1)



- Observe the “Rule of Thirds”: one-third fuel for trip out, one-third for return and one-third for reserve.
- Allow an additional 15 percent fuel reserve when operating in rough seas.
- Listen as the tank fills and stop adding fuel before it spills from the fuel fill opening.

### C. AFTER FILLING

- Windows, doors, hatches - open.
- DO NOT wash spilled fuel overboard. Wipe up any spill with rags or paper towels and dispose of them properly on shore.
- Sniff test - if fuel fumes remain, operate blowers until fumes are gone.
- Fuel tank - secure filler cap.

## 6. BOARDING

- DO NOT overload the boat. Refer to Coast Guard capacity plate located near the helm (See Figure 1.6.1), and load to less than capacity in adverse conditions.

## SECTION 3 • USING YOUR BOAT



### WARNING

Wet decks are slippery.

You can be seriously injured if you slip and fall.

Wear slip-resistant footwear secured to your feet and hold onto rails or boat structure.

- Board one person at a time and give assistance as needed.
- Transfer gear and equipment by handing it from a person on the dock to a person on board. You can lose your balance and be injured if you attempt to board while carrying equipment or gear.
- Distribute the weight of equipment and passengers as evenly as possible to keep the boat balanced.
- Stow gear and equipment so that it is accessible, but everything is to be stored in places so as to prevent it from flying about if the boat encounters rough water or weather.

### 7. PERSONAL FLOTATION DEVICES (PFD's)

- Operator must instruct all passengers on location and use of PFD's (See *Section 1-Safety, page 4* for type and usage).
- Children less than sixteen (16) years of age and all non-swimmers, adults as well as children, must wear properly-sized PFDs at all times when aboard.
- ALL passengers should wear PFDs. By the time someone falls overboard, it can be too late for them to put on a PFD and fasten it properly. This is especially true in colder waters, below 70°F, where survival time, before hypothermia sets in, is measured in minutes.

- If there are passengers not wearing PFDs, the PFDs must be readily accessible. "Readily accessible" means out of the storage bag and unbuckled.
- All throwable flotation devices (cushions, rings, etc.) must be right at hand.

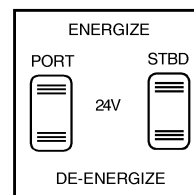
### 8. PASSENGER INSTRUCTION AND LOCATION

- Everyone on board must be told about the boat's behavior from starting to getting up on plane.
- Before the operator does any high-speed maneuvers or rapidly accelerates or decelerates the boat, passengers must be warned to sit and hold on and must heed the warning.
- The operator may have to make rapid changes in speed and/or direction to avoid a problem, with little or no time for alerting passengers. It is critical that all passengers be seated in the designated seating areas and holding on to prevent falling overboard or getting knocked about in the boat at all times when the boat is underway.

### 9. STARTING THE ENGINES

The engine operation and maintenance manual furnished with your boat describes pre-start and starting procedures. The following notes are basic reminders and not intended to cover every detail of starting. We urge you to thoroughly read and understand your engine manual.

1. Check battery solenoids for ENERGIZED position (see Section 6 – *Electrical System*, Fig. 6.4.1).



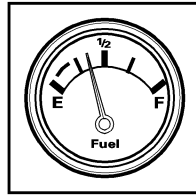
### WARNING

DO NOT run the engine or generator in an enclosed area, such as a closed boat house, as there is the possibility of buildup and inhaling of carbon monoxide.

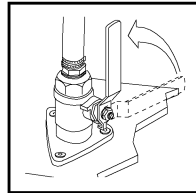


## SECTION 3 • USING YOUR BOAT

2. Check the fuel tank levels.
3. Check the oil and coolant levels. See your Engine Operator's Manual for proper readings.
4. Check engines for coolant drain plug installations.
5. Check seacocks for open position

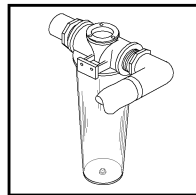


**NOTE:** While executing this internal test, the display will also provide a visual indication by ramping gauges and displaying all digits to the operator that the panel is (or is not) functioning properly. Refer to your Engine Owner's Manual in the Owner's Manual Packet.

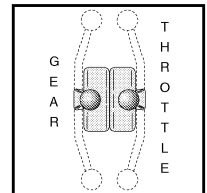


**NOTE:** Electric Twin Disc® shift and throttle controls require that the STATION SELECT button be pushed twice: once before the start of the port engine and again before the start of the starboard engine, or vice versa (refer to the Original Equipment Manual in the Owner's Manual Packet).

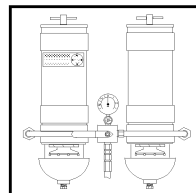
6. Make sure strainers are clean and water tight (see Section 4 – *Bilge and Underwater Gear*, page 4.12).



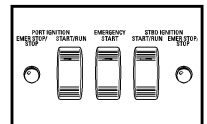
11. After ignition power is verified, check the gear shift lever(s) in the NEUTRAL position and the throttle lever(s) at IDLE.



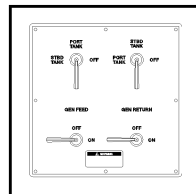
7. Check fuel filters for tightness



12. Push on the top of the ignition switches until the engines start. Do not operate starter for more than 10 seconds without allowing starter to cool for two (2) minutes. This will also allow the batteries to recover between starting attempts. Once engine has started and sufficient oil pressure is achieved, alarm buzzer will stop.

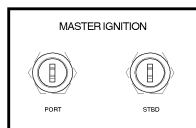


8. Turn on fuel valves on crossover fuel board.
9. Check the bilge for fuel fumes or liquid. **Do not start the engines until the source of fumes is determined and corrected and the bilge area is safely ventilated.**



**Important:** Check engine RPM on tachometer as soon as engine starts. **Do not allow RPM to exceed 1,500.** Move throttle lever down to decrease RPM.

10. Turn on the master key switches located on the DC distribution panel (see Section 6 – *Electrical System*, Figure 6.4.1). Listen for alarms which indicate ignition power.



**Note:** Alarm will sound when:

- Engine oil pressure is too low.
- Engine temperature is too hot.
- Transmission oil is too low.
- Transmission temperature is too hot.
- Engine stalls.
- Exhaust temperature too high.

**NOTE:** Ignition switches on the control station must be in the RUN position.

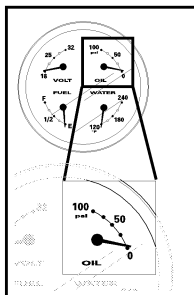
12. Check the oil pressure and look at exhaust port to assure that engine is pumping water.



## SECTION 3 • USING YOUR BOAT

13. Let the engines warm up at idle and check for leaks. If engine is cold, run for a short period of time at fast idle speed that does not exceed 1500 RPM.

14. Shut down the engines and recheck fluid levels; top off if necessary.



The throttle controls (twin lever controls on starboard side of control station) (See Figure 2.15.1) regulate the RPM of the engines. Periodically check and seasonally lubricate the linkage with medium weight oil.

**NOTE:** Prior to starting engines, put throttles at IDLE and gearshifts in NEUTRAL.

**NOTE:** For general operation of the boat, its instruments and the engine, follow detailed instructions on “Engine Break-in” in the Engine Operator’s Manual.

REFER TO OWNER’S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.


### 10. SHIFTING TO DRIVE THE BOAT

Standard on the 560 DB are dual hydraulic gear shift and throttle engine controls. However, your yacht may be equipped with hydraulic or electric throttle control(s). There are different functions and operating and maintenance instructions which must be followed. Read and understand the information in the Owner’s Manual Packet for your yacht model’s gear and throttle control.

Your yacht has start in-gear protection. For safety’s sake and as a good habit to get into, always put the gear selector in the NEUTRAL position and the throttle selector in the IDLE position before starting the engines.

#### A. GEAR SHIFTS AND THROTTLE CONTROLS


The gear shift lever for each engine (twin lever controls on port side of the control station) (See Figure 2.15.1) has three positions: FORWARD, NEUTRAL and REVERSE. The control lever must be in the NEUTRAL (center) position when starting the engine(s). A positioning indent can be felt when the control is in exact NEUTRAL. FORWARD and REVERSE positions should always be in full travel extremes in either direction for a positive engagement and minimum wear.

**WARNING**

Shift selector(s) to **NEUTRAL** before starting engines.


Shift only when engine is at **IDLE**.

Reversing at high speeds can cause flooding/swamping due to water being pushed over the transom.

**CAUTION**

Shift quickly; easing into gear can damage the transmission.

Hydraulic controls **FORWARD** and **REVERSE** positions should always be in full travel extremes in either direction for positive engagement and minimum wear.

**CAUTION**

Cockpit can fill with water if boat is moving forward, when it is put into reverse.

Before shifting into reverse, shift to neutral, wait for the boat to stop moving forward, then shift into reverse.

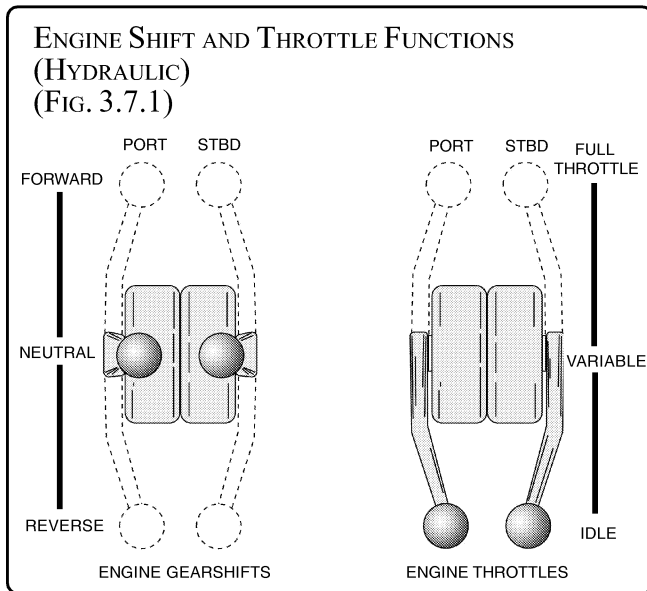
#### B. OPERATION (HYDRAULIC) (FIG. 3.7.1)

1. Throttle Levers:
  - Forward motion - increases Throttle
  - Aft Motion - Decreases Throttle
2. Gearshift Levers:
  - Forward Position - FORWARD
  - Center Position - NEUTRAL
  - Aft Position - REVERSE





## SECTION 3 • USING YOUR BOAT



### MAINTENANCE

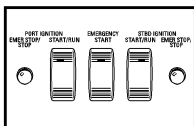
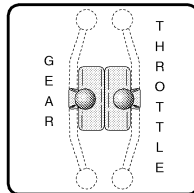
The clutch and throttle lever bodies are made of anodized aluminum. To clean them, a warm soapy water solution should be used. DO NOT use an abrasive compound.

NOTE: Refer to your engine Owner's Manual to operate the throttle arm by hand for maintenance.

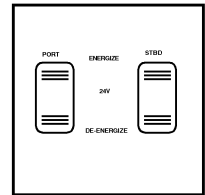
REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

## 11. STOPPING THE ENGINES

1. Bring throttle controls to IDLE position.
2. Bring gear shift controls to NEUTRAL position.
3. Secure mooring lines.
4. Idle for five (5) minutes to cool the engines.
5. Switch momentary start switch or ignition key to OFF position.



6. Turn battery switches OFF.

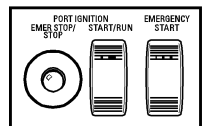


## 12. EMERGENCY STOP SWITCH

Your Sea Ray® is equipped with an emergency stop switch. The emergency stop switch gives the boat operator the ability to shut down the engines in an emergency situation.

### OPERATION OF EMERGENCY STOP SWITCH

1. If the momentary start switch is in the RUN position, switch to OFF position.
2. Press and hold emergency stop switch until engine(s) stops completely. Release switch.



**NOTE:** Run bilge blowers for 4 minutes before restarting engine(s). **Follow engine starting instructions.**

## 13. STEERING SYSTEM

The hydraulic power steering system (Figure 3.8.1) uses the boat's engines to provide the "power" for the steering system, via a mechanical or electrical motor driven hydraulic pump.

A manual hydraulic steering system, consisting of a helm and a hydraulic cylinder (fitted with an integral servo cylinder and a power steering valve), supplies the "control" portion of the steering system.

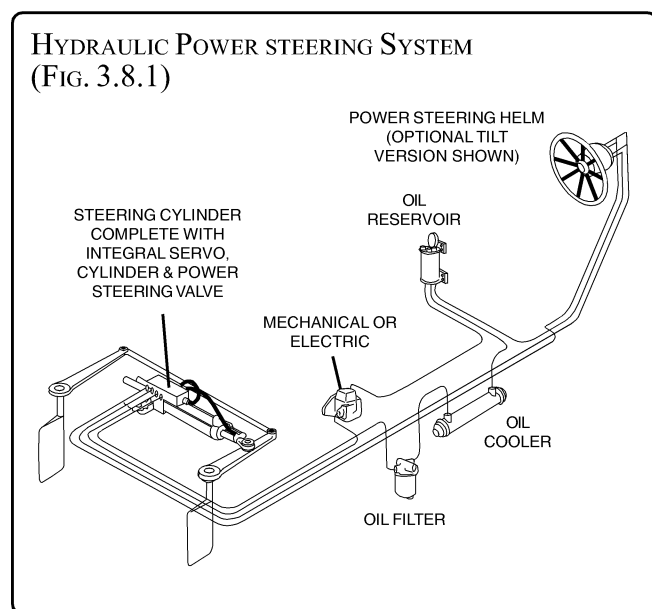
Under normal conditions, with engines running, a hydraulic oil supply is in a standby mode, ready to be directed to the steering cylinder as dictated by the steering wheel, servo cylinder and power steering valve. Turning the steering wheel left or right makes the system go from "standby" into "operating" mode and move the steering cylinder accordingly.

## SECTION 3 • USING YOUR BOAT

In the event of a power source failure, hydraulic oil from the steering helm is automatically diverted into the servo and steering cylinder, providing the helmsman with manual backup steering.

An engine room mounted oil reservoir allows easy fill and assists the in-line cooler in cooling the hydraulic oil. An in-line oil filter helps to protect the steering system components against contaminants.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.



### 14. STARTING THE GENERATOR

#### NOTICE

Pre-start generator prior to getting underway as there is a possibility that it will not pick up water if started underway. Make sure the MAIN GENERATOR breaker is OFF and there is no load on the generator before starting it.

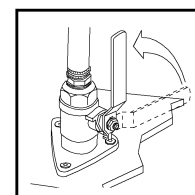
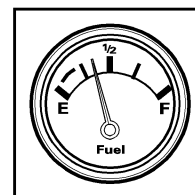
#### ! WARNING

DO NOT run the engine or generator in an enclosed area, such as a closed boat house, as there is the possibility of buildup and inhaling of carbon monoxide.

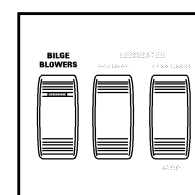
Sea Ray® strongly urges you to fully comply with the manual provided by the generator manufacturer. The generator is warranted separately by the generator manufacturer, NOT Sea Ray®. Follow the recommended maintenance and warranty schedule in your Generator Operator's Manual included in the Owner's Manual Packet. Generator abuse or improper maintenance may adversely affect claims made under generator manufacturer separate warranty.

(Remote control switches are located on the main distribution panel or local switches on the generator.)

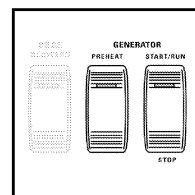
1. Check fuel tank levels.
2. Check oil and coolant levels. See Generator Operator's Manual for proper readings.
3. Check generator for coolant drain plug installation.
4. Open the generator seacock.



5. Run the bilge blowers for at least four minutes before starting and any time the generator is running. **If fuel fumes are detected, do not start the generator until the source of fumes is determined and corrected and the bilge area is safely ventilated.**



6. While holding the PREHEAT switch depressed, depress the START switch. The starter motor will run, thereby cranking the engine. As soon as the engine runs, release the START switch, but continue to hold the PREHEAT switch depressed for 2 or 3 seconds. Release the PREHEAT switch when the oil pressure reaches approximately 20 psi. This bypasses the Low Oil Pressure shutdown until the engine's oil pressure rises to its normal running pressure. Now release the PREHEAT switch.



## SECTION 3 • USING YOUR BOAT

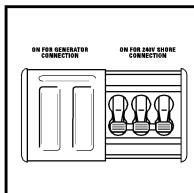
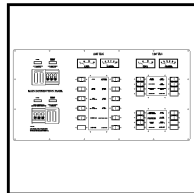
7. Check generator exhaust port to verify that water is flowing. If not, shut generator down and refer to your Generator Operator's Manual.

**NOTE:** To start the Westerbeke® generator from the generator mounted controls, a bypass switch, located on the side of the generator mounted control box, must be turned ON. The bypass switch must be OFF to start and stop the generator from the DC main distribution panel.

READ THE OWNER'S MANUAL IN THE OWNER'S MANUAL PACKET FOR YOUR GENERATOR MODEL.

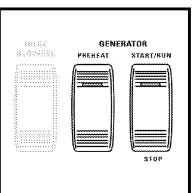
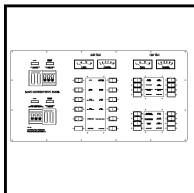
### 15. SHIFTING FROM SHORE POWER TO GENERATOR POWER.

1. Turn all AC systems and branch circuit breakers OFF. Turn both main breakers on the main distribution panel OFF.
2. Start the generator.
3. Slide the source select shuttle mechanism on the main distribution panel to expose the GENERATOR breaker(s) and turn it ON.
4. Turn the individual system breakers ON.



### 16. STOPPING THE GENERATOR

1. Prior to generator shut down turn OFF all AC equipment and breakers including main breakers and allow the generator to run a few minutes to cool down. If desired, transfer to shore power.
2. Stop the generator by switching START/STOP switch on DC distribution panel to STOP position or holding stop switch on



generator until generator stops.

3. Leave stop switch on main distribution panel in the stop position when generator is not in use to prevent overheating electric fuel valve.

**Note:** After the generator stops, the multiplex system must reset for 20-30 seconds and then may be restarted at any time.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

## 17. ANCHORING

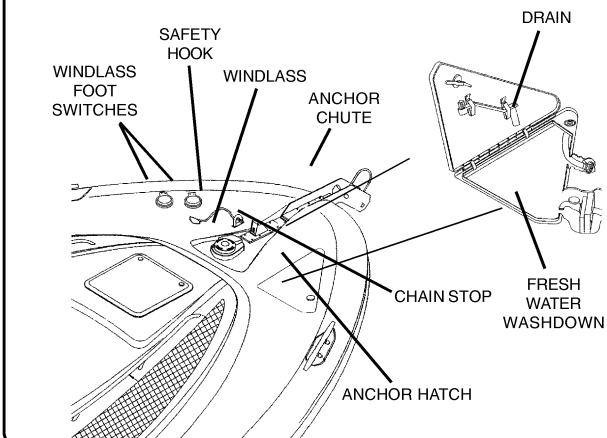
To anchor, bring the bow into the wind or current and put the engine in neutral. When the vessel comes to a stop, lower the anchor from the bow. The anchor line should be 5 to 7 times the depth of the water.

### A. ANCHORING ARRANGEMENT

The 560 DB is equipped with a windlass and an anchor chute (see Fig. 3.9.1). Stow the anchor in the chute when not in use.

**NOTE:** Before using the anchor, be sure the anchor safety hook is removed from the anchor, the chain stop is released from the chain and the anchor is secured to the windlass chain.

ANCHOR ARRANGEMENT  
(FIG. 3.9.1)



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## SECTION 3 • USING YOUR BOAT

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### B. ANCHORING

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

The **rode** is the line connecting the anchor to the boat. The 560 DB utilizes an all-chain anchor rode. The **scope** is technically defined as the ratio of the rode length to the vertical distance from the bow to the sea floor.



#### WARNING

**SINKING HAZARD** – Anchor from the bow if using one anchor. A small current can make a stern-anchored boat unsteady; a heavy current can drag a stern-anchored craft under water.

**COLLISION HAZARD** – Anchor only in areas where your boat will not disrupt other boats. Do not anchor in a channel or tie up to any navigational aid. It is dangerous and illegal.

#### NOTICE

Use the safety hook supplied to ensure that the anchor is held in place should the windlass fail. Do not use the safety hook to support the anchor in a stored position. The windlass should always support the anchor and ensure that it is held in the roller device securely.

Since you want to know how much rode to use when anchoring, the formula is:

Rode Length = (Bow Height + Water Depth) x Scope

- Scope depends on the type of anchor, bottom, tide, wind and sea conditions.
- Minimum is 5:1 for calm conditions; norm is 7:1; severe conditions may require 10:1.

#### Example:

Rode Length = (3 feet + 10 feet) x 7\*

Rode Length = 13 feet x 7\*

Rode Length = 91 feet

- \* Scope factor may range from 5 to 10 or more. Less than 5, the anchor breaks out

$$\text{Scope} = \frac{\text{Rode Length}}{\text{Bow Height} + \text{Water Depth}}$$

too easily.

### C. LOWERING ANCHOR

- Be sure there is adequate rode.
- Secure rode to both the anchor and the boat.
- Stop completely before lowering anchor.
- If using windlass, refer to windlass operator's manual.
- Keep feet clear of coiled line.
- Turn on anchor light at night and in reduced visibility.

### D. SETTING ANCHOR

- There is no best way to set an anchor. Experiment to see how your anchor performs.
- One method is to turn the rode around a bit and slowly pay out as the boat backs from the anchor site. When the proper scope has been reached, snub the rode quickly, causing the anchor to dig into the bottom.
- Reverse engine slowly to drive the anchor in and prevent it from dragging.
- Close chain stop (see Fig. 3.12.1).

### E. WEIGHING ANCHOR

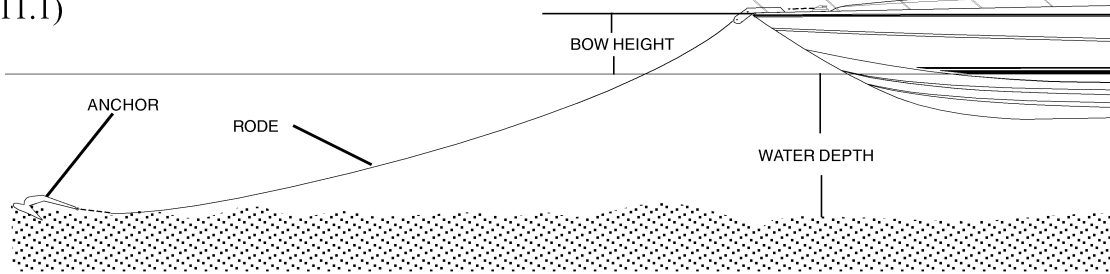
- Run the boat slowly up to the anchor, taking in the rode as you go.
- The anchor will usually break out when the rode becomes vertical.
- Be careful that trailing lines do not foul in the propeller.



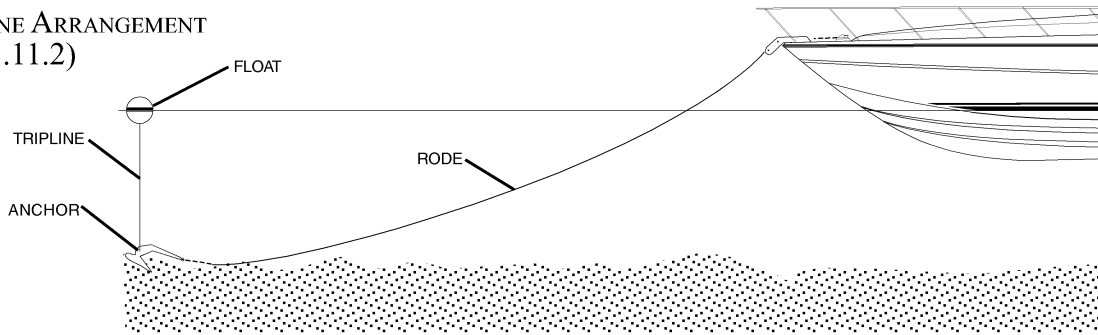
## SECTION 3 • USING YOUR BOAT

ANCHORING  
(FIG. 3.11.1)

$$\text{Rode Length} = (\text{Bow Height} + \text{Water Depth}) \times \text{Scope}$$



TRIPLINE ARRANGEMENT  
(FIG. 3.11.2)



**NOTE:** Use the fresh water washdown spigot in the port bow locker to hose down the chain in the locker after haul-in .

We suggest you read this section on anchoring again and fully understand rode and scope and their affect on anchor performance.

### F. CLEARING A FOULED ANCHOR

A fouled anchor can test your patience and ingenuity. One of the best methods of breaking free is to set a **tripline** before you lower anchor.

- Attach a line to the crown or head of the anchor and the other end to a float.
- The line should be just long enough to reach the surface of the water, allowing for tides.
- A polypropylene line is a good choice because it is light, strong and floats.
- If the anchor snags, pull vertically on the tripline to lift the anchor by the crown.

### G. A FINAL WORD

An anchored boat is affected by wind and sea conditions. Because there is no headway, there is no control. Be alert! If leaving the boat, be sure the anchor will hold under all circumstances.

## 18. WINDLASS

The windlass is wired to the 24 volt system through the WINDLASS thermal breaker (See Fig. 6.4.2) located in the bilge on the forward component board.

The windlass facilitates the anchoring of your yacht by automatically raising and lowering the anchor. To operate the windlass the WINDLASS MAIN switch on the control station switch panel must be ON.

### NOTICE

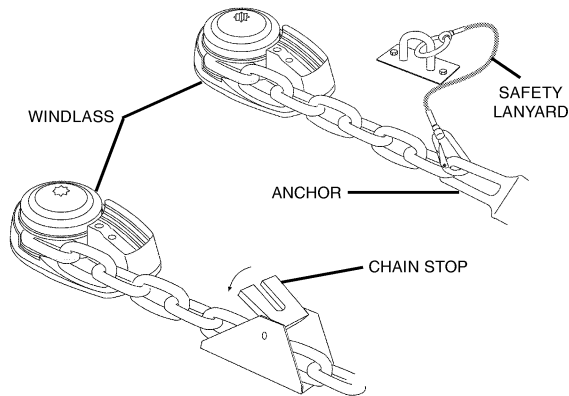
It is important that the windlass clutch is tight for proper operation and safety. Periodically check the clutch and tighten if necessary.

#### To Tighten Clutch:

With the anchor in the stowed position, tighten the windlass clutch by inserting the emergency handle into the clutch nut (Figure 3.12.2) and turn clockwise.

## SECTION 3 • USING YOUR BOAT

**WINDLASS SAFETY LANYARD AND CHAIN**  
(FIG. 3.12.1)



### **WARNING**

Keep hands, feet, hair and loose clothing clear of moving parts. Entanglement may cause severe bodily injury (i.e. loss of fingers or toes).

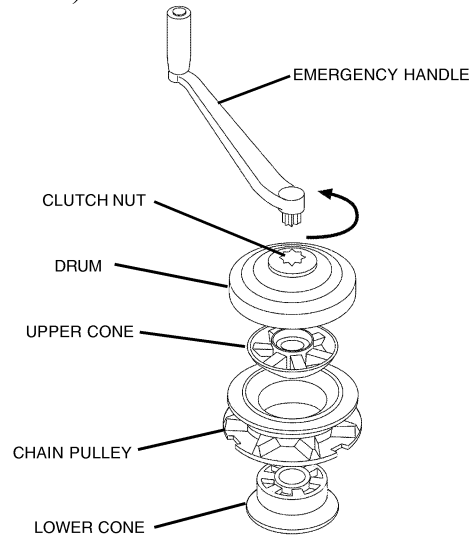
#### **A. TO OPERATE FROM THE HELM:**

- Make sure that the safety lanyard and chain stop (see Fig. 3.12.1) are removed from the anchor chain.
- Turn the WINDLASS MAIN rocker switch ON.
- Push the toggle switch (located beside the rocker switch on the control station switch panel) UP to raise the anchor. To lower the anchor, push the toggle switch DOWN.

#### **B. TO OPERATE FROM THE BOW:**

- Make sure that the safety lanyard and chain stop (see Fig. 3.12.1) are removed from the anchor chain.
- Lift protective cap on foot switches (see Fig. 3.9.1) and depress UP or DOWN switch for the desired result.

**WINDLASS (MAINTENANCE PROFILE)**  
(FIG. 3.12.2)



#### **C. TO OPERATE MANUALLY:**

- Make sure that the safety lanyard and chain stop (see Fig. 3.12.1) are removed from the anchor chain.
- Insert the emergency handle into the clutch nut (see fig 3.12.2)
- Turn handle clockwise to retrieve anchor.

#### **D. MAINTENANCE:**

- Periodically check the motor and control box electrical connections, remove any residue and cover the connections with a small coating of grease.

It is recommended at least once a year to disassemble the windlass (see Fig. 3.12.2) and remove any residue build-up.

- Using the emergency handle, unscrew the clutch nut by turning the handle counterclockwise.

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## SECTION 3 • USING YOUR BOAT

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### **DANGER**

**Make sure that the power is off before any work is performed on the windlass.**

- Remove the drum, upper cone, chain wheel and lower cone.
- Wash down with fresh water and remove any residue.
- Coat contact surfaces with a light film of lubricant.
- Reassemble the unit and tighten clutch by turning the handle clockwise.

**NOTE:** Use the fresh water washdown spigot in the port bow locker to hose down the chain in the locker after haul-in.

REFER TO WINDLASS OPERATOR'S MANUAL IN YOUR OWNER'S PACKET FOR DETAILED OPERATING INSTRUCTIONS.



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## SECTION 3 • USING YOUR BOAT

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## SECTION 4 • BILGE & UNDERWATER GEAR

### 1. BILGE

#### A. FUEL & OIL SPILLAGE

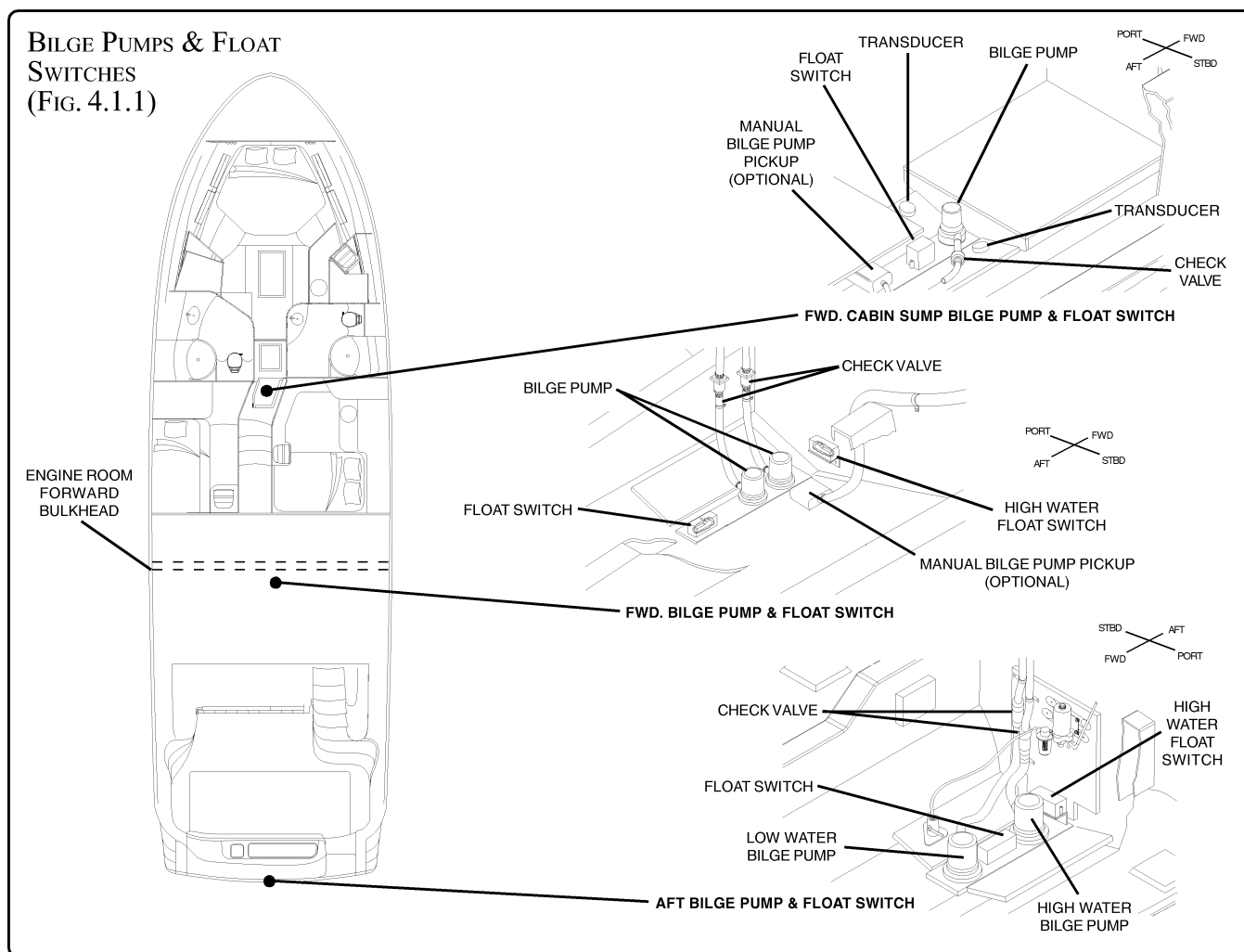
Regulations prohibit discharging fuel or oily waste in navigable waters. Discharge is defined as any action which causes a film, sheen or discoloration on the water surface, or causes a sludge or emulsion beneath the water surface. A common violation is bilge discharge. Use rags or sponges to soak up fuel or oily waste, then dispose of it properly ashore. If there is much fuel or oil in the bilge, contact a knowledgeable marine service to remove it. Never pump contaminated bilge overboard.

Fill fuel tank(s) less than rated capacity. Allow for fuel expansion.

### 2. BILGE PUMPS

The 560 DB is equipped with four (4) bilge pumps, including one (1) emergency high water bilge pump (Fig. 4.1.1). Your yacht is also equipped with a shower sump pump and a condensate sump pump, each equipped with a float switch.

Each of the bilge pumps are equipped with switches on the control station switch panel. These switches have MANUAL and AUTO positions. When the switch is in the MANUAL position, the pump will run continuously. When the switch is in the AUTO position, the pump is activated when there is enough water in the bilge to raise the float switch to its highest position; and deactivated when the water recedes. **The pumps should NOT be left in the MANUAL mode unless the bilge is being pumped out for servicing.**



## SECTION 4 • BILGE & UNDERWATER GEAR

### WARNING

**SINKING HAZARD** – Ensure the bilge pumps are operating properly.

### CAUTION

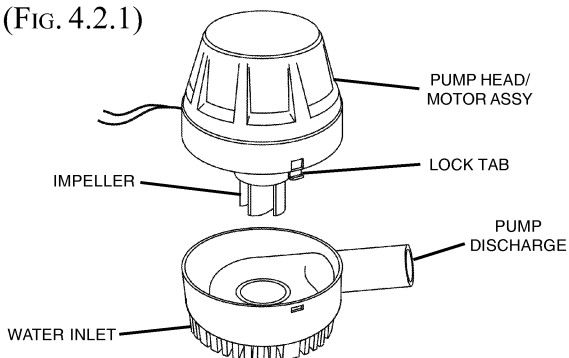
Run bilge pumps in the manual position only as long as necessary to remove water. Running bilge pumps dry can damage the pump motor.

The emergency bilge pumps and high water float switches are wired to the systems monitor located on the dash at the control station (see “SYSTEMS MONITOR” in Section 2 - page 2.19).

Whenever a bilge pump turns ON, either manually or automatically, the systems monitor will display which pump is active. **Should the high water alarms become activated, immediate attention to the area indicated on the systems monitor panel is required.**

Each pump is protected by a breaker on the main DC breaker panel located on the forward component board in the bilge. (See Fig. 6.3.1).

**BILGE PUMP ASSEMBLY**  
(FIG. 4.2.1)



### MAINTENANCE:

Frequently inspect the area under the float switches to ensure they are free from debris and gummy bilge oil. To clean, soak in heavy duty bilge cleaner for 10 minutes, agitating several times. Check for unrestricted operation of the float. Repeat the cleaning procedure if necessary.

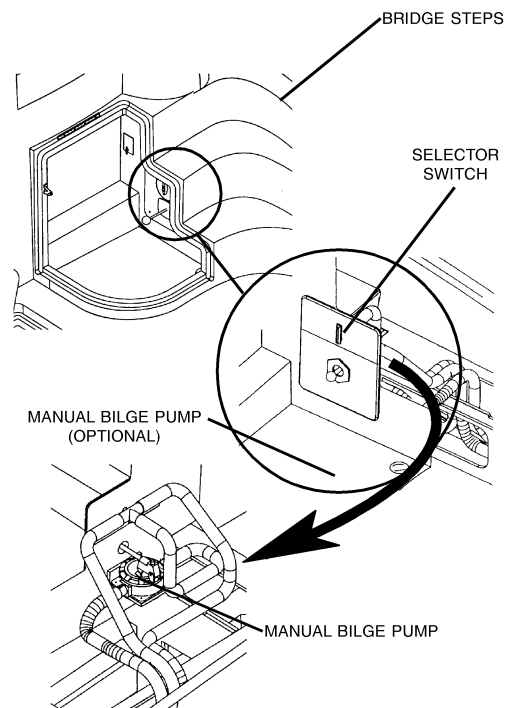
**Inspect the bilge pump intakes and keep them free of dirt or material which may impede the flow of water through the pump.** To clean the pump strainer, depress the lock tabs on both sides of the pump and lift the pump motor.

### TROUBLESHOOTING:

If water does not come out of discharge hose:

1. Depress the breaker on the main DC breaker panel located on the forward component board in the bilge (see Fig. 6.3.1) to ensure it has not tripped.
2. Remove the motor module to see if the impeller rotates with the power on.
3. Remove any debris that may have accumulated in the nozzle section or strainer base.
4. Check hose and connection on hull side for debris and proper connections.

**560 DB MANUAL BILGE PUMP (OPTIONAL)**  
(FIG. 4.2.2)



## SECTION 4 • BILGE & UNDERWATER GEAR

### A. MANUAL BILGE PUMP (OPTIONAL)

If equipped, the manual bilge pump (see Fig. 4.2.2) is located bridge steps in the cockpit. It can be accessed by lifting the bottom of the bridge steps.

To operate, turn the selector switch (see Fig. 4.2.2) to the FWD or AFT position and begin moving the handle up and down quickly and smoothly.

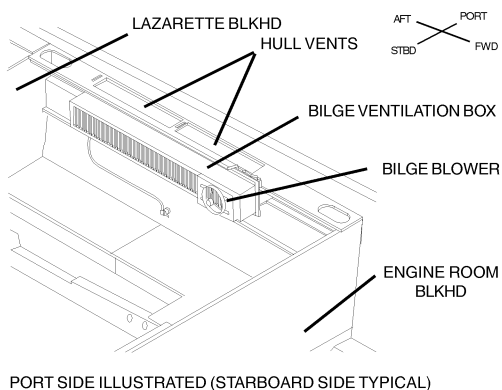
REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### 3. BILGE BLOWERS

The two (2) bilge fans in the engine room remove odors and excessive heat and provide ventilation through the hull vents. The blowers are wired through circuit breakers on the DC breaker panel located on the forward bilge component board and with switches on the control station switch panel (see Fig. 2.16.1) and on the salon main DC distribution panel (See Fig. 6.12.1).

Run the blowers when operating below cruising speed and when vessel is at rest with the generator running to dissipate heat buildup in the bilge.

560 DB BILGE BLOWER  
(FIG. 4.3.1)



### ! WARNING

**EXPLOSION/FIRE HAZARD – Run blower at least four (4) minutes before starting engine or generator. Check bilge and engine compartment for fumes.**

### ! WARNING

**Do not allow obstructions to interfere with bilge blower or ventilation intake operation. Engine performance may be adversely affected.**

### MAINTENANCE:

The bilge blowers should be checked periodically to ensure that all electrical connections are secured in place and that the blower motors are operating efficiently.

### TROUBLESHOOTING:

If your bilge blowers fail to operate, depress the breakers on the main DC breaker panel in the port side aft bilge area to ensure that they have not tripped.

### 4. BILGE HEAT DETECTOR

The 560 DB is equipped with a bilge heat detection device.

The bilge heat detector detects heat buildup in the engine room bilge area. The heat detector alarm is connected to the systems monitor panel on the control station panel (see Figure 2.19.2).

### ! CAUTION

**Never ignore an alarm.**

In the unlikely event of a heat detection alarm:

- Immediately shut down engines.
- Feel around engine room hatch for excessive heat before opening (See Section 1-Safety - C. Fire, pg. 1.11).
- Identify and correct problem before restarting the engines.
- Heat detector must be replaced if it has been activated.





## SECTION 4 • BILGE & UNDERWATER GEAR

### 8. MARINE GEARS

#### A. REDUCTION GEARS

A reduction gear reduces the rotating speed of the propeller shaft in relation to the engine RPM. This permits the use of a larger propeller while allowing the engine to attain its rated RPM, thereby increasing efficiency.

#### B. REVERSE GEARS

The reverse gear incorporates the clutch and controls the rotation of the propeller. The position of the clutch control or shifting lever indicates the motion which the clutch and reverse gear are transmitting. The center position of the lever indicates neutral. **Engine RPM should never exceed 1000 when engaging or disengaging the clutch. Higher RPM will result in unnecessary wear and shortened life of the unit, and perhaps breakage.**

Marine reverse gears are hydraulically operated, thereby making it imperative to periodically maintain and check oil level. If the correct oil level is not

maintained, slippage occurs, causing damage to the clutch plates. Too much oil will cause foaming and erratic clutch operation. For additional information see the Engine Operator's Manual.

### 9. ENGINE EXHAUST SYSTEM

The exhaust system on Sea Ray® boats with inboard engines is designed so that water from the raw water cooling system enters the exhaust system through elbows (engine side) where water and exhaust are mixed. Water and exhaust are then pumped through the mufflers and then overboard through the exhaust outlet. Make sure water is flowing from the exhaust outlets while the engines are operating. Prior to every boat use, examine the exhaust system fittings to ensure tightness.

A drain plug is located on each bypass muffler. When servicing or winterizing, remove the plug to drain the water out of each muffler. Replace the plug after all water has drained from the muffler.

### 10. ENGINE REMOVAL



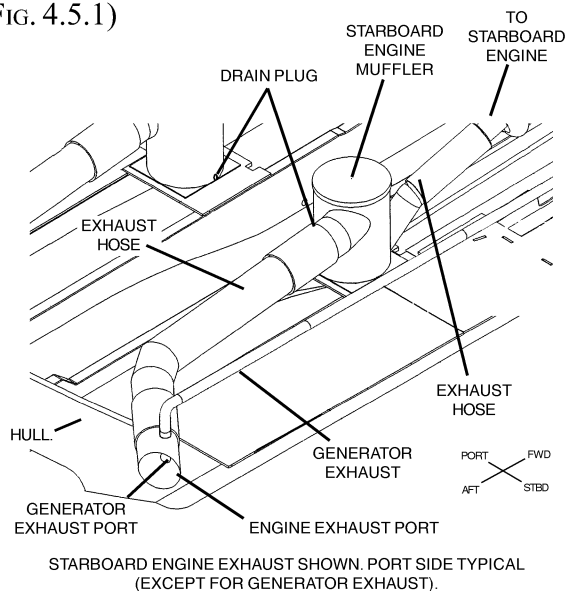
#### WARNING

**Hose clamps must be tight at all times to avoid exhaust leaks.**

Should the removal of an engine become necessary, **see your Sea Ray® dealer or an authorized service representative of the engine manufacturer.** The following is only a generalized procedure to follow.

Shut off the fuel lines and close the engine seacocks. Remove all electrical wires, fuel lines and raw water intake hoses from the engine. Unbolt the engine coupling from the shaft coupling and slide the shaft and coupling back from the engine. Detach both throttle and shift connections. Cap off hoses to avoid hydraulic fluid loss. **Do not bend or twist the hoses, as damage may result.** Remove the mounting bolts for the engine and lift the engine out, leaving the mounts bolted to the stringer caps.

560 DB ENGINE EXHAUST  
(FIG. 4.5.1)



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## SECTION 4 • BILGE & UNDERWATER GEAR

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To reinstall, reverse the above procedure. Check the coupling and shaft alignments, as well as water hoses and wiring connections. Also check for fuel and exhaust leaks and make sure seacocks are open before starting engines.

### 11. VIBRATION & CAUSES

Some vibration is to be expected in your boat because of the action of the engines and the propeller. But excessive vibration indicates conditions which must be promptly corrected to avoid damage. Contact your Sea Ray® dealer immediately if you are experiencing severe vibration. The following are some conditions which may cause vibrations.

#### A. FOREIGN OBJECT INTERFERING WITH PROPELLER ACTION

Weeds, ropes, fishing lines or nets can become wrapped around the propeller and/or shaft, causing vibration and loss of speed. Always stop and then reverse the propeller after going through a weedy area to unwrap and clear away any weeds which may have accumulated. Although reversing will sometimes help to unwrap lines and nets, they are difficult to remove without hauling the boat.

Always check for loose or trailing dock lines before getting underway. When towing a dinghy, remember that a long line may easily become entangled with the propeller when backing down.

#### B. BENT PROPELLER AND/OR SHAFT

A badly damaged or distorted propeller or shaft is an obvious cause of vibration. Even when the propeller appears to be perfect, make sure it has not been pulled off-center by the propeller key.

#### C. ENGINE AND SHAFT OUT OF ALIGNMENT

Although the shaft is properly aligned when it leaves the factory, after transit and after the boat has been in the water a few days, the alignment should be rechecked. The shaft coupling is the connecting point between the shaft and the engine and the alignment

should be set at .005 or less. Refer to SHAFTS (pg. 4.10) in this section of this Owner's Manual.

#### D. COUPLING OUT OF TRUE

Although an extremely unlikely condition, check the couplings if other efforts to correct the vibration fail. Check the engine half of the coupling (with dial indicator on the face) to see that it runs true with the shaft coupling. Also check the coupling keys. They must fit correctly to prevent forcing the couplings off center.

#### E. ENGINE PART HITTING BOAT STRUCTURE

Engines are flexibly mounted to reduce transmission of vibration to the hull structure. If some part of the engine, such as the oil pan, reverse gear or reduction gear housing, contacts a stringer, brace or part of the hull, vibration will result. The flexible shaft log allows a limited side motion of the shaft, but an excessive "whip" can cause the shaft to strike the sides of the shaft hole or the shaft log with resultant vibration.

#### F. OTHER POSSIBLE CAUSES

Other causes of vibration include the following: engine out of tune, a bent rudder, a worn strut bearing, a component of the exhaust system vibrating against the hull or improper contact between shaft taper and the propeller hub bore.

### 12. FRESH WATER COOLING SYSTEM

The fresh water cooling system is a closed system which helps protect engines from internal corrosion and provides more even distribution of engine temperature. **Change the coolant annually.**

#### A. COOLANT RECOMMENDATIONS:

The standard mixture of water and coolant is a mixture of 30% environmentally safe, non-toxic antifreeze and 70% water, which protects to 0°F (-18°C). This will allow the coolant to expand properly and maintain normal operating engine temperature. In colder climates, the coolant level should be increased to 50/50, which protects to -34°F (-37°C),



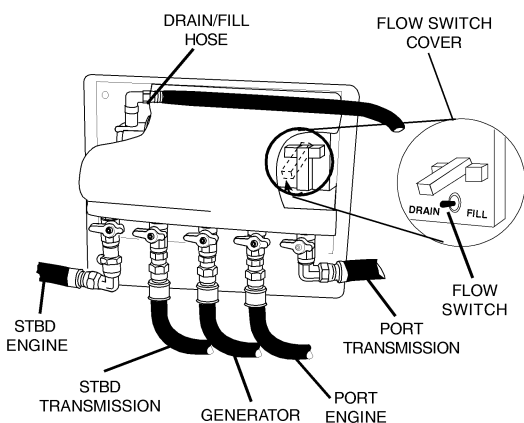
## SECTION 4 • BILGE & UNDERWATER GEAR

for proper coverage. **To find engine coolant requirements for the specific engine on your yacht, refer to your Engine Owner's Manual in the Owner's Manual Packet.**

### 13. OIL CHANGE SYSTEM

The oil change system, located on the inboard port stringer, center of the port engine, simplifies changing the oil in the engines, transmissions and generator. The pump is self-priming and pumps in either direction. The oil change pump is protected by the 24 volt OIL CHANGE PUMP breaker on the DC breaker panel on the port component board in the engine room.

OIL CHANGE PUMP  
(FIG. 4.7.1)



#### ! CAUTION

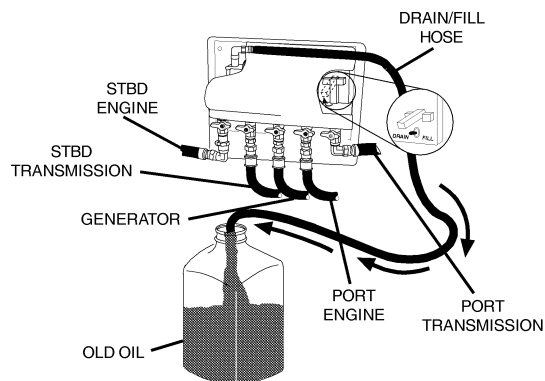
Have only one (1) valve open at a time. Make sure other valves are closed to prevent accidental over filling.

#### A. OPERATING INSTRUCTIONS:

(SERVICE ONE (1) ENGINE AT A TIME.)

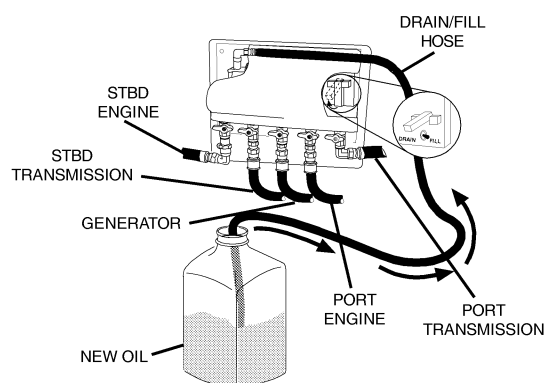
1. Run engines or generator for several minutes to warm the oil and mix the sludge.
2. Select the first unit to be serviced. Turn the valve to the open position, in line with valve body.
3. Turn the pump on (switch position indicates the direction of flow) and pump the old oil into containers to be disposed of properly.

OIL CHANGE (USED OIL)  
(FIG. 4.7.2)



4. After oil has been pumped out of unit being serviced, place the pump discharge hose into a container of pre-measured fresh oil and reverse the pump switch to pump the fresh oil into the engine. **NOTE: Fresh oil should be at least 60° F (16½ C).**

OIL CHANGE PUMP (FRESH OIL)  
(FIG. 4.7.3)



5. When pumping is complete, shut the pump off and close the valve leading to the unit being serviced. Check oil level and adjust if necessary.
6. Repeat for each engine, generator or transmission to be serviced.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

## SECTION 4 • BILGE & UNDERWATER GEAR

### 14. UNDERWATER GEAR

#### A. PROPELLERS

Propellers should be free of nicks, excessive pitting and any distortions that alter them from their original design. Badly damaged propellers should be replaced, but those that are chipped, bent or merely knocked out of shape can be reconditioned by your marine dealer.

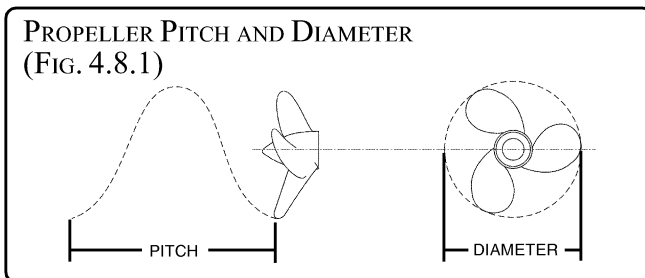
When doing extensive cruising, it is advisable to carry extra propellers aboard. Extra propellers can be stored on the optional propeller mounts in the engine room.

#### BASIC PROPELLER CHARACTERISTICS

Propellers have two basic characteristics:

- Diameter
- Pitch.

Diameter is that distance measured across the propeller hub line from the outer edge of the 360° that is made by the propeller's blade during a single rotation. Pitch is that distance in inches that a propeller will travel if rotated one revolution without any slippage (Figure 4.8.1).

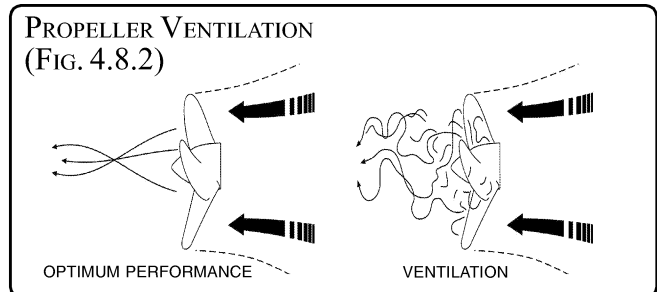


For example, a propeller with a 12-inch pitch, when rotated 360° would, theoretically, advance 12 inches through the water. Actually, no propeller applied to any boat is 100% efficient. No 12-inch pitch blade will, in a single rotation, advance a boat 12 inches. This variance is referred to as slippage.

#### VENTILATION, ITS CAUSES AND CORRECTIONS

While often called “cavitation,” ventilation is really a different effect. At times when a boat enters or leaves a sharp turn, the propeller seems to slip and lose thrust and the engine may over-speed (Figure 4.8.2). This problem is normally caused by air or aerated water entering the propeller. (A damaged propeller can also cause ventilation.) Ventilation can usually be corrected by one or more of the following:

1. Replace the damaged or incorrect propeller with the recommended one.
2. With stern drives, set the outdrive at a lesser trim angle (trim the unit downward).



#### CAVITATION, ITS CAUSES AND CORRECTIONS

Cavitation is a phenomenon that occurs in all propeller-driven craft under certain conditions. The surface of propeller blades are not perfectly flat, and as water is drawn through the blades to be discharged aft into the propeller's slip stream, the water flowing over the curved surface of the blade encounters areas of greater and less pressure.

In those areas of reduced pressure, air bubbles are formed. When they move out of the low pressure area these bubbles collapse. If they collapse while in contact with an object, such as part of the propeller blade or trim plane, the bubbles create such highly localized forces that they erode the surface of the object. In the case of the propeller, such damage is sometimes called a “burn.” It may be caused by an irregularity in the propeller's leading edge, and it should be corrected by reconditioning the propeller or by replacement.



## SECTION 4 • BILGE & UNDERWATER GEAR

Cavitation is a normal occurrence in modern sport boats, and prop inspection should be part of routine maintenance.

### PROPELLER TORQUE AND ITS CORRECTION

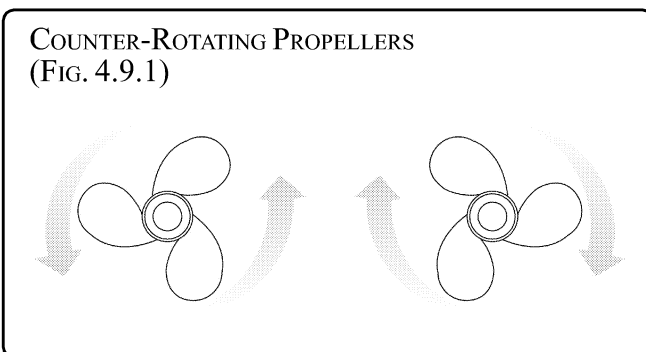
Some of the more powerful motors create a considerable torque effect; that is, a twisting motion causing the boat to ride with one sheer lower than the other. This twisting reaction is caused by the direction of propeller rotation lifting one side of the boat. This causes an uneven drag, so that a boat's bow may tend to fall off in one direction or the other from the intended course given by the wheel.

Torque action may occur when maximum or close to maximum rated horsepower is applied. Any slight torque may be offset by shifting passenger or gear weight laterally to the high side of the boat.

### COUNTER-ROTATING PROPELLERS

On twin engine yachts, one propeller turns in a clockwise direction while the other turns counterclockwise in order to maintain a straight course through the water.

When removing or replacing propellers, be sure to install the correct propeller on the correct drive.



### PROPELLER INSTALLATION:

For proper rotation, the installation of propellers on inboard engine boats requires the right hand propeller to be installed on the starboard side and the left hand propeller to be installed on the port side. Install in the following manner:

1. Inspect the key. It must be chamfered so that the corners of the key do not touch the keyway fillets (see Fig. 4.10.1, illustration #2).
2. Install the propeller on the shaft without the key in the keyway. Slide the propeller all the way on the shaft until it seats. Mark the shaft on the leading edge of the hub with a felt tip marker and remove the propeller.
3. Install the key in the keyway and slide the propeller on the shaft. If the key is not pinned, tap the key back slightly as the propeller slides up the taper. This will ensure that the propeller does not ride the key up the keyway end radius, thus forcing the propeller off-center. The propeller is properly seated if the hub is in the same position as previously marked.
4. Install a board (2 x 4) against the hub perpendicular to the keel and rotate the propeller clockwise until one blade rotates against the board. Do not put a board between the strut and the rudder. (Fig. 4.10.1, illustration #4.)
5. Install the large bronze prop nut on the propeller shaft and seat the propeller (Fig. 4.10.1) with the correct torque as listed on the table below.

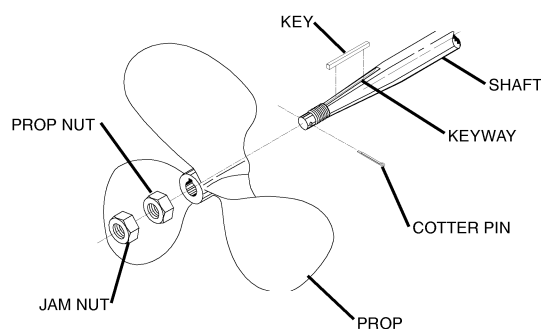
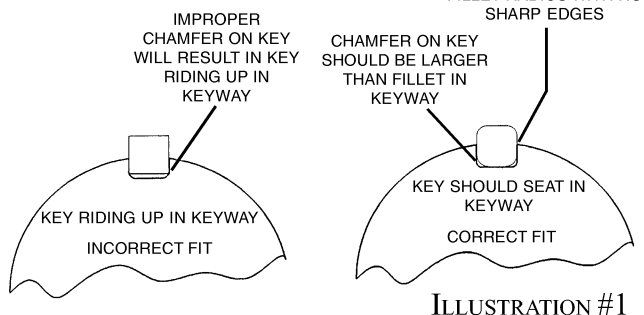
| Shaft Diameter | Thread Size | Prop Nut | Torque Ft. Lbs. | Jam Nut Torque Ft. Lbs. |
|----------------|-------------|----------|-----------------|-------------------------|
| 1"             | 3/4"        | Bronze   | 100-125         | 100                     |
| 1 1/4"         | 7/8"        | Bronze   | 150-175         | 100                     |
| 1 1/2"         | 1 1/8"      | Bronze   | 250-275         | 100                     |
| 1 3/4"         | 1 1/4"      | Bronze   | 275-300         | 100                     |
| 2"             | 1 1/2"      | Bronze   | 325-350         | 100                     |
| 2 1/2"         | 1 3/4"      | Bronze   | 400-425         | 100                     |

6. Install the jam nut and torque to 100 ft. lbs.
7. Install the cotter pin.

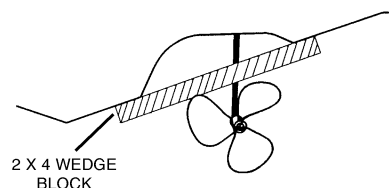
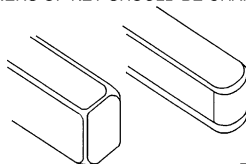


## SECTION 4 • BILGE & UNDERWATER GEAR

### PROPELLER INSTALLATION (FIG. 4.10.1)



ALL CORNERS OF KEY SHOULD BE CHAMFERED



### NOTICE

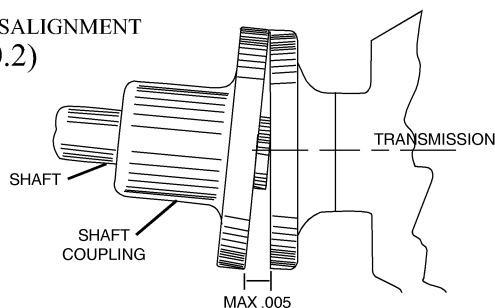
If the jam nut and prop nut are installed properly, the propeller should not loosen. If you tighten both nuts holding only the propeller blade, the nuts could possibly thread back on the shaft to the cotter pin. It is important that the above procedure

With coupling faces brought together by hand – not bolted – the feeler gauge should be tightly gripped at all points around the edges of the couplings. Next, hold the engine coupling flange stationary and rotate the shaft coupling flange 90 degrees in either direction. The feeler gauge should still be tightly gripped at all points around the edges of the couplings.

### B. SHAFTS

The shaft coupling is the connecting point between the shaft and the engine (Figure 4.10.2). The alignment should be set at a maximum of .005" (0.13mm). A slight misalignment will cause loss of power, excessive wear, noise and vibration and should not be tolerated. When checking for parallel coupling faces (the proof of proper alignment), use a feeler gauge not more than .003 to .005 of an inch thick (0.08 – 0.13mm).

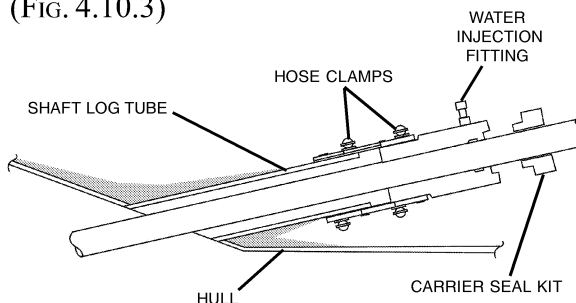
### SHAFT MISALIGNMENT (FIG. 4.10.2)



### SHAFT LOG & STRONG SEAL™

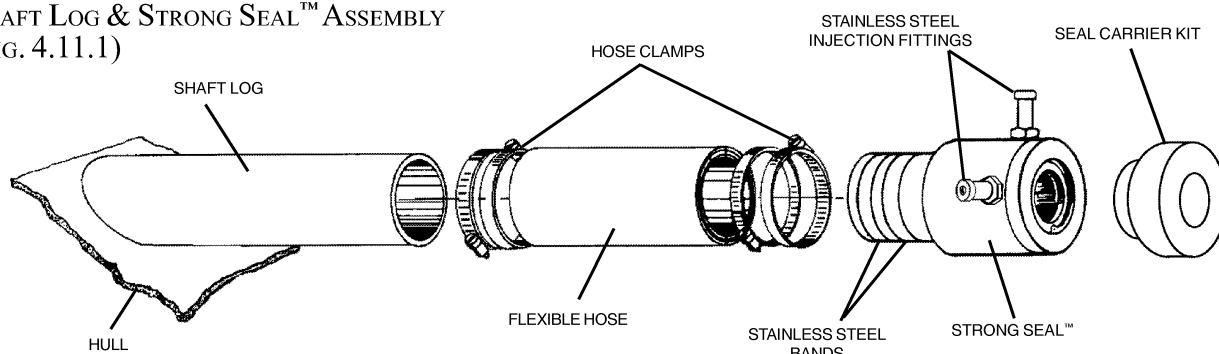
The shaft log is a fiberglass tube which provides an opening through the bottom of the boat for the propeller shaft (Figure 4.10.3). The Strong Seal™ is connected to it by a short length of special flexible hose which serves to absorb normal shaft vibration (see Fig. 4.11.1).

### 560 DB SHAFT LOG & STRONG SEAL (FIG. 4.10.3)



## SECTION 4 • BILGE & UNDERWATER GEAR

SHAFT LOG & STRONG SEAL™ ASSEMBLY  
(FIG. 4.11.1)

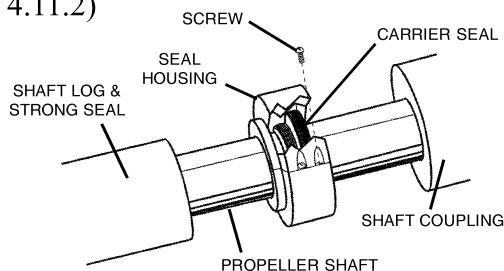


The Strong Seal™ prevents water from leaking around the shaft and into the boat. Shaft alignment and straightness must be correct to assure proper operation of the Strong Seal™. Refer to the Strong Seal™ information for the seal carrier kit in the Owner's Manual packet.

### C. CARRIER SEAL KIT

Your 560 DB is equipped with spare carrier seals located on the port and starboard engine shafts (Figure 4.11.2). Seal failure can be corrected by replacing the seal with the spare seals provided.

CARRIER SEAL KIT  
(FIG. 4.11.2)



### TO REPLACE THE CARRIER SEAL:

1. Clean any accumulated dirt and scale from the exposed shaft. **MAKE SURE THERE ARE NO SHARP EDGES OR BURRS ON THE SHAFT.**
2. Separate the two halves of the Carrier Seal Kit housing by removing the screws. If there are two lip seals in the carrier kit, move the forwardmost one forward on the shaft until out of the way.
3. Remove the retaining ring from the Strong Seal™ using a small screwdriver (for a spiral ring) or snap-ring pliers (for a snap ring). Work the retaining ring around the new lip seal and move the ring forward out of the way.
4. Re-assemble the empty Carrier Seal Kit housing onto the shaft just forward of the new lip seal with the small diameter facing aft. Leave the screws loose enough that the housing can move along the shaft. The Carrier Seal Kit housing is now ready to be used as a lip seal installation tool.
5. Push needle-nose pliers or a hook into the exposed body of the lip seal and pull it out of the Strong Seal™ housing. Cut the old seal off the shaft with wire cutters. **BE CAREFUL NOT TO SCRATCH THE SHAFT.**
6. Inspect and clean the inside of the Strong Seal™ housing and the newly exposed area of the shaft that was under the old lip seal.
7. Push the new lip seal and installation tool aft until the lip seal contacts the Strong Seal™ housing. Using a rubber mallet, tap the face of the installation tool until the lip seal is seated within the Strong Seal™ housing. You will know the lip seal is fully seated when the retaining ring groove is exposed.
8. Remove the Carrier Seal Kit housing from the shaft. Re-install the retaining ring into its groove in the Strong Seal™ housing.
9. If the Carrier Seal Kit came with two lip seals, position the remaining lip seal back onto a convenient location on the shaft at least 2"

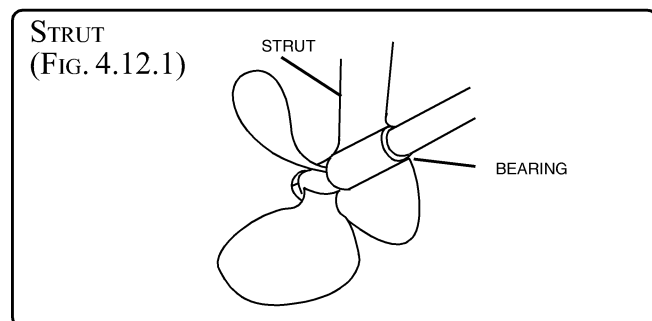
## SECTION 4 • BILGE & UNDERWATER GEAR

forward of the Strong Seal™. Re-assemble the Carrier Seal Kit housing around the lip seal with the smaller diameter facing forward. Tighten the screws and make sure the assembly is firmly secured on the shaft.

**NOTE:** As the Carrier Seal Kit is turning with the shaft and the Strong Seal™ is not, it is important that the two do not touch.

### D. STRUT

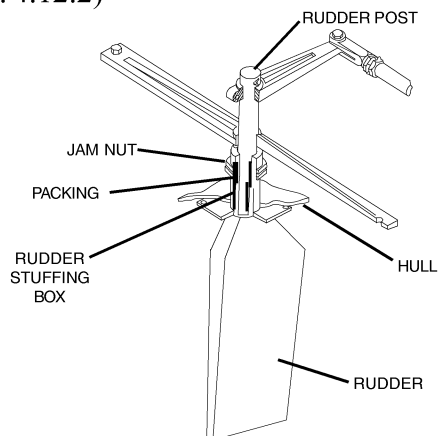
The strut is the bronze casting fastened to the bottom of the hull to support and form a bearing for the propeller shaft (Figure 4.12.1). A replaceable rubber bearing is inserted to minimize wear and protect the shaft where it passes through the strut hub. During lay up periods, squirt castor oil into this bearing to keep it from freezing to the shaft. **Never use machine oil or grease on rubber bearing.** Periodically check all strut fastenings to assure that they are secure.



### 15. RUDDER & RUDDER STUFFING BOX

The rudder (Figure 4.12.2) is the vertical flat surface aft of the propeller that pivots about a vertical axis and changes the direction of the boat through the water. The rudder stuffing box prevents water from leaking into the boat where the rudder post enters the hull. Spot check for leaks before and after using your boat.

RUDDER & RUDDER STUFFING BOX  
(FIG. 4.12.2)



### 16. SEACOCKS & STRAINERS

Seacocks and strainers provide cooling water to the engines, generator and A/C units located throughout the bilge area.

To open the seacock, turn the handle in line with water flow (vertically). To close, turn the handle against water flow (horizontally). The strainers should be inspected frequently and cleaned out when plugged. If operation of the air conditioning is excessive it is important that the A/C unit strainers are inspected more frequently than other strainers.

**The seacock body should be inspected and lubricated annually.**

#### CAUTION

**As a safety measure, close all seacocks when leaving boat for any length of time to impede water ingress in the event of water hose failure.**

#### TO CLEAN THE STRAINER

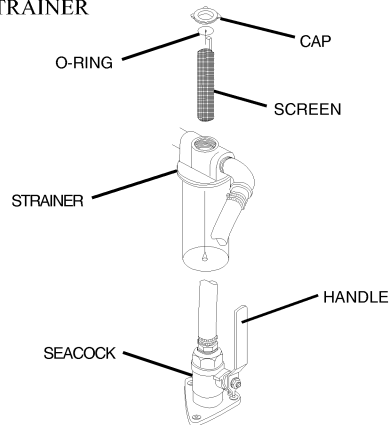
- Close the seacock by turning the handle against water flow direction (horizontally) (Figure 4.13.1).

**NOTE:** Some seacocks are equipped with locking tee handles which must be loosened before operating the handle

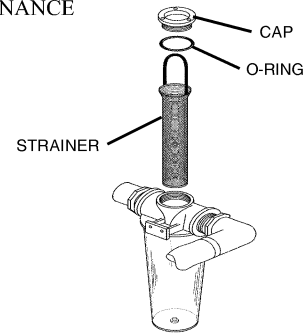
## SECTION 4 • BILGE & UNDERWATER GEAR

- Loosen strainer cap with the adjustable spanner wrench provided (Figure 4.13.2). It is stowed on the stringer adjacent to the strainer.

**SEACOCK & STRAINER**  
(FIG. 4.13.1)

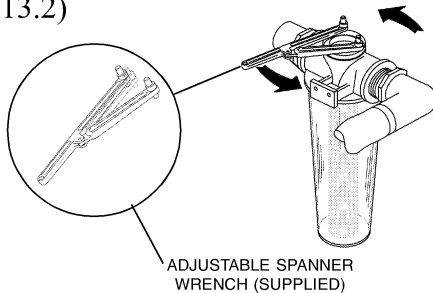


**STRAINER MAINTENANCE**  
(FIG. 4.13.3)



- Rotate strainer cap clear of strainer housing. Pull upward on stainless steel screen basket handle (Figure 4.13.3).

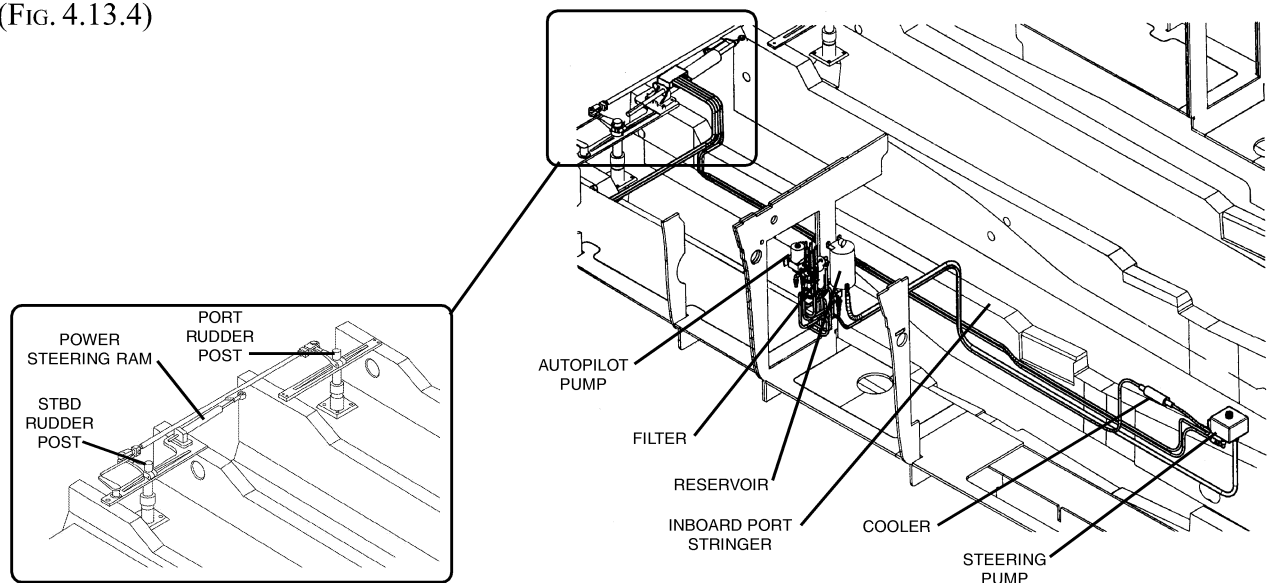
**STRAINER MAINTENANCE**  
(FIG. 4.13.2)



## 17. HYDRAULIC POWER STEERING CONTROL

The hydraulic power steering ram (Figure 4.13.4) ensures identical positioning of the port and starboard rudders. Check that rudder arms are tight and free of play. Ensure that fluid reservoir is up to level and filter is clean. Sea Ray® recommends Sea Star hydraulic steering fluid or Dextron 3 auto transmission fluid for the 560 Sedan Bridge power steering system.

**POWER STEERING RAM**  
(FIG. 4.13.4)



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## SECTION 4 • BILGE & UNDERWATER GEAR

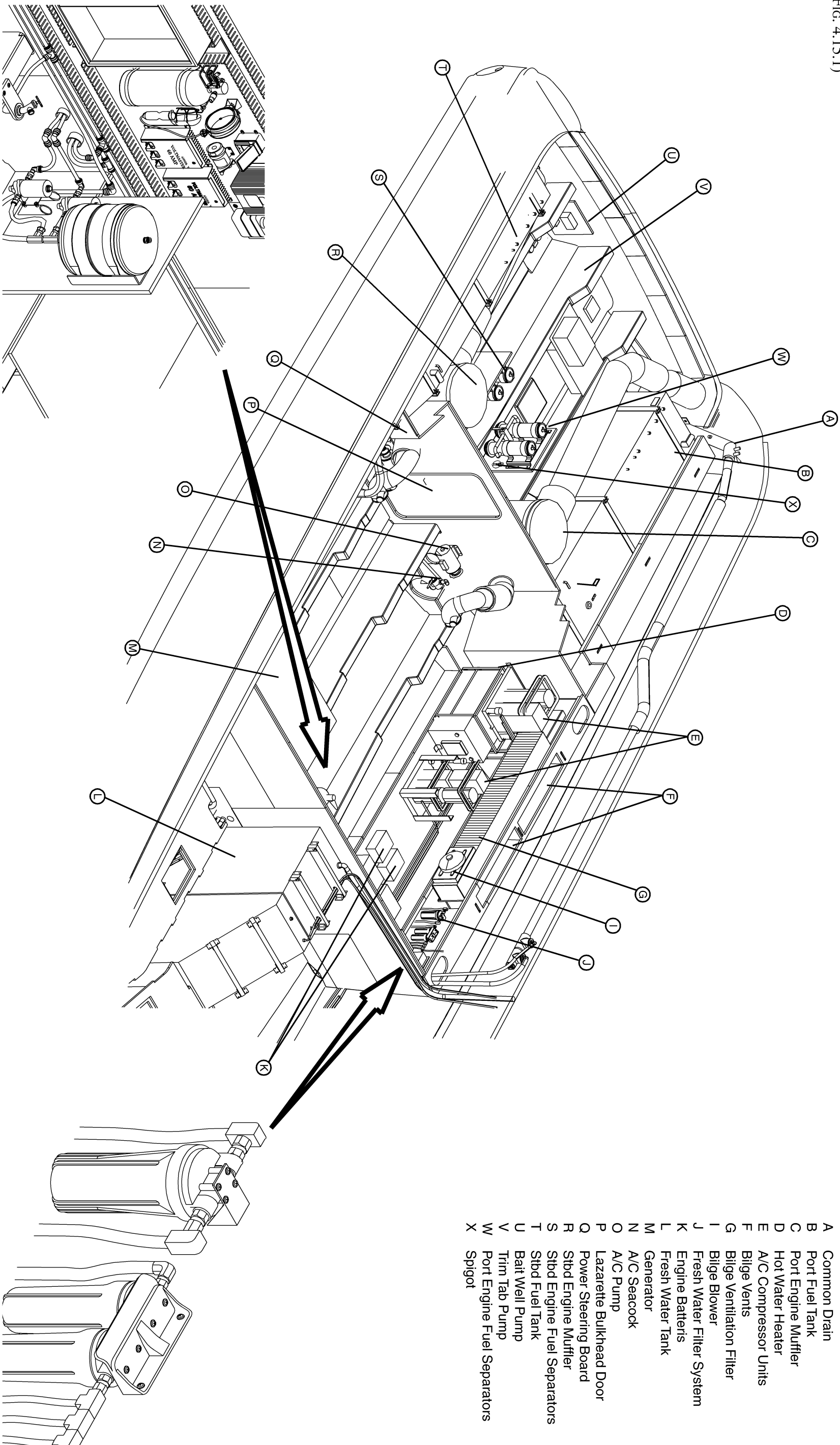
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18. 560 DB Bilge

(Fig. 4.15.1)



560 DB Bilge Layout (Starboard)

(Fig. 4.16.1)

- A

Coolant Recovery Bottle

B

Generator

C

Anti Siphon Valve

D

Generator Converter

E

Generator Battery

F

Generator Fuel Separator

G

Waste Vacuum Generators

H

Waste Holding Tank

I

Generator Muffler

J

Oil Exchange Unit

K

Horn Compressor Tank & Regulator Valve
- L

Stbd Engine Muffler
- M

Stbd Engine Fuel Separators
- N

Stbd Fuel Tank
- R

Reserve Oil Containers
- S

Aft Bilge High Water Pump
- T

Aft Bilge Pump
- V

Automatic Fire Extinguisher
- W

Port Fuel Tank
- X

Lazarette Bulkhead Door

Y

Port Engine Muffler

Z

Engine Strainer

AA

Engine Seacock

BB

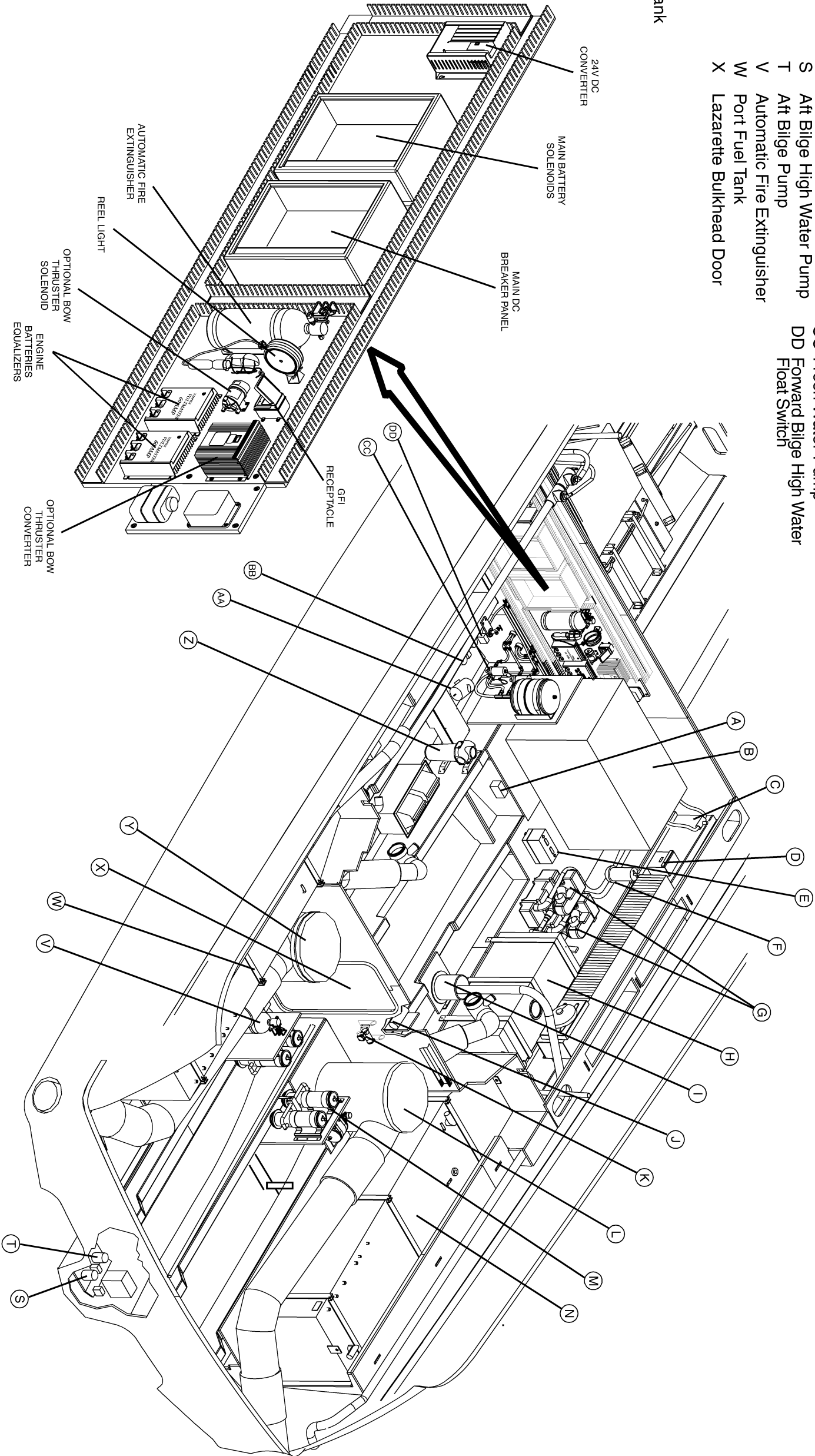
Forward Bilge Pump

CC

Fresh Water Pump

DD

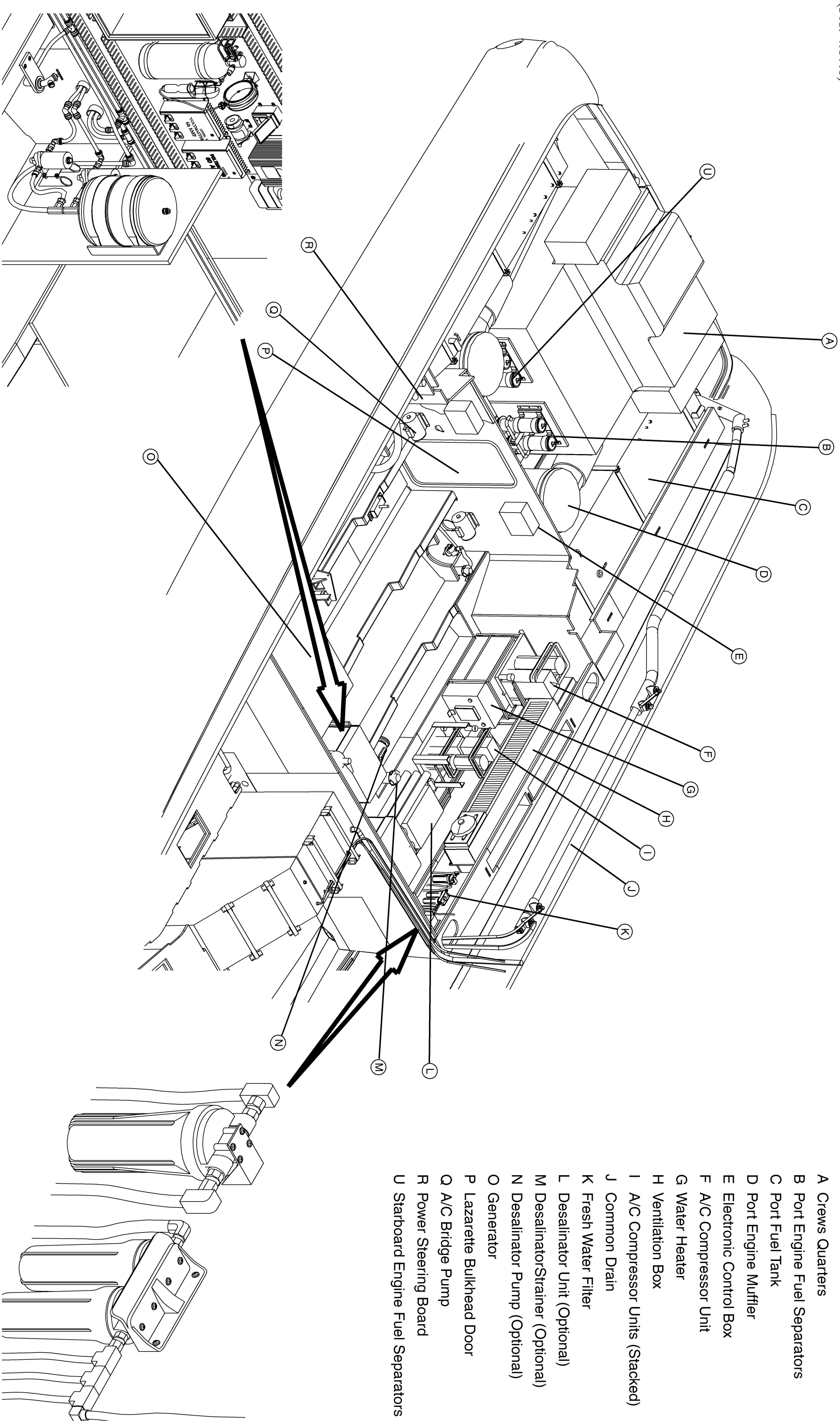
Forward Bilge High Water Float Switch





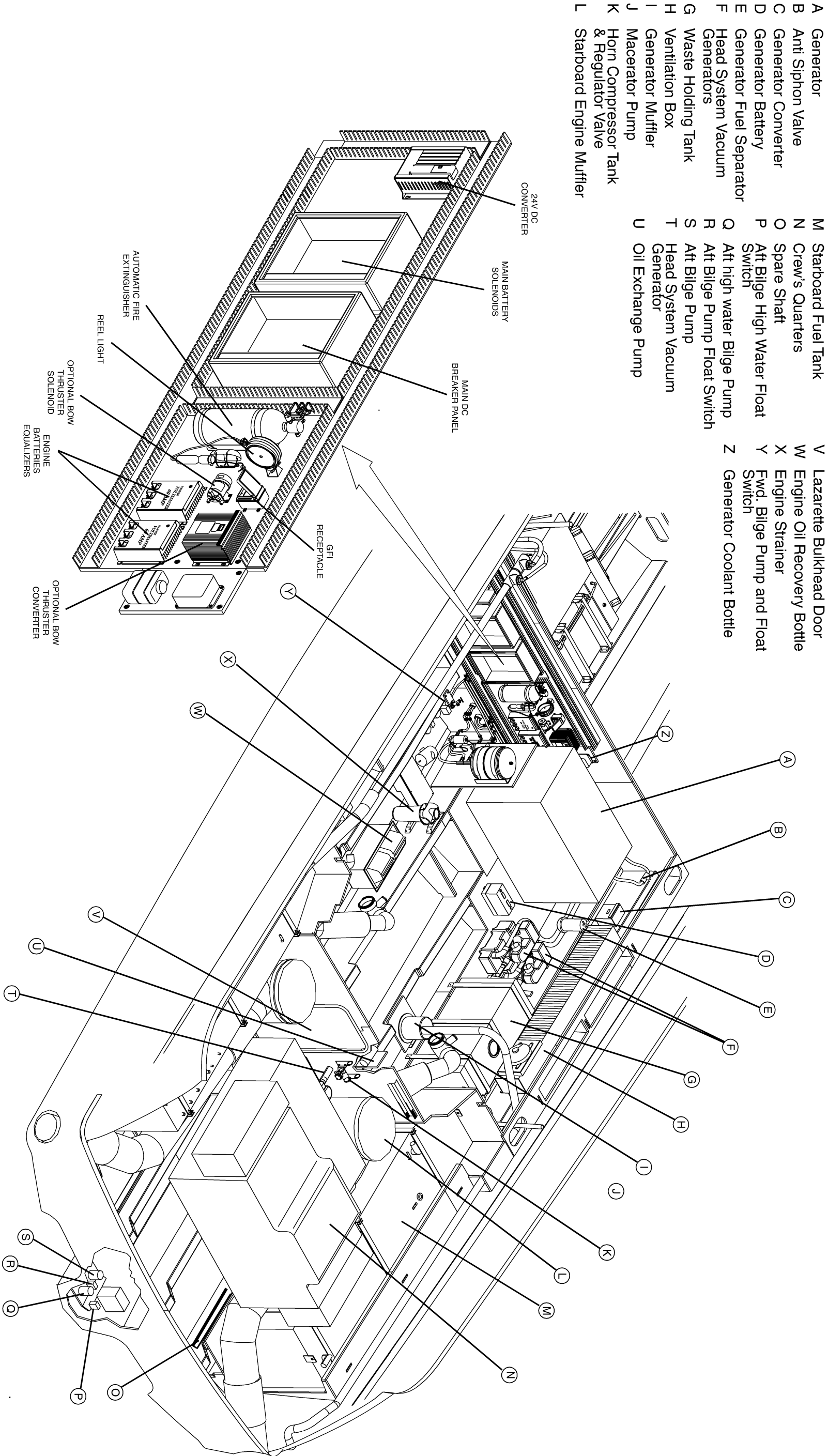
560 DB Optional Bilge Layout Showing Optional Crew Quarters (Port)

(Fig. 4.17.1)



560 DB Optional Bilge Layout Showing Optional Crew Quarters (Starboard)

(Fig. 4.18.1)



## SECTION 5 • FUEL SYSTEM

### 1. FUEL SYSTEM

*Section 3 - Using Your Boat* contains important fueling information. Take time to read all the fuel related information in the owner's manual.

Fuel lines, filters and all fuel system components should be checked at the start of each season and periodically thereafter, particularly after any work has been done aboard the boat which might have affected any part of the system. Be certain that all are in proper condition and that the entire system is fuel tight. Each fuel tank has manual shut-off valves on the top of the tank to close off the fuel system in case of leakage or line failure.

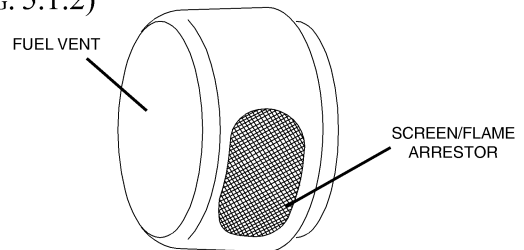
fuel usage of either engine. The crossover line is equipped with a shutoff valve at each tank (see Figure 5.2.1). Fuel fill inlets for the tanks are located on the starboard and port deck walkway by the control station (see Figure 5.1.1).

Your Sea Ray® is equipped with a fuel tank vent (see Fig 5.1.2) for each tank which serves as a pressure/vacuum release and safety overflow. The through-hull fitting has a flame arrester, making it imperative that you keep the screen clean and in excellent repair. Replace the screen immediately if it becomes damaged or displaced. Periodically check the vent to assure that it is not clogged.

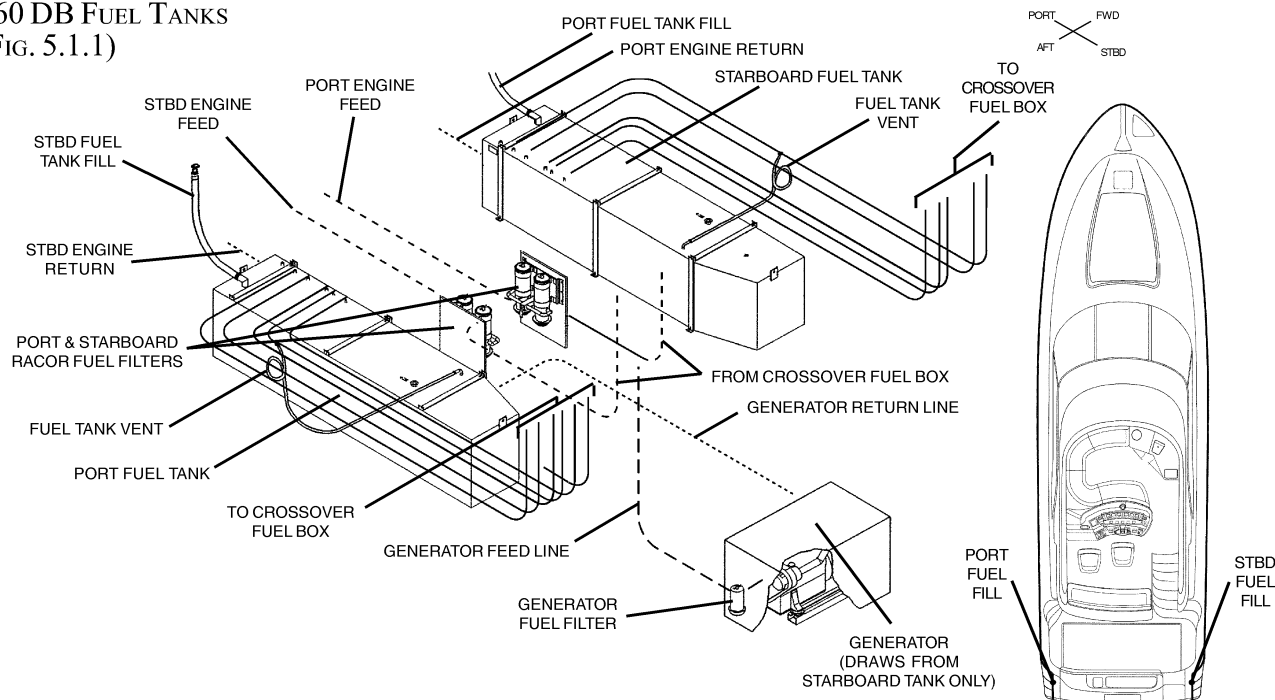
#### A. FUEL TANKS

The 560 DB has two (2) aluminum fuel tanks (see Figure 5.1.1) with a capacity of 400 gals. (1514 liters) each, for a total capacity of 800 gals. (3028 liters). The fuel tanks are connected by a crossover line which allows both engines to draw fuel from the entire fuel supply eliminating unequal fuel availability and/or weight differential (listing) caused by different

FUEL VENT WITH SCREEN/FLAME ARRESTER  
(FIG. 5.1.2)

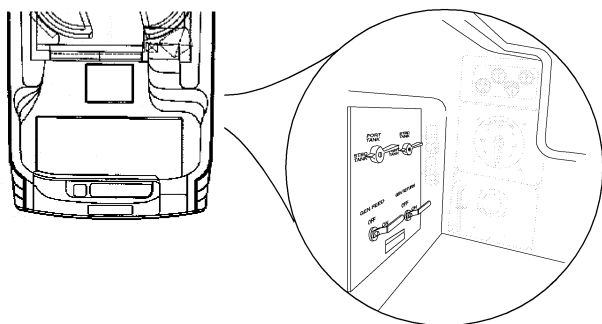
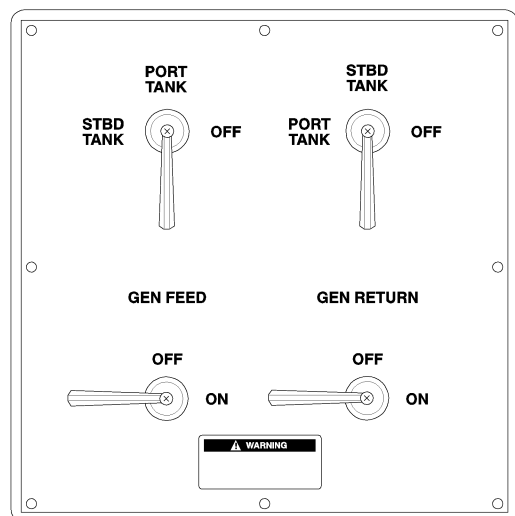


560 DB FUEL TANKS  
(FIG. 5.1.1)



## SECTION 5 • FUEL SYSTEM

FUEL CROSSOVER BOARD  
(FIG. 5.2.1)



### 2. FUEL RECOMMENDATIONS

The quality of the fuel is very important for satisfactory engine performance and long engine life. Fuel should be clean and free of contamination. Your fuel tanks should be kept full of fuel whenever possible. This will reduce the amount of water condensation and reduce the possibility of contamination.

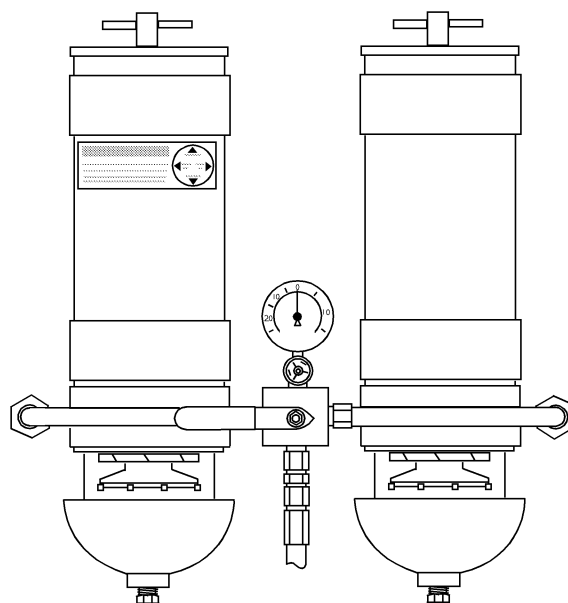
#### A. RECOMMENDED FUEL: #2 DIESEL FUEL

**NOTE:** In rough seas, allow approximately 15% reserve when planning fuel consumption.

### 3. FUEL FILTERS: (DIESEL)

Primary and secondary fuel filters are located on your Sea Ray® to help keep the fuel as clean as possible. Primary fuel filters are the Racor® water separating fuel filters installed on the aft engine room bulkhead, starboard side (see Fig. 5.2.2). The secondary fuel filters are located on the engines and should be replaced in accordance with the Engine Owner's Manual.

RACOR® FUEL FILTERS  
(FIG. 5.2.2)



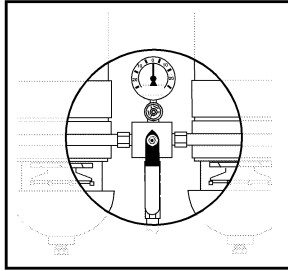
**NOTE:** Use of any methanol, gasohol or alcohol based fuel additive will damage the fuel filter.

Maximum efficiency can be accomplished by the on-line selection of the left or right fuel filter individually. This will give you a clean, efficient filter on-line while allowing maintenance on the off-line filter.

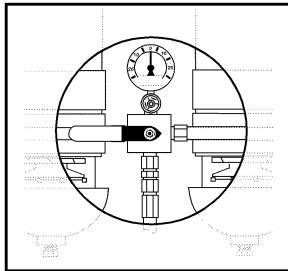
## SECTION 5 • FUEL SYSTEM

### A. PRIMARY FUEL FILTER SELECTION VALVE:

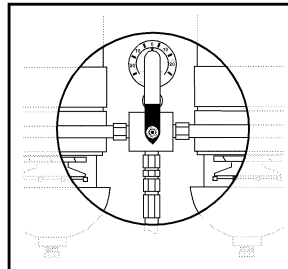
Arrow Up: ALL OFF



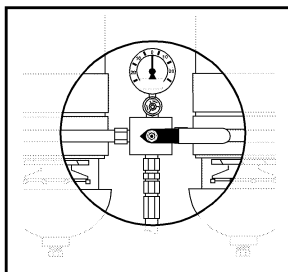
Arrow Right: RIGHT ON



Arrow Down: ALL ON



Arrow Left: LEFT ON



REFER TO THE ENGINE OPERATOR'S MANUAL FOR MORE DETAILED INFORMATION.

### 4. FUEL FILTER MAINTENANCE

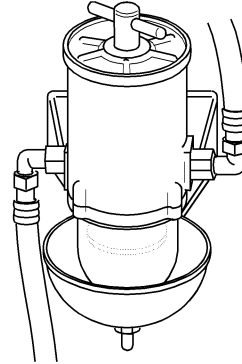
A major cause of poor starting or power loss is the result of a clogged filter element or a fuel system air leak. Check that the filter lid and drain plug are properly tightened.

Inspect or drain the collection bowl of water daily.

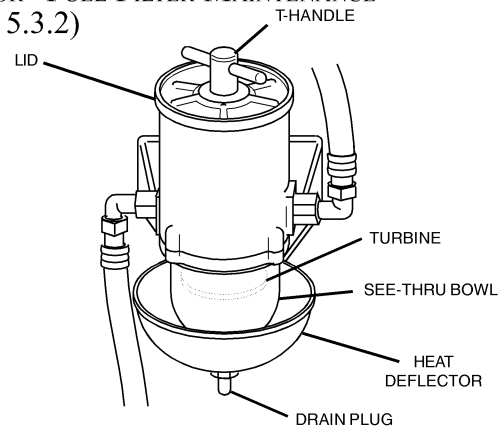
#### A. TO DRAIN WATER:

1. Shut down the engine.
2. Loosen the T-handle on the top lid to break the vacuum within the filter (see Fig. 5.3.1).

RACOR® FUEL FILTER MAINTENANCE  
(FIG. 5.3.1)



RACOR® FUEL FILTER MAINTENANCE  
(FIG. 5.3.2)



3. With a suitable collection container in place, remove the drain plug and allow water and contaminants to drain. (see Fig. 5.3.2).

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## SECTION 5 • FUEL SYSTEM

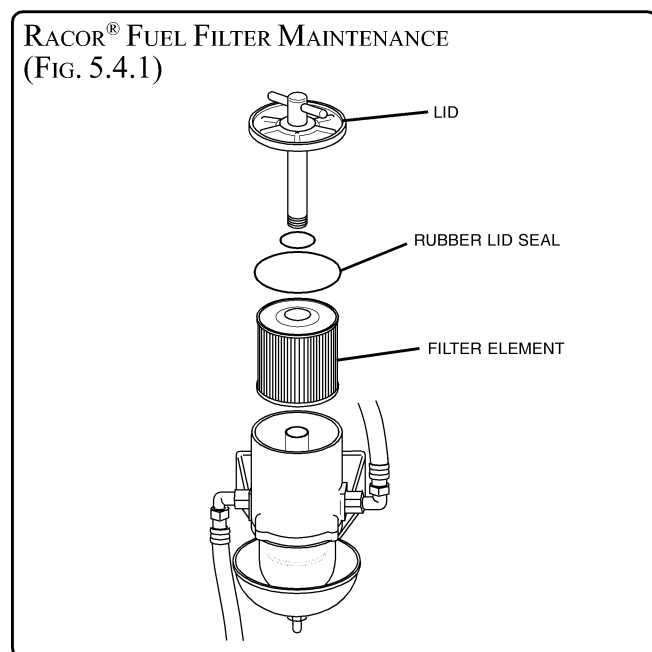
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4. Replace the drain plug and, if necessary, prime the filter by removing the lid (see Fig. 5.4.1) and filling the filter with clean fuel.
5. Replace the lid and tighten the lid T-handle by hand only. Do not overtighten.

Replace the filter element at regular intervals or if a power loss is detected.

### B. TO REPLACE THE FILTER (FIG 5.4.1):

1. Shut down the engine.
2. Remove the lid .
3. Remove the old rubber lid seal and dispose of the old seal properly.



4. Apply a coating of clean fuel or motor oil to the rubber lid seal supplied with the new element.
5. Place the new seal in position on the lid.
6. Remove the filter element by holding the molded handle and slowly pulling upward with a twisting motion.
7. Insert the new filter element with a slow downward twisting motion.
8. Fill the filter with clean fuel, then replace the lid. Tighten the lid T-handle by hand only. Do not overtighten.

9. Start the engine and check for any leaks.
  10. Correct any leaks with the engine shut down.
- It is recommended that spare filter elements be carried aboard as contaminated fuel can easily plug a filter.

REFER TO THE ENGINE OPERATOR'S MANUAL FOR MORE DETAILED INFORMATION.

## 5. FUELING PRECAUTIONS

Certain precautions must be carefully and completely observed every time a boat is fueled, even with diesel fuel. Diesel fuel is nonexplosive but it will burn.

### A. GENERAL:

- Fuel during daylight.
- Check fill plate label to ensure fuel is placed only in fuel tank. Fuel fill plates are located on the stbd deck walkway by the control station (see Fig. 3.3.1).
- Avoid spills.
- Know your fuel capacity and consumption. Record the amount of fuel used since your last fill up, and compute the engine's hourly fuel usage. As a fuel gauge backup check, deduct the average hourly fuel usage from fuel tank capacity.
- Observe the "Rule of Thirds": one-third fuel for trip out, one-third for return and one-third for reserve.
- Allow an additional 15 percent fuel reserve when operating in rough seas.

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## SECTION 5 • FUEL SYSTEM

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### **B. BEFORE & DURING FUELING – CHECKLIST:**

- Fire extinguisher – close at hand.
- Mooring – boat tied securely to fueling pier.
- Crew – at least one knowledgeable person present.
- Passengers – unnecessary people off the boat.
- Engines – stopped.
- Electrical equipment, including blowers – power off.
- Windows, doors, hatches – closed.
- Smoking material – extinguished.
- Inboard tanks – grounded.
- Filler pipe – marked DIESEL.
- Fuel nozzle – in contact with filler pipe to prevent static sparks.
- Fill level – fill less than rated capacity of tank; allow for fuel expansion.
- Trim – fuel weight distributed equally.

### **C. AFTER FUELING – CHECKLIST:**

- Windows, doors, hatches – open.
- Sniff test – if fuel fumes remain, operate blowers until fumes are gone.
- Fuel tank – secure filler cap.
- Spills – wipe; dispose of rags ashore.



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## SECTION 5 • FUEL SYSTEM

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## SECTION 6 • ELECTRICAL SYSTEM

### 1. DC SYSTEM

The 24/12 volt direct current (DC) electrical system derives its power from the batteries, which are kept charged by alternators and/or AC to DC converter. The battery voltage is indicated by a digital voltmeter on the 24 volt DC distribution panel located in the aft salon portside, and the voltmeter on the control station instrument panel. Each battery bank's voltage can be checked at the 24 volt distribution panel by using the Battery Bank Selector and voltmeter. The batteries supply power to the main DC breaker panel, the control station and DC distribution panel breakers. The 12 volt control station circuits are protected by the "ELECTRONICS (12V)" switch and fuse blocks. The stereos and 12 volt receptacles are controlled from the DC distribution panel. The 24 volt functions on the control station breaker panel are protected by the control station main breaker in the main DC breaker panel. The 24 volt functions on the DC distribution panel are protected by the cabin main breaker in the main DC breaker panel.

All main grounds are connected at the main DC ground buss located on the forward bilge bulkhead in the engine room (Figure 6.1.1). The negative

terminal of each bank of batteries is connected to the ground buss, and then on to ground the engines. This negative ground system is the approved system for marine DC electrical systems.

### 2. BATTERIES

The batteries in your boat have been selected for their ability to furnish starting power based on engine and generator starting requirements as well as their ability to supply power to the DC system.

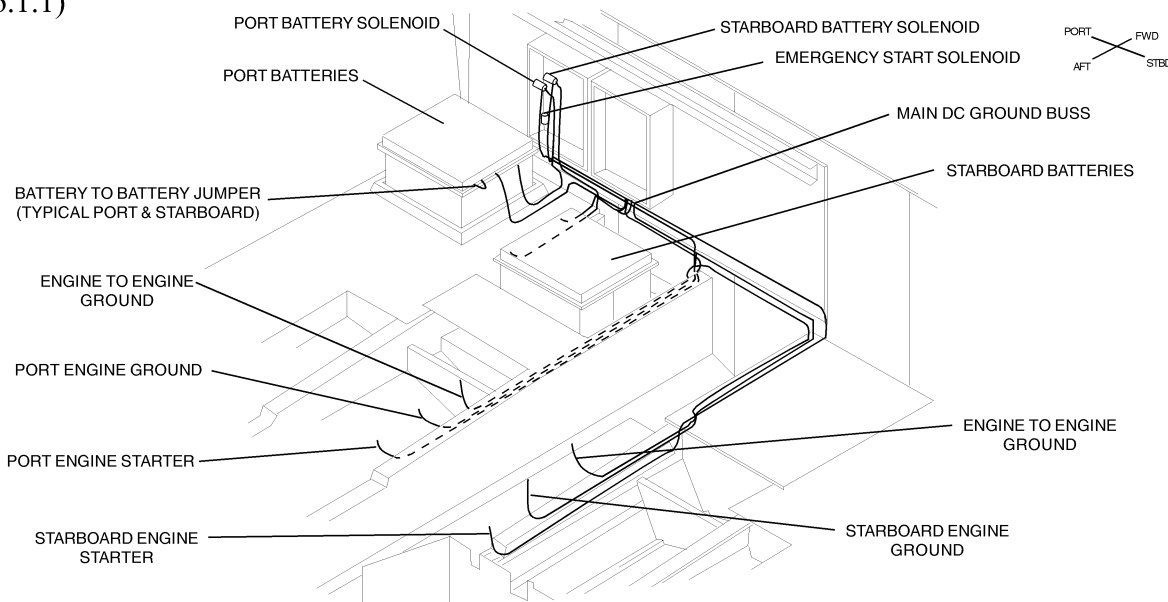
The following table describes the recommended marine cranking batteries to install in your boat.

| Application  | Group | Volts | CCA* | Reserve | Qty. |
|--------------|-------|-------|------|---------|------|
| Engines      | 8-D   | 12    | 1400 | 435     | 4    |
| Bow Thruster | 8-D   | 12    | -    | -       | 2    |

\*COLD CRANKING AMPS

The main engine cranking batteries consist of two (2) 12 volt batteries for each engine, connected in series to create the 24 volts required for starting each engine. If the yacht is equipped with the optional bow thruster, there are two (2) 8-D, 12 volt marine batteries connected in series dedicated to its operation.

NEGATIVE BATTERY CABLES  
(FIG. 6.1.1)



## SECTION 6 • ELECTRICAL SYSTEM

### DANGER

- Never use an open flame in the battery storage area.
- Avoid striking sparks near the batteries.
- A battery will explode if a flame or spark ignites the free hydrogen given off during charging.

Recommended batteries are available through your local Sea Ray® dealer.

### A. TO REMOVE THE BATTERY CABLES:

1. Turn OFF all items drawing power from the batteries.
2. Turn OFF the “CONVERTER” breaker at the main distribution panel.
3. Turn OFF battery solenoid switches.
4. Remove the positive cable first, then the negative cable. To replace the cables, reverse the procedure.

### B. BATTERY MAINTENANCE:

#### CAUTION

While the engine or generator is running, the battery terminal clamps must not be loosened or detached nor should the battery solenoid switch(es) be turned off. The alternator and other electronic units will be damaged.

- Check the fluid level in the cells approximately every 4 weeks, and more often in summer and hot zones.
- The fluid level must be between the lower and the upper markings.
- Only replenish with distilled water. Do not use metal funnels.

#### CAUTION

Always disconnect battery cables before doing any work on the engine's electrical system or alternator wiring to prevent arcing or damage to the

- Coat battery terminal clamps with silicone grease. Keep battery clean and dry.

Only use a battery charger designed to charge automotive/marine type batteries when batteries are disconnected from the boat's electrical circuit.

### 3. MAIN DC BREAKER PANEL

The main DC breaker panel is located on the forward bilge component board (Figure 6.4.2). It has breakers for both 24 and 12 volt electrical loads.

On the main DC breaker panel, notice that the breakers are locked in the “ON” position. This prevents all circuits from being inadvertently turned off. The bilge pumps are connected directly to the battery banks and CANNOT be turned off with the battery switches. If maintenance is to be performed on the pumps, use a small tool that will fit through the hole to push the breaker to the “OFF” position. When maintenance is complete, push the breaker to the “ON” position.

The main engine solenoids, emergency start solenoid, halon module and blower module along with the main control switch fuses and various shunts and fuses are located behind the panels on the main DC breaker panel (Figure 6.3.1).

### 4. MAIN BATTERY SWITCHES AND SOLENOIDS

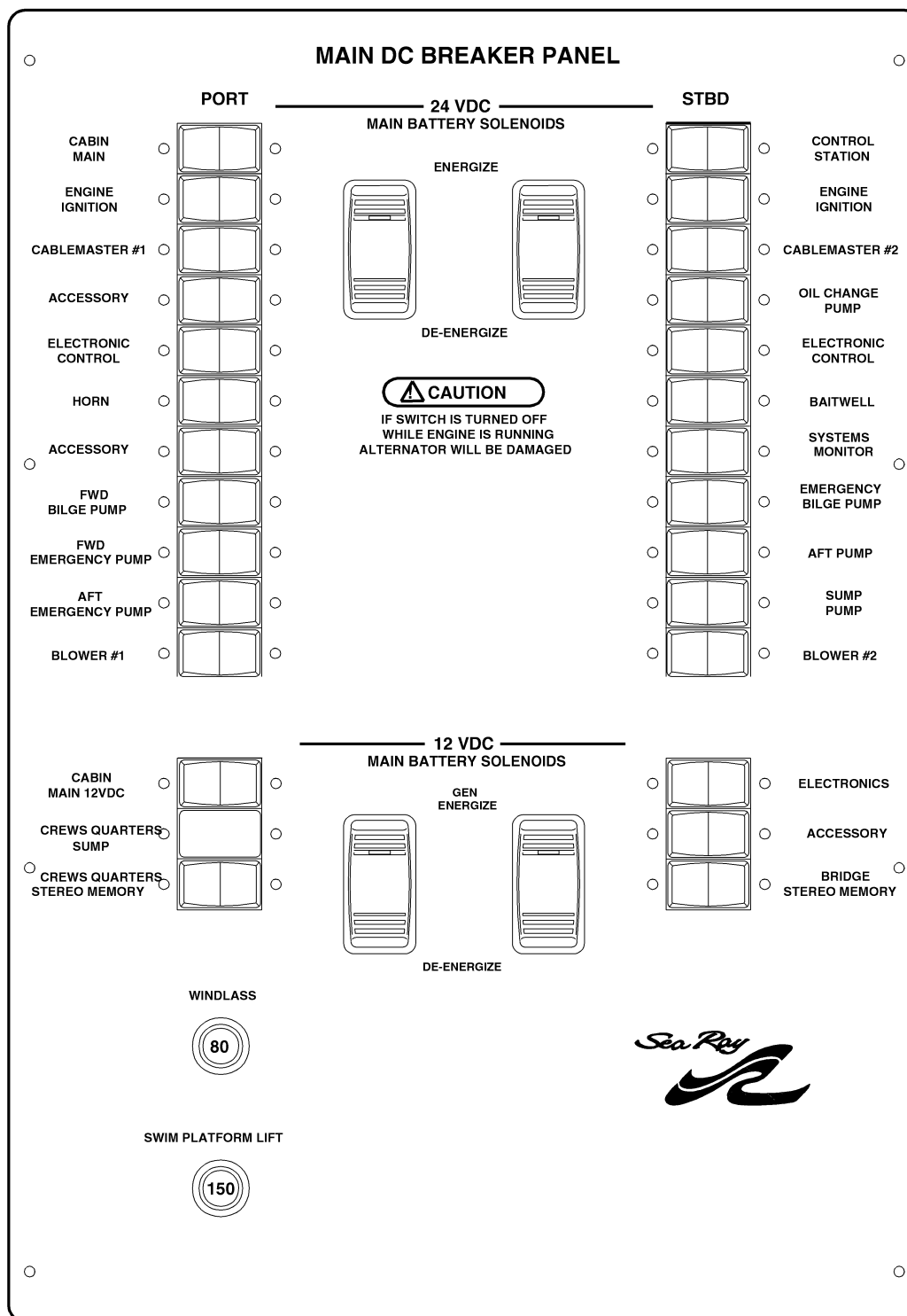
Battery switches for the 24VDC and 12VDC systems are located on the Main DC Breaker Panel in the bilge (Figure 6.3.1). The 12V and 24V battery solenoids are located in the Main Battery Solenoid Access Panel on the bilge component board (Figure 6.4.2). Battery switches are also located on the DC distribution panel in the salon (Figure 6.4.1). When the switches are in the OFF position all 24/12 volt current to the engines and accessories are turned off except power to the bilge pumps and other line side circuits (i.e. systems monitor, blowers, etc.). The battery switches must be ON to start the engines or generator. Turn battery solenoids OFF when leaving boat for extended duration.

**NOTE:** The bilge pumps, emergency bilge pumps and stereo memory CANNOT be turned OFF with the battery solenoid switches. The entire remaining DC system CAN be turned OFF with the battery solenoid switches.



## SECTION 6 • ELECTRICAL SYSTEM

MAIN DC BREAKER PANEL  
(Fig. 6.3.1)

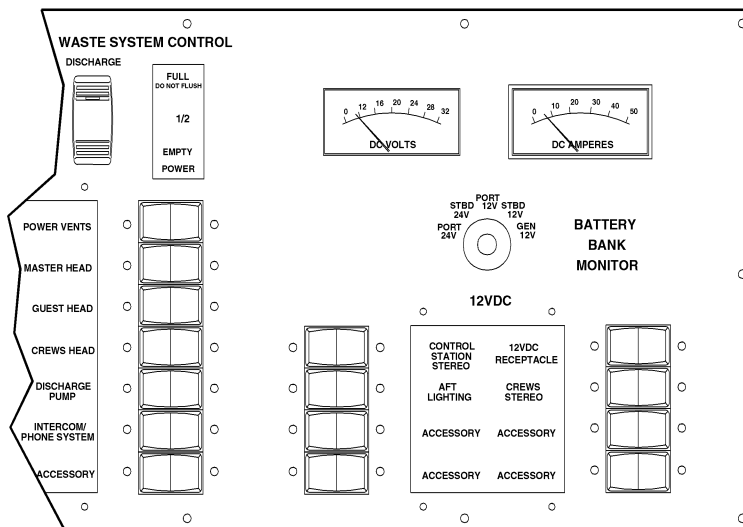
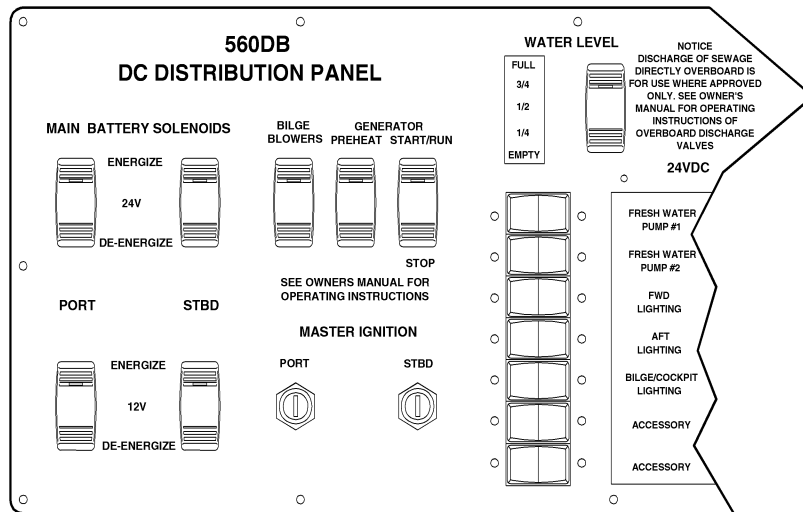


**NOTE:** Panel layout and labeling are subject to variance due to customized optional accessories and equipment.

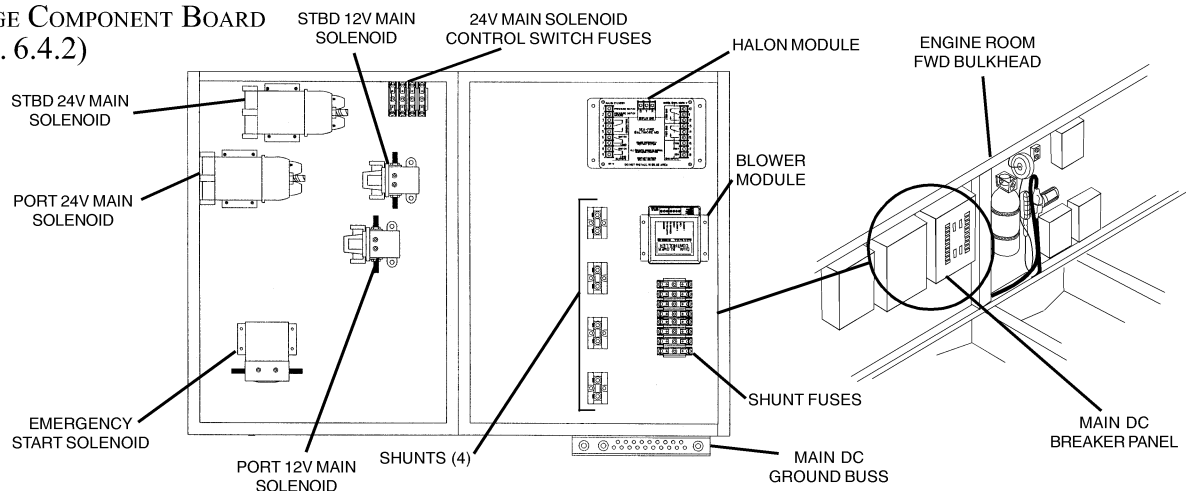


## SECTION 6 • ELECTRICAL SYSTEM

DC DISTRIBUTION PANEL  
(FIG. 6.4.1)



BILGE COMPONENT BOARD  
(FIG. 6.4.2)



## SECTION 6 • ELECTRICAL SYSTEM

### A. IGNITION PROTECTION

To avoid the possibility of creating sparks, electrical components in the bilge are ignition protected.

Protective terminal covers, such as rubber boots on electrical connections, must be in place when engine is operating or working in the bilge.



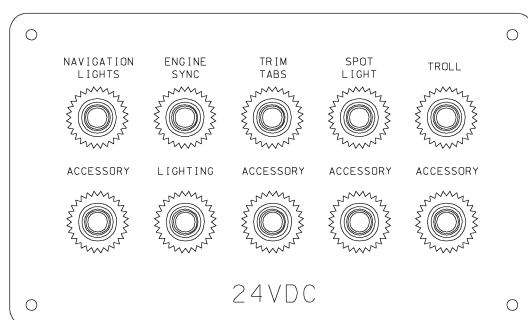
### DANGER

Use **ONLY** Marine Rated parts to replace such items as starters, distributors, alternators, generators, etc. Do not use Automotive Parts because they are not ignition protected and could cause a fire or explosion.

## 5. CONTROL STATION BREAKER PANELS

The control station breaker panel is located in a fold-out door at the helm and only has 24 volt breakers (Figure 6.5.1).

BRIDGE CONTROL STATION BREAKER PANEL  
(FIG. 6.5.1)



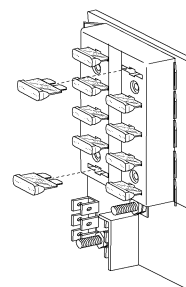
In the event one of the breakers trip, determine and correct the fault, then reset by depressing the tripped breaker.

## 6. ELECTRICAL SYSTEM FUSE BLOCKS & BREAKERS

Fuse blocks utilizing automotive type blade fuses (Figure 6.5.2) are used to provide overload protection. The control station accessory fuse block protects the various stereos, 12V receptacle and other accessories. The electronics fuse block protects the VHF radio, radar, depth/speed indicator, GPS, chart plotter, autopilot and other electronic accessories.

The bridge control station fuse block is located on the forward wall under the control station. It can be accessed by a door directly below the helm. If the optional bridge A/C unit is installed the fuse blocks are located directly behind the unit.

FUSE BLOCK, TYPICAL  
(FIG. 6.5.2)



The lower control station fuse blocks are located in the crawl space under the control station. The fuse blocks are mounted on the starboard side aft wall of the crawl space.

There is also a set of accessory and electronic fuse blocks on the MDP accessory board located behind the MDP board in the salon.

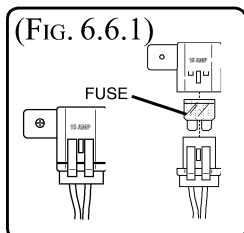
In the event it becomes necessary to replace a fuse or an electrical breaker, REPLACE THE FUSE OR BREAKER ONLY WITH A FUSE OR BREAKER OF THE SAME RATING. The amperage is marked on the fuse or breaker.

If a fuse or breaker is replaced with one of lower amperage, it will be insufficient to carry the electrical load of the equipment it is connected to and cause nuisance tripping or blowing.

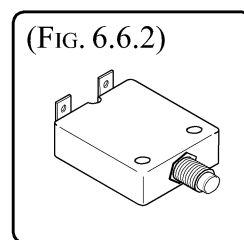


## SECTION 6 • ELECTRICAL SYSTEM

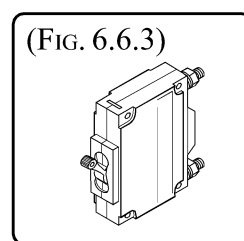
Conversely if a fuse or breaker is replaced with one of higher amperage, it will not provide adequate protection against an electrical malfunction and could create a possible fire hazard. Some of the various types of breakers used on your boat are as follows:



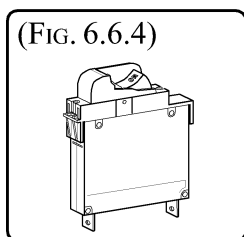
This type is an in-line fuse holder and uses an automotive-type blade fuse.



This type of breaker is found on the control station DC breaker panel located behind the access panel below the control station switch panel. These breakers protect the trim tabs, wipers, windshield vent, navigation lights, hatch lift, spot light, engine synchronizer, horn, instrument lights, 12V receptacle and accessories.

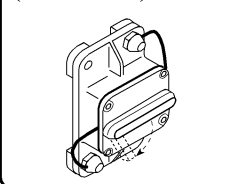


This type of breaker is typically found on the main distribution panel. It selects the electrical power source, either from the generator or from shore power.



This type of breaker is found on the main DC breaker panel. It is used to protect the bilge pumps, sump pumps, bilge blowers, control station main, electronics, systems monitor, oil change pump, stereo memory and accessories.

(FIG. 6.6.5)



This type of breaker is used to protect high amperage equipment. They are found in the bilge and protect the windlass and the swim platform lift.

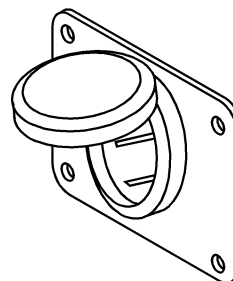
### 7. 12 VOLT SYSTEM

Although the boat's DC system is primarily a 24 volt system, the control station electronics require 12 volts to operate. Also operating on the 12 volt system are the control station stereo and TV antenna amplifier. The 12 volt system derives its power from the generator battery which is kept charged by the generator alternator and 12 volt converter in the bilge.

#### A. 12 VOLT ACCESSORY RECEPTACLE

Your Sea Ray® is equipped with a 12 volt accessory receptacle (Figure 6.6.6) located at each control station. On the Pilot house control station the receptacle is located below the switch panel on the port side of the control station (Figure 2.15.1). On the bridge control station the receptacle is located port and below the gear shift levers (Figure 2.15.1). The receptacle is a cigarette lighter style receptacle to be used with any 12 volt accessories using this type of plug.

12 VOLT ACCESSORY RECEPTACLE  
(FIG. 6.6.6)



## SECTION 6 • ELECTRICAL SYSTEM

### 8. EMERGENCY START SYSTEM

The emergency start system utilizes one momentary rocker switch located on the control station switch panel and one emergency start solenoid located on the DC main solenoid panel. Holding the switch energizes the solenoid which parallels the batteries to assist in starting.

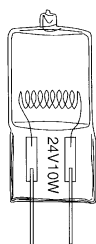
Use the emergency start system when the charge of one bank of batteries is insufficient to start its corresponding engine.

To engage the engine emergency start system, start whichever engine has sufficient battery power, then hold the emergency start switch while starting the other engine.

### 9. XELOGEN LIGHTING

The 560 DB uses 24 volt Xelogen lights (Figure 6.7.1) throughout as the primary lighting system. The system is powered by the 24 volt batteries and is activated by the lighting breakers on the DC distribution panel located in the salon (Figure 6.15.1).

**XELOGEN BULB**  
(FIG. 6.7.1)



#### CAUTION

The filament bulbs used in all Xelogen-cycle lamps generate intense heat. To avoid the possibility of fire, do not use lamp at close range to materials that are combustible or affected by heat or drying. Xelogen-cycle bulbs are pressurized and could shatter if scratched or damaged. Glass Xelogen-cycle bulbs should be protected against contact with liquids when operating.

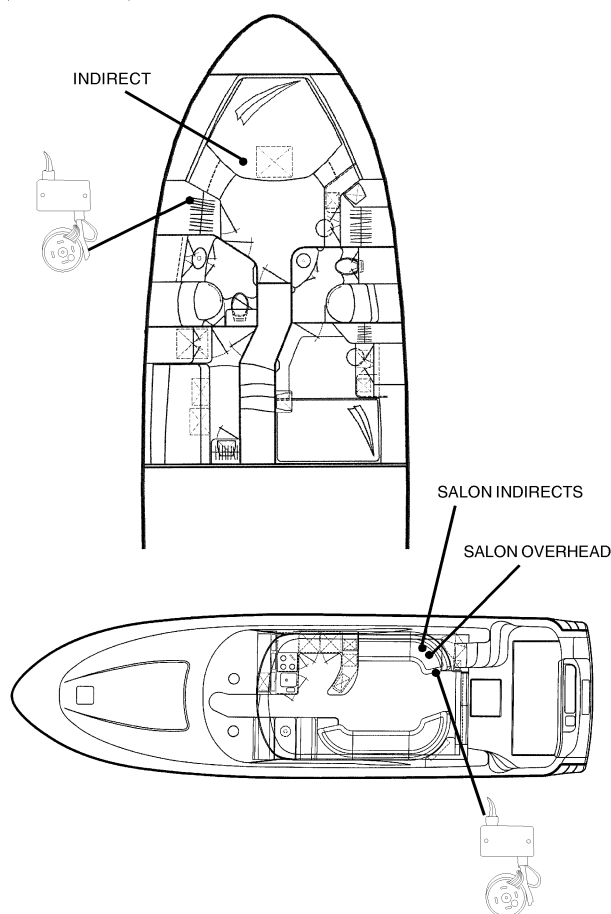
### A. AC Low Voltage Lighting

Overhead lighting in the forward stateroom, guest stateroom, master stateroom and the port and starboard salon are powered by the generator or the shore power system. Transformers in various locations throughout the boat (Figure 6.7.2) reduce the voltage from 120VAC to 24VAC supplying the lighting with a stable, constant power source.

Use appropriate protection, such as a clean cloth or gloves when handling or disposing of all Xelogen-cycle bulbs. Wear eye protection. Turn power off when installing or before removing lamp. Allow lamp to cool before removal.

Remove grease or fingerprints from new Xelogen bulbs with a grease-free solvent before use.

**XELOGEN LIGHTING TRANSFORMERS**  
(FIG. 6.7.2)



## SECTION 6 • ELECTRICAL SYSTEM

### 10. ELECTRONICS CIRCUIT

The 50 amp electronics circuit utilizes a circuit breaker on the main DC breaker panel on the forward component board in the bilge to energize the electronics fuse block at the control station. There is a static ground buss located at the control station for connection of electronic equipment **static grounds only**, not for current carrying grounds. It is grounded via a ground plate mounted on the bottom of the hull. **Do not use bottom paint on the ground plate as it will destroy the effective area of grounding.**

### 11. AC SYSTEM

#### DANGER

**EXTREME HAZARD** – Swimming near a boat operating on AC electrical system can lead to severe shock and death. Never swim or allow swimming when AC system is in use.

The 560 DB AC standard electrical system operates on a 240/120 volt/50 amp shore power system and/or generator with two (2) shore power cables located in the aft transom hatch.

Take time to look at your yacht's Main Distribution Panel and read the MDP breaker descriptions on pages 6.12 - 6.17.

**NOTE:** Actual usage of equipment will depend on the amperage output of the power source available.

Line voltage from the generator or shore power is shown by the voltmeters on the main distribution panel. The ammeters indicate amperes being drawn through the selected power source's circuit breakers on the main distribution panel.

The main distribution panel main breakers are equipped with a source selector slide to prevent

#### WARNING

**Under no circumstances override the source select system.**

the generator and shore power from being energized at the same time and damaging the electrical system. Both breakers must be in the OFF position before switching to an alternate power source.

The 240 volt system wiring consists of four (4) color-coded wires. The black and black/red wires are the "hot" feeds, the white is the common, or neutral, and the green wire is the safety ground. The shore main circuit breakers protect the white neutral feed and the black hot feed wires. All branch breakers and switches for AC equipment are installed on the "hot" wires. The green conductor of the shore power is connected through the galvanic isolator, and then connected to the AC grounding buss bar behind the main distribution panel.

#### CAUTION

**Never operate 240 volt shore power at less than 205 volts.**

The 120 volt wiring installed on Sea Ray® boats consists of three (3) color-coded wires. The black wire is the "hot" feed, white is the common, or neutral, and the green wire is the ground. All branch breakers and switches for AC equipment are installed on the "hot" wire. The green conductor of the shore power is connected through the galvanic isolator and then connected to the AC grounding buss bar behind the main distribution panel.

#### CAUTION

**Never operate 120 volt shore power at less than 105 volts.**

The main breakers may trip if there is a surge in line voltage, an electrical storm or an onboard system overload. The main breaker interrupts both the neutral and hot feeds in the AC circuit to prevent equipment damage due to internal overloads and external surges.

### 12. SHORE POWER

#### A. ISOLATION TRANSFORMERS

The 560 DB is equipped with two (2) isolation transformers which isolate the boats electrical





## SECTION 6 • ELECTRICAL SYSTEM

system from the dockside power supply. By isolating the power reverse polarity is eliminated thus protecting the sensitive AC appliances such as the TV, VCR and microwave from being harmed.

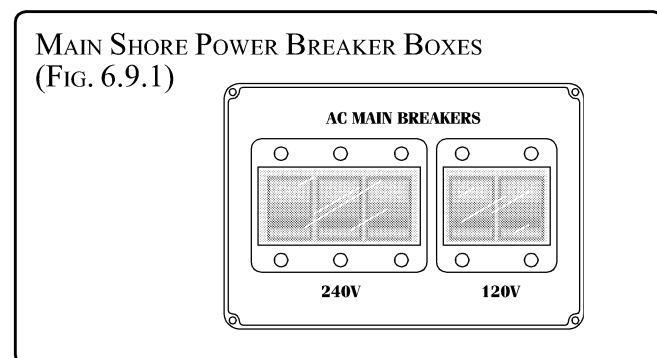
In addition, low voltage output (208V dockside power) and long cable runs which can cause voltage drops can be eliminated by equipping your yacht with the optional Iso-Boost transformer. This transformer effectively steps up the available voltage to a constant 230V providing a stable source of power to your yacht.

### B. GLENDENNING CABLEMASTER (OPTION)

The 560 DB is equipped with 240/120/50amp and 120/50amp shore power cords for hookup to dockside power. A cablemaster system provides remote control access to automatically advance/retrieve the power cords (See page 7.16 for operation of the cablemaster system). The power cables are accessed from the port side aft transom of your yacht.

### C. MAIN SHORE POWER BREAKER BOX

The 560 DB is equipped with an AC Main Shore Power Breaker Box (Figure 6.9.1) mounted in the port cockpit wall. The breaker(s) must be “ON” at all times to operate the shore AC power system.



If your yacht is equipped with the optional Bow Access Shore Utilities package, the main shore power breaker boxes will be mounted in the upper forward corner of the V-berth hanging closet.

The breaker(s) must be ON at all times to operate the shore AC power system.

### D. SHORE POWER HOOKUP (U.S.)

Your 560 DB 240/120 volt main distribution panel distributes the required voltage for all the boat's AC equipment and accessories. It is very important to know and understand where the power originates and how the power is distributed to the different voltage equipment and accessories.

To access the shore power cable(s), become familiar with the instructions on page 7.16 for “Cablemaster With Remote,” then follow these steps:

1. Make sure the shore power breaker(s) and all AC branch breakers on the AC main distribution panel are OFF.
2. Advance shore power cord(s) to dockside power box. Ensure dockside breaker is OFF, then plug the shore power cord(s) into the shore power outlet box on the dock. Thread the locking ring on the outlet to secure cable and prevent accidental unplugging.
3. Plug the dockside cord into the shore power outlet box on the dock and turn the circuit breaker on the dock to the ON position.
4. Check the POWER lights on the main

#### CAUTION

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

#### CAUTION

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

distribution panel. The POWER lights should be on. If not have the dockmaster check the dockside power.

5. Individual DC breakers and switches can now be energized.

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## SECTION 6 • ELECTRICAL SYSTEM

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### CAUTION

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

#### TO USE THE GENERATOR:

1. Start the generator by following the generator start-up procedures in Section 3 - *Using Your Boat*, page 3.8 or in your generator owner's manual.
2. Make sure the shore power breakers and all AC branch breakers on the AC main distribution panel are OFF.
3. Slide the source selector to the right to expose the three (3) breakers marked GENERATOR. Push up on the three breakers to energize the 240 volt side of the AC MDP.

#### E. SHORE POWER HOOKUP (INT'L.)

The 220 volt main distribution panel distributes the required voltage for all the boat's AC equipment and accessories. It is very important to know and understand where the power originates and how the power is distributed to the LINE 1 and LINE 2 equipment and accessories.

Your 560 DB is equipped with 220 volt AC service. There are two (2) shore power cables. Both are for 220 volt AC power.

By looking at the AC main distribution panel (AC MDP), notice there is a LINE 1 and LINE 2 side for equipment and accessories. There are two (2) ways to supply shore power to both lines.

1. Make sure the MAIN shore power breaker and all AC branch breakers on the main AC distribution panel are OFF.
2. Advance shore power cord(s) to dockside power box. Ensure dockside breaker is OFF, then plug the dockside cord into the shore power outlet box on the dock. Turn the circuit breaker on the dock to the ON position.
3. Check the polarity lights on the main distribution panel. The POWER lights should

be on. If the REVERSED lights are on, have the dockmaster check the dockside power for a reversed connection.

### CAUTION

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

### CAUTION

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

#### USING ONLY ONE 220 VOLT SHORE POWER CORDS

Follow the shore power hookup sequence above.

Take the LINE 1 220 volt cable and plug it into the proper dockside outlet. Check the power/reversed polarity indicator lights to insure proper polarity and slide upper source selector to the left to expose the two (2) breakers marked SHORE. By pushing the two (2) breakers up you will be supplying 220 volts of AC power through the AC MDP to only the LINE 1 side.

### CAUTION

Do not energize main breaker under reversed polarity conditions.

To supply power to the LINE 2 side of the AC MDP, slide the lower source selector to the right to expose the two (2) breakers marked TRANSFER. Push up on the two (2) breakers. This will take the 220 volts supplied by the LINE 1 shore power cable and transfers 220 volts to the LINE 2 side of the AC MDP.

**NOTE:** Keep in mind that utilizing only one power cord will severely limit the amount of equipment that can be used.



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## SECTION 6 • ELECTRICAL SYSTEM

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### USING THE TWO 220 VOLT SHORE POWER CORDS:

Take both 220 volt cables and plug into the proper dockside outlets. Check the power/reversed polarity indicator lights to insure proper polarity and slide the upper and lower source selectors to the left to expose the two (2) breakers marked SHORE. Push up on the two (2) breakers to energize the 220 volt LINE 1 and LINE 2 sides of the AC MDP.

### TO USE THE GENERATOR:

1. Start the generator by following the generator start-up procedures in Section 3 - *Using Your Boat*, page 3.8 or in your generator owner's manual.
2. Once the generator is started, slide upper source selector to the right to expose the two (2) breakers marked GENERATOR and push the two (2) breakers up to energize LINE 1.



### WARNING

Disconnect the power cable from power source before performing maintenance.

3. Slide the lower source selector to the right to expose the two (2) breakers marked TRANSFER and push the two (2) breakers up to energize LINE 2.

### F. MAINTENANCE FOR SHORE POWER

#### CABLE SET & SHORE POWER INLETS

The metallic parts of your cable set and inlet are made to resist corrosion. In salt water environment, life of the product can be increased by periodically wiping the exposed parts with fresh water, drying and spraying with a moisture repellent.

A soiled cable can be cleaned with grease-cutting household detergent. A periodic application of vinyl protector will help both ends and cable maintain their original appearance.



### CAUTION

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

In case of salt water spray or immersion: Rinse plug end and/or connector end thoroughly in fresh water, shake or blow out excess water and allow to dry. Spray with a moisture repellent before reuse.

### 13. SERVICING THE MAIN DISTRIBUTION PANEL

**NOTE:** Servicing should be referred to a qualified electrician.

#### A. TO REPLACE A FAULTY COMPONENT ON THE MAIN DISTRIBUTION PANEL:

1. Turn all breakers OFF.
2. Make sure the generator is OFF.
3. Unplug the shore power.
4. Remove screws from all sides except the hinged side of panel. The main distribution panel is hinged to swing open for servicing.
5. Reverse the procedure for closing the panel.

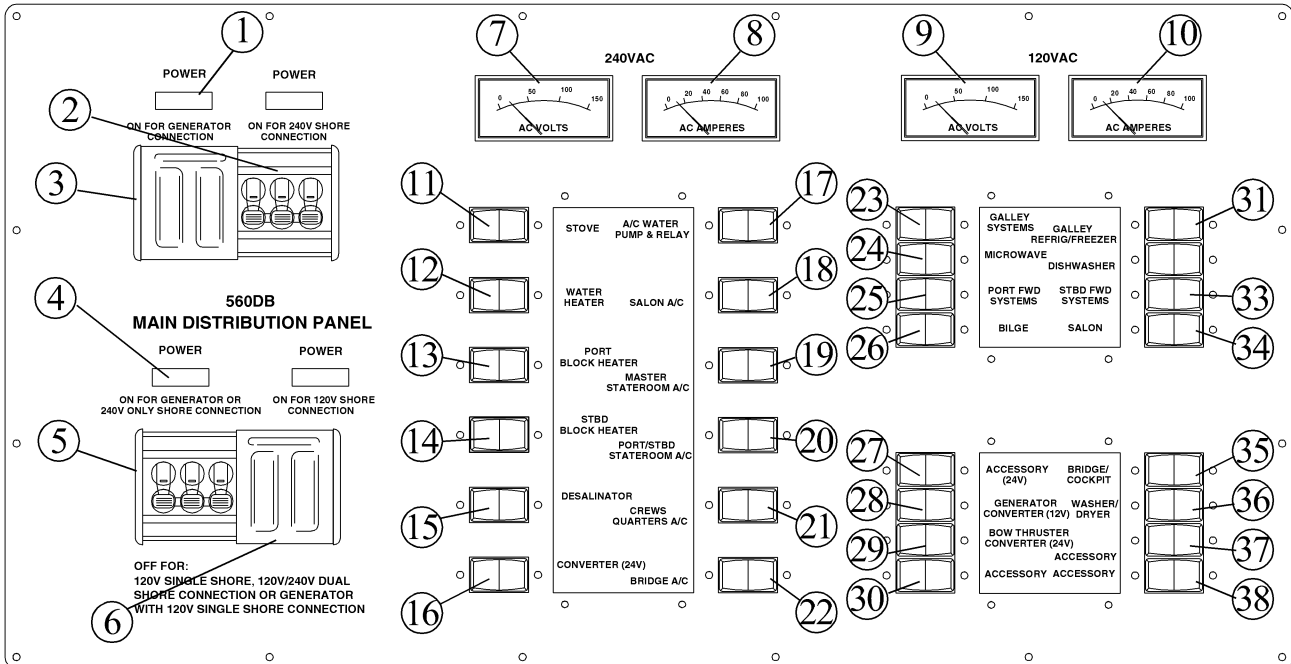


# SECTION 6 • ELECTRICAL SYSTEM

## 14. MAIN DISTRIBUTION PANEL CONTROLS & FUNCTIONS

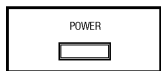
The following main distribution panel descriptions are based on standard construction with the 240/120/60hz AC electrical system.

560 DB MAIN DISTRIBUTION PANEL (FIGURE 6.12.1)



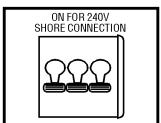
**NOTE:** Panel layout and labeling are subject to variance due to customized optional accessories and equipment upgrades

### 1. (U.S.) POWER/REVERSED POLARITY INDICATOR LIGHTS



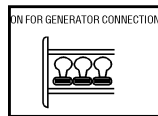
Indicates wiring connections condition for 240 volt main shore power system. When shore power connection is correct, the "POWER" light will be lit.

### 2. (U.S.) SHORE POWER MAIN BREAKER 240v BREAKER



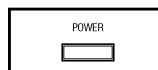
Power source selection. Supplies power to 240 volt branch breakers on main distribution panel from generator.

### 3. (U.S.) GENERATOR MAIN BREAKER W/15kW GENERATOR: 240V/70 AMP BREAKER



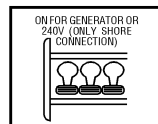
Power source selection. Supplies power to 240 volt branch breakers on main distribution panel from shore power.

### 4. (U.S.) POWER REVERSE POLARITY INDICATOR LIGHTS



Indicates wiring connections condition for 120 volt main shore power system. When shore power connection is correct, the "POWER" light will be lit.

### 5. (U.S.) TRANSFER BREAKER

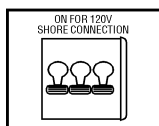


Power source selection. Supplies power to 120 volt branch breakers on main distribution panel from either 240 volt shore power or generator.



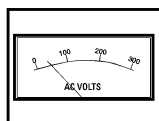
## SECTION 6 • ELECTRICAL SYSTEM

### 6. (U.S.) 120 VOLT MAIN BREAKER 120v BREAKER



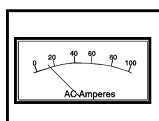
Power source selection. Supplies power to 120 volt branch breakers on main distribution panel from shore power.

### 7. (U.S.) AC VOLTMETER



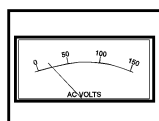
Indicates the 240 volt AC power source voltage.

### 8. (U.S.) AC AMMETER



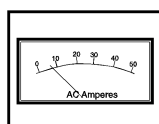
Indicates the amount of 240 volt amperage being used by the equipment that is energized on 240 volt branch breakers and 120 volt branch breakers if transfer breaker is energized.

### 9. (U.S.) AC VOLTMETER



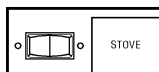
Indicates the 120 volt AC power source voltage.

### 10. (U.S.) AC AMMETER



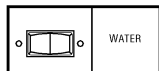
Indicates the amount of 120 volt amperage being used by the equipment that is energized for 120 volt shore power.

### 11. (U.S.) STOVE 240V BREAKER



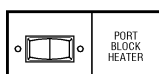
Supplies 240 volt AC power to the stove.

### 12. (U.S.) WATER HEATER 240V BREAKER



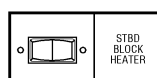
Turns on water heater. WATER HEATER MUST BE FULL OF WATER.

### 13. (U.S.) PORT BLOCK HEATER



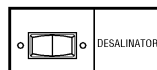
Supplies 240 volt AC power to the port engine block heater.

### 14. (U.S.) STARBOARD BLOCK HEATER



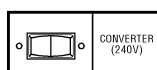
Supplies 240 volt AC power to the starboard engine block heater.

### 15. (U.S.) DESALINATOR 240V BREAKER



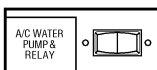
Supplies 240 volt AC power to the desalinator.

### 16. (U.S.) CONVERTER 240V BREAKER



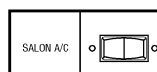
Turns on the main batteries 120V AC to 24V DC converter.

### 17. (U.S.) A/C WATER PUMP & RELAY 240V BREAKER



Turns on air conditioner raw water cooling pump and relay to cycle water pump on and off with air conditioner compressors. It must be ON when any A/C unit is on.

### 18. (U.S.) SALON A/C



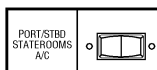
Supplies 240 volt AC power to the salon A/C unit.

### 19. (U.S.) MASTER STATEROOM A/C



Supplies 240 volt AC power to the master stateroom A/C unit.

### 20. (U.S.) PORT/STARBOARD STATEROOMS A/C



Supplies 240 volt AC power to the starboard stateroom A/C unit.

### 21. (U.S.) CREW'S QUARTERS STATEROOMS A/C



Supplies 240 volt AC power to the optional crew's quarters stateroom A/C unit.

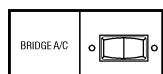


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## SECTION 6 • ELECTRICAL SYSTEM

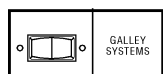
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### 22. (U.S.) BRIDGE A/C



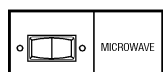
Supplies 240 volt AC power to the bridge A/C unit.

### 23. (U.S.) GALLEY SYSTEMS 120V BREAKER



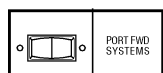
Supplies power to 120 volt galley equipment and OPT salon ice maker.

### 24. (U.S.) MICROWAVE 120V BREAKER



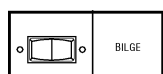
Supplies 120 volt AC power to microwave.

### 25. (U.S.) PORT FORWARD SYSTEMS 120V BREAKER



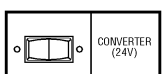
Supplies 120 volt AC power to master stateroom lights above berth, indirect lights and port forward receptacles and port state room outlets and TV.

### 26. (U.S.) BILGE 120V BREAKER



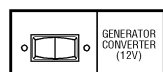
Supplies 120 volt AC power to the bilge receptacle.

### 27. (U.S.) CONVERTER (24V) 120V BREAKER



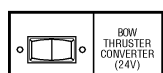
Turns on the main batteries 120V AC to 24V DC converter.

### 28. (U.S.) GENERATOR CONVERTER (12V) 120V BREAKER



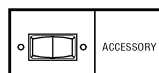
Turns on the generator battery 120V AC to 12V DC converter. This converter keeps the generator battery charged.

### 29. (U.S.) BOW THRUSTER CONVERTER (24V) 120V BREAKER (OPTIONAL)



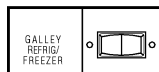
Turns on the bow thruster 120V AC to 12V DC converter. This converter keeps the bow thruster batteries charged.

### 30. (U.S.) ACCESSORY 120V BREAKER



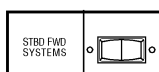
For future use.

### 31. (U.S.) GALLEY REFRIGERATOR AND FREEZER 120V BREAKER



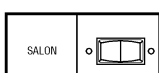
Supplies 120 volt AC power to the galley refrigerator and freezer.

### 33. (U.S.) STARBOARD FORWARD SYSTEMS 120V BREAKER



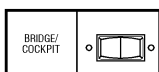
Supplies 120 volt AC power to starboard forward receptacles, SSR indirect, TV, V-B TV, and V-B Bose system.

### 34. (U.S.) SALON 120V BREAKER



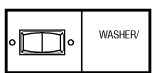
Supplies 120 volt AC power to entertainment center, 120 volt salon lights and receptacles indirect on sofas, VAC system, and outlet in dinette.

### 35. (U.S.) BRIDGE/COCKPIT 120V BREAKER



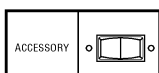
Supplies 120 volt AC power to the bridge and cockpit receptacles.

### 36. (U.S.) WASHER/DRYER 120V BREAKER



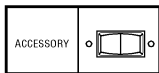
Supplies 120 volt AC power to clothes washer and dryer unit.

### 37. (U.S.) ACCESSORY 120V BREAKER



Supplies 120 volt AC power to trash compactor unit (optional).

### 38. (U.S.) ACCESSORY 120V BREAKER



For future use.

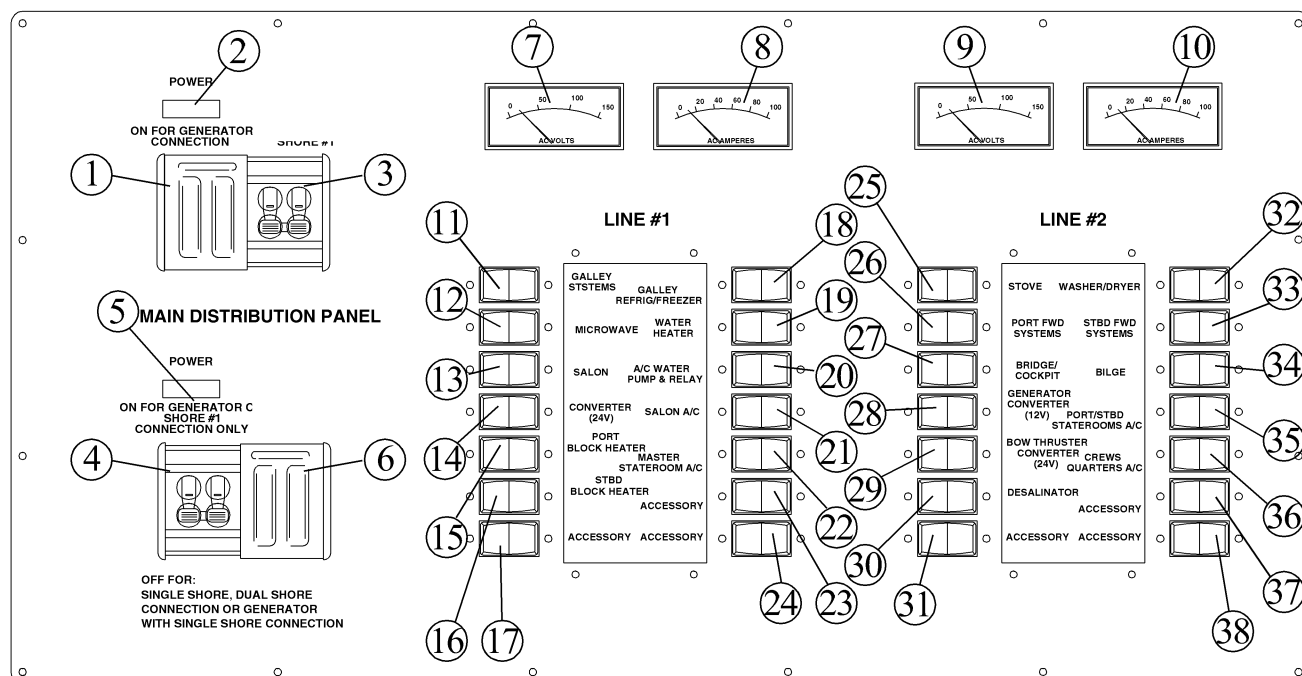


## SECTION 6 • ELECTRICAL SYSTEM

### 15. 24V DC DISTRIBUTION PANELS CONTROLS & FUNCTIONS

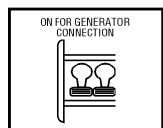
The following main distribution panel descriptions are based on standard construction with the 240 volt/50 amp AC electrical system.

220 VOLT MAIN DISTRIBUTION PANEL (INTERNATIONAL VERSION)  
(FIG. 6.15.1)



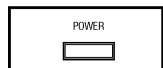
NOTE: Panel layout and labeling are subject to variance due to customized optional accessories and equipment upgrades

#### 1. (INT'L) LINE 1 / GENERATOR MAIN BREAKER W/15KW GENERATOR: 220V/70 AMP Breaker



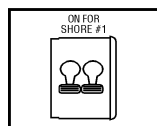
Power source selection. Supplies power to 220 volt branch breakers on main distribution panel from generator.

#### 2. (INT'L) LINE 1 POWER/REVERSED POLARITY Indicator Lights



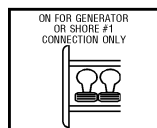
Indicates wiring connections condition for 220 volt main shore power system. When shore power connection is correct, the "POWER" light will be lit.

#### 3. (INT'L) LINE 1 / SHORE POWER MAIN BREAKER 220V BREAKER



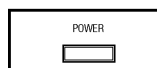
Power source selection. Supplies power to line 1 220 volt branch breakers on main distribution panel from shore power.

#### 4. (INT'L) TRANSFER BREAKER 2 POLE BREAKER



Power source selection. Supplies power to 220 volt branch breakers on main distribution panel from either line 1 220 volt shore power or generator.

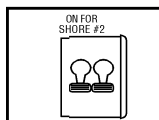
#### 5. (INT'L) LINE 2 POWER/REVERSED POLARITY INDICATOR LIGHTS



Indicates wiring connections condition for 220 volt main shore power system. When shore power connection is correct, the "POWER" light will be lit.

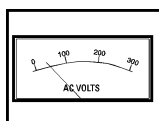
## SECTION 6 • ELECTRICAL SYSTEM

### 6. (INT'L) LINE 2 / SHORE POWER MAIN BREAKER 220V BREAKER



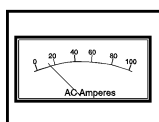
Power source selection. Supplies power to 220 volt branch breakers on main distribution panel from line 2 shore power.

### 7. (INT'L) AC VOLTMETER



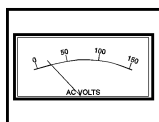
Indicates the 220 volt AC power source voltage on line 1.

### 8. (INT'L) AC AMMETER



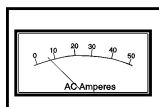
Indicates the amount of 220 volt amperage being used by the equipment that is energized on line 1.

### 9. (INT'L) AC VOLTMETER



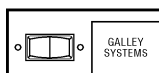
Indicates the 220 volt AC power source voltage on line 2.

### 10. (INT'L) AC AMMETER



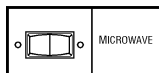
Indicates the amount of 220 volt amperage being used by the equipment that is energized on line 2.

### 11. (INT'L) GALLEY SYSTEMS 220V BREAKER



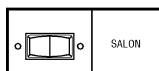
Supplies power to 220 volt galley equipment and light switch.

### 12. (INT'L) MICROWAVE 220V BREAKER



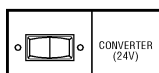
Supplies power to the microwave.

### 13. (INT'L) SALON 220V BREAKER



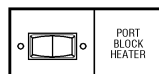
Supplies power to entertainment center, 220 volt salon lights and receptacles above sofa.

### 14. (INT'L) CONVERTER (24V) 220V BREAKER



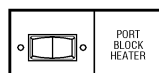
Turns on the main batteries 220V AC to 24V DC converter.

### 15. (INT'L) PORT BLOCK HEATER 220V BREAKER



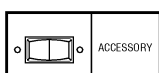
Supplies power to the port engine block heater.

### 16. (INT'L) STARBOARD BLOCK HEATER 220V BREAKER



Supplies power to the starboard engine block heater.

### 17. (INT'L) ACCESSORY 220V BREAKER



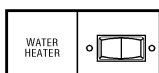
For future use.

### 18. (INT'L) GALLEY REFRIGERATOR AND FREEZER 220V BREAKER



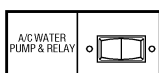
Supplies 220V AC power to the galley refrigerator and freezer.

### 19. (INT'L) WATER HEATER 220V BREAKER



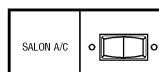
Turns on water heater. WATER HEATER MUST BE FULL OF WATER.

### 20. (INT'L) A/C WATER PUMP & RELAY 220V BREAKER



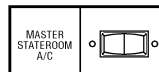
Turns on air conditioner raw water cooling pump and relay to cycle water pump on and off with air conditioner compressors. It must be ON when any A/C unit is on.

### 21. (INT'L) SALON A/C 220V BREAKER



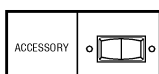
Supplies 220 volt AC power to the salon A/C unit.

### 22. (INT'L) MASTER STATEROOM A/C 220V BREAKER



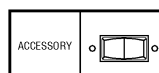
Supplies 220 volt AC power to the master stateroom A/C unit.

### 23. (INT'L) ACCESSORY 220V BREAKER



For future use.

### 24. (INT'L) ACCESSORY 220V BREAKER

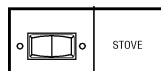


For future use.



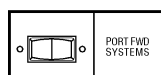
## SECTION 6 • ELECTRICAL SYSTEM

### 25. (INT'L) STOVE 220V BREAKER



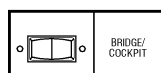
Supplies power to the stove.

### 26. (INT'L) PORT FORWARD SYSTEMS 220V BREAKER



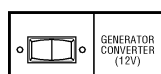
Supplies 220 volt AC power to master stateroom lights above berth, indirect lights and port forward receptacles.

### 27. (INT'L) BRIDGE/COCKPIT 220V BREAKER



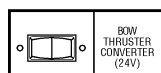
Supplies 220 volt AC power to the bridge and cockpit receptacles.

### 28. (INT'L) GENERATOR CONVERTER (12V) 220V BREAKER



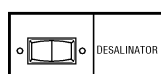
Turns on the main batteries 220V AC to 12V DC converter. This converter keeps the generator battery charged.

### 29. (INT'L) BOW THRUSTER CONVERTER (24V) 220V BREAKER (OPTIONAL)



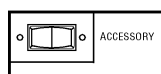
Turns on the bow thruster 220V AC to 12V DC converter. This converter keeps the bow thruster batteries charged.

### 30. (INT'L) DESALINATOR 220V BREAKER



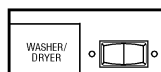
Supplies 220V AC power to the desalinator.

### 31. (INT'L) ACCESSORY 220V BREAKER



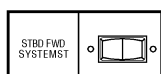
For future use.

### 32. (INT'L) WASHER/DRYER 220V BREAKER



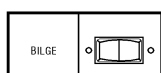
Supplies 220 volt AC power to clothes washer and dryer unit.

### 33. (INT'L) STARBOARD FORWARD SYSTEMS 220V BREAKER



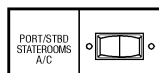
Supplies 220 volt AC power to starboard forward receptacles.

### 34. (INT'L) BILGE 220V BREAKER



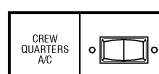
Supplies 220 volt AC power to bilge receptacle.

### 35. (INT'L) PORT/STARBOARD STATEROOMS A/C 220V BREAKER



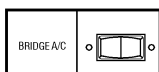
Supplies 220V AC power to the starboard stateroom A/C unit.

### 36. (INT'L) CREW'S QUARTERS A/C 220V BREAKER



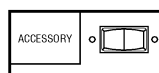
Supplies 220V AC power to the optional crew's quarters stateroom A/C unit.

### 37. (INT'L) BRIDGE A/C 220V BREAKER



Supplies 220V AC power to the bridge A/C unit.

### 38. (INT'L) ACCESSORY 220V BREAKER



For future use.

## 16. BATTERY CHARGER

The battery charging unit located on the forward bilge bulkhead along side the main battery solenoid access panel (Figure 6.18.1) is fully automatic and is designed specifically for the marine environment. The high frequency characteristic has allowed these chargers to achieve a huge size and weight reduction over their previously used equipment. Commonly called high frequency or smart chargers, these units bring a new sophistication to the battery charger field. These units feature a built-in amperage indicator located on the front panel. This gives an accurate reading of the combined battery current and load current. If the batteries are fully charged and no load is present, the ammeter will read near zero. To verify that the charger is functioning properly, turn on lights or other load. The ammeter should register and increase.

### ⚠ WARNING

Never block air circulation through the unit. Never store any gear on top of the units.

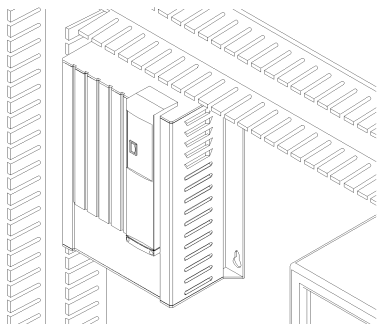
### NOTICE

Leave the converter running at all times to maintain the 12 volt system voltage.



## SECTION 6 • ELECTRICAL SYSTEM

BATTERY CHARGER  
(FIG. 6.18.1)



### 17. GROUND FAULT INTERRUPTER RECEPTACLE (GFI)

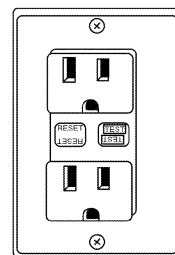
Ground fault interrupter receptacles (Figure 6.18.2) are located in the galley inside the port cabinet, master head lower storage cabinet under the sink, guest head lower starboard cabinet under the sink, and in the cockpit under the wet bar. The GFI receptacles are out of sight and wired in-line with the exposed Vmar receptacles throughout the yacht. This allows your yacht to have an elegant exposed receptacle while still providing protection from shock hazards. Please read and understand the CAUTION block for GFI receptacles.

#### ! CAUTION

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

The GFI receptacle is designed to protect people from the line-to-ground shock hazards which could occur from defective power tools or appliances operating from this device, or from down-line outlets protected by it. It does not prevent line-to-ground electric shock, but does limit the time of exposure to a period considered safe for normally healthy persons.

GFI OUTLET  
(FIG. 6.18.2)



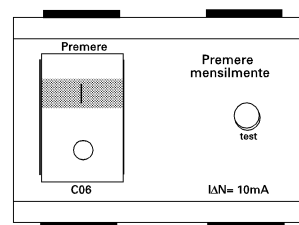
It does not protect persons against line-to-line or line-to-neutral faults.

The GFI receptacle does not protect against short circuits or overloads. This is the function of the circuit breaker.

#### A. INTERNATIONAL RECEPTACLE

All readily accessible 220V outlets are protected by a Residual Current Circuit Breaker (RCCB) (Figure 6.18.3). This current breaker is mounted in an accessible, out-of-sight location such as under a cabinet and includes a test switch to verify proper operation. Its function is similar, but not identical to the 120V GFI.

RCCB OUTLET  
(FIG. 6.18.3)



REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### 18. GENERATOR

Sea Ray® strongly urges you to fully comply with the manual provided by the generator manufacturer. **The generator is warranted separately by the generator manufacturer, NOT Sea Ray®.** Follow the recommended maintenance and warranty schedule in

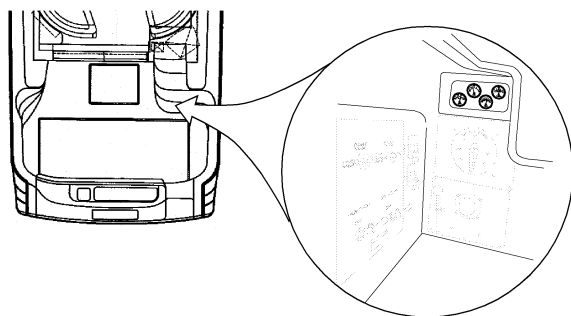
## SECTION 6 • ELECTRICAL SYSTEM

your Generator Operator's Manual included in the Owner's Manual Packet. Generator abuse or improper maintenance may adversely affect claims made under generator manufacturer separate warranty.

### ⚠ CAUTION

Do not run the generator in an enclosed area, such as a closed boathouse, as there is a possibility of build-up and inhaling of carbon monoxide.

GENERATOR GAUGES (COCKPIT ACCESS)  
(FIG. 6.19.1)



### A. STARTING THE GENERATOR

**NOTE:** Pre-start generator prior to getting underway as there is a possibility that it will not pick up water if started underway. Make sure the “Main Generator” breakers are “OFF” and there is no load on the generator before starting it.

**To start the generator:**

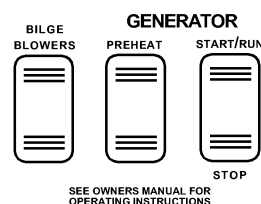
(Switches located on the 24 volt distribution panel or on the generator set.)

1. Check the fuel tank levels. The generator draws from the starboard fuel tank.
2. Check the oil and coolant levels. See your Generator Operator's Manual for proper readings.
3. Check generator for coolant drain plug installations.
4. Open the generator seacock.
5. While depressing the PREHEAT switch, depress the START/RUN switch. The starter

motor will run, thereby cranking the engine. As soon as the engine is running, release the START/RUN switch, but continue to hold the PREHEAT switch depressed. Release the PREHEAT switch when the oil pressure reaches approximately 20 psi (approximately 2 or 3 seconds). This bypasses the Low Oil Pressure shutdown until the engine's oil pressure rises to its normal running pressure.

6. Check generator exhaust port to verify that water is flowing. If not, shut the generator off and refer to your Generator Operator's Manual.

GENERATOR SWITCHES - DC DISTRIBUTION PANEL  
(FIG. 6.19.2)



**NOTE:** To start the Westerbeke® generator from the generator mounted controls, a bypass switch, located on the side of the generator mounted control box, must be turned ON. The bypass switch must be OFF to start and stop the generator from the DC main distribution panel.

READ THE OWNER'S MANUAL IN THE OWNER'S MANUAL PACKET FOR YOUR GENERATOR MODEL.

### B. SHIFTING FROM SHORE POWER TO GENERATOR POWER:

1. Turn all AC systems and branch circuit breakers OFF. Turn both main breakers on the main distribution panel OFF.
2. Start the generator.
3. Slide the source select shuttle mechanism on the main distribution panel to expose the GENERATOR breaker(s) and turn it ON.
4. Turn the individual system breakers ON.



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### C. STOPPING THE GENERATOR

1. Prior to generator shut down, turn OFF all AC equipment and breakers including main breakers and allow the generator to run a few minutes to cool down. If desired, transfer to shore power.
2. Stop the generator by switching START/RUN switch on the DC distribution panel to the STOP position or by depressing stop switch on the generator until the generator stops.
3. Leave STOP switch on the Main Distribution Panel in the STOP position when generator is not in use to prevent overheating of electric fuel valve.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### 19. ELECTROLYSIS & ZINC ANODES

Electrolysis corrosion of metals on power boats can result in serious deterioration. The boat owner must be aware of the possibilities of galvanic action (the deterioration of metals due to dissimilar characteristics when placed in salt water), and/or electrolysis. It is the owner's responsibility to check for and replace damaged parts due to galvanic deterioration. Refer to your Sea Ray® dealer to investigate the source of stray corrosive currents.

Zinc plates are installed on the transom and trim tabs (Figure 6.20.1) to protect underwater hardware. Zinc, being much less "noble" than copper based alloys and aluminum used in Sea Ray® underwater fittings, will deteriorate first and protect the more noble parts.



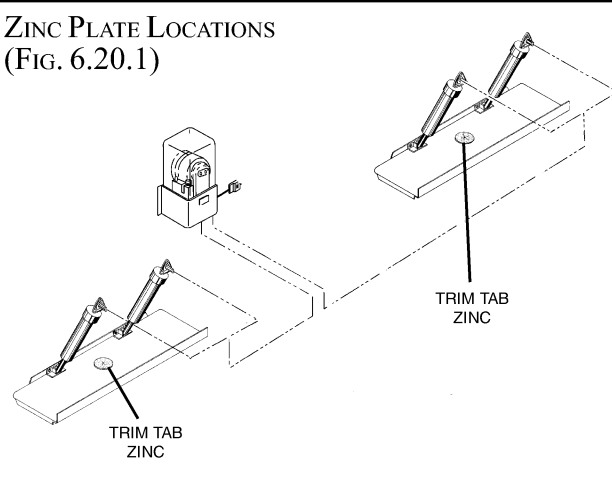
#### CAUTION

Replace zinc sacrificial anodes if they are corroded 50% or more.

**Zinc anodes generally require replacement about once a year. (In salt water areas, replace every six (6) months).** The need to replace anodes more frequently may indicate a stray current problem within the boat or at the slip or mooring. If zinc anodes do not need replacing after one year, they may not be providing proper protection. Loose anodes or low-grade zinc may be the problem.

**DO NOT PAINT BETWEEN THE ZINC AND THE METAL IT CONTACTS, AND DO NOT PAINT OVER THE ZINC.**

ZINC PLATE LOCATIONS  
(FIG. 6.20.1)



When an AC shore power system is connected to the boat, the underwater metal fittings will, in effect, be connected through the water to grounded metals ashore. The zincs will be consumed at a faster rate unless the marina maintains a protective system to prevent this. In this case, hanging a zinc in the water bonded to the metal outlet box on the dock will reduce zinc loss on the boat. Do not connect this zinc to the boat's ground system.

It is extremely important that all electrically operated DC equipment and accessories be wired so that the ground polarity of each device is the same as that of the battery. Sea Ray® boats have a negative ground system, which is the recommended practice throughout the marine industry. All metal items (fuel tanks, underwater gear, etc.) in the boat are connected to the zinc anode by the green bonding wire.

Electrolysis can also be caused by "stray currents" due to a fault in an electrical item, even though correctly grounded. A galvanic current blocker (zinc saver) is standard on all Sea Ray® boats. It is installed between the shore power ground and the boat's AC ground connection to the DC bonding system. This connection maintains the safety ground from dockside power while stopping the back-flow of DC corrosive currents.



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## SECTION 6 • ELECTRICAL SYSTEM

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### **20. AC & DC ELECTRICAL SCHEMATICS & WIRING HARNESSES**

This owner's manual contains electrical schematics and wiring harness illustrations for your boat (See pages 6.23 thru 6.47). These electrical schematics were generated by electrical CAD designers at the engineering division for technical reference and service technicians. Sea Ray® does not recommend that you attempt to work on the boat's electrical system yourself. Instead we recommend that you take your boat to your authorized Sea Ray® dealer for service. Sea Ray® reserves the right to change or update the electrical system on any model at any time without notice to the consumer and is NOT obligated to make any updates to units built prior to changes.



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## SECTION 6 • ELECTRICAL SYSTEM

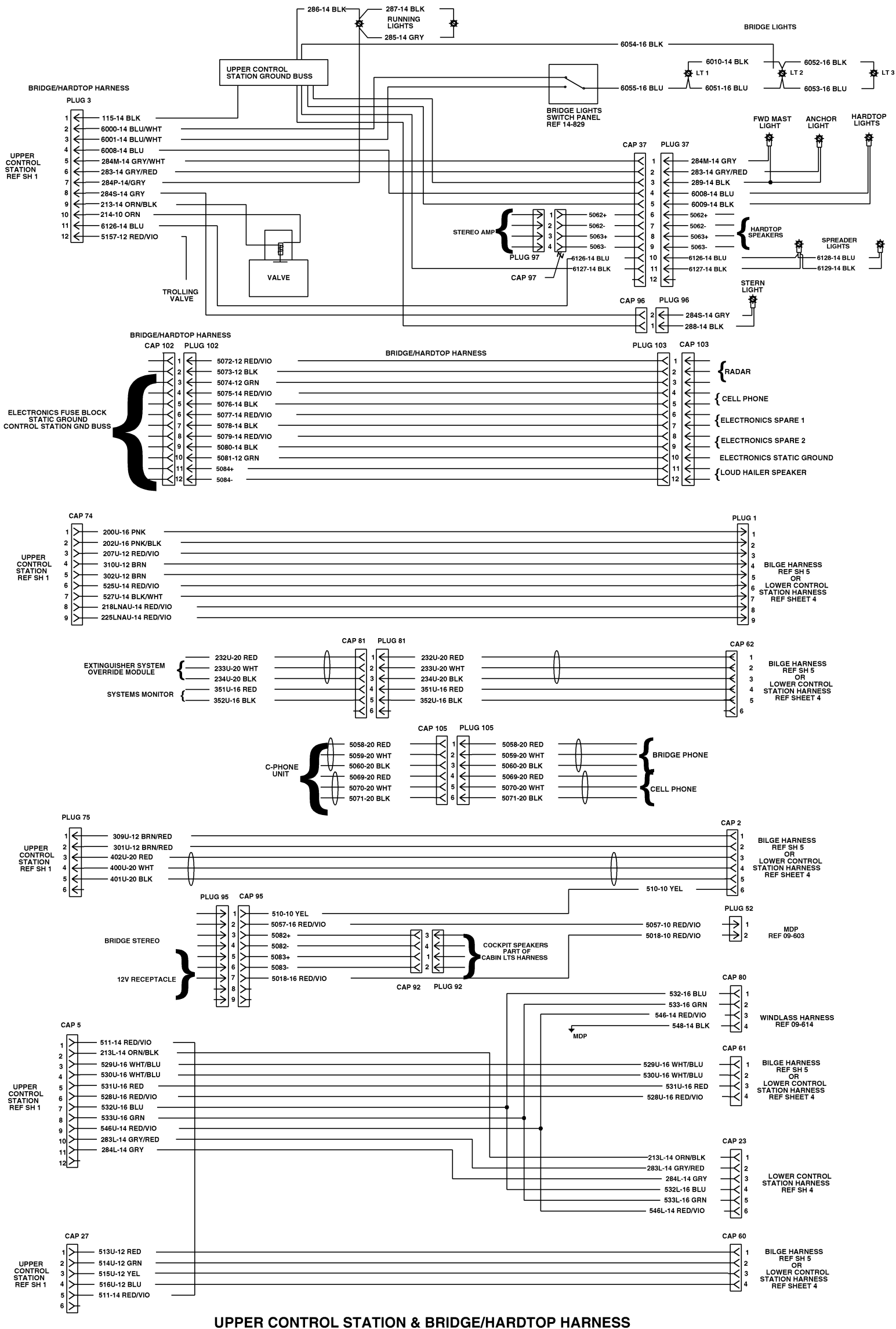
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UPPER CONTROL STATION & BRIDGE/HARDTOP HARNESS

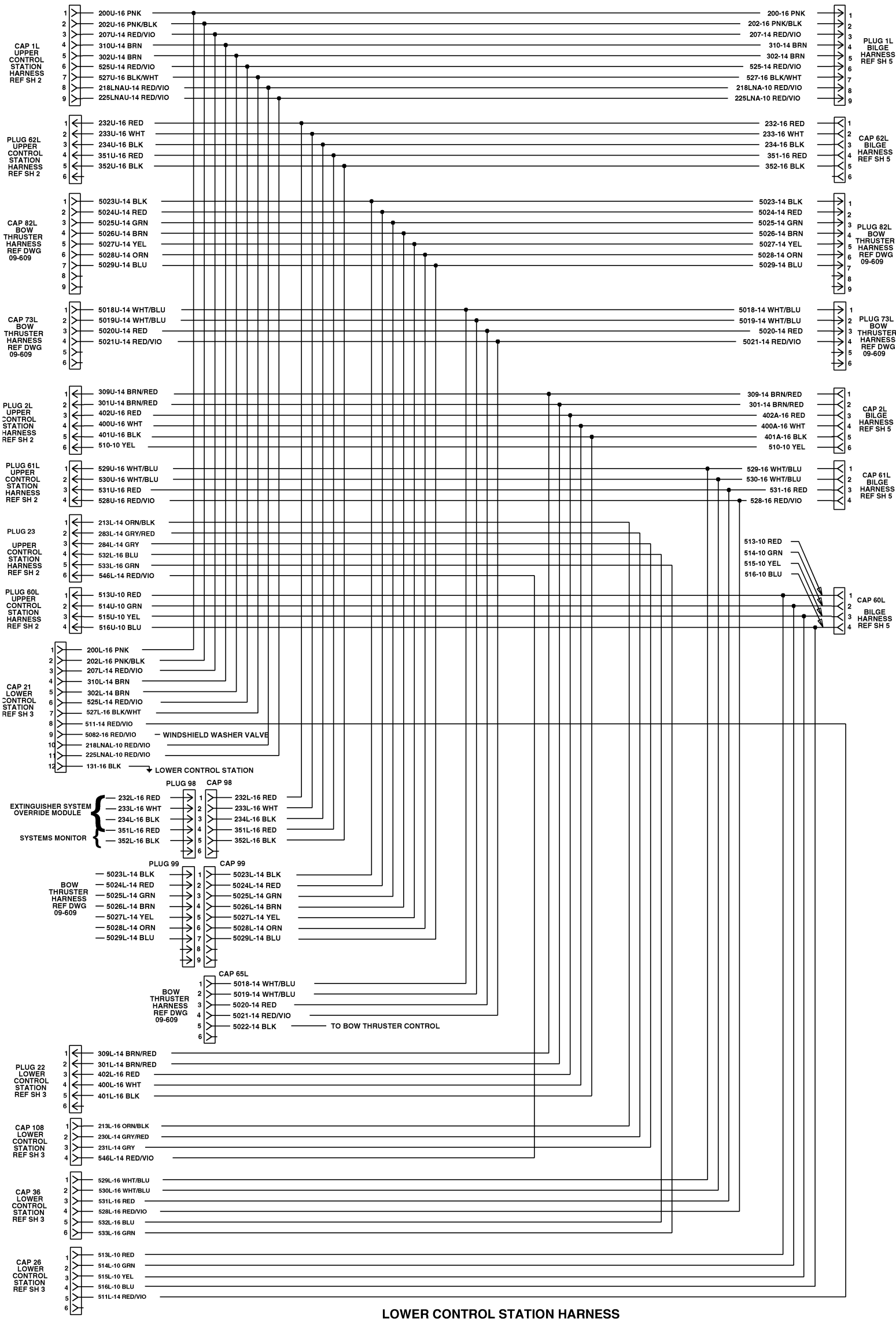


Print 09-600 (3 of 8)



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560 SEDAN BRIDGE DC WIRING SCHEMATIC (4 OF 8)  
(Fig. 6.26.1)



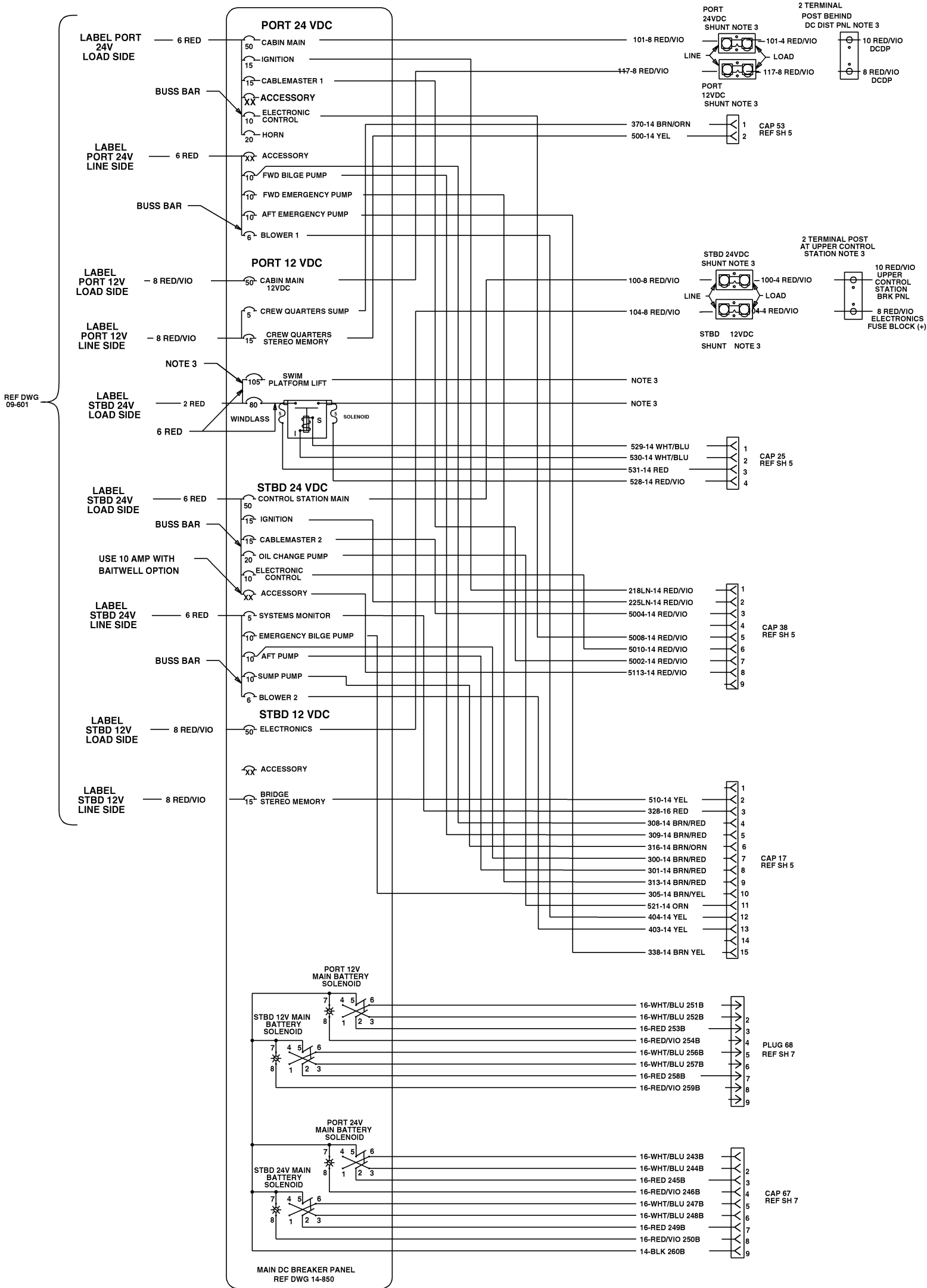
LOWER CONTROL STATION HARNESS

## 560 Sedan Bridge



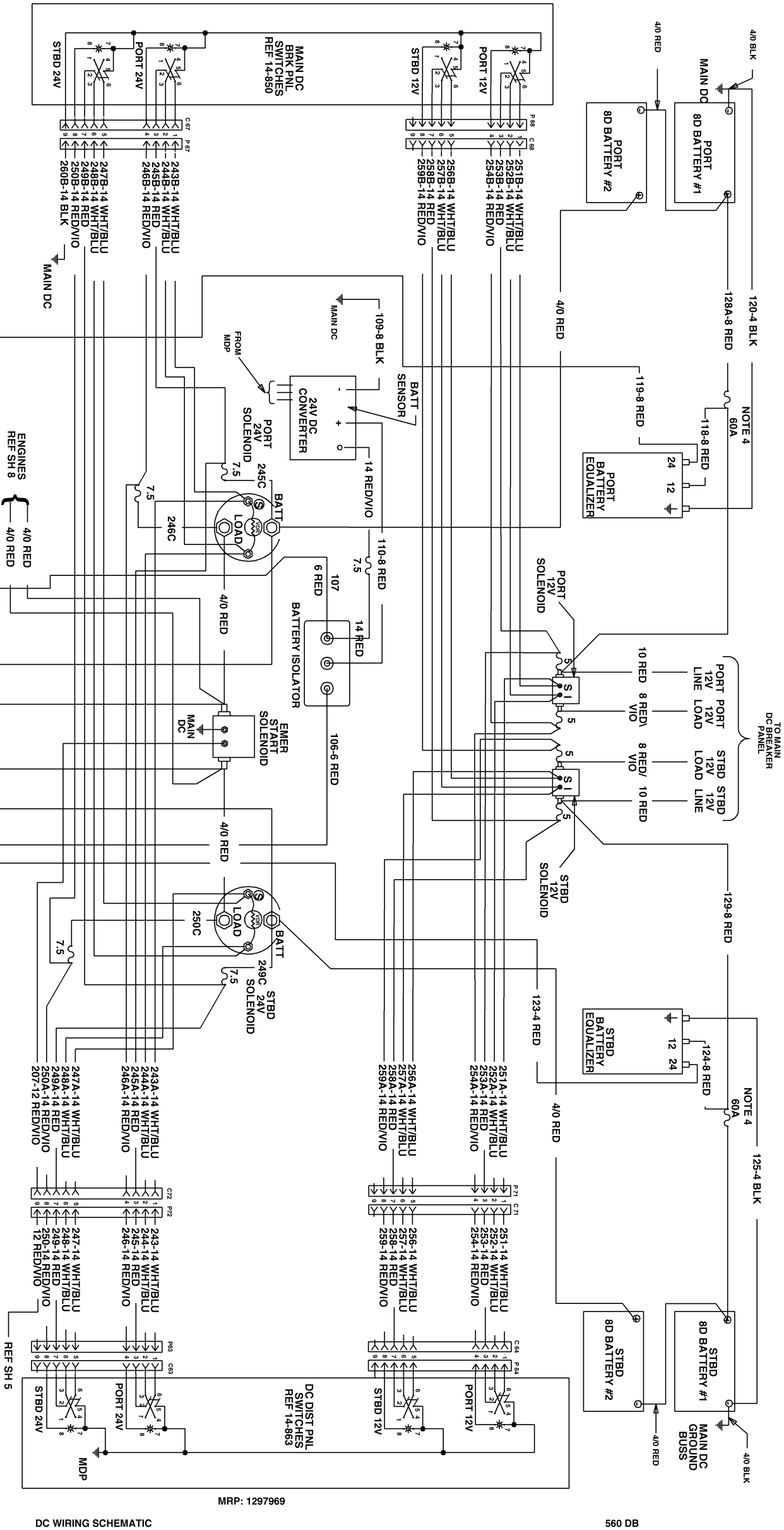
560 SEDAN BRIDGE DC WIRING SCHEMATIC (6 OF 8)  
(Fig. 6.28.1)

- NOTES:
- 1) PART OF WIRING SCHEMATIC 09-601.
  - 2) BUSS BARS TO BE INSULATED.
  - 3) SHOWN FOR TROUBLE SHOOTING AND ARE NOT TO BE INCLUDED IN PANEL WIRING.



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560 SEDAN BRIDGE DC WIRING SCHEMATIC (7 OF 8)  
(Fig. 6.29.1)

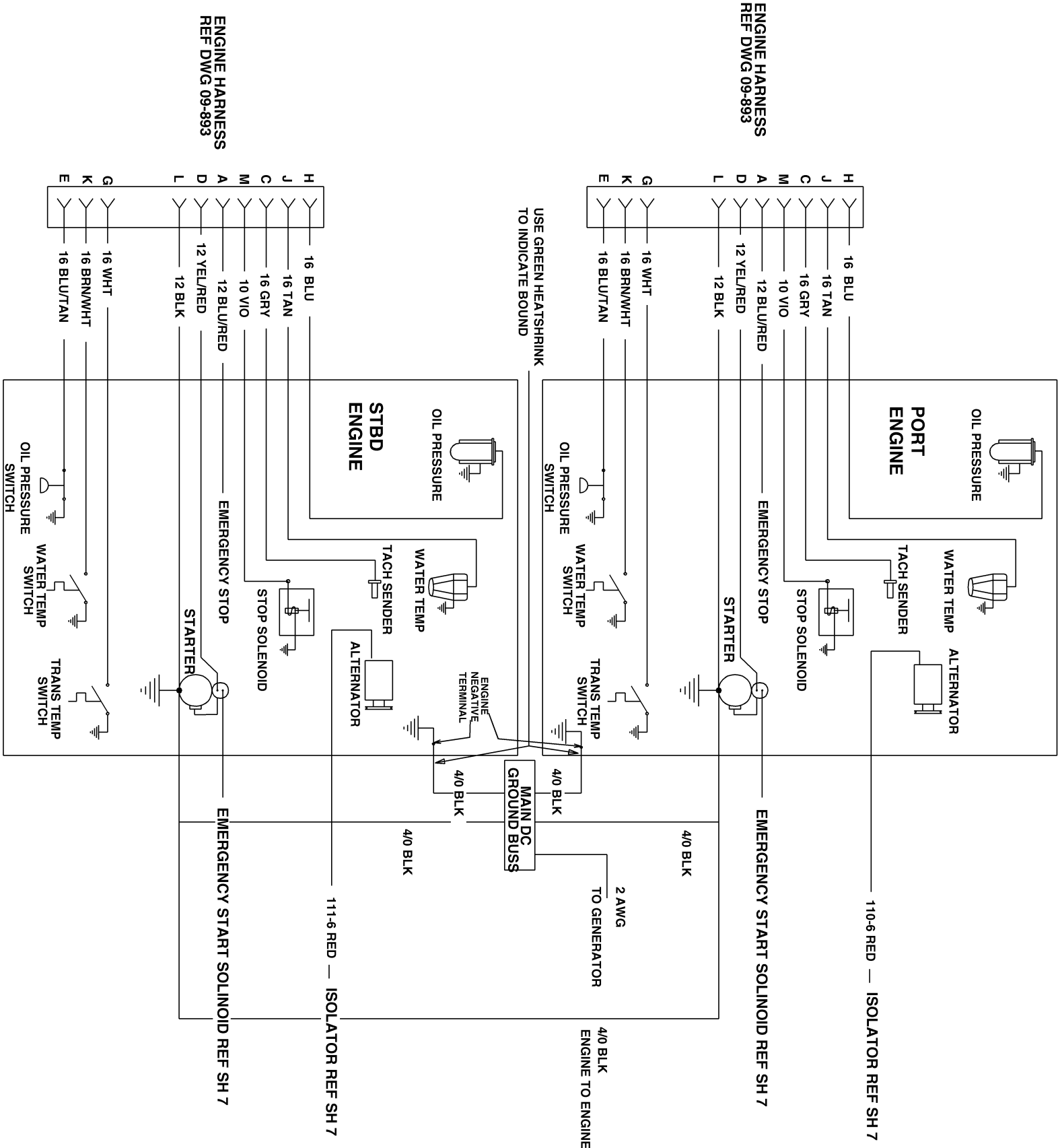


- NOTES:
- 1) INSTALL VARISTORS AS SHOWN.
  - 2) VARISTORS ARE NOT POLARITY SENSITIVE.
  - 3) VARISTOR COMES WITH "BIG BOY" SOLENOID.
  - 4) FEEDER TO FUSE SHALL BE SHEATHED OR IN AN ENCLOSURE, AND SHALL NOT BE GREATER THAN 72" IN LENGTH.
  - 5) FEEDER TO FUSE SHALL BE GREATER THAN 40" IN LENGTH, AND SHALL NOT BE GREATER THAN 40" IN LENGTH.



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560 SEDAN BRIDGE DC WIRING SCHEMATIC (8 OF 8)  
(FIG. 6.30.1)

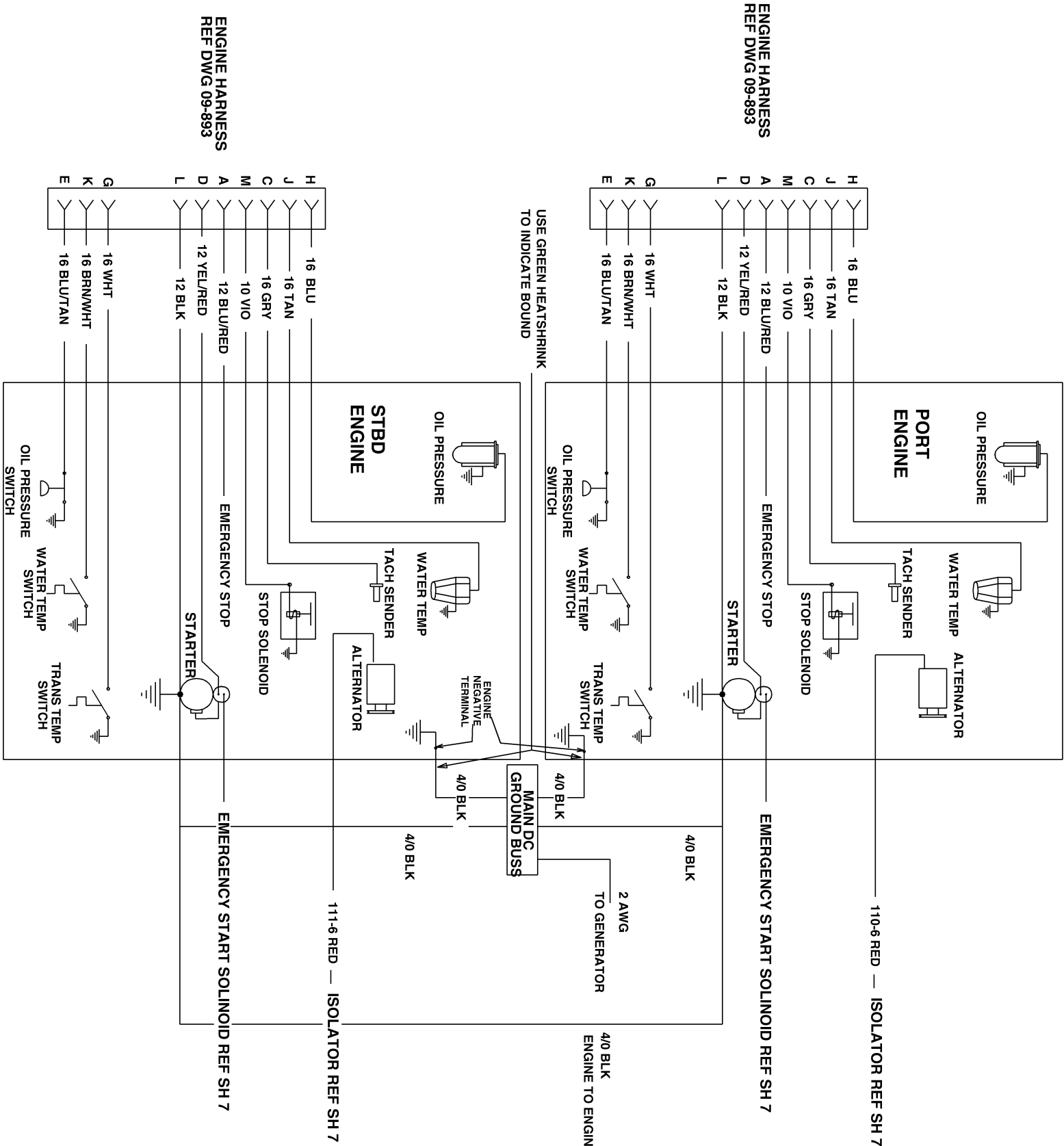


Print 09-600 (8 of 8)



SECTION 6 • ELECTRICAL SYSTEM

560 SEDAN BRIDGE DC WIRING SCHEMATIC CATERPILLAR® EMS® (1 OF 3)  
(Fig. 6.31.1)

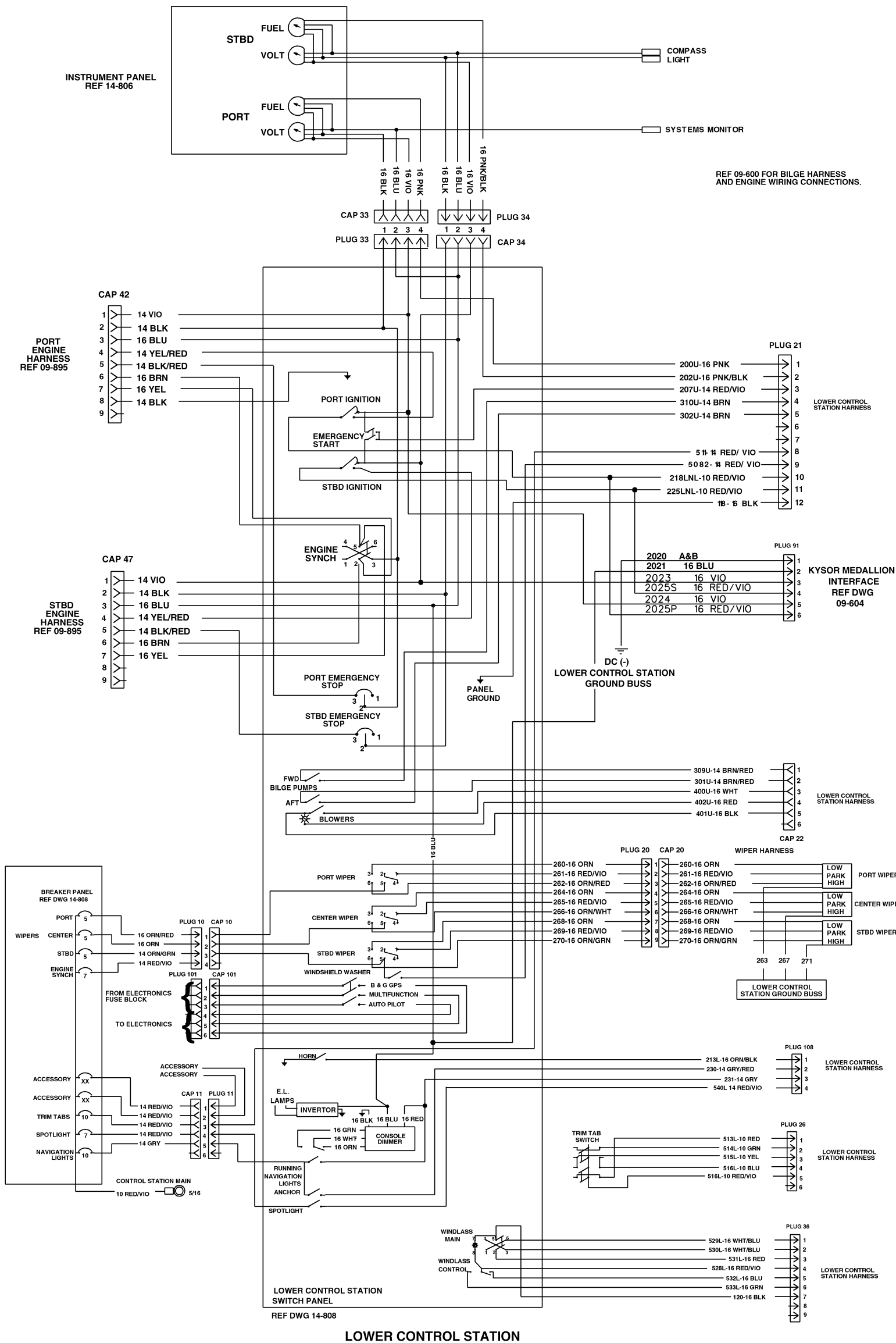


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SECTION 6 • ELECTRICAL SYSTEM

560 SEDAN BRIDGE DC WIRING SCHEMATIC CATERPILLAR® EMS® (2 OF 3)  
(Fig. 6.32.1)



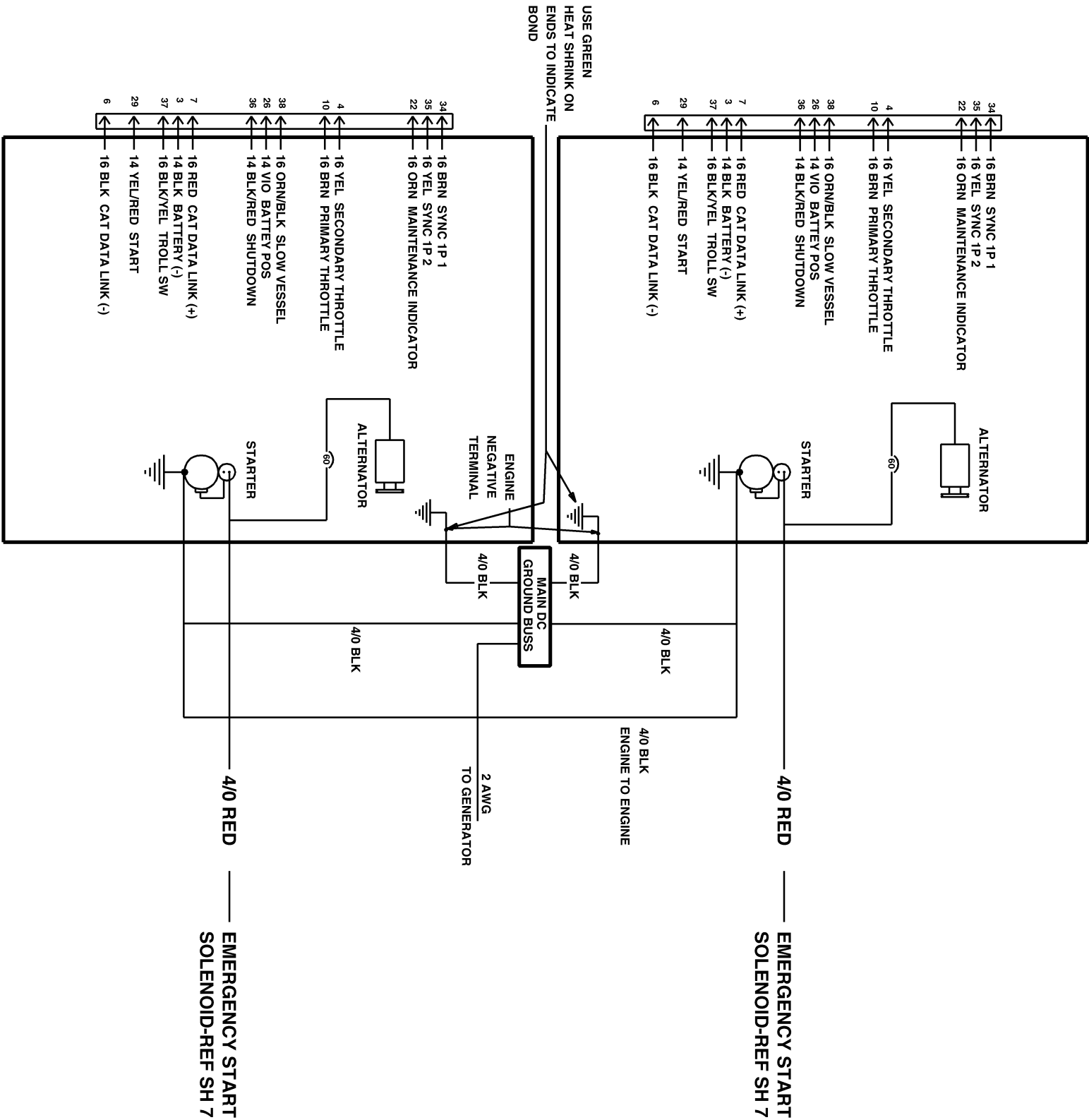
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SECTION 6 • ELECTRICAL SYSTEM

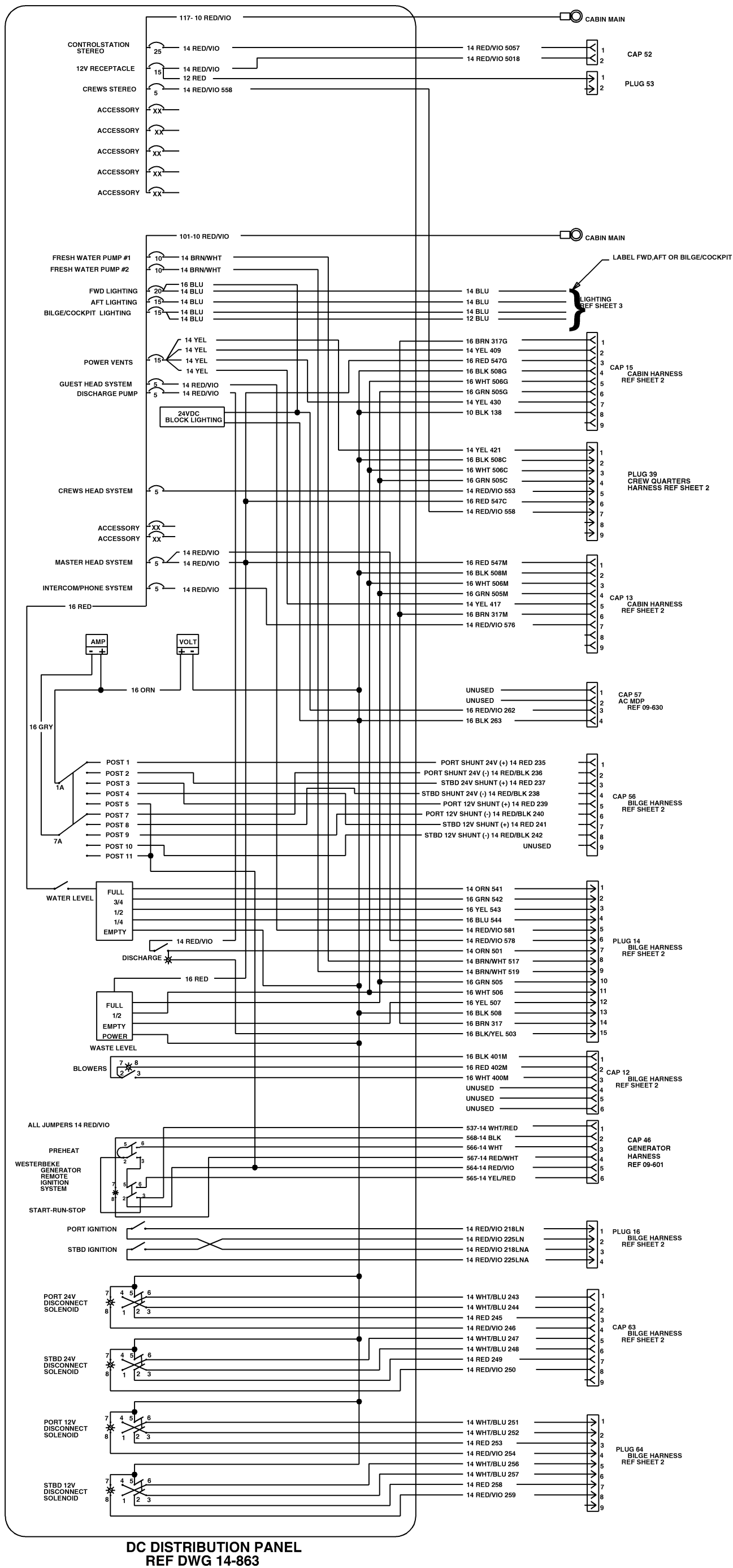
560 SEDAN BRIDGE DC WIRING SCHEMATIC CATERPILLAR® EMS® (3 OF 3)  
(Fig. 6.33.1)



Print 09-602 (3 of 3)



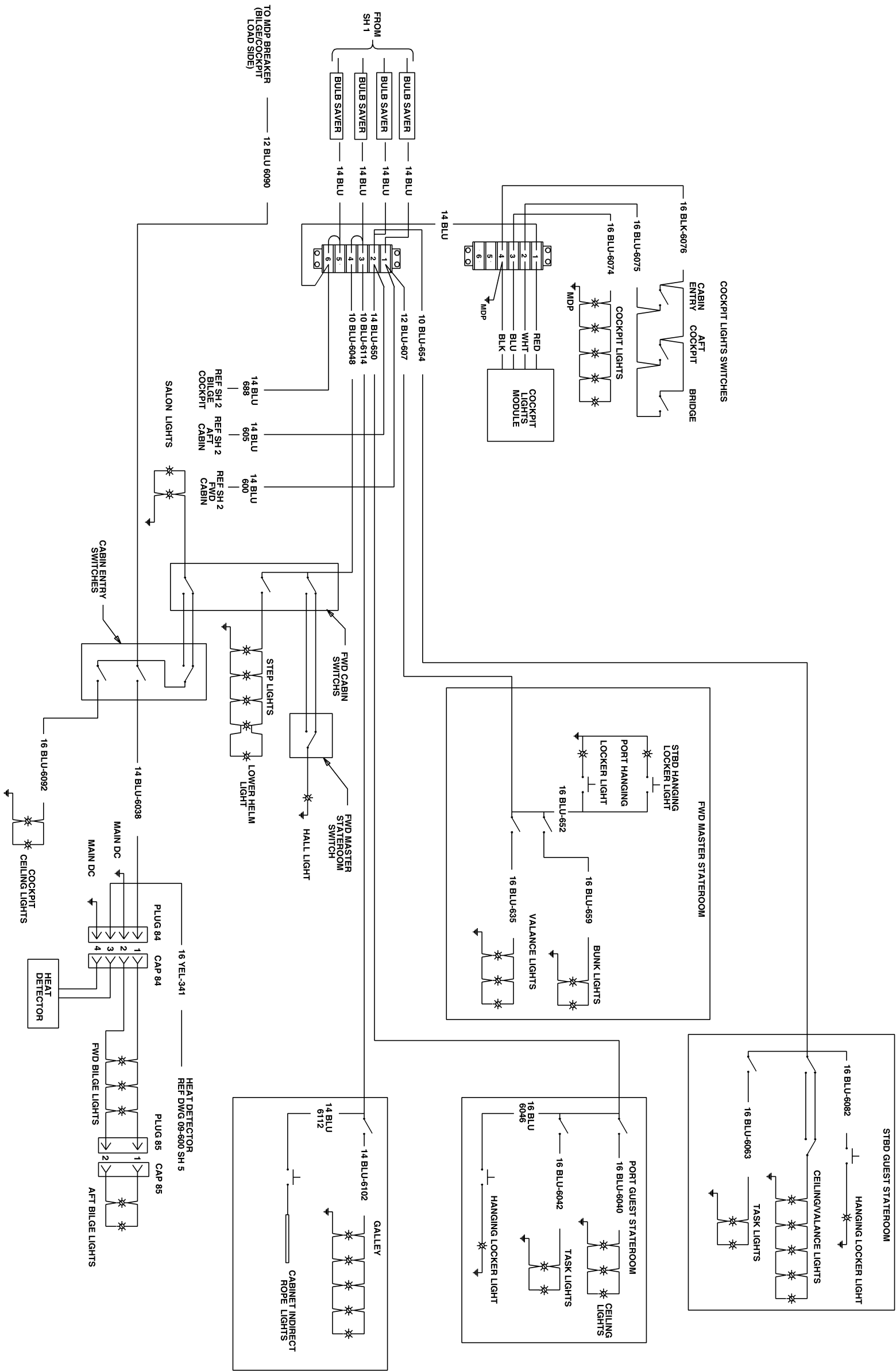
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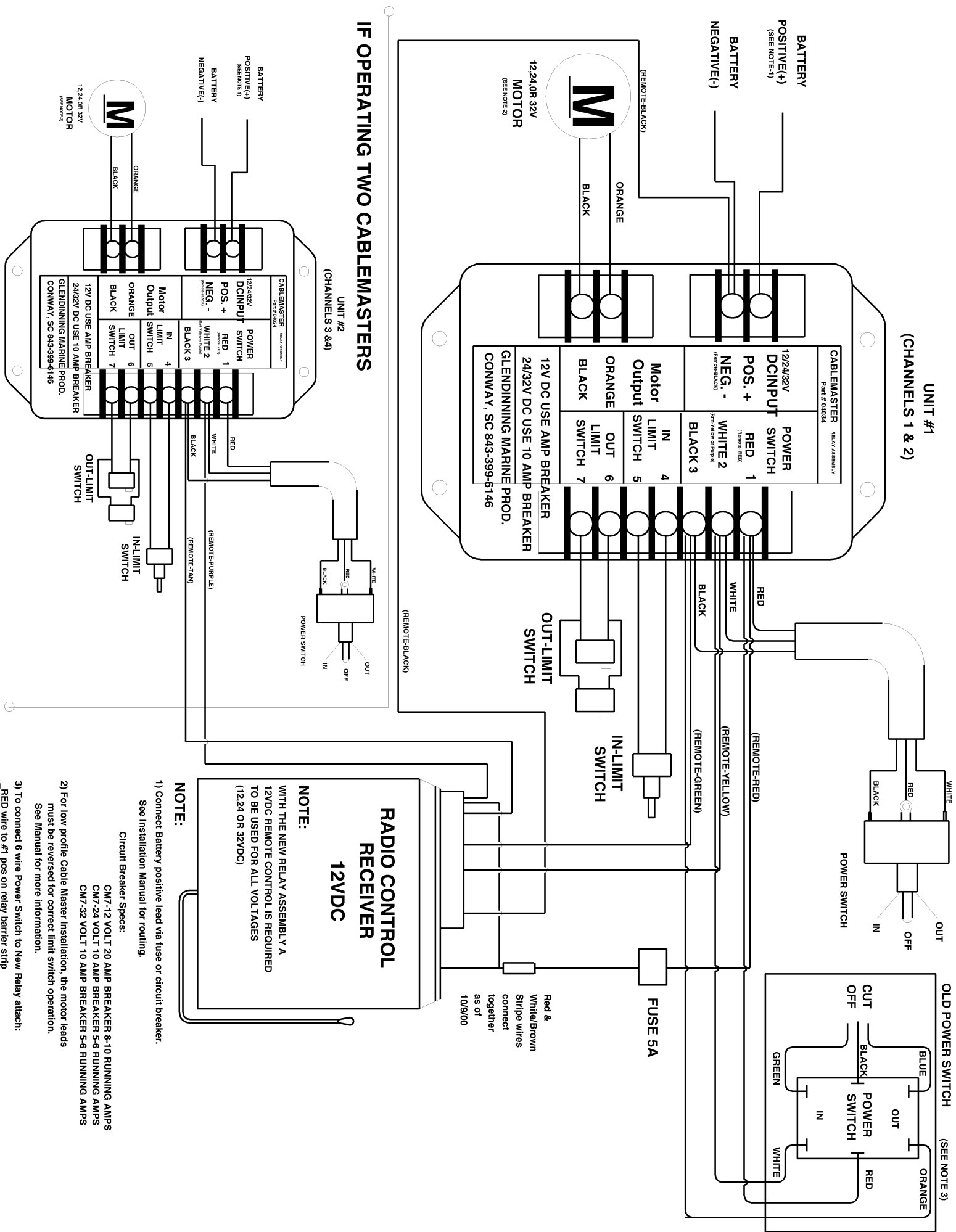
SECTION 6 • ELECTRICAL SYSTEM

560 SEDAN BRIDGE CABIN DC WIRING SCHEMATIC (3 OF 3)  
(Fig. 6.36.1)



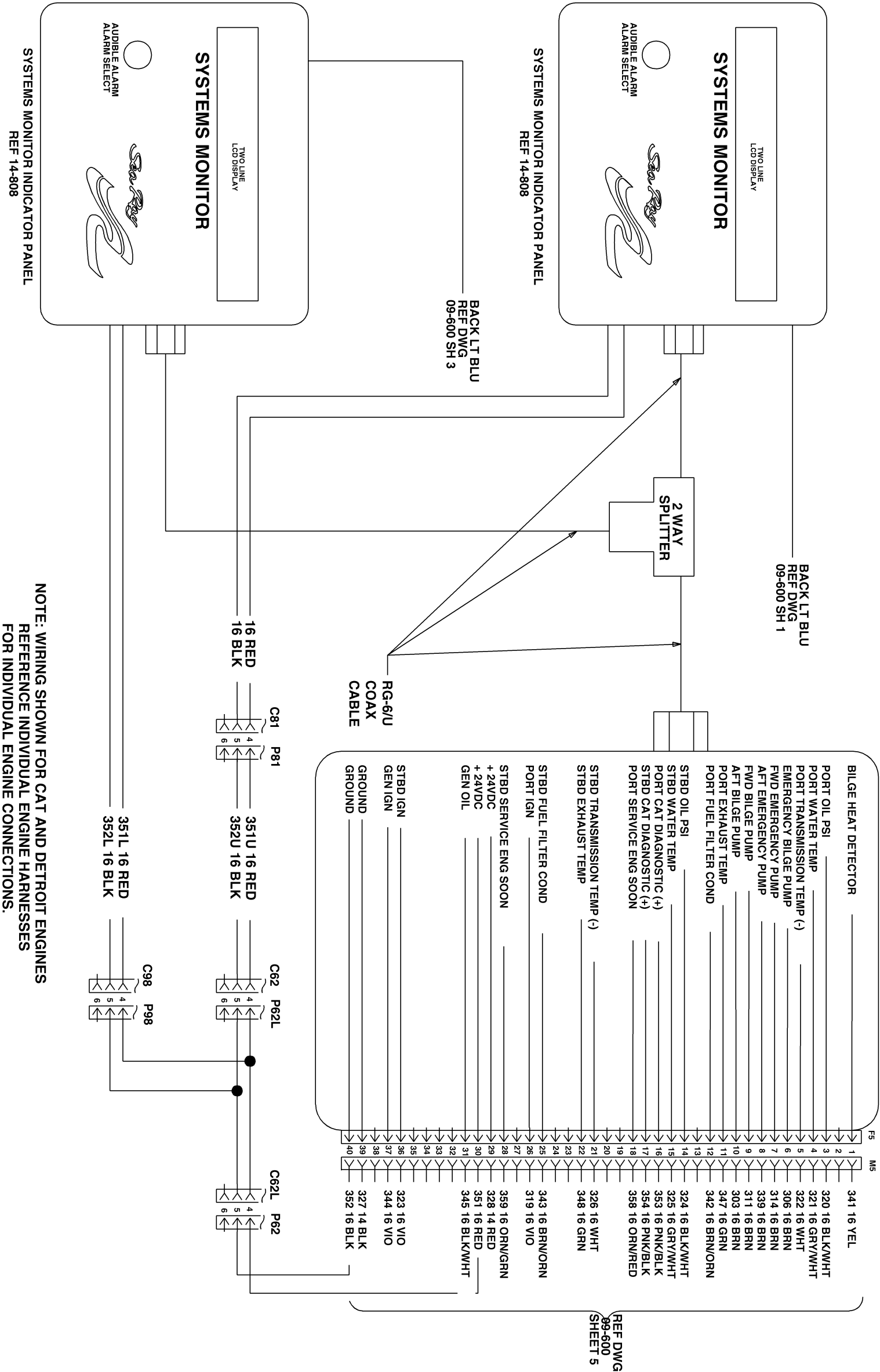
SECTION 6 • ELECTRICAL SYSTEM

560 SEDAN BRIDGE CABLEMASTER REMOTE WIRING SCHEMATIC  
(Fig. 6.37.1)



SECTION 6 • ELECTRICAL SYSTEM

560 SEDAN BRIDGE SYSTEMS MONITOR WIRING SCHEMATIC  
(Fig. 6.38.1)

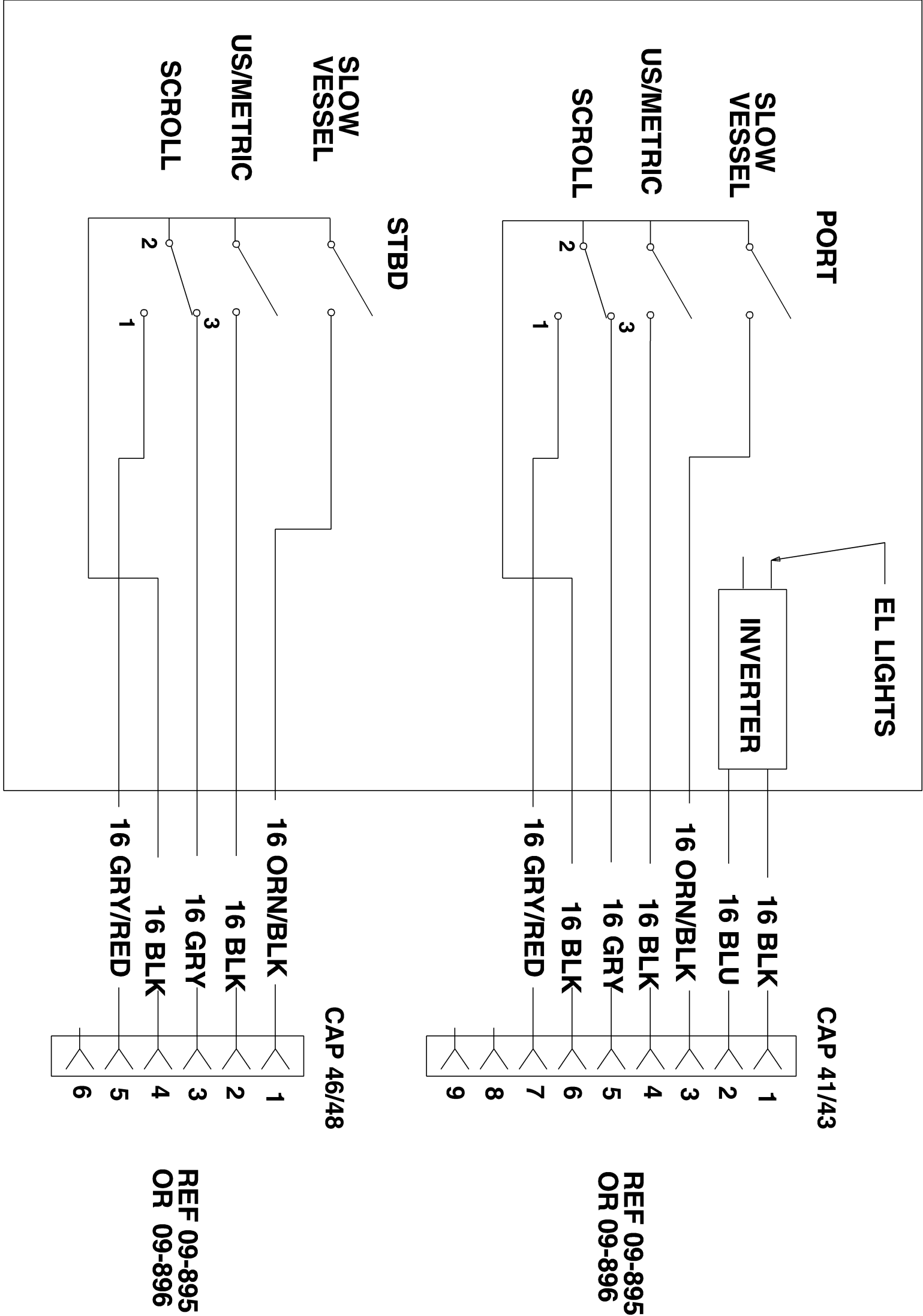


NOTE: WIRING SHOWN FOR CAT AND DETROIT ENGINES  
REFERENCE INDIVIDUAL ENGINE HARNESSSES  
FOR INDIVIDUAL ENGINE CONNECTIONS.



SECTION 6 • ELECTRICAL SYSTEM

560 SEDAN BRIDGE CATERPILLAR® EMS® SWITCH PANEL WIRING SCHEMATIC OPTION  
(Fig. 6.39.1)



Print 09-607 (1 of 1)

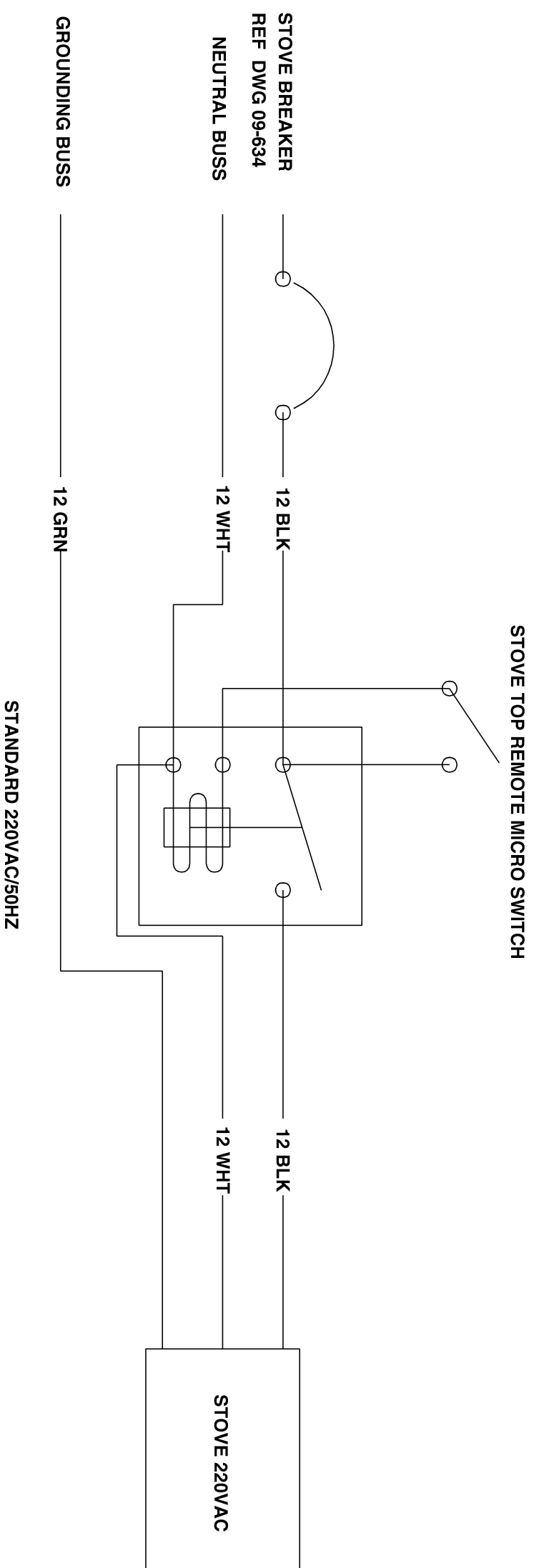
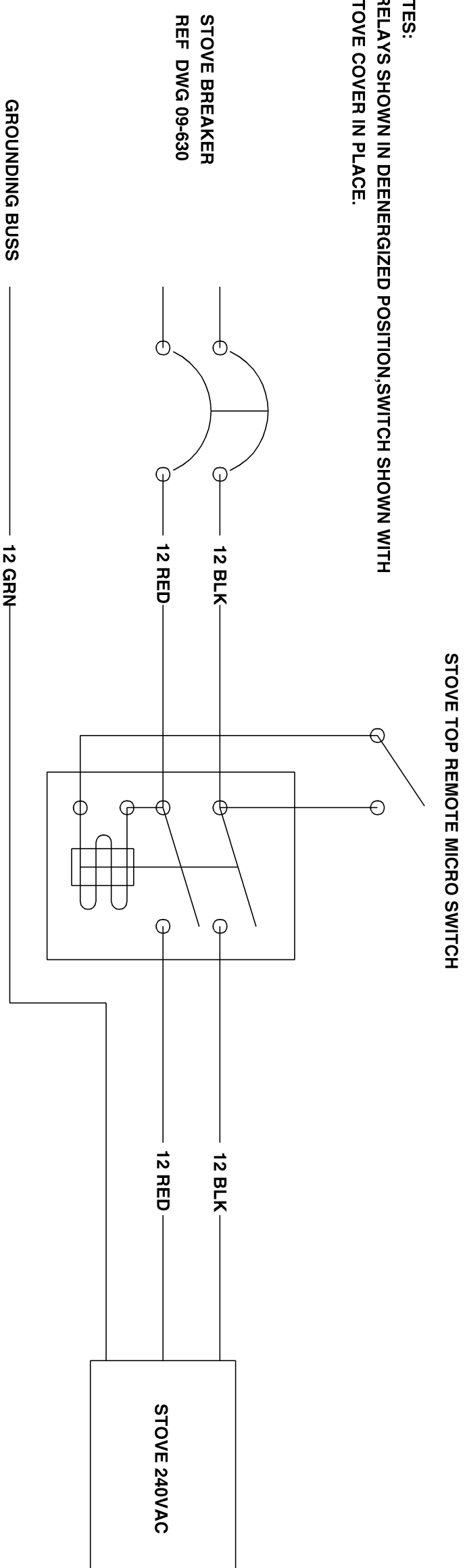


## SECTION 6 • ELECTRICAL SYSTEM

### 560 SEDAN BRIDGE STOVE TOP SWITCH WIRING SCHEMATIC OPTION (Fig. 6.40.1)

**NOTES:**

**1) RELAYS SHOWN IN DEENERGIZED POSITION, SWITCH SHOWN WITH STOVE COVER IN PLACE.**

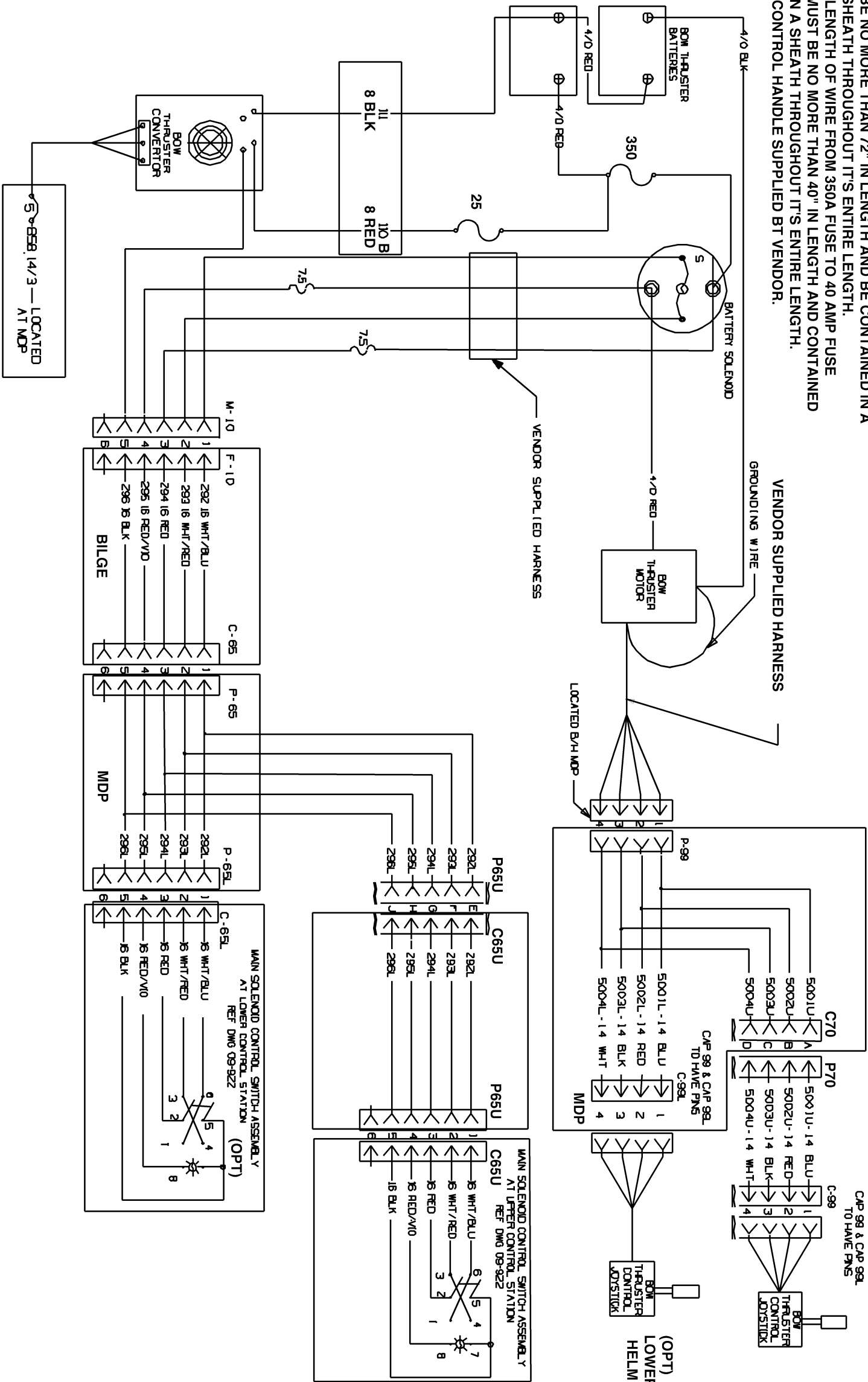




SECTION 6 • ELECTRICAL SYSTEM

560 SEDAN BRIDGE BOW THRUSTER SCHEMATIC  
(Fig. 6.41.1)

- NOTES:
- 1) ENSURE TOTAL POSITIVE AND NEGATIVE CABLE LENGTHS FROM BATTERY TO MOTOR ARE NO LONGER THAN 65 FEET.
  - 2) THE CABLE LENGTH FROM THE BATTERY TO 350A FUSE MUST BE NO MORE THAN 72" IN LENGTH AND BE CONTAINED IN A SHEATH THROUGHOUT ITS ENTIRE LENGTH.
  - 3) LENGTH OF WIRE FROM 350A FUSE TO 40 AMP FUSE MUST BE NO MORE THAN 40" IN LENGTH AND CONTAINED IN A SHEATH THROUGHOUT ITS ENTIRE LENGTH.
  - 4) CONTROL HANDLE SUPPLIED BY VENDOR.

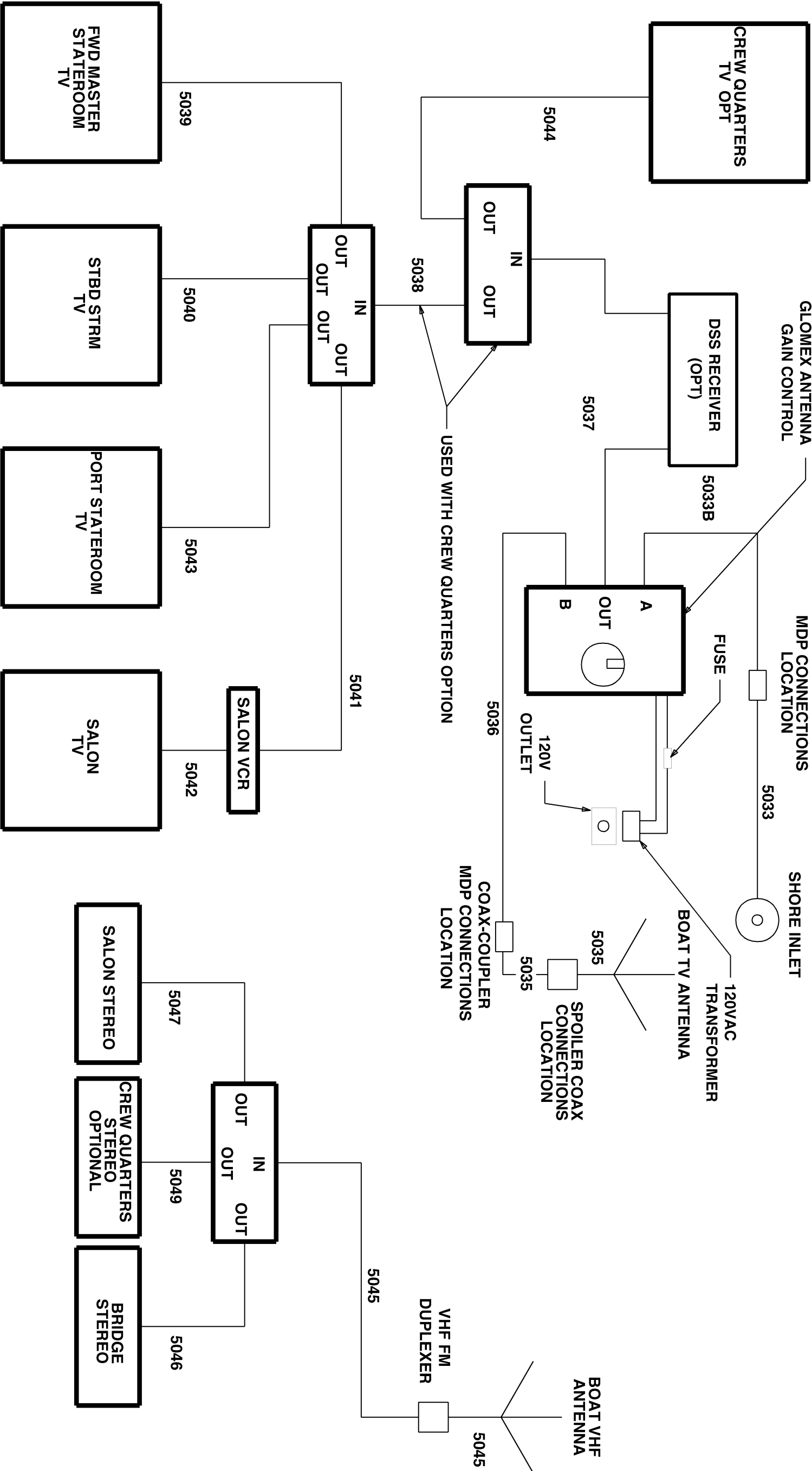


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SECTION 6 • ELECTRICAL SYSTEM

560 SEDAN BRIDGE TV & STEREO COAXIAL CABLE SCHEMATIC  
(Fig. 6.42.1)

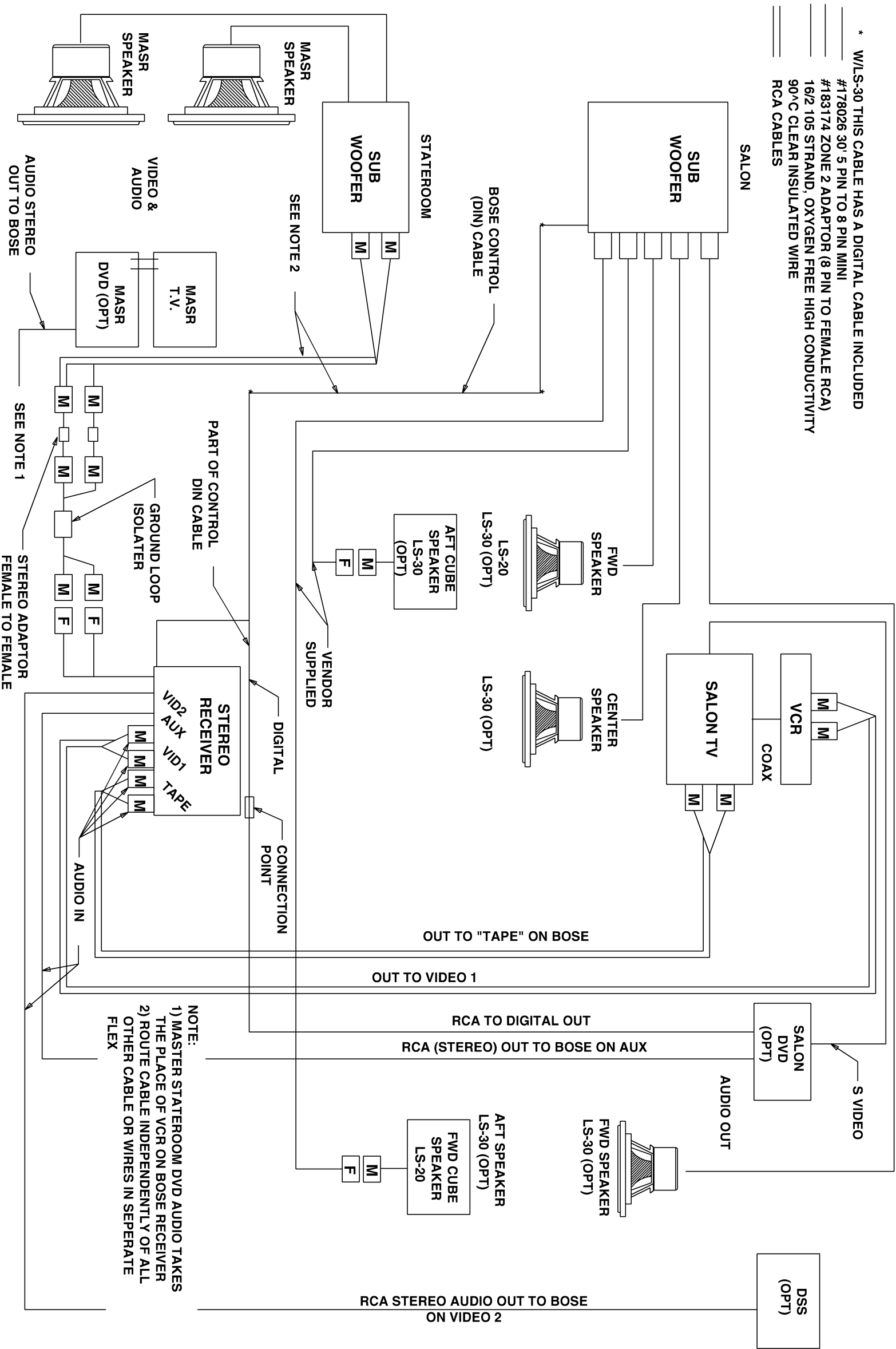


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SECTION 6 • ELECTRICAL SYSTEM

560 SEDAN BRIDGE BOSE® STEREO SYSTEM WIRING DIAGRAM  
(Fig. 6.43.1)

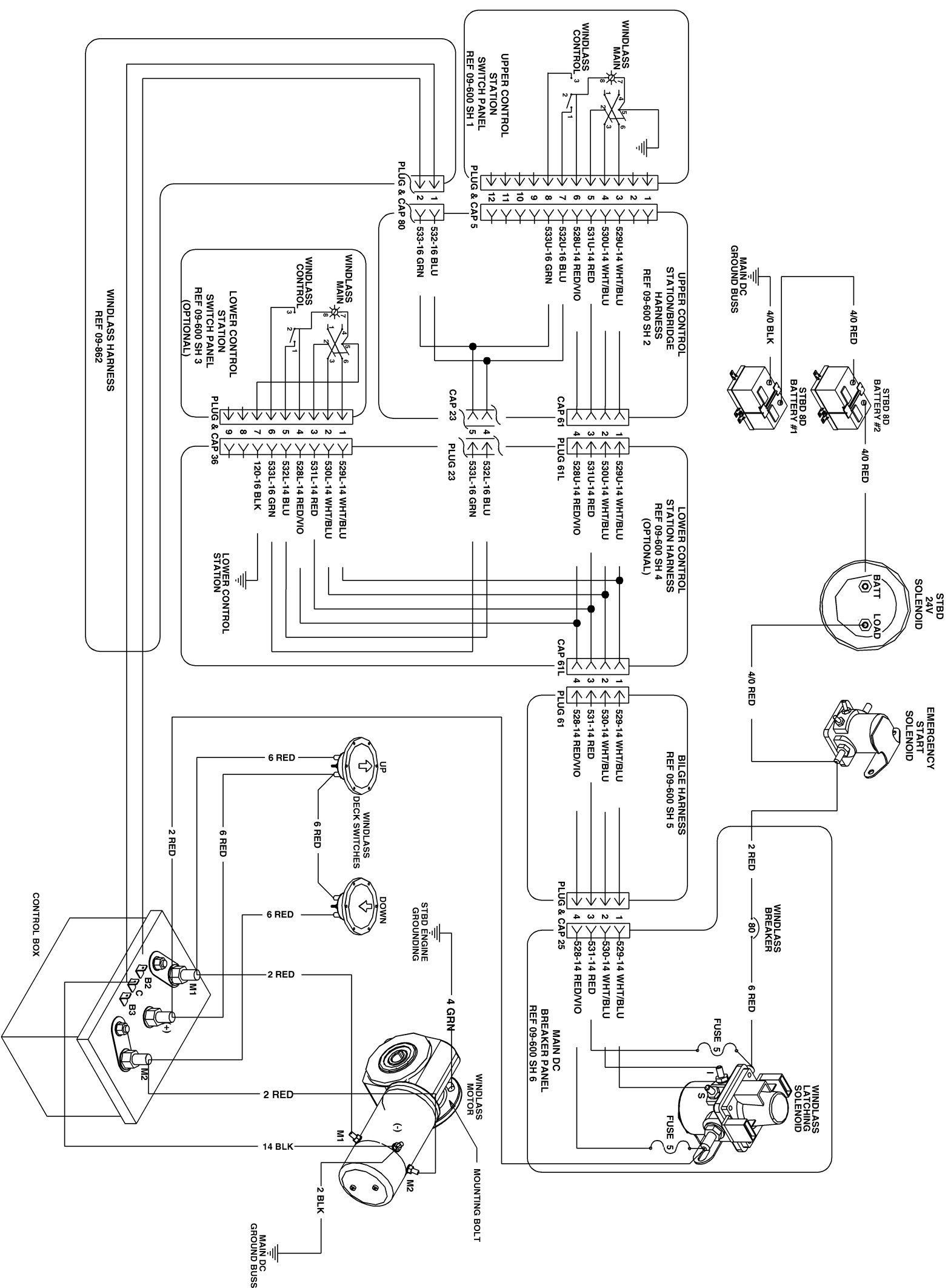


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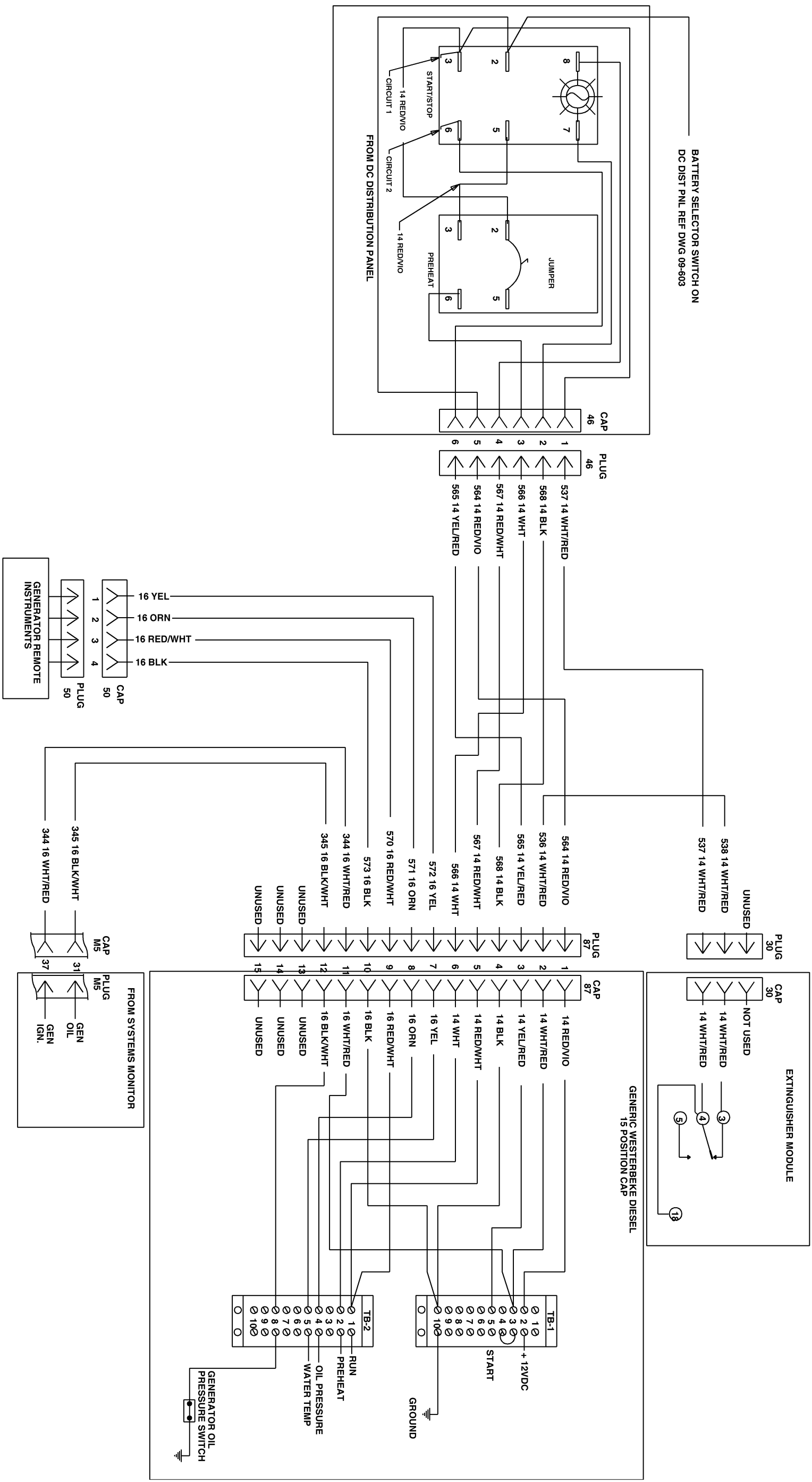
## SECTION 6 • ELECTRICAL SYSTEM

**560 SEDAN BRIDGE LOFRAN PROGRESS II WINDLASS WIRING DIAGRAM**  
(Fig. 6.44.1)



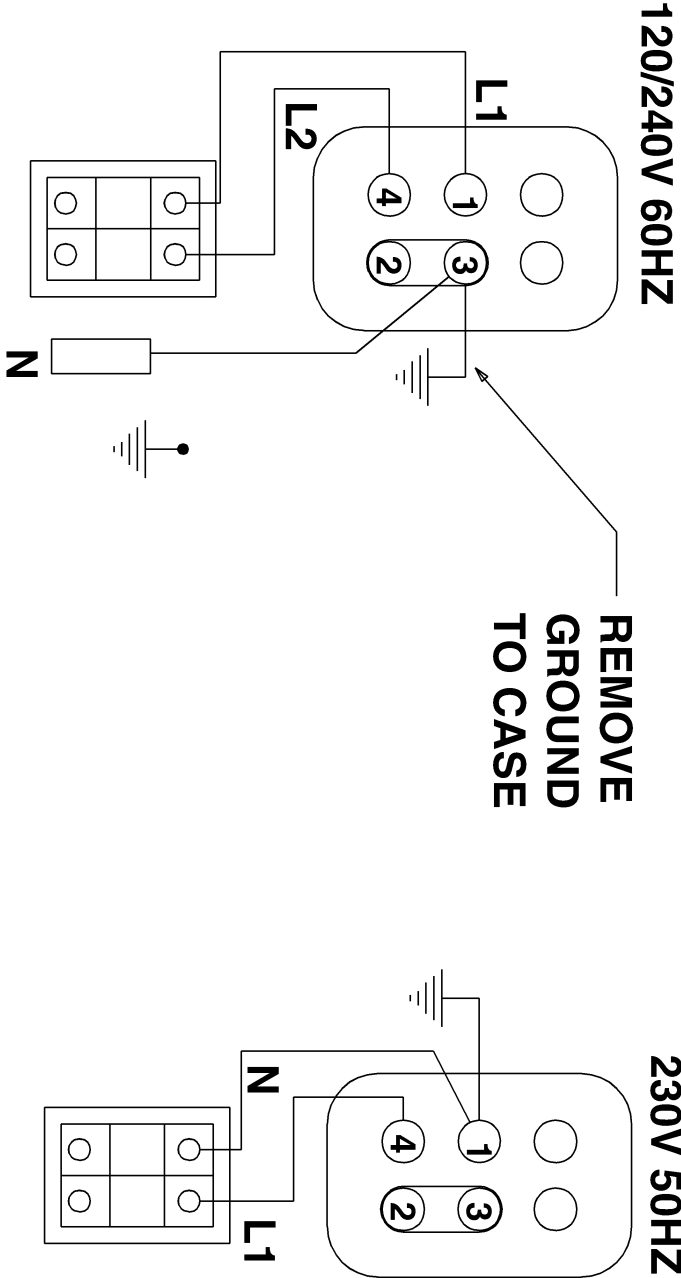
## SECTION 6 • ELECTRICAL SYSTEM

560 SEDAN BRIDGE WESTERBEKE 20KW DIESEL GENERATOR REMOTE WIRING DIAGRAM  
(Fig. 6.45.1)



SECTION 6 • ELECTRICAL SYSTEM

560 SEDAN BRIDGE WESTERBEKE GENERATOR HIGH VOLTAGE WIRING DIAGRAM  
(Fig. 6.46.1)



ISOLATED NEUTRAL &  
GROUND TO MAIN AC  
NEUTRAL/GROUNDING BUS

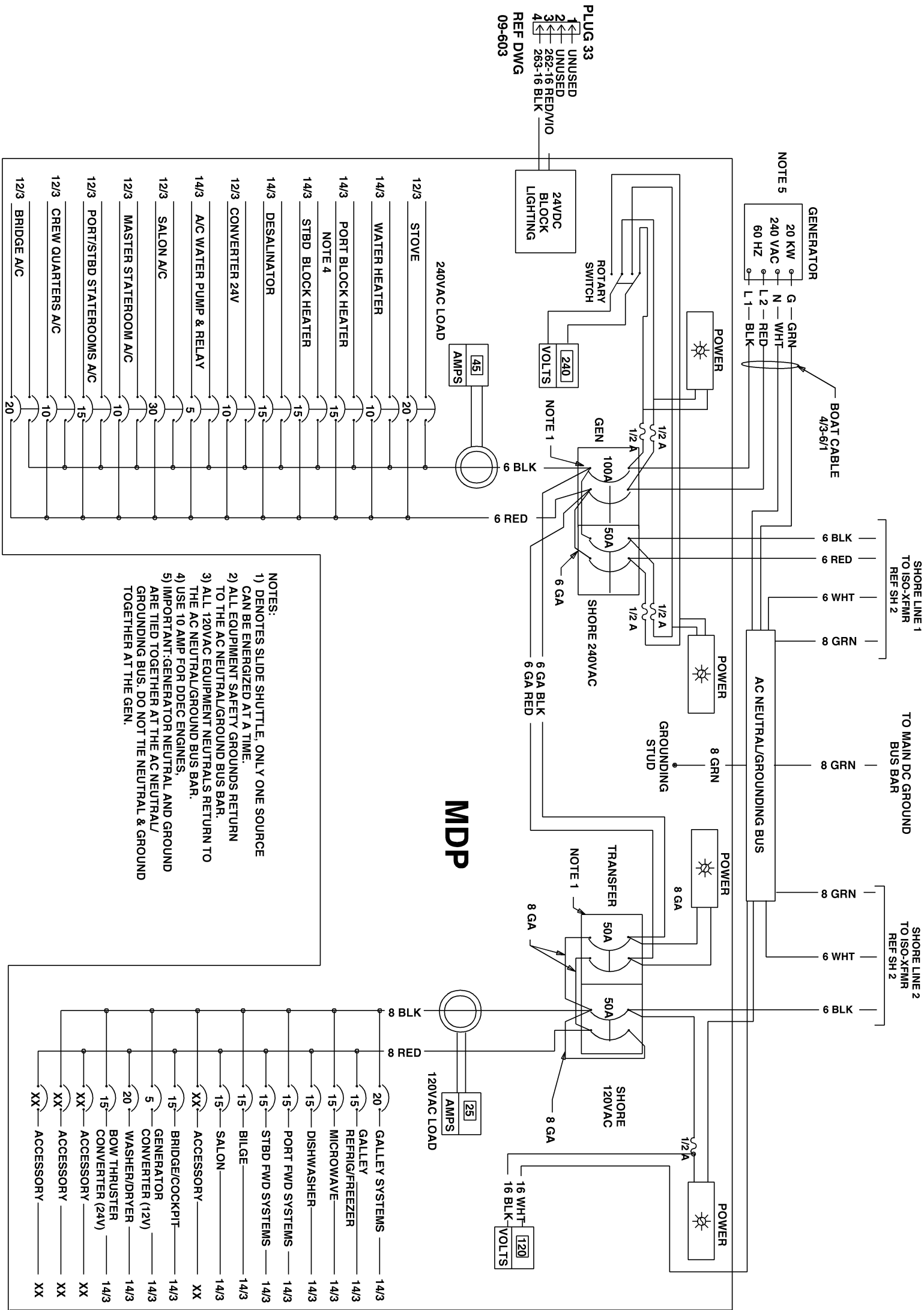
| MODEL       | RATING  | BREAKER | VOLTS/HZ                     |
|-------------|---------|---------|------------------------------|
| 16.0KW BEDA | 70 AMP  | 42710   | 230V//50HZ                   |
| 16.0KW BEG  | 70 AMP  | 42718   | 230V//50HZ                   |
| 25.0KW BEDA | 120 AMP | TBO     | 230V//50HZ                   |
| 20.0KW BED  | 90 AMP  | 42711   | 230V//50HZ                   |
| 32.0KW BEDA | 150 AMP | 42703   | 120V//60HZ OR 120/240V//60HZ |
| 20.0KW BEDA | 90 AMP  | 42711   | 120V//60HZ OR 120/240V//60HZ |
| 25.0KW BED  | 100 AMP | 42702   | 120V//60HZ OR 120/240V//60HZ |
| 20.0KW BEG  | 90 AMP  | 42696   | 120V//60HZ OR 120/240V//60HZ |

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SECTION 6 • ELECTRICAL SYSTEM

560 SEDAN BRIDGE AC WIRING SCHEMATIC 240VAC/120VAC  
(Fig. 6.47.1)



SECTION 6 • ELECTRICAL SYSTEM

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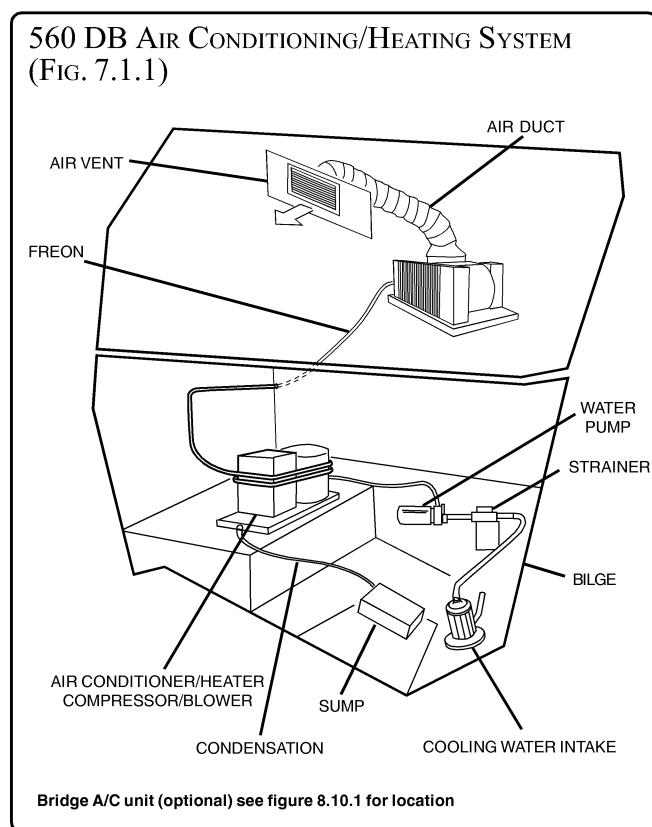




# SECTION 7 • ACCESSORIES AND OPTIONS

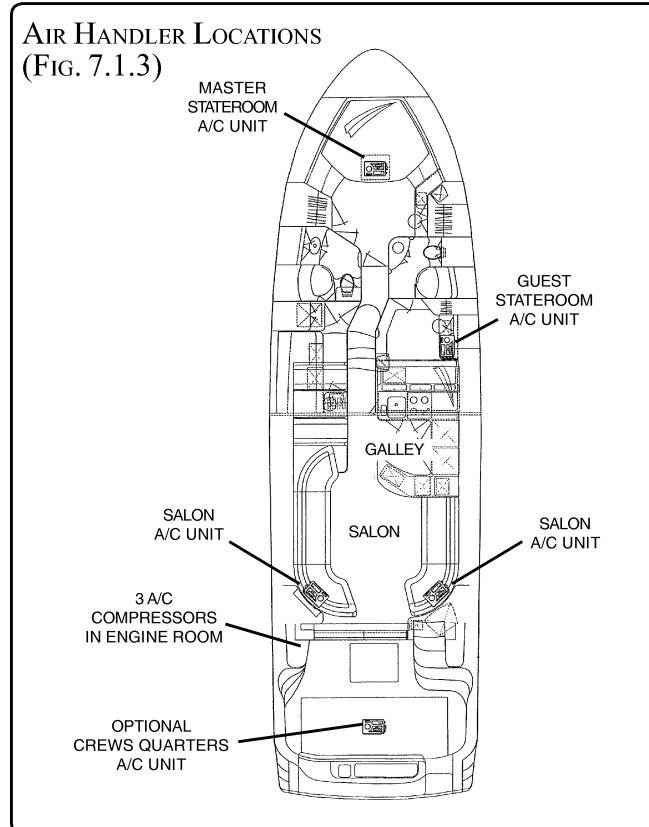
## 1. LAYOUT AND ACCESSORIES

Figures 7.22.1 through 7.25.1 identify the location and arrangement of the equipment and components on your yacht. We strongly suggest that you walk through your yacht, locate the features illustrated, and become familiar with their operation and maintenance.

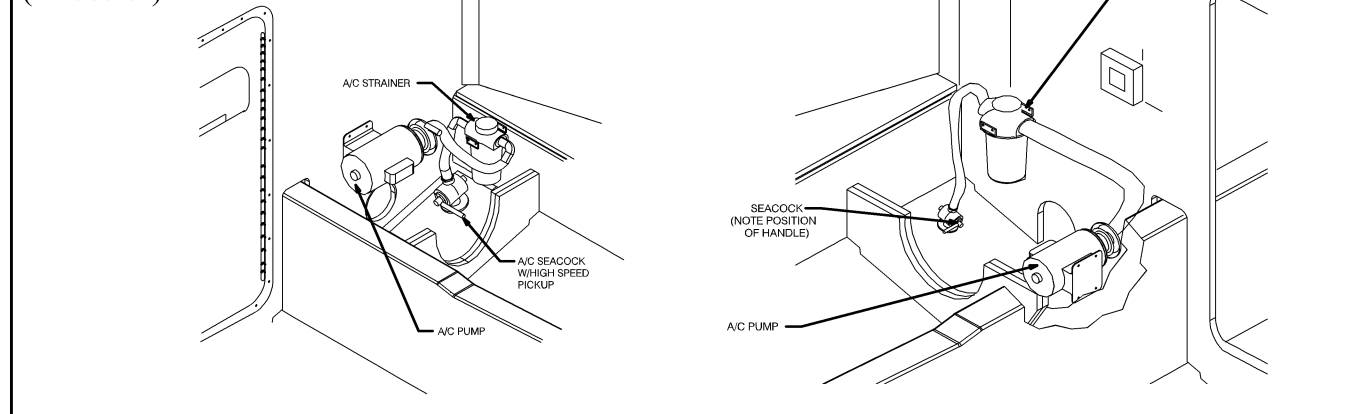


## 2. AIR CONDITIONING & HEATING

The 560 DB air conditioning/heating system consists of four (5) standard air conditioning/heating units, one (2) raw water pumps with a seacock and strainer and a relay unit so the water pumps will be activated by demand when any AC unit comes on.



## A/C SEACOCK, STRAINER & SEAWATER PUMP (FIG. 7.1.2)



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## SECTION 7 • ACCESSORIES AND OPTIONS

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The compressors for the units are located in the bilge and the various air handlers located throughout the boat (Figure 7.1.3). Care should be taken so as not to stow items around the air handlers that may block the return air grill or damage the freon lines running to the compressor.

The 560 DB master stateroom unit is located under the master stateroom bunk. The controls for the unit are located on the port hanging locker. The air filter is located on the face of the unit.

The unit for the port and starboard guest staterooms is located under the starboard guest stateroom closet floor. The controls for the unit are located on the forward side of the starboard hanging locker. The air filter is located on the face of the unit.

There are two (2) salon units located under the aft end of the port and starboard sofas. The controls for the unit are located above the port sofa. The air filter is located on the face of the unit.

The bridge unit is located behind an access panel on the lower port side of the helm. The controls for the bridge unit are located under the center helm with the control station breaker panel (Figure 2.15.1).

The system is cooled to maintain optimal operating temperature by the raw water pumps located in the bilge, aft of the port and starboard engines. The pump draws water through a seacock and filters it through a sea water strainer. The water passes through each compressor cooling the condensing coils, then flows overboard. (The sea water strainer should be inspected frequently and cleaned out when plugged. To clean strainer, refer to page 4.12).

The condensation drains for all the cabin units connect into the shower sump located under the hatch at the bottom of the stateroom steps. Remove the hatch to access the sump (Figure 7.8.3).

### A. TO START SYSTEM:

1. Make sure the seacock for the cooling water pump is open.
2. Turn ON the "A/C WATER PUMP & RELAY" circuit breaker on the main AC distribution panel. Turn ON each "A/C UNIT" circuit breaker.
3. Refer to air conditioner owner's manual in the owner's packet for instructions on operation of the control panels.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

## 3. WATER SYSTEM

The fresh water system consists of two (2) 24 volt water pumps with filters, water system filter and pneumatic accumulator tank (see Fig. 7.3.2 for water system layout).

The fresh water system is activated by the water pump breakers on the DC distribution panel. The breakers must be ON to operate the head, shower, ice maker, fresh water wash down or faucets.

### A. WATER TANK

The 560 DB has one (1) 200 gallon (750 liter) water tank located between the port and starboard fuel tanks against the forward engine bulkhead in the engine room. To check the water level in the tank, press the water level switch on the 24 volt DC distribution panel located in the salon. The lights will indicate the amount of water in the tank.

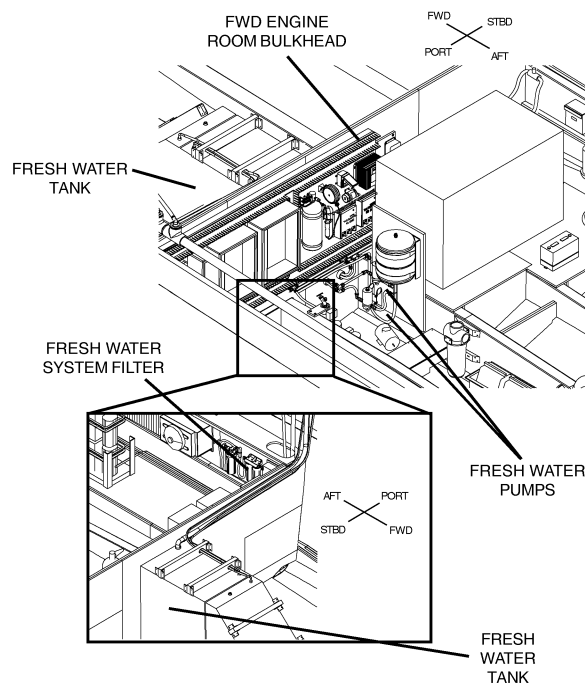
### FILLING THE WATER TANK

The tank is filled through fill plates located on the port and starboard deck walkway. Fill the water tanks only from a source known to provide safe, pure drinking water. To fill your water tank you should use a plastic hose. Do not use a rubber hose; it can give the water a disagreeable flavor. The hose should be kept for filling use only. After using the hose it should be emptied. Start at one end and raise the hose to shoulder level and walk to the opposite end

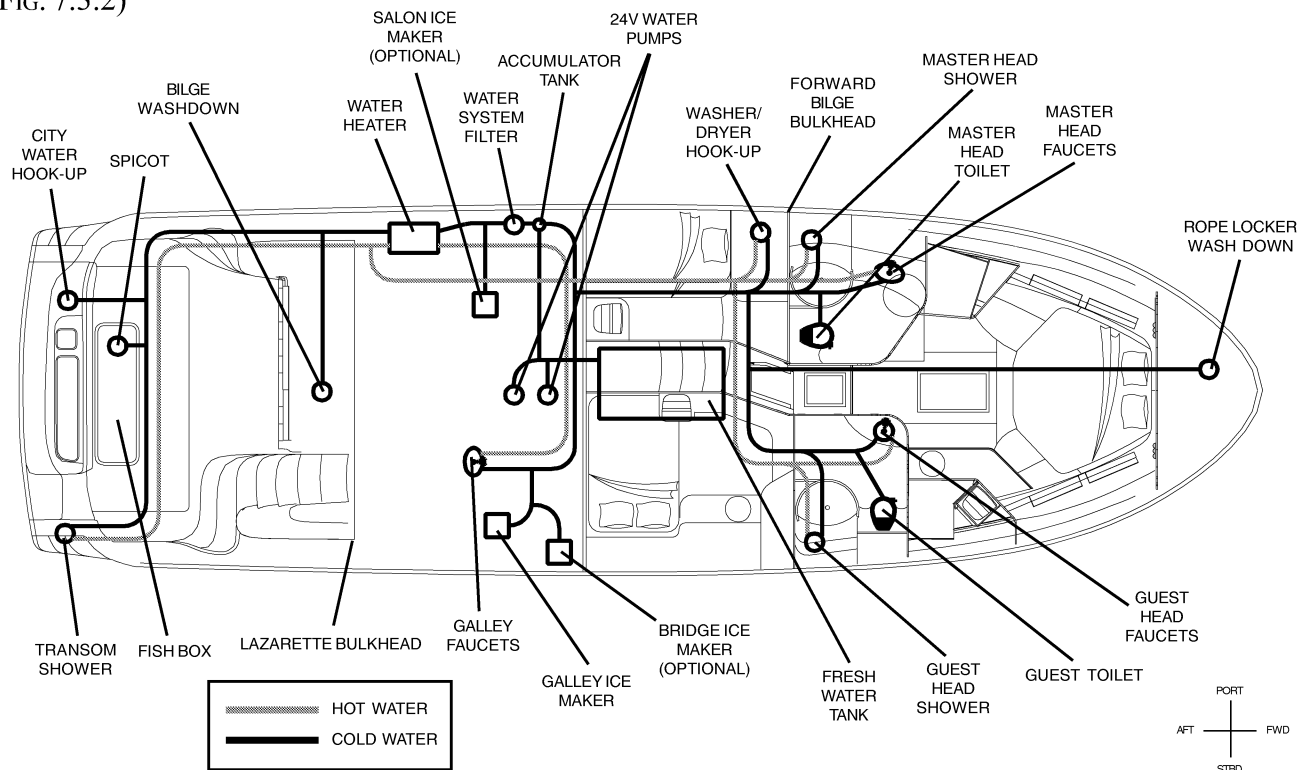


## SECTION 7 • ACCESSORIES AND OPTIONS

FRESH WATER TANK  
(FIG. 7.3.1)



FRESH WATER SYSTEM  
(FIG. 7.3.2)



## SECTION 7 • ACCESSORIES AND OPTIONS

of the hose, allowing the remaining water to flow out. You should store your water tank filling hose in a clean dry place. It is also a good practice to cover the ends of the hose to keep the inside clean.

### TO BEGIN INITIAL OPERATION:

1. Fill the water tank with potable water.
2. Switch the water pump breakers to the ON position.
3. One at a time, open all hot and cold faucets to bleed air from the water lines.
4. Once air has been eliminated from water lines, close faucets.
5. Shutting off the last faucet should cause the pump to shut off.

### SANITIZING THE WATER SYSTEM

Although your dealer initially sanitizes the water system, if the system has not been used for a long period of time, or you suspect it may be contaminated, use a water treatment additive to sanitize the potable water system. Water treatment additives are available at marine/RV supply stores.

If water treatment additives are not available, adhere to the following procedure for complete sanitation of your potable water system.

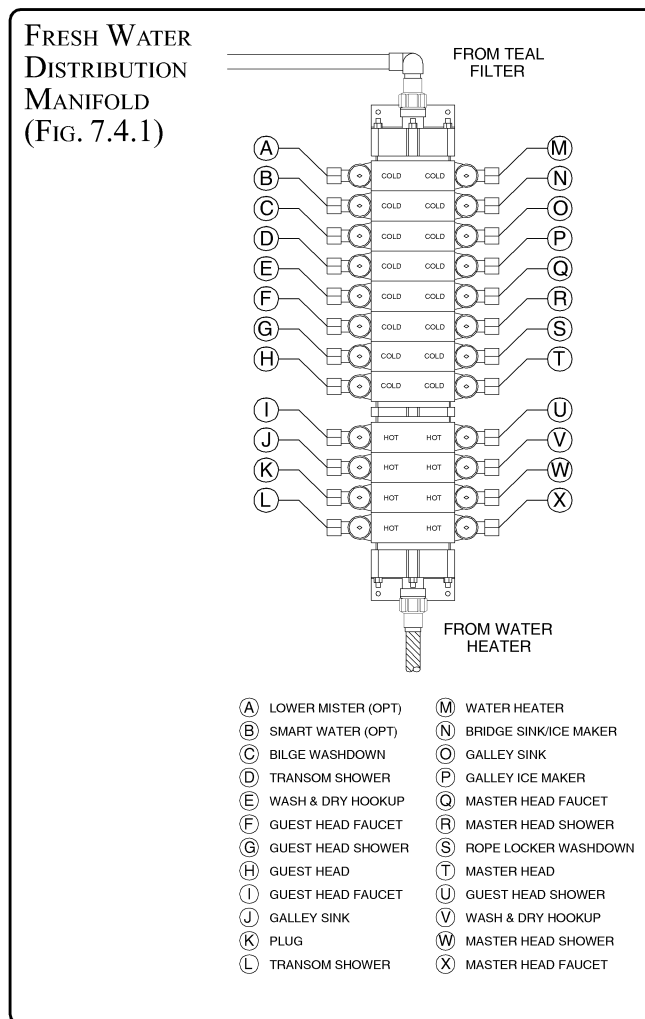
1. Prepare a chlorine solution using one (1) gallon of water and one (1) cup Clorox or Purex household bleach (5% Hypochlorite solution). With tank empty, pour chlorine solution into tank, using one (1) gallon solution for each sixty (60) gallons of tank capacity.
2. Complete filling of tank with fresh water. Open each faucet until air has been released and the entire system is filled.
3. Allow to stand for three (3) hours.
4. Drain and flush with potable fresh water.

5. To remove excessive chlorine taste or odor which might remain, prepare a solution of four (4) quarts of vinegar to twenty (20) gallons of water and allow this solution to agitate in the tank for several days by vehicle motion.
6. Drain tank and again flush with potable water.
7. Replace water filter.

### B. DISTRIBUTION MANIFOLD

The distribution manifold (Figure 7.4.1) located behind an access door in the lower aft cabinet of the master stateroom directs fresh water to the various equipment throughout the yacht.

The valves should be shut off when the equipment is not in use.



## SECTION 7 • ACCESSORIES AND OPTIONS

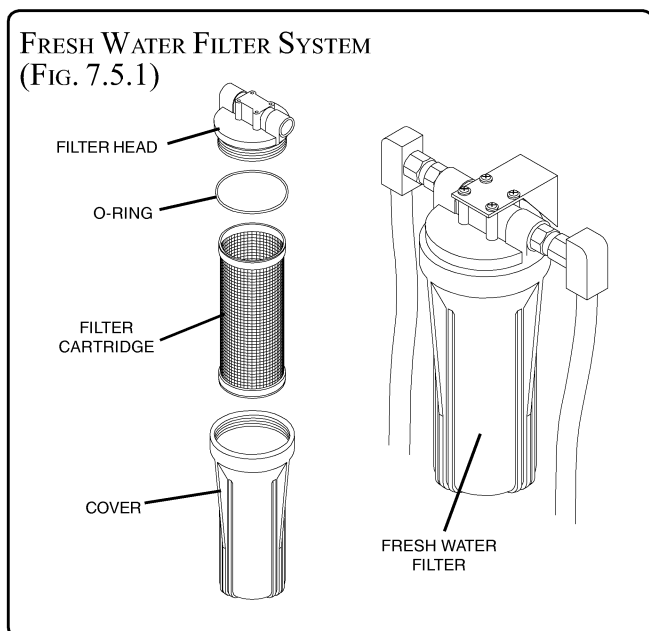
### C. WATER PUMPS & FILTERS

The pump for the fresh water system is located on the forward component board in the engine room (Figure 7.3.2).

The pump activated by the FRESH WATER PUMP breaker on the salon 24VDC distribution panel.

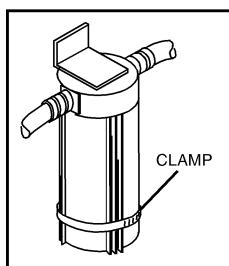
The water system filter is located on the forward component board in the engine room. (Figure 7.5.1) The filter is situated on the supply side of the pumps to filter any particles that may have passed through the pumps. The filter should be checked and cleaned periodically.

Before servicing the system, turn the FRESH WATER PUMP breakers OFF and release pressure on the system by opening a faucet.

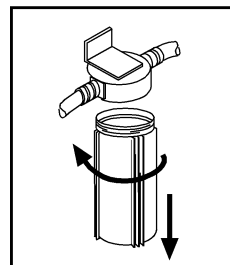


#### TO CLEAN THE FILTER:

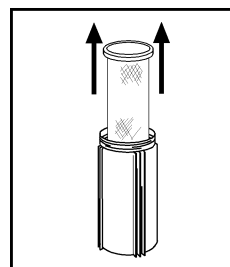
- Release the clamp at the bottom of the filter body.



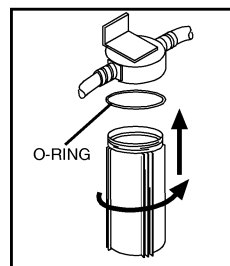
- Unscrew filter body and remove from the filter cap.



- Remove the screen and rinse with clean water.



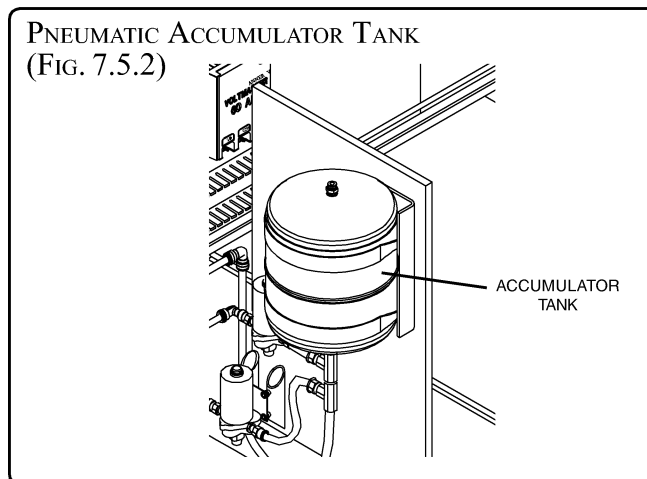
- Replace screen and screw filter body onto filter head, making sure the O-ring is in place



REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### D. WATER SYSTEM PRESSURIZATION

Water system pressure is regulated by a pneumatic accumulator tank located next to the water heater under the master stateroom bunk (Figure 7.5.2).



## SECTION 7 • ACCESSORIES AND OPTIONS

The accumulator tank smooths water flow and reduces on/off cycling of the pumps by lessening the variation in pressure and flow between the pump and the outlets in the system.

The even flow of water gives better control of hot water adjustment at the faucet.

The reduced on/off cycling reduces noise from the pump motor, and from shock pressures (pipe hammer). It also reduces battery drain, and gives longer pump life.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### E. WATER HEATER

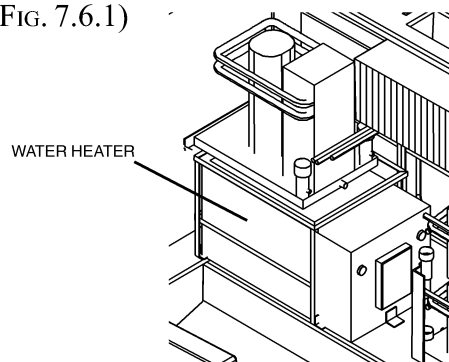
The 20 gallon (75.7 liters) water heater is located in the engine room on the port hull (Figure 7.6.1). It operates on the 240 volt dockside system or generator and has a circuit breaker on the AC main distribution panel.

The water heater has a check valve to prevent hot water from back-washing into the cold water source and a pressure relief valve to avoid damage to the heater from over pressure or excessive temperature.

#### ! WARNING

**Make certain the hot water lines are air free, indicating the water heater is full. Damage will occur to water heater if it is not full when turned on.**

HOT WATER HEATER  
(FIG. 7.6.1)



#### INITIAL START-UP OR AFTER WINTERIZATION:

1. Make sure the WATER HEATER breaker is OFF.
  2. Fill the heater with water.
  3. Open the hot water faucets until all air is eliminated from the system.
  4. Make certain the heater is full of water. **COMPLETE FAILURE OF THE HEATING ELEMENTS WILL RESULT IF THEY ARE NOT COMPLETELY IMMERSSED IN WATER AT ALL TIMES.**
  5. Turn the WATER HEATER breaker ON.
- To maintain water heater properly, drain whenever the possibility of freezing occurs and frequently inspect lines and connections for leaks.

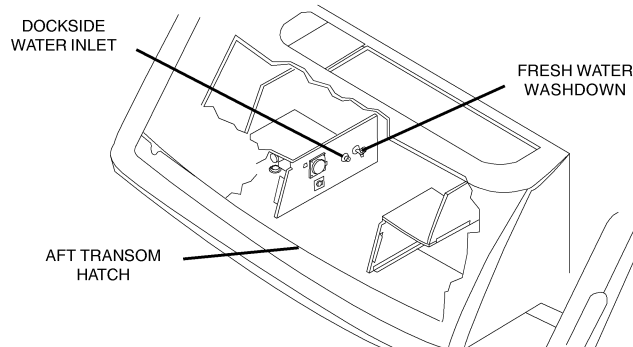
REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### F. FRESH WATER WASHDOWN

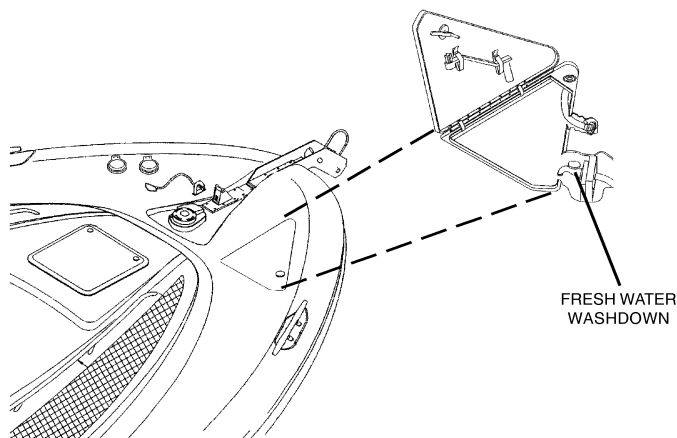
The 560 DB is equipped with four fresh water spigots; one in the bilge, one in the cockpit at the transom, one in the anchor chain locker, and one in the fish box. The bilge spigot comes with a 12-foot hose and a strap for storage when not in use. The cockpit spigot is located in the port side transom locker. The anchor chain locker spigot is accessible through the starboard bow deck hatch. The system uses water from the fresh water tank. The FRESH WATER PUMP breakers on the salon DC main distribution panel must be ON to operate the system.

## SECTION 7 • ACCESSORIES AND OPTIONS

TRANSOM DOCKSIDE WATER INLET  
(FIG. 7.7.1)



BOW DOCKSIDE WATER INLET  
(FIG. 7.7.2)



### G. DOCKSIDE WATER INLET

The dockside water inlet, located in the starboard transom locker adjacent to the cockpit shower receptacle, allows use of a dockside water source to provide water for the boat's fresh water system (Figure 7.7.1).

If your yacht is equipped with the optional bow access shore utilities package, a dockside water inlet is located in the starboard bow chain locker (Figure 7.7.2).

#### TO USE THE SYSTEM:

1. Make sure the "FRESH WATER PUMP" breakers are OFF.
2. Remove the plug from the face of the dockside water inlet.

3. Connect a drinking water hose to the water outlet on the dock, then to the dockside water inlet on the boat and turn on the water at the dock.

All fresh water faucets and showers are now usable. To disconnect the system, reverse the procedure, making sure the plug is reinstalled tightly.

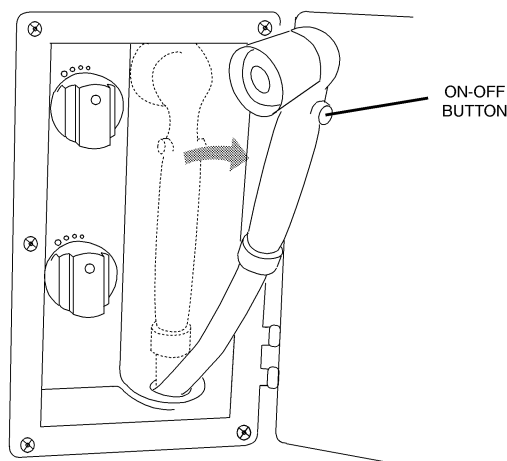
Remove the dockside water hose when leaving the boat. This is a safety precaution to prevent the unlikely event of a water system failure and the intake of extreme amounts of water to the vessel.

### H. COCKPIT SHOWER

The cockpit shower has a hot and cold control and shower wand which are located in a receptacle in

## SECTION 7 • ACCESSORIES AND OPTIONS

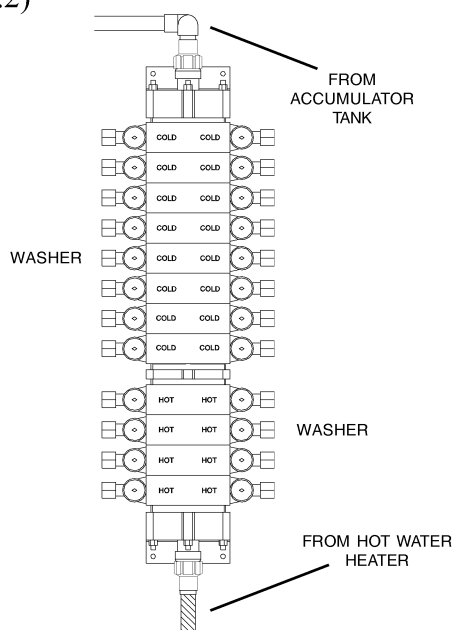
**COCKPIT SHOWER**  
(FIG. 7.8.1)



the starboard transom locker (Figure 7.8.1). Squeeze the button on the shower wand to dispense water and turn the knob to adjust water temperature. The FRESH WATER PUMP breakers on the main distribution panel must be ON to operate the shower.

### I. WASHER/DRYER WATER VALVE

**WASHER HOT/COLD VALVES**  
(FIG. 7.8.2)

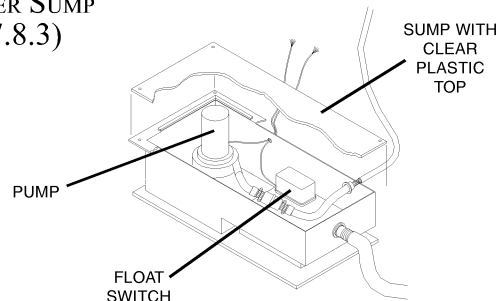


The hot and cold water shutoff valves (Fig. 7.8.2) for the clothes washer unit are located on the water manifold (Figure 7.4.1). Hot and cold water lines are connected to the back of the unit. The water valves for the unit should be turned OFF when not in use.

### J. GRAY WATER SUMP

The 560 DB is equipped with a shower/condensate sump (See Fig. 7.8.3) located under an aft floor access in the master stateroom. Gray water from the head systems, galley systems and air conditioner condensation drains into the sump to be pumped overboard (See Fig. 7.9.1).

**SHOWER SUMP**  
(FIG. 7.8.3)



The sump pump is fully automatic and protected by breakers on the main DC breaker panel on the forward bulkhead of the bilge. Periodically remove the clear cover, check and clean the pump and float switch. Check the pump and float switch for obstructions and proper working order. The sump pump comes on when there is enough water in the sump to raise the float switch and start the pump. If it does not come on after one or two gallons of water drain from the shower, turn the water off and check the pump and float switch for proper operation.

After using the shower, it is recommended that you run a gallon of clean water through the shower drain to clean out soap residue.

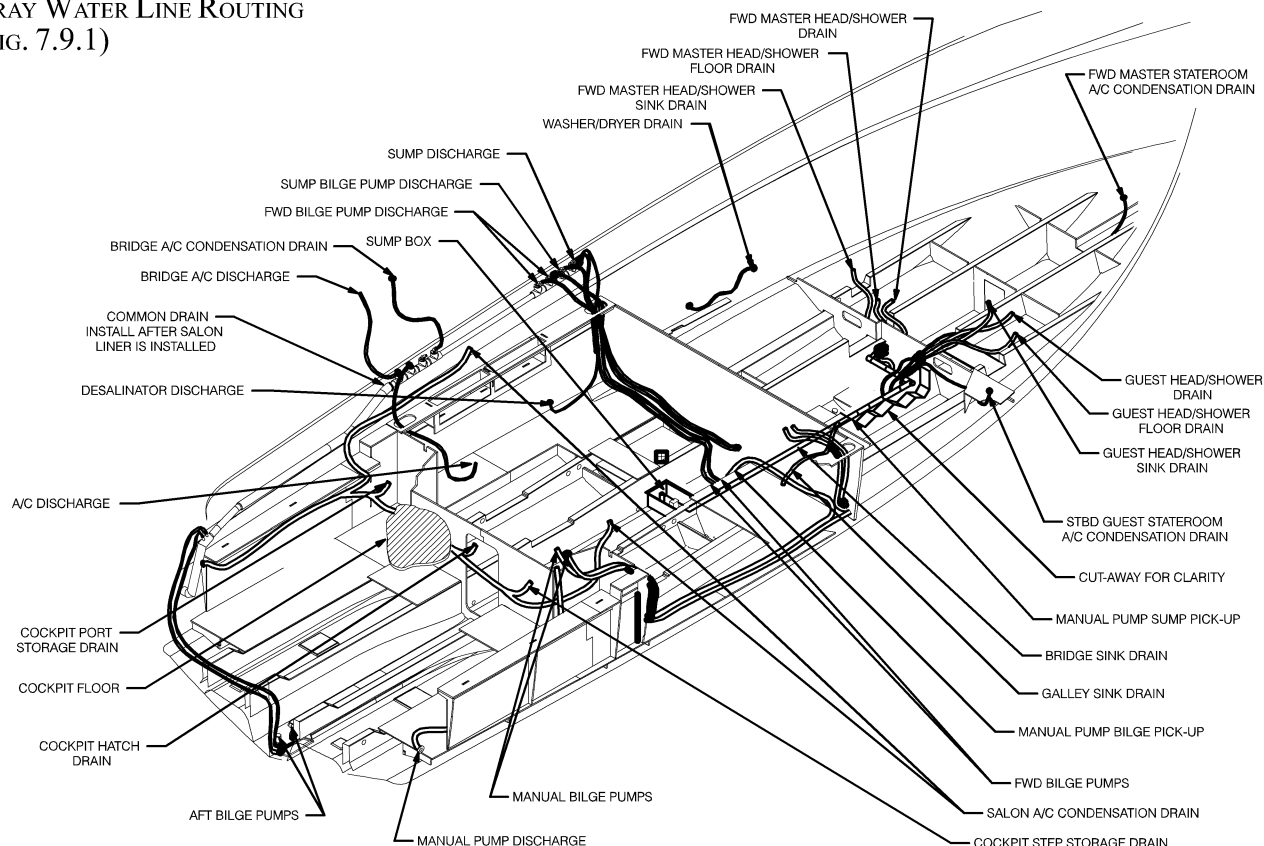
### K. SMART WATER SYSTEM (OPTIONAL)

If equipped, the optional smart water filtration system is located alongside the water system filter on the forward component board in the engine room

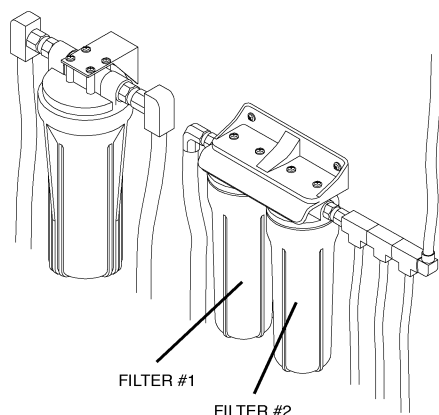


## SECTION 7 • ACCESSORIES AND OPTIONS

GRAY WATER LINE ROUTING  
(FIG. 7.9.1)



SMART WATER FILTER SYSTEM  
(FIG. 7.9.2)



(Figure 7.9.2). The system incorporates two additional filters which effectively eliminate the water of any sedimentation and unpleasant odors and taste which may be present.

The system is rated for 1,250 gallons of water throughput. However, the filters should be checked and cleaned periodically using the same method described in the servicing of the standard filtration system.

The smart water system filter #1 (Figure 7.9.2) reduces unpleasant taste and odor, dirt, rust and sedimentation which may be present.

The smart water system filter #2 (Figure 7.9.2):

- Absolute 1 micron
- Reduces 97.5% lead
- Reduces 99.98% Filterable cysts (such as cryptosporidium and giardia)
- Reduces 99.5% chlorine

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.



## SECTION 7 • ACCESSORIES AND OPTIONS

### 4. HEAD SYSTEM

The standard head system on your Sea Ray® includes a holding tank with dockside pump-out and fluid level indicators, with a macerator and overboard discharge seacock available as an option. Below is a description of the head system and options. You should be aware of whether your boat is equipped with the optional overboard discharge system and read the section pertaining to it. The owner's packet in your boat contains information pertaining to your head system that should be read carefully.



#### CAUTION

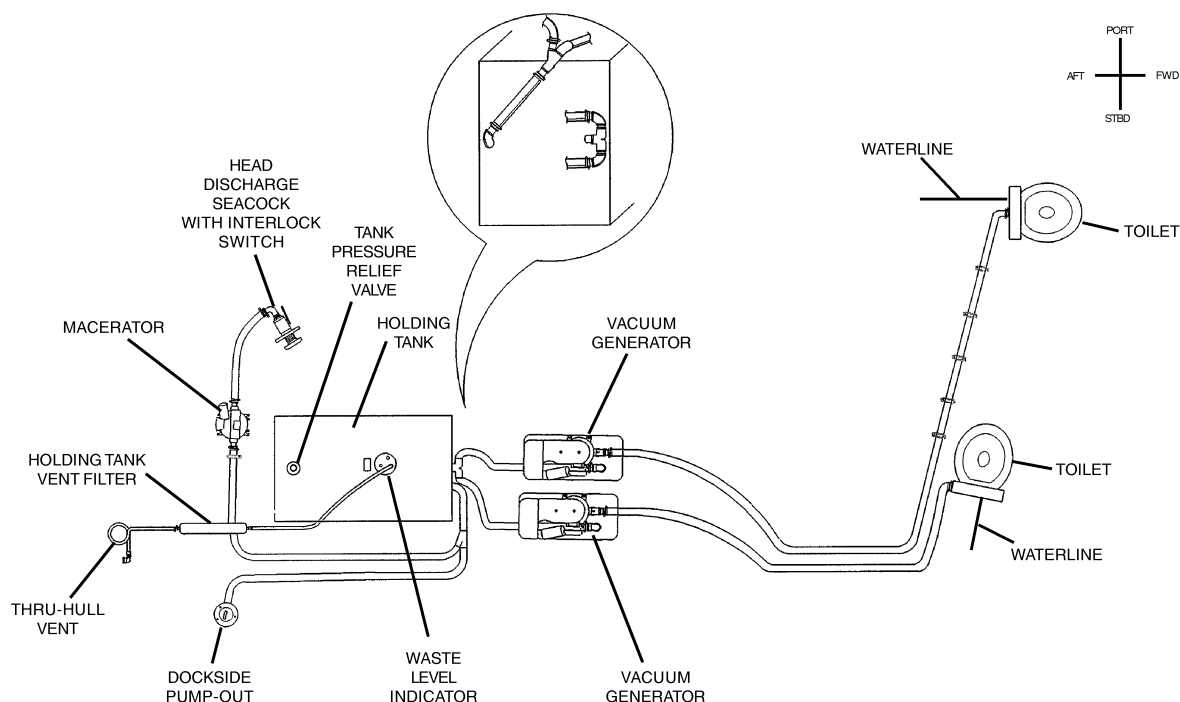
Do not flush facial tissue, paper towels or sanitary napkins in head.

#### A. REQUIREMENTS FOR VESSEL OPERATORS

The Environmental Protection Agency (EPA) standards state that in freshwater lakes,

freshwater reservoirs or other freshwater impoundments whose inlets or outlets are such as to prevent the ingress or egress by vessel traffic subject to this regulation, or in rivers not capable of navigation by interstate vessel traffic subject to this regulation, marine sanitation devices certified by the U.S. Coast Guard installed on all vessels shall be designed and operated to prevent the overboard discharge of sewage, treated or untreated, or of any waste derived from sewage. The EPA standards further state that this shall not be construed to prohibit the carriage of Coast Guard-certified flow through treatment devices which have been secured so as to prevent such discharges. They also state that waters where a Coast Guard certified marine sanitation device permitting discharge is allowed include coastal waters and estuaries, the Great Lakes and interconnecting waterways, freshwater lakes and impoundments accessible through locks, and other flowing waters that are navigable interstate by vessels subject to this regulation (40 CFR 140.3).

TYPICAL VACU-FLUSH® HEAD SYSTEM WITH HOLDING TANK & OVERBOARD DISCHARGE PUMP CONTROL (FIG. 7.10.1)



## SECTION 7 • ACCESSORIES AND OPTIONS

### B. VACU-FLUSH® HEAD

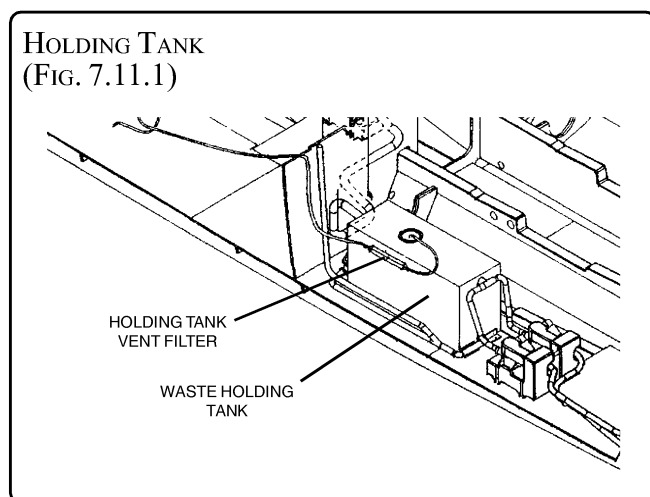
The Vacu-Flush® head utilizes the HEAD breakers on the DC distribution panel in the salon. Individual breakers on the DC distribution panel control the GUEST HEAD and MASTER HEAD. The foot pedall at the base of the toilet opens a mechanical seal and vacuum forces waste through the opening in the bowl to the vacuum generator, through the vacuum pump and then to the holding tank.

TO OPERATE VACU-FLUSH® HEAD:

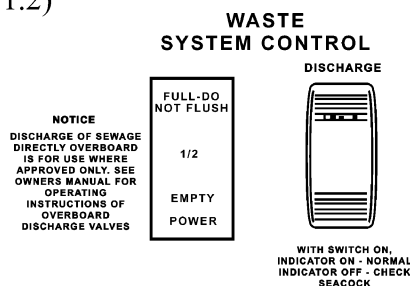
1. Turn ON the FRESH WATER PUMP breaker.
2. Turn ON the HEAD SYSTEM breaker.
3. If there is no water in bowl, lift foot pedal until enough water fills the bowl.
4. To flush, depress foot pedal to floor until bowl is clear.

### C. HOLDING TANK OPERATION

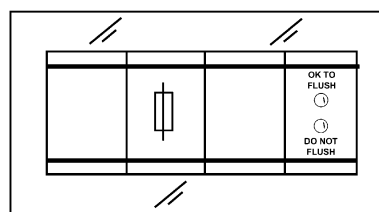
Waste from the head is directed into the holding tank located in the engine room outboard of the starboard engine (Figure 7.11.1). The holding tank fluid level indicator is located on the main distribution panel and in each head which indicates "POWER," "1/2" and "FULL-DO NOT FLUSH." (Figure 7.11.3) When the "FULL-DO NOT FLUSH" light is on, the holding tank must be emptied before the head can be reused. However it would be a good practice to empty the holding tank when the "1/2" light is on to avoid overflowing the holding tank and ruining the vent filter.



WASTE LEVEL INDICATOR AND DISCHARGE CONTROL (FIG. 7.11.2)



INDIVIDUAL HEAD, WASTE LEVEL INDICATOR (FIG. 7.11.3)



To empty the holding tank, the services of a dockside pump out station will be needed. Follow instructions at the station and make sure pump out station hose is inserted into the deck plate marked WASTE, located on the port side of the transom.

The holding tank can also be emptied by the optional macerator. See MACERATOR DISCHARGE PUMP, page 7.12.

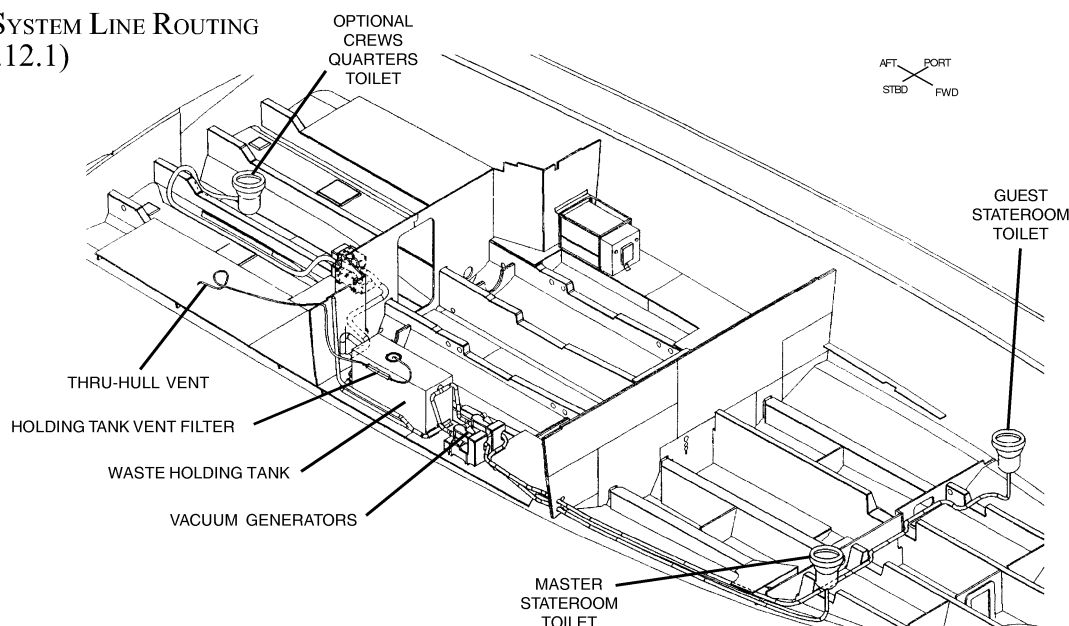
### D. VENT FILTER

The vent filter is designed to control odors associated with the head system operations. The vent filter is located on the engine room aft bulkhead. **The filter must be changed at the beginning of each boating season to be effective.** The vent filter is installed in-line on the holding tank ventilation hose (Figure 7.12.1).

**NOTE:** Do not overfill the holding tank as this will flood the vent filter and render it useless. Filter replacement will then be required. See Parts Manual for correct replacement filter.

## SECTION 7 • ACCESSORIES AND OPTIONS

HEAD SYSTEM LINE ROUTING  
(FIG. 7.12.1)



### 5. MACERATOR DISCHARGE PUMP WITH SEACOCK INTERLOCK SYSTEM (OPTIONAL)

The optional macerator gives the boat operator the means of discharging the holding tank contents directly overboard through a seacock in the bottom of the hull. This is available in conjunction with the dockside pump out.

Since direct overboard discharge is prohibited in many areas, the macerator seacock is normally closed. The macerator seacock is equipped with a system interlock switch which prevents the operation of the macerator when the macerator seacock is closed. The light on the MACERATOR switch on the DC Distribution Panel will be lighted when the macerator is operational. If the light is not lighted, it is visual confirmation the macerator seacock is closed and that the macerator cannot

be operated. Check that the macerator seacock handle is in the open position and the light on the switch is lighted before operating the macerator.

#### NOTICE

**There is the possibility of being fined for having an operable overboard discharge in U.S. waters. Removing handle of seacock while in closed position, or other means must be utilized to avoid fine.**

#### NOTICE

**This boat may be equipped with an optional overboard discharge valve.**

**Discharging of sewage directly overboard is for use where approved only.**

#### TO OPERATE THE MACERATOR:

1. Turn ON the DISCHARGE PUMP breaker on the salon DC distribution panel and open the waste discharge seacock located on the bilge floor.
2. Operate DISCHARGE switch under the WASTE SYSTEM CONTROL area on the main distribution panel.
3. When tank is empty, release the switch and close waste discharge seacock.

#### MAINTENANCE

Prior to each use and at regularly scheduled intervals, cycle the macerator seacock handle open and shut to ensure proper operation of the seacock.



## SECTION 7 • ACCESSORIES AND OPTIONS

### 6. COMMUNICATION SYSTEM

Your 560 DB is equipped with a C-Phone® on-board communication system and a dockside telephone hookup.

C-Phone® stations are located on the port side of the pilot house control station and behind the access door on the starboard side of the operator chair on the bridge control station and in various locations throughout the yacht. These stations provide capabilities for an intercom, telephone, paging/hailing, security alert, automatic foghorn signalling and cellular telephone interface.

#### A. DOCKSIDE TELEPHONE HOOKUP

The dockside telephone hookup can be accessed by opening the transom hatch (see Fig. 7.13.1). A fifty foot shore cord with waterproof connectors is supplied.

##### TO CONNECT TELEPHONE SYSTEM:

1. Unscrew and lift cover plate.
2. Connect shore cord to dock telephone inlet and then to the boat inlet (see Fig. 7.13.1).
3. Telephone system is now operational.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### 7. ENTERTAINMENT CENTERS

#### A. SALON ENTERTAINMENT CENTER

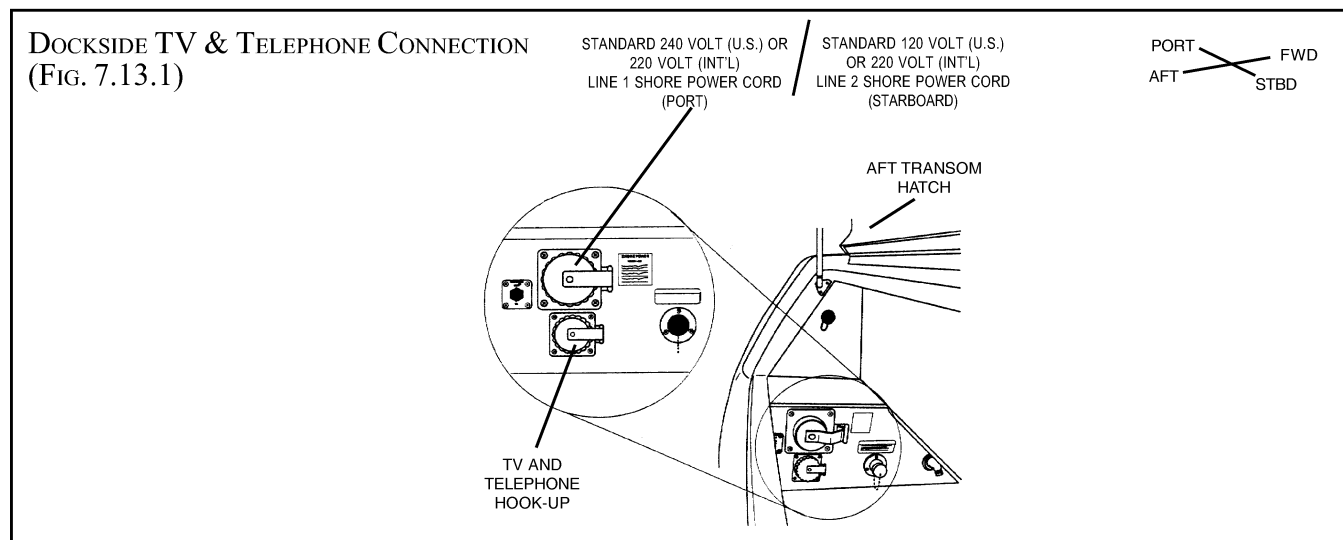
The salon entertainment center consists of a 25" television with remote and video cassette recorder with remote located on top of the galley counter and a Bose® stereo system located behind an access door on the aft, port side of the salon. The 120 volt ENTERTAINMENT CENTER on the main distribution panel breaker must be ON to operate the system.

The system has two (2) speakers in the salon with a subwoofer under the salon sofa. Speakers in the master and guest staterooms are optional.

Note: The television/VCR and stereo systems are plugged into a surge suppression power strip located behind the entertainment center.

#### B. MASTER AND GUEST STATEROOM ENTERTAINMENT CENTER

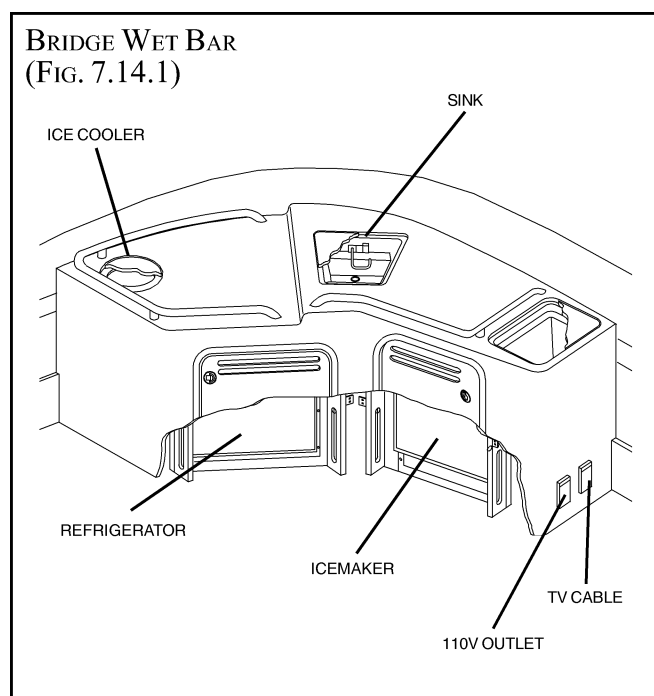
The stateroom entertainment centers consist of a television/VCR/Radio combination unit with remote and a Bose Acoustimas 3 speaker system. To operate, turn ON the 120 volt "MASTER or GUEST STATEROOM" breaker on the main distribution panel.



## SECTION 7 • ACCESSORIES AND OPTIONS

### C. BRIDGE CENTER

The bridge entertainment center consists of a 12V Clarion® AM/FM digital cassette stereo with a 6-disc CD changer located in the salon entertainment center. A remote control for the system is located on the port side of the cockpit. The system has six (6) speakers located throughout the bridge and cockpit.



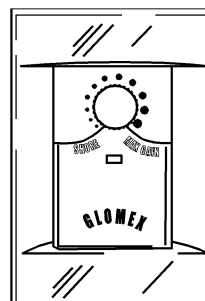
### D. BRIDGE WET BAR

The bridge wet bar consist of a 110V refrigerator, icemaker, 110V outlet, TV cable connection, a sink with running water, a cooler, and a garbage can. The bridge/cockpit breaker on the main distribution panel must be on to operate the refrigerator and icemaker (Figure 6.12.1)

### E. TV SIGNAL SELECTOR

The antenna/cable selector panel (Figure 7.14.2) is located behind access door on starboard wall in the aft salon. Turn the selector to MAX GAIN for onboard TV antenna reception. Turn the selector to SHORE for dockside cable reception.

TV SIGNAL SELECTOR  
(FIG. 7.14.2)



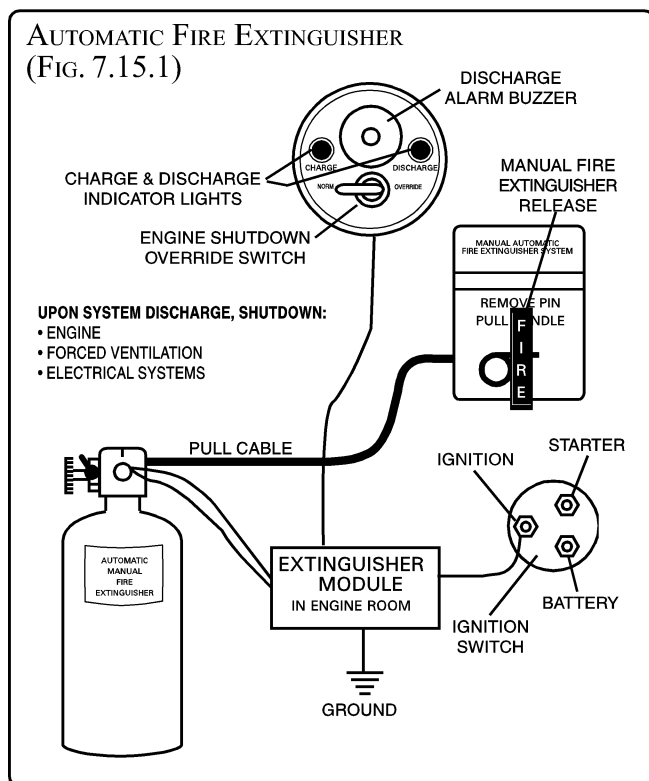
## 8. AUTOMATIC FIRE EXTINGUISHER SYSTEM

The 560 DB is equipped with a dual automatic fire extinguisher system. One is located in the engine room and the other is located in the lazarette (Figure 4.16.1). In the event of a fire, the heat sensitive automatic head will release the extinguishant as a vapor, totally flooding the area in fire-killing concentrations. The system indicator light is wired to the ignition and is turned ON when the ignition is turned ON.

The system incorporates an engine shutdown switch with override system.

The indicator light, located on the control station instrument panel, indicates to the helmsman when the unit has discharged. Under normal circumstances, when the engines are operating, the charge indicator light is lit. If the unit discharges, the charge light will go out and the discharge light will come on.

## SECTION 7 • ACCESSORIES AND OPTIONS



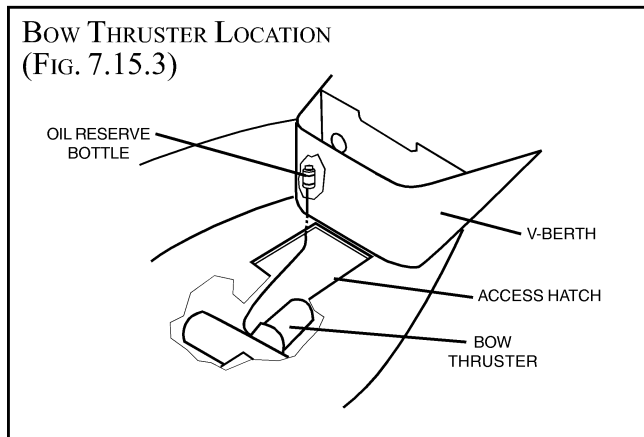
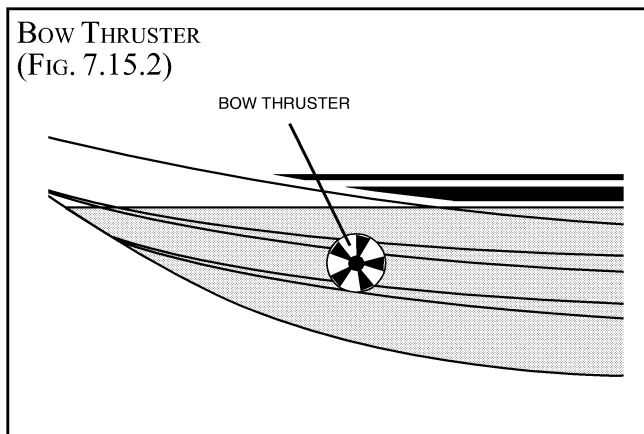
**WHEN ACTUATION OCCURS, IMMEDIATELY SHUT DOWN ALL ENGINES, POWERED VENTILATION, ELECTRICAL SYSTEMS AND EXTINGUISH ALL SMOKING MATERIALS. DO NOT IMMEDIATELY OPEN THE ENGINE COMPARTMENT!! THIS FEEDS OXYGEN TO THE FIRE AND FLASHBACK COULD OCCUR.**

Allow the extinguishant to “soak” the compartment for at least fifteen (15) minutes and for hot metals or fuels to cool before cautiously inspecting for cause of damage. Have portable extinguishers at hand and ready. Do not breathe fumes or vapors caused by the fire.

REFER TO OWNER’S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### 9. OPTIONAL BOW THRUSTER

The optional bow thruster is electrically driven and gives the operator more maneuverability of the bow. The bow thruster motor is located under a hatch in the V-berth (see Fig. 7.15.3).



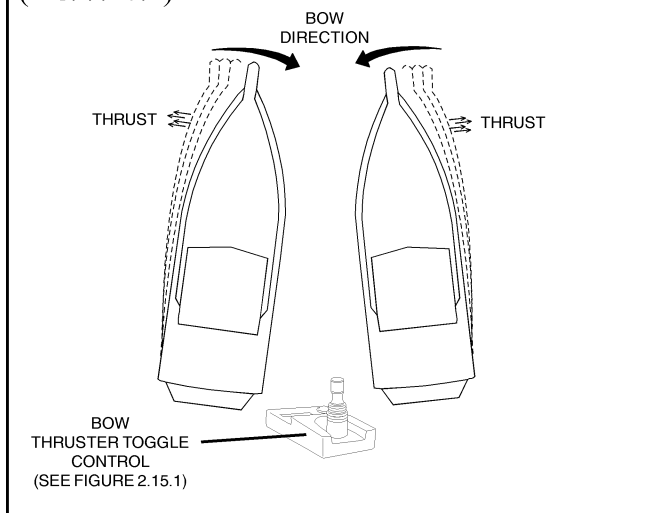
The BOW THRUSTER MAIN switch is located on the control station switch panels (Figure 2.16.1) and the joy stick control panel with station enabled indicator light (Figure 7.16.1) is located at the helm (Figure 2.15.1).

The bow thruster motor is equipped with an internal thermally activated breaker. The thermal breaker protects the motor from overheating. When the thermal breaker is activated the thruster motor will not operate and must be allowed to cool down for normal operation.



## SECTION 7 • ACCESSORIES AND OPTIONS

**BOW THRUSTER OPERATION**  
(FIG. 7.16.1)



REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

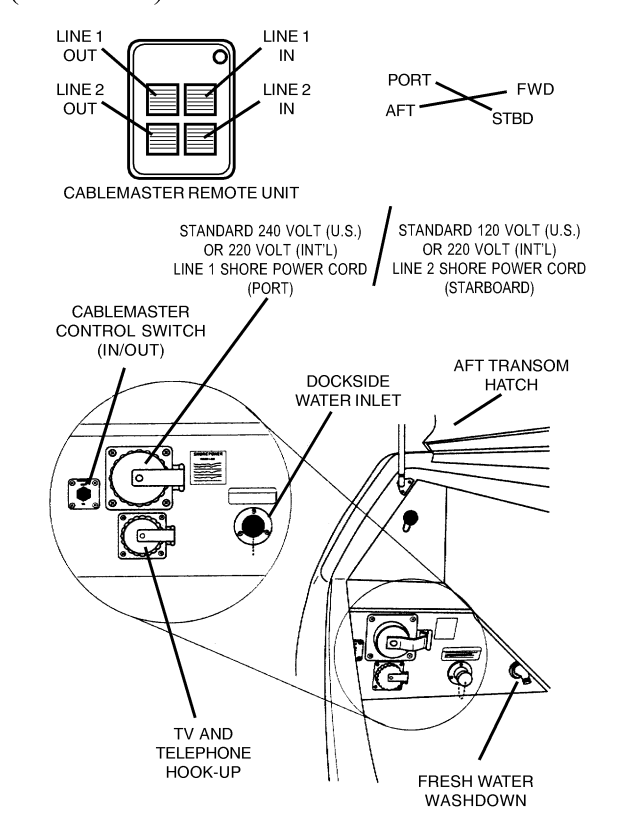
### 10. CABLEMASTER WITH REMOTE (OPTION) (AUTOMATIC SHORE POWER CORD ADVANCE/RETRIEVE SYSTEM)

Your Sea Ray® is equipped with the Cablemaster shore power cord system located on the port transom (Figure 7.16.2). The system will advance and retrieve the shore power cord(s) as needed to hook up the shore power system. The circuit breaker is located on the DC breaker panel in the aft port side of the engine room.

#### TO OPERATE CABLEMASTER:

1. Remove shore power cord cover.
2. Press the control switch to the OUT position to advance cable to the shore power hookup, or the IN position to rewind cable for storage. This is a momentary switch which returns automatically to the center OFF position.
3. For remote operation, leave the regular Cablemaster switch in the center OFF position.
  - a. By pressing the buttons on the remote unit, you will be able to advance and retrieve the cable. Two (2) points should be observed when using the Cable-Control system:

**CABLEMASTER**  
(FIG. 7.16.2)



- There is a slight delay (less than one (1) second) between pressing the transmitter button and operation of the Cablemaster system. This gives the radio transmitter and receiver time to establish communications and for the transmitter to provide the receiver with the appropriate instructions.
- When using the Cable-Control Radio Control system, the regular Cablemaster switch should be left in the center OFF position. The regular switch is still fully operational when the Cable-Control system is not used.



## SECTION 7 • ACCESSORIES AND OPTIONS

### 11. REFRIGERATOR/FREEZER

The REFRIGERATOR/FREEZER breaker on the main distribution panel supplies power to the unit. To operate dockside, connect the shore power system, turn the MAIN breaker(s) ON. Then turn the REFRIGERATOR/FREEZER breaker on the AC main distribution panel and the switch on the bottom of the unit ON.

#### TO REMOVE THE REFRIGERATOR/FREEZER:

1. Turn the REFRIGERATOR/FREEZER breakers OFF.
2. Remove panel in back of cabinet under galley sink.
3. Turn OFF icemaker water valve located under the galley sink, and disconnect water line at refrigerator/freezer.
4. Peel back the carpet.
5. Remove screws securing unit to floor.
6. Pull unit straight out and unplug.

#### A. BRIDGE REFRIGERATOR/FREEZER WITH ICE MAKER

The bridge refrigerator/freezer is located under the bridge wet bar at the top of the bridge steps on the starboardside (Figure 7.23.1).

#### B. SALON REFRIGERATOR

The salon refrigerator (Figure 7.23.1) is located in a cabinet forward of the port salon sofa.

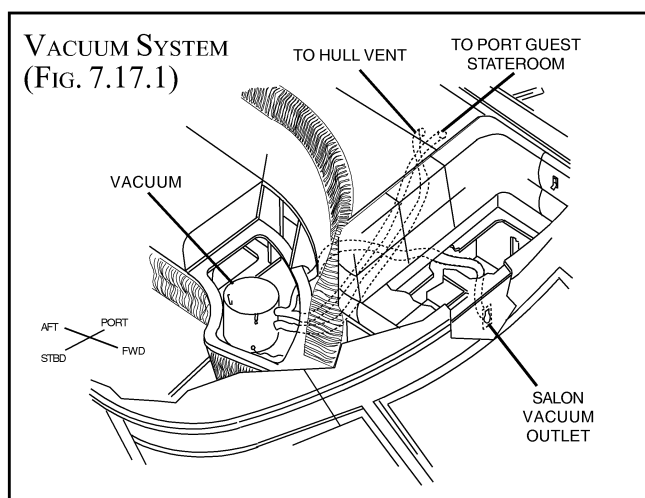
#### C. SALON FREEZER WITH ICE MAKER

The salon freezer (Figure 7.23.1) is located in a cabinet forward of the port salon sofa.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION

### 12. POWER VENTILATION SYSTEM

The power ventilation system removes stagnant & foul air from the master stateroom head, galley and guest head by means of 24 volt exhaust fans. They are powered by the CABIN MAIN breaker on the DC main distribution panel in the bilge and individually turned on and off by the power vent switch in the heads and the galley.



### 13. CENTRAL VACUUM SYSTEM

The central vacuum unit is located under the forward end of the port salon sofa (Figure 7.17.1). The "SALON" breaker must be ON to operate the system. The 24 foot hose connects to the inlets located in the dinette and guest port stateroom. The built in switch on the hose inlet fitting activates the vacuum when the hose is plugged in.

### 14. COFFEE MAKER

The drip coffee maker operates on the 120 volt system. It is protected by the GALLEY SYSTEMS breaker on the main distribution panel which must be ON to operate the coffee maker.

To keep the coffee maker operating efficiently, the mineral deposits left by water must be flushed out using the cleaning method described in the instruction booklet.



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## SECTION 7 • ACCESSORIES AND OPTIONS

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### To remove coffee maker:

1. Make sure the GALLEY SYSTEMS breaker is OFF.
2. Remove the carafe and water reservoir.
3. Remove the screws located inside the coffee maker cabinet.
4. Slide out coffee maker and unplug.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION

## 15. STOVE & MICROWAVE

### A. ELECTRIC STOVE

The 240 volt STOVE breaker on the main distribution panel supplies power to the stove and must be ON to operate the stove.

The stove has three (3) burners with control knobs to provide a variation of heat.

A stove power safety switch is installed on the cover recess. When the stove cover is installed it depresses the switch turning power OFF to the stove control knobs.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### B. MICROWAVE/CONVECTION OVEN

The 120V MICROWAVE breaker on the AC main distribution panel supplies power to the microwave and must be ON to operate the unit.

**NOTE:** Turn on the galley power ventilation system when operating the convection oven.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

## 16. WASHER & DRYER

The washer/dryer is a single front load washing and drying combination unit. The unit operates on the "WASHER/DRYER" breaker on the AC main distribution panel.

The washer/dryer is connected to hot and cold water. The supply valves should only be on when the unit is being used. The dryer lint filter can be cleaned by opening the access hatch located on the bottom of the cabinet above the washer/dryer unit.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

## 17. HYDRAULIC SWIM PLATFORM (OPTIONAL)

The swim platform is powered through the SWIM PLATFORM thermal breaker (Figure 6.3.1) located in the engine room on the forward bilge component board and is operated by a remote control unit located behind the starboard access door on the transom (Figure 7.19.1).

### A. TO OPERATE REMOTE:

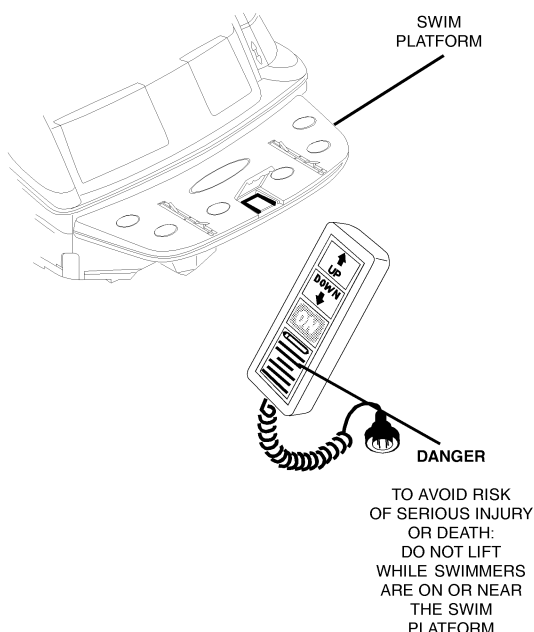
Plug the remote into the remote power plug (Figure 7.19.1), switch on the remote actuation switch and operate the swim platform by depressing the desired button on the remote. The remote is located in the port side cockpit storage.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.



## SECTION 7 • ACCESSORIES AND OPTIONS

OPTIONAL SWIM PLATFORM  
(FIG. 7.19.1)



### 18. DIGITAL SATELLITE SYSTEM (DSS) (OPTIONAL)

If equipped, the digital satellite system is located on the hardtop (Figure 7.25.1) and is powered by an ON/OFF switch located in the salon. Also included next to the ON/OFF switch is a data port for computer-aided diagnostics of the system. The data port is for use by qualified technicians only.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### 19. CARBON MONOXIDE MONITORS

The 560 DB is equipped with a carbon monoxide (CO) monitor in every room of the boat. The CO monitor is an electronic instrument that detects CO. When there is a build-up of CO in any room, the monitor in that room will alert the occupants by a flashing DANGER light and alarm.

It is important that you read and understand the CO monitor information and operating instructions. It is extremely important that you become familiar with the CO monitor and its functions.

### 20. TRASH COMPACTOR (OPTIONAL)

If equipped, the trash compactor is powered by a breaker on the 120V Main Distribution Panel in the salon (Figure 6.12.1) and is located in the galley forward of the refrigerator.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### 21. CANVAS

It is recommended that you read Section 1 • *Safety*, pages 1.2 thru 1.4 and understand the effects of exhaust emissions.

#### A. CARE & MAINTENANCE

Care and maintenance instructions have been provided by the canvas manufacturer for the canvas used on your Sea Ray®. The information can be found in the owner's manual packet.

By following the provided instructions, your canvas set will give you protection from the elements and comfort that you expect. Most of all, the instructions provide you with installation and removal procedures that will simplify the task.



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## SECTION 7 • ACCESSORIES AND OPTIONS

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### STANDARD 560 DB CANVAS:

|                        |                     |
|------------------------|---------------------|
| 1 Windshield cover     | 1 Aft Sedan Bridge  |
| 2 Windshield side      | Enclosure (5 pcs.)  |
| Curtains               | 1 Cockpit Enclosure |
| 1 Forward Sedan Bridge | (5 pcs.)            |
| Enclosure (7 pcs.)     |                     |

Components of your canvas set consist of zipper tracks, and snaps. These components can be found in the parts manual located in the Owner's Manual Packet.

### B. STORAGE

- Do not fold or store any of the canvas set pieces while wet. All canvas should be rolled or folded when dry and stored in a clean, dry place.
- For clear vinyl pieces, rolling or laying down flat are the recommended methods for storage. The clear vinyl should never be folded or creased as cracking will result. To protect the clear vinyl from rubbing against itself while rolled or stored flat, place a piece of very soft, nonabrasive cloth between the pieces, or rolled up in it. If the surface of your clear vinyl becomes scratched, the canvas manufacturer has provided a canvas care sheet in your Owner's Manual Packet.

### C. INSTALLATION TIPS:

- Attached the roped zipper strips forward and aft by inserting into the channel around the hard top. Once installed, it is not necessary to remove the zipper strips from the hard top.
- When attaching any of the pieces of the canvas set, attach the top edges first and zip the zippers only partially. This helps to hold the piece in place and relieves tension, helping the other side zip or snap easier. After all of the sides of the piece are secure, then finish zipping the top of each piece. This will ensure a tight fit.

REFER TO OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### D. CANVAS INSTALLATION

#### SEDAN BRIDGE ENCLOSURE

The forward enclosure consists of seven (7) pieces. Partially zip each panel at the top, to the zipper track, attach the fasteners at the bottom of the panels to the windshield cap. Finish by zipping all around.

The aft enclosure, five (5) pieces, is attached similarly, with the zipper tracks and fasteners on the bridge cockpit. Attach the side curtains first and then continue by attaching the aft curtains .

#### WINDSHIELD COVER

The Windshield cover is installed by attaching to the fasteners on the forward bottom edge of the windshield, complete installation by attaching to the fasteners on the side windshield column.

#### SIDE WINDOW CURTAINS

Install the side curtains by attaching to the fasteners located around the perimeter of the window.

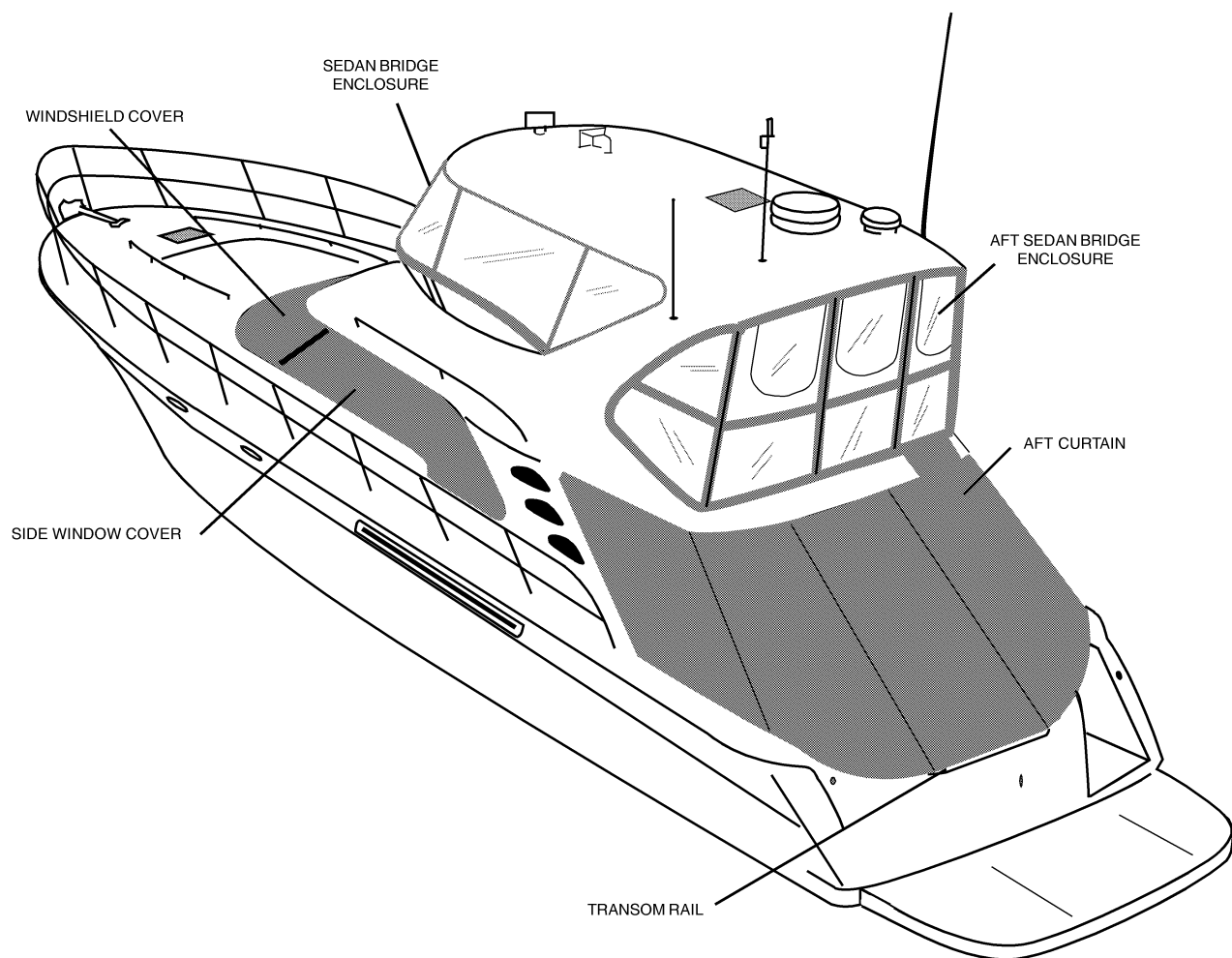
#### COCKPIT ENCLOSURE

Attach the side curtains first by partially zipping to zipper track at top, attach the remaining cockpit curtains in the same manner. Next attach the bottom of the curtains to the fasteners around the cockpit and transom. Finish by zipping all around.



## SECTION 7 • ACCESSORIES AND OPTIONS

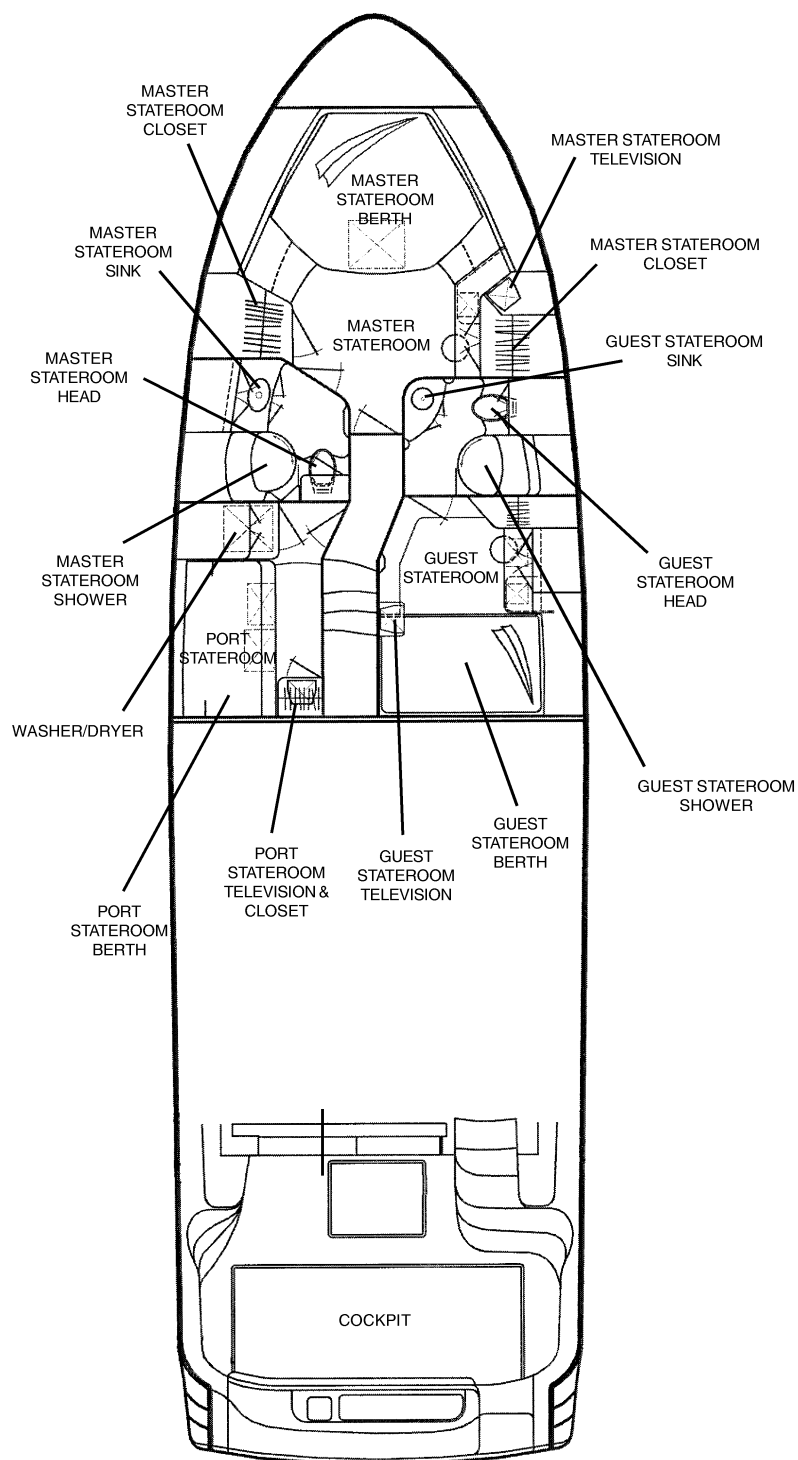
560 DB CANVAS  
(FIG. 7.21.1)



## SECTION 7 • ACCESSORIES AND OPTIONS

### 22. FLOOR PLAN

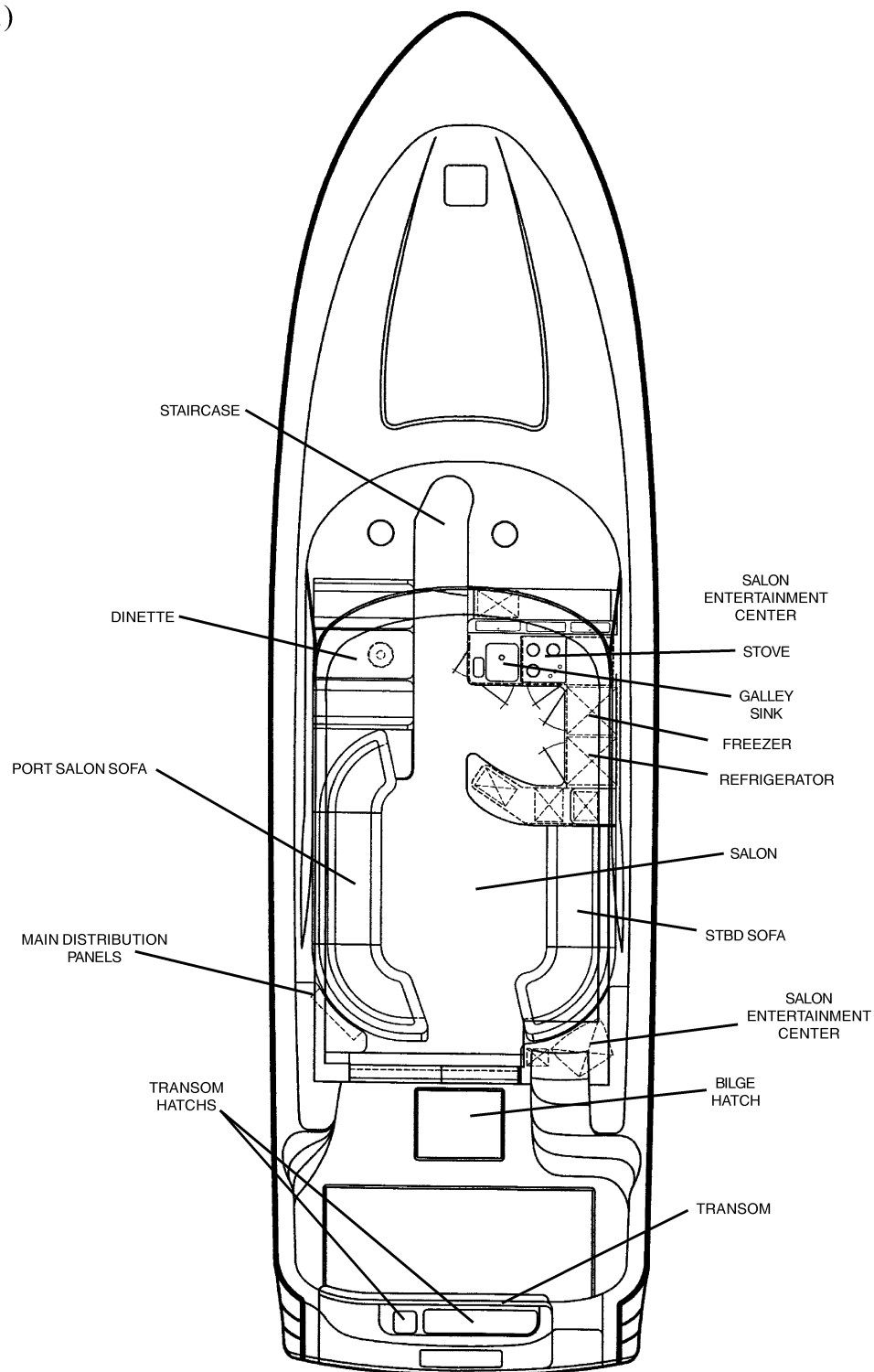
LOWER LEVEL  
(FIG. 7.22.1)



## SECTION 7 • ACCESSORIES AND OPTIONS

### FLOOR PLAN

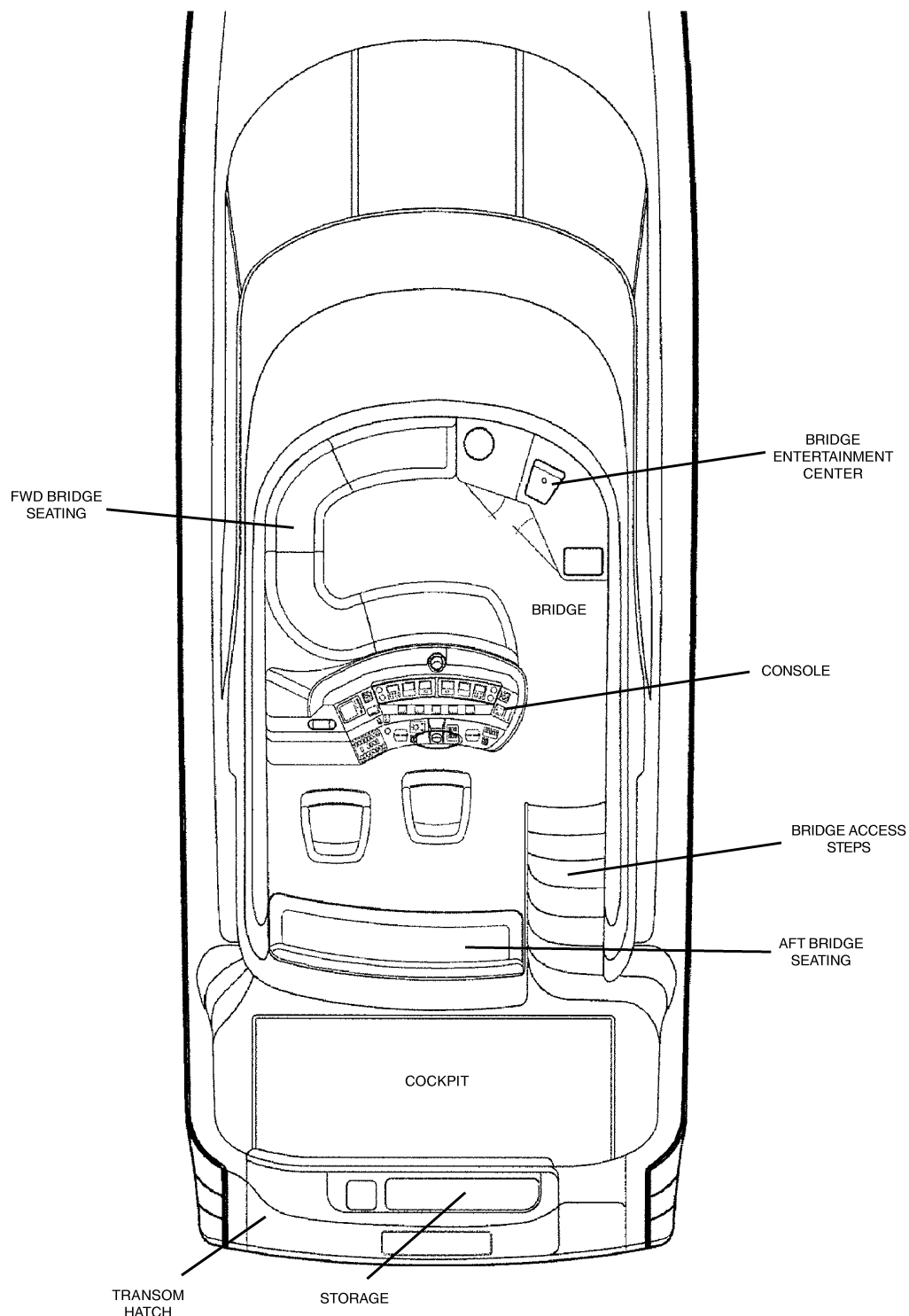
MID LEVEL  
(FIG. 7.23.1)



## SECTION 7 • ACCESSORIES AND OPTIONS

### FLOOR PLAN

BRIDGE  
(FIG. 7.24.1)

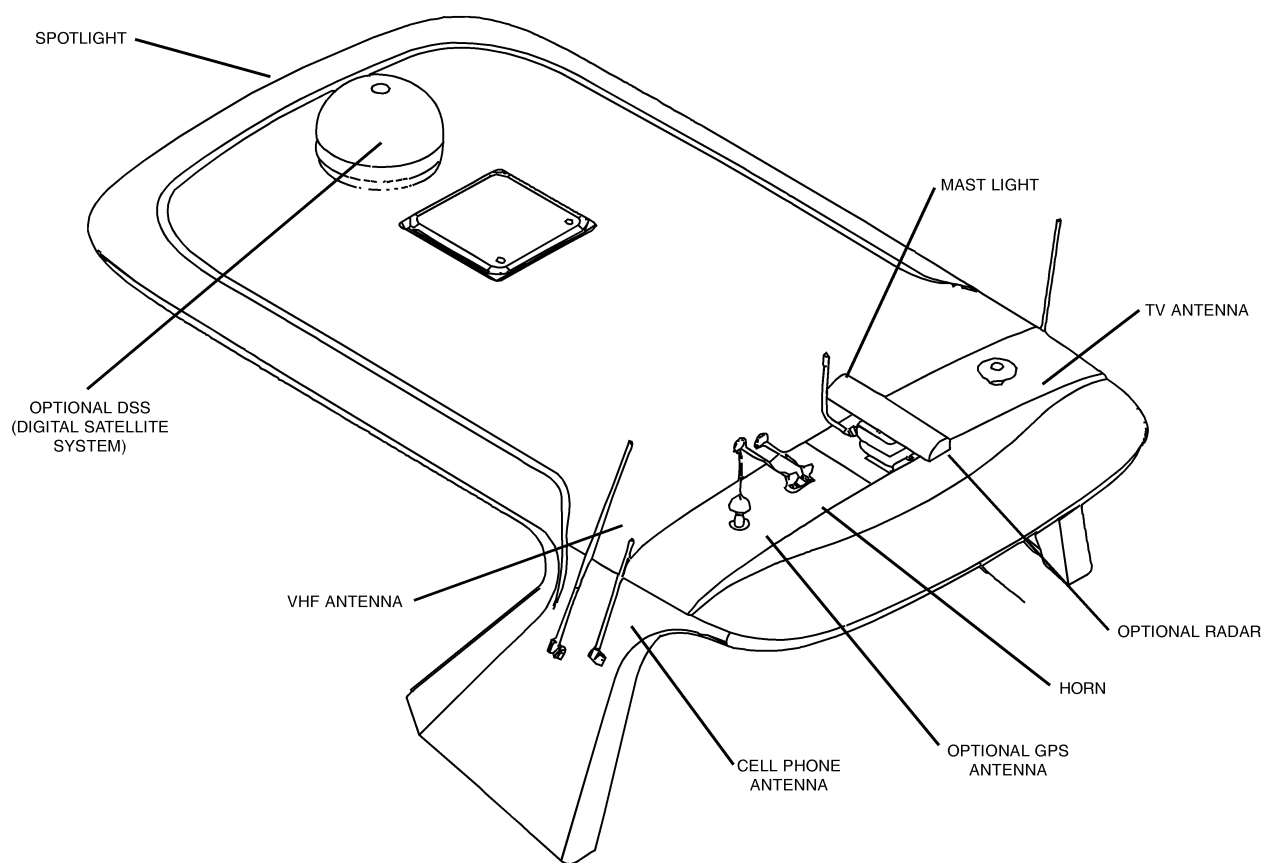




## SECTION 7 • ACCESSORIES AND OPTIONS

### 23. HARDTOP ACCESSORIES

HARDTOP  
(FIG. 7.25.1)



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## SECTION 7 • ACCESSORIES AND OPTIONS

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## SECTION 8 • SERVICE INFORMATION

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### 1. USEFUL SERVICE INFORMATION

OWNER \_\_\_\_\_

HOME PORT \_\_\_\_\_

BOAT NAME \_\_\_\_\_

REGISTRATION NUMBER \_\_\_\_\_ STATE \_\_\_\_\_

HULL SERIAL NUMBER \_\_\_\_\_

WARRANTY REGISTRATION DATE \_\_\_\_\_

ENGINE MAKE & MODEL \_\_\_\_\_

SERIAL NUMBER PORT \_\_\_\_\_ STARBOARD \_\_\_\_\_

GEAR MAKE & REDUCTION RATIO \_\_\_\_\_

SERIAL NUMBER PORT \_\_\_\_\_ STARBOARD \_\_\_\_\_

PROPELLER SIZE PORT \_\_\_\_\_ STARBOARD \_\_\_\_\_

PART NUMBER PORT \_\_\_\_\_ STARBOARD \_\_\_\_\_

SHAFT SIZE (DIAMETER X LENGTH) \_\_\_\_\_ MATERIAL \_\_\_\_\_

FUEL CAPACITY FORWARD TANK \_\_\_\_\_ AFT \_\_\_\_\_

WATER CAPACITY \_\_\_\_\_

KEY NUMBER, IGNITION \_\_\_\_\_ DOOR \_\_\_\_\_

SELLING DEALER \_\_\_\_\_

CITY & STATE \_\_\_\_\_

LENGTH \_\_\_\_\_ BEAM \_\_\_\_\_ DRAFT \_\_\_\_\_

VERTICAL CLEARANCE \_\_\_\_\_

ESTIMATED WEIGHT \_\_\_\_\_

GENERATOR SERIAL # \_\_\_\_\_ MODEL # \_\_\_\_\_ KILOWATTS \_\_\_\_\_



## SECTION 8 • SERVICE INFORMATION

### USEFUL SERVICE INFORMATION

REFER TO THIS MANUAL AND/OR YOUR ENGINE OPERATOR'S MANUAL FOR DETAILS.

|   | BEFORE<br>EVERY<br>USE | AFTER<br>FIRST<br>20 HRS. | EVERY<br>50<br>HOURS | EVERY<br>100<br>HOURS | ANNUALLY |
|---|------------------------|---------------------------|----------------------|-----------------------|----------|
| CHECK ENGINE OIL LEVEL  | ●                      |                           |                      |                       |          |
| CHANGE ENGINE OIL   |                        |                           |                      | ●                     | ●        |
| CHECK GENERATOR OIL LEVEL   | ●                      |                           |                      |                       |          |
| REPLACE OIL FILTER  |                        |                           |                      | ●                     | ●        |
| REPLACE ENGINE MOUNTED FUEL FILTER  |                        |                           |                      | ●                     |          |
| CHECK TRANSMISSION FLUID LEVEL  | ●                      |                           |                      |                       |          |
| CHANGE TRANSMISSION FLUID**   |                        |                           |                      |                       | ●        |
| CLEAN CRANKCASE VENTILATING SYSTEM  |                        | ●                         |                      | ●                     |          |
| CLEAN TRANSMISSION OIL STRAINER SCREEN*                                   |                        |                           |                      |                       | ●        |
| CHECK COOLING SYSTEM HOSES & CONNECTIONS FOR LEAKS (WITH ENGINES RUNNING) | ●                      |                           |                      |                       |          |
| TIGHTEN ENGINE MOUNT FASTENERS  |                        | ●                         |                      |                       | ●        |
| CHECK FOR LOOSE, DAMAGED OR MISSING PARTS                                 | ●                      |                           |                      |                       |          |
| CHECK PICK-UP & WATER IMPELLERS*  |                        |                           |                      |                       | ●        |
| CHECK ACCESSORY DRIVE BELTS   | ●                      |                           |                      |                       |          |
| CHANGE ANTIFREEZE   |                        |                           |                      |                       | ●        |
| CLEAN AIR CLEANERS  |                        | ●                         |                      | ●                     |          |
| CHECK ZINCS IN HEAT EXCHANGER   | EVERY 25 HOURS         |                           |                      |                       |          |
| CHECK SEA WATER STRAINERS & SEACOCKS                                      | ●                      | ●                         | ●                    |                       |          |
| LUBRICATE SEACOCKS  |                        |                           |                      |                       | ●        |
| CHECK ENGINE ALARMS   | ●                      |                           |                      |                       |          |

\* Sea Ray® recommends that this maintenance be performed by an authorized service center.



## SECTION 8 • SERVICE INFORMATION

### USEFUL SERVICE INFORMATION

REFER TO THIS MANUAL AND/OR YOUR ENGINE OPERATOR'S MANUAL FOR DETAILS.

|  | BEFORE<br>EVERY<br>USE | AFTER<br>FIRST<br>20 HRS. | EVERY<br>50<br>HOURS | EVERY<br>100<br>HOURS | ANNUALLY |
|--|------------------------|---------------------------|----------------------|-----------------------|----------|
| CHECK EXHAUST SYSTEM FOR LEAKS                                       | ●                      | ●                         |                      | ●                     |          |
| CHECK FUEL SYSTEM LINES & CONNECTIONS                                | ●                      | ●                         | ●                    |                       |          |
| CHANGE WATER SEPARATING FUEL FILTER                                  |                        | ●                         |                      |                       | ●        |
| CHECK SHAFT LOG & STRONG SEAL™                                       | ●                      | ●                         | ●                    |                       |          |
| CHECK RUDDER PACKING, TIGHTEN FOR NO LEAKS***                        |                        | ●                         | ●                    |                       | ●        |
| INSPECT CLEVIS PIN ON RUDDER TIE BAR                                 |                        | ●                         | ●                    |                       |          |
| LUBRICATE RUDDER SHAFT   |                        |                           |                      |                       | ●        |
| LUBRICATE THROTTLE & SHIFT LINKAGE PIVOT POINTS                      |                        | ●                         |                      | ●                     | ●        |
| CHECK BATTERY ELECTROLYTE LEVEL                                      | ●                      | ●                         | ●                    |                       |          |
| CHECK ALL ELECTRICAL CONNECTIONS<br>(Including Dockside Power Inlet) |                        | ●                         |                      |                       | ●        |
| INSPECT PROPELLER FOR POSSIBLE DAMAGE                                |                        |                           | ●                    |                       |          |
| CHECK ENGINE TO SHAFT ALIGNMENT                                      |                        | ●                         |                      |                       | ●        |
| CHECK WATER SYSTEM PUMP FILTER                                       |                        | ●                         | ●                    |                       | ●        |
| INSPECT FRESH WATER PUMP & WATER SYSTEM                              |                        | ●                         |                      | ●                     |          |
| CHECK HOLDING TANK LEVEL   | ●                      |                           |                      |                       |          |
| CHECK FLUID IN TRIM PLANE PUMPS                                      |                        | ●                         |                      |                       | ●        |
| TEST 120 VOLT GFI OUTLET   |                        |                           |                      |                       | ●        |
| CHECK OIL IN STEERING SYSTEM   | EVERY 3 MONTHS         |                           |                      |                       |          |

\* Sea Ray® recommends that this maintenance be performed by an authorized service center.



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## SECTION 8 • SERVICE INFORMATION

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### 2. DRAINING THE BOAT

In climates where freezing occurs, it is important that the bilge be completely drained and dried out when the boat is laid up for the winter. Some compartments in the bilge may not drain completely because of the position of the boat. They should be pumped out and sponged until totally free of water or add sufficient amount of antifreeze to standing water to prevent freezing.

The boat's entire fresh water system must be drained. Open all faucets, including the shower faucets, throughout the boat. Open a connection at the lowest point in the fresh water lines to completely drain them. Break the connections on each side of the water pump. Drain the heads. Drain the water heater. Break the lower connection if necessary.

The engine cooling system and the exhaust system must be free of water if there is danger of freezing. Drain plugs are provided on the engine for this purpose. It is necessary to open a connection or two in the exhaust system to drain the lowest portions; these should be reassembled securely immediately after draining is accomplished.

CONSULT YOUR ENGINE AND GENERATOR OPERATOR'S MANUAL FOR DETAILED INFORMATION ON PREPARING FOR STORAGE.

### 3. WINTERIZATION CHECKLIST FOR BOATS STORED ON LAND

#### A. BOAT STORAGE

- Store boat in a bow high attitude.
- Remove hull drain plug.
- Pour one (1) pint (half-liter) of 50% water/antifreeze mixture in each bilge pump sump.

#### B. ICE MAKER

- Shut OFF water supply.

- Disconnect the water line at the garden hose connection on the solenoid valve.
- Allow the unit to run for one hour. Remove any ice cubes ejected during this period.
- Shut OFF the electricity and prop the door open to allow the unit to thaw.
- After it has thawed, wipe it dry.

#### C. ENGINES

- Flush engines with fresh water.
- Remove engine drain plugs.

REFER TO YOUR ENGINE OPERATOR'S MANUAL FOR DETAILED INFORMATION ON PREPARING THE ENGINES FOR STORAGE AND WINTERIZATION.

#### D. GENERATOR

- Flush generator with fresh water.
- Remove generator drain plugs.
- Remove drain plugs from muffler and strainer.

REFER TO YOUR GENERATOR OPERATOR'S MANUAL FOR DETAILED INFORMATION ON PREPARING THE GENERATOR FOR STORAGE AND WINTERIZATION.

#### E. AIR CONDITIONER

- Close thru-hull seacock, remove hoses from sea water pump.
- Flush with fresh water through hose from sea water pump.
- Blow out water lines with air pressure.
- Loosen the screws on the pump head, allowing water to drain from the pump.
- Keep under a trickle charge.
- When replacing battery in service, remove excess grease from terminals, recharge as necessary and reinstall in boat.



## SECTION 8 • SERVICE INFORMATION

### F. HEAD SYSTEM

- Flush entire system thoroughly with fresh water.
- Pump out holding tank.
- Remove water line from inlet fitting located on back bottom half of water valve on head.
- Flush one gallon (four liters) antifreeze mixed with one gallon (four liters) of water through toilet and let vacuum pump run for one or two minutes.

#### CAUTION

Use an automotive or commercial ethylene glycol base antifreeze. Do not use alcohol base products.

- Shut WATER SYSTEM breaker OFF.
- Pump out holding tank.

### G. WATER SYSTEM

- Turn ON fresh water pump.
- Open all faucets, let system drain completely, leave faucets open.
- Turn OFF fresh water pump.
- Remove hoses from water pump.
- Remove hoses from water heater and open drain plug.
- Blow out all lines to clean.
- Pour one (1) pint (half-liter) of 50% water/ environmentally safe, non-toxic antifreeze mixture in shower drain to fill shower sump.

#### CAUTION

Use an automotive or commercial ethylene glycol base antifreeze. Do not use alcohol base products.

### H. FUEL SYSTEMS

- Diesel fuel must be treated with a biocide, “Biobor,” which prevents bacteria and fungi from contaminating diesel fuel that contains some water.

#### CAUTION

Do not overfill. Filling a tank until the fuel flows from vents is dangerous. Allow room for expansion.

- Diesel fuel should also get a petroleum distillate additive, such as “Stabil” or “Racor RX1000.” This will help assimilate water in the fuel and prevent freezing problems.
- Fill fuel tanks with the treated fuel.
- Run engines for ten minutes to ensure that all diesel fuel in injectors and fuel lines are treated.

### I. SECURITY CONSIDERATIONS

Be conscious of the security of your boat. Always remove the keys from the ignition, lock hatches, lock the cabin door, remove and stow any removable electronic gear (fishfinders, LORAN, etc.) and personal gear (fishing poles, etc.) normally left aboard your boat.

- Remove hoses from condensing unit.
- Remove strainer plug.

### J. BATTERIES

- Remove from boat. Remove negative (-) cable first, then positive (+) cable.
- Remove grease and dirt from top surface.
- Grease terminal bolts.
- Store on wooden pallet or thick plastic in a cool dry place. Do not store on concrete.

REFER TO INDIVIDUAL OWNER’S MANUALS FOR SPECIFIC PROCEDURES.



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## SECTION 8 • SERVICE INFORMATION

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### 4. FITTING OUT AFTER STORAGE

#### A. FUEL SYSTEM

Check the entire fuel system for loose connections, worn hoses, leaks, etc. and repair. This is a primary safety precaution.

Check fuel lines for damage and make sure that they do not come in contact with any moving parts.

#### B. EXHAUST SYSTEM

Examine the complete exhaust system, from engine to transom. It is imperative that the entire exhaust system be vapor proof and water tight. If a plug or cover was used at the exhaust port, don't forget to remove it. Also check the drain plugs on the bottom of the mufflers. Do not over tighten. Recheck the system with the engines running.

#### C. BATTERIES

Before installing the batteries, clean the terminal posts with a wire brush or steel wool and then attach the cables. After the cable clamps are tightened, smear the post and clamps with vaseline or grease to exclude air and acid. Do not apply grease before attaching and tightening the terminal clamps. Examine all wiring.

#### D. MISCELLANEOUS

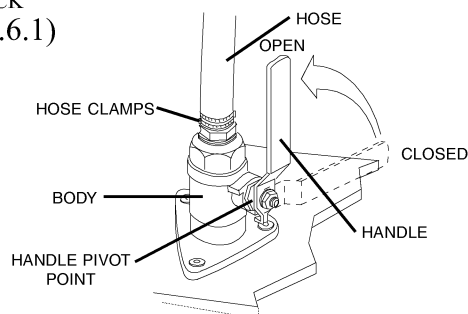
1. Check all thru-hull fittings for unobstructed water passage. Be alert for any deteriorated hoses and/or fittings below the water line which might fail in service and admit water.
2. Inspect the rudder stuffing boxes. They should be just tight enough to prevent excessive leaking. Over-tightening will destroy the packing and score the shaft. Check the hose clamps for tightness.
3. Make sure the rudder clevis pins on each side of the tie bars are in and safety-wired.
4. Check all strut fastenings and thru-hull fastenings.
5. Test the navigation lights.

6. Check all wiring for loose connections.
7. Check all switches and equipment for proper operation.
8. Check bilge blowers for proper operation. Turn ON blowers and place hand over hull blower vent to make sure air is coming from vent.
9. Anchor lines and gear should be inspected and replaced if necessary.
10. Clean bilge thoroughly if it was not done at lay-up.
11. Check all engine and generator fluid levels.

### 5. SEACOCK LUBRICATION

- With the boat out of the water, remove the hose from the top of the seacock.
- Put seacock handle in closed position.
- Add a few drops of lubricating oil inside.
- Work handle back and forth a few times. Add oil as needed.
- Replace hose and tighten clamps.
- Add a few drops of oil to the handle pivot point.

SEACOCK  
(FIG. 8.6.1)





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## SECTION 8 • SERVICE INFORMATION

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### 6. QUICK REFERENCE CHECKLIST

As the owner/operator of a Sea Ray® Sport Boat, you are responsible for the safe operation your boat and the safety of your passengers. Always be sure that required documents, navigational equipment and Coast Guard required safety equipment is aboard and in proper working order.

#### A. BOARDING THE BOAT\*

##### GENERAL

1. Weather Conditions ..... Is it going to be safe to go out
2. Transom Drain Plug ..... Installed
3. PFDs and all other Coast Guard required safety equipment ..... Available for all children and adults
4. Ignition keys ..... Available
5. Tool Box ..... Stocked with a variety of appropriate tools

##### BOAT SYSTEMS

1. Bilge Pumps ..... Working. Discharge any appreciable amounts of water overboard
2. Blowers ..... Working. "Sniff" the bilge/engine compartment for fuel odor
3. Navigation Lights ..... Working. Have spare bulbs and fuses aboard
4. Radio/Electronics ..... Working
5. Horn ..... Working
6. Trim Tabs ..... Full range of motion. No excessive play or binding
7. Fresh Water Tank ..... Filled and sanitized
8. Head System Holding Tank ..... Empty
9. Seacocks ..... Open (handle parallel to hose)

##### ENGINE

1. Batteries ..... Fully charged (Check water cell levels)
2. Fuel Tank ..... Filled with recommended fuel
3. Fuel System ..... Check for leaks
4. Fuel Filters ..... Check that filters are clean and tight
5. Diesel Racor Fuel Filters ..... Check that filters are clean, tight and free of water
6. Engine Coolant Drain Plugs ..... Secured
7. Steering Fluid ..... Full
8. Throttle & Gearshift Controls Test ..... Full range of motion

**\*Note:** Many of these items should be checked before leaving the house.



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## SECTION 8 • SERVICE INFORMATION

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### QUICK REFERENCE CHECKLIST (CONT'D)

#### B. PREPARING TO DEPART AND AFTER LAUNCHING

##### GENERAL

1. Bilge/Engine Compartment ..... “Sniff” the bilge/engine compartment for fuel odor. Run the bilge blowers for at least four (4) minutes.
2. Shore Power Cable ..... Disconnected from dockside power inlet
3. Lines, Fenders and Anchor ..... Ready for use
4. Passengers/Crew ..... Instructed in duties for getting underway and fitted for a correct size PFD

##### ENGINE

1. Battery Switches ..... In the ON position
2. Fuel Valves ..... Open
3. Engine Alarm ..... Test. Should sound after a few seconds
4. Gear Shift & Throttle Controls ..... In NEUTRAL and IDLE positions

#### STARTING THE ENGINE\*

1. Gearshift & Throttle Controls ..... Shift in NEUTRAL (Refer to your Engine Owner's Manual for startup procedures for your specific engine)
2. Ignition ..... Turn master ignition keys on DC distribution panel to the ON position. Depress ignition switch on the helm switch panel to START position until engine starts, then release to RUN position (light on).

**IMPORTANT: Do not continue to operate starter for more than 10 seconds without pausing to allow starter motor to cool off for 2 minutes. This also will allow the battery to recover between starting attempts.\***



#### WARNING

Do not run the engine or generator in an enclosed area, such as a closed boat house, as there is the possibility of buildup and inhaling of carbon monoxide.

\*If engine fails to start, refer to the Engine Owner's Manual for further troubleshooting procedures



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## SECTION 8 • SERVICE INFORMATION

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### QUICK REFERENCE CHECKLIST (CONT'D)

#### C. WHILE UNDERWAY

##### GENERAL

1. Passengers/Crew ..... Safely seated with PFD's on or immediately accessible
2. Lines, Fenders and Anchor ..... Stowed

##### BOAT SYSTEMS

1. Trim Tabs ..... Bring boat to "On Plane"
2. Navigation Lights ..... On at night or in reduced visibility

##### ENGINE

1. Tachometers ..... Engines operating in safe RPM range
2. Engine Gauges ..... Continually monitor
3. Engine Operation ..... Check idle and shift. Listen for abnormal noises and visually check the engine compartment while underway

#### D. RETURNING TO PORT

##### GENERAL

1. Passengers/Crew ..... Instructed in duties for line handling
2. Lines and Fenders ..... Ready for use

##### BOAT SYSTEMS

1. Navigation Lights ..... Turned OFF when secured
2. Anchor Light ..... ON if necessary
3. Bilge/Engine Compartment ..... "Sniff" the bilge/engine compartment for fuel odor. Run the bilge blowers if necessary. Check for water in bilge. Run bilge pumps if necessary

##### ENGINE

1. Gearshift & Throttle Controls ..... Bring to NEUTRAL and IDLE positions
2. Tachometers ..... Idle the engines for five (5) minutes to cool down



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## SECTION 8 • SERVICE INFORMATION

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### QUICK REFERENCE CHECKLIST (CONT'D)

3. Ignition ..... Depress EMERGENCY STOP/STOP switches on the helm switch panel when engines are cooled down.
4. Engine Operation ..... Check idle and shift. Listen for abnormal noises

### E. SECURING THE BOAT

#### GENERAL

1. Shore Power Cable ..... Connected to dockside power inlet
2. Lines and Fenders ..... Fenders in place, lines tied securely to dock

#### BOAT SYSTEMS

1. Seacocks ..... Closed (handle perpendicular to hose)
2. Helm Switch Panel ..... All switches in the OFF position
3. Gearshift & Throttle Controls ..... In the NEUTRAL and IDLE positions

#### ENGINE

1. Ignition ..... Switches in the OFF position (lights off) and master ignition keys removed from DC distribution panel
2. Battery Switches ..... In the OFF position
1. Fuel Valves ..... Closed (handle perpendicular to hose)

### F. IF THE ENGINE DOES NOT START

#### NO STARTER MOTOR RESPONSE

1. Check battery condition for sufficient charge
2. Check battery cable connections tight and free from corrosion
3. Check battery switches in the ON position
4. Check gearshift/throttle control levers in the NEUTRAL positions
5. Check starter motor and solenoid connections
6. Check ignition switch connections

#### STARTER MOTOR RESPONDS, BUT NO IGNITION

1. Check electrical connections on engine wiring harness and ignition wiring
2. Check that fuel tanks are not empty
3. Check fuel filters and filter/water separators clean



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## SECTION 8 • SERVICE INFORMATION

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### QUICK REFERENCE CHECKLIST (CONT'D)

#### G. OPERATING THE GENERATOR

##### STARTING THE GENERATOR

1. Generator Seacock ..... Open
2. Bilge Blowers ..... Run for at least 4 minutes and any time the generator is running
3. Depress PREHEAT ..... Preheat time should not exceed 30 seconds
4. Depress START Switch ..... Depress until generator starts
5. When the Generator Starts ..... Release the START switch only (If diesel, continue holding PRE-HEAT for a few seconds)
6. Load The Generator ..... Turn ON the generator main breaker on the Main Distribution Panel. Turn AC breakers ON

##### STOPPING THE GENERATOR

1. Breakers ..... Turn AC breakers OFF. Turn OFF the generator main breaker on the Main Distribution Panel
2. Generator ..... Let it run a few minutes to cool down
3. STOP Switch ..... Depress to stop the generator set



#### **WARNING**

**Do not run the generator or engines in an enclosed area, such as a closed boat house, as there is the possibility of buildup and inhaling of carbon monoxide.**





## 8. MAINTENANCE LOG

[illegible]

## MAINTENANCE LOG (CONT'D)

[illegible]



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## SECTION 9 • CARE & REFINISHING

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### 1. MAINTENANCE AND RECONDITIONING

Your new boat has been designed to provide you with years of enjoyment and satisfaction. In order to maintain the factory new appearance of your boat, we recommend the use of 3M™ Marine's one step Maintenance and Reconditioning Products designed specifically for pleasure boats. Following proper fiberglass maintenance guidelines will help maintain your boat's performance, value, and enjoyment.

### 2. FIBERGLASS & GELCOAT

The fiberglass hull, deck and some interior parts consist of the molded shell and exterior gelcoat. The gelcoat is the outer surface, often colored, that presents the shiny smooth appearance which is associated with fiberglass products. In some areas, this gelcoat surface is painted or taped for styling purpose.

#### WARNING

Gelcoat surfaces are slippery when wet. Use extreme care when walking on wet gelcoat.

Always wear non-slip foot gear while washing and waxing boat.

#### WARNING

Care should be utilized in waxing commonly walked upon areas of the boat to ensure that they are not dangerously slippery.

Wash the fiberglass regularly with clean, fresh water. Wax gelcoated surfaces to maintain the luster. In northern climates, a semiannual waxing may suffice for the season. In southern climates, a quarterly application of wax will be required for adequate protection.

REFER TO 3M ONE STEP MAINTENANCE AND RECONDITIONING PRODUCTS PAMPHLET IN YOUR OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION

### 3. STAINS & SCRATCHES

Gelcoat and painted surfaces are very resistant to deep stains. Common surface stains can be removed with diluted household detergents, provided these detergents do not contain ammonia or chlorine. Porcelain-cleaning powders are too abrasive and often contain chlorine and ammonia, either of which would permanently discolor the gelcoat and paint. Alcohol or kerosene can be used for difficult stains but should be washed away promptly with a mild detergent and water. **Never use acetone or any ketone solvents.**

Minor scratches and deeper stains which do not penetrate the gelcoat may be removed by light sanding and buffing.

### 4. SPECIAL CARE FOR BOATS THAT ARE MOORED

If permanently moored in salt water or fresh water, your boat will collect marine growth on its bottom. This will detract from the boat's beauty and greatly affect its performance. There are two methods of preventing this:

- Periodically haul the boat out of the water and scrub the bottom with a bristle brush and a solution of soap and water.
- Paint the hull below the waterline with a good grade of antifouling paint. **DO NOT paint the engine drive surfaces.**

**NOTE:** There are EPA regulations regarding bottom paint application. Consult your Sea Ray® dealer for proper application methods.

### 5. CARE FOR BOTTOM PAINT

From time to time a slight algae or slime forms on all vessels. The bottom painted portion of the hull can be wiped off with a coarse turkish towel or a piece of old rug while the boat is in the water. Do not use a stiff or abrasive material to clean the bottom paint.



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## SECTION 9 • CARE & REFINISHING

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The bottom paint should be inspected annually. If it needs repainting consult your Sea Ray® dealer.

### 6. BILGE/ENGINE COMPARTMENT

1. Pump the bilges dry and remove all loose dirt. Be sure that all limber holes are open. If there is oil in the bilge and the source is not known, look for leaks in engine oil lines or engine gaskets. Oil stains can be removed by using a bilge cleaner available from your dealer or a marina. **DO NOT** use flammable solvents.
2. Check all wiring to be sure it is properly supported, that its insulation is intact, and that there are no loose or corroded terminals. If there are corroded terminals, they should be replaced or thoroughly cleaned. Tighten all terminals securely and spray them with light marine preservative oil.
3. Inspect the entire fuel system (including fill lines and vents) for any evidence of leakage. Any stains around joints could indicate a leak. Try a wrench on all fittings to be sure they are not loose, but do not over tighten them. Clean fuel filters and vent screens.
4. Inspect the entire bottom for evidence of seepage, damage or deterioration, paying particular attention to hull fittings, hoses and clamps. Straighten kinked hoses and replace any that do not feel pliable. Tighten loose hose clamps and replace those that are corroded. Tighten any loose nuts, bolts or screws.
5. Refer to your engine operator's manual for engine maintenance details. Wipe off engine to remove accumulated dust and grease. If a solvent is used, make sure it is nonflammable. Go over the entire engine and tighten nuts, bolts, and screws. Inspect the wiring on the engine and clean and tighten the terminals. Inspect the belts and tighten them if needed. Clean and lubricate the battery terminals; fill the battery cells with distilled water as needed.

### 7. TOPSIDE AREAS

1. Check grab rails for loose screws, breaks, sharp edges, etc., that might be hazardous in rough

weather. Inventory and inspect life jackets for tears and deterioration. Check your first aid kit to make sure it is complete. Check the signaling equipment. Inspect anchor, mooring and towing lines and repair or replace as required. **DO NOT** stow wet lines or they may mildew and rot.

2. Stainless steel and alloy fittings should be cleaned with soap and water or household glass cleaner. Remove rust spots as soon as possible with a brass, silver or chrome cleaner. Irreversible pitting will develop under rust that remains for any period of time. Never use an abrasive like sandpaper or steel wool on stainless. These may actually cause rust. To help protect the stainless, we recommend the use of a good car wax.
3. When instruments are exposed to a saltwater environment, salt crystals may form on the bezel and the plastic covers. These salt crystals should be removed with a soft, damp cloth; never use abrasives or rough, dirty cloths to wipe plastic parts. Mild household detergents or plastic cleaners can be used to keep the instruments bright and clean.

REFER TO THE OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### 8. ACRYLIC PLASTIC SHEETING (PLASTIC GLASS)

**Never use a dry cloth or duster or glass cleaning solutions on acrylic.**

To clean acrylic, first flood it with water to wash off as much dirt as possible. Next, use your bare hand, with plenty of water, to feel and dislodge any caked dirt or mud. A soft, grit-free cloth may then be used with a nonabrasive soap or detergent. A soft sponge, kept clean for this purpose, is excellent. Blot dry with a clean damp chamois.

Grease and oil may be removed from acrylic with kerosene, hexane, white (not aviation or ethyl) gasoline or aliphatic naphtha (no aromatic content).



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## SECTION 9 • CARE & REFINISHING

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**Do not use solvents such as acetone, silicone spray, benzene, carbon tetrachloride, fire extinguisher fluid, dry cleaning fluid or lacquer thinner on acrylic, since they attack the surface.**

Remove fine scratches with fine automotive acrylic rubbing and polishing compounds.

### 9. UPHOLSTERIES

Exterior fabrics should be cleaned with a sponge or very soft scrub brush and a mild soap and warm water solution. After scrubbing, rinse with plenty of cold, clean water and allow the fabric to air dry in a well ventilated place, preferably away from direct sunlight.

Mildew can occur if your boat does not have adequate ventilation. Heat alone will not prevent mildew; you must also provide for fresh air circulation.

REFER TO THE OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

### 10. VITRACORE® CABINETS

To maintain the beauty of the galley cabinet surfaces and to prevent using the wrong cleaning agents, please follow the cleaning recommendations listed below.

#### NOTICE

##### Care and maintenance of your Vitacore® cabinets

- **Never use ammoniated window sprays or kitchen scouring components.**
- **Never use solvents such as acetone, gasoline, benzene, alcohol or lacquer thinner.**
- **Polish with light coat of automobile paste, wax or plastic cleaner/polish.**
- **failure to follow these instructions will result in damage to your cabinets.**

The following NOTICE label is placed on the fiberglass area of the galley countertop.

Clean often with a soft cloth or sponge and **mild** soap and water. A **non-ammoniated** spray may also be used. (Examples: Glass Cleaner-Vinegar Glass Works by Miles, Inc.) **Never** use paper towels, abrasive pads or abrasive cleaners! Hairline scratches and minor abrasions can be removed or minimized by using mild automobile polish, Johnson Paste or Mirror Glaze (M.G.M.10).

These care instructions refer specifically to the Vitacore® Cabinets surfaces. Ask your dealer about cleaning any hardware or trim which has been incorporated in your cabinetry.

### 11. CLEANING RECOMMENDATIONS FOR MARINE HEADLINER & FABRIC

REFER TO THE OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND WARRANTY INFORMATION.

#### NOTICE

**Always clean immediately. Test an unseen area of fabric before cleaning.**



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## SECTION 9 • CARE & REFINISHING

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