CARVER®

YACHTS

2000

350 Mariner

Owner's Guide

HIN - CDR _____

2000 Version 1

PREFACE

350 MARINER

This manual has been compiled to help you to operate your craft with safety and pleasure. It contains details of the craft, the equipment supplied or fitted, its systems, and information on its operation and maintenance. Please read it carefully, and familiarize yourself with the craft before using it.

If this is your first craft, or you are changing to a type of craft you are not familiar with, for your own comfort and safety, please ensure that you obtain handling and operation experience before assuming command of the craft. Your dealer or national sailing federation or yacht club will be pleased to advise you of local sea schools, or competent instructors.

PLEASE KEEP THIS MANUAL IN A SECURE PLACE, AND HAND IT OVER TO THE NEW OWNER WHEN YOU SELL THE CRAFT.

PRE-DELIVERY SERVICE RECORD

The pre-delivery service record that follows this page is the first step in activating your Carver limited warranty. This document must be completed and signed by you and your dealer before taking delivery of your new Carver yacht. Failure to complete and register this pre-delivery service record could void your Carver limited warranty.

Your Carver dealer will prepare your boat for delivery in accordance with the procedures detailed within this document. Your Carver dealer will also review the terms of the Carver warranty and make certain the warranty is registered with Carver.

At time of delivery, make a complete inspection of the boat and its systems. Document any work that needs to be completed by the dealer in order to meet the terms of your agreement. Be certain that the boat's pre-delivery service record and all OEM warranty cards have been completed and mailed to their respective companies. Also, be sure you sign and retain a copy of the pre-delivery service record for you own reference.

CARVER®
YACHTS

Dear Carver Owner,

Congratulations and welcome to the Carver family! As a Carver owner, you'll enjoy the quality, the finish, and the attention to detail our Carver Yachts are renowned for. Over time its Carver's commitment to quality and your Carver Dealer's commitment to your service and satisfaction that you'll come to appreciate.

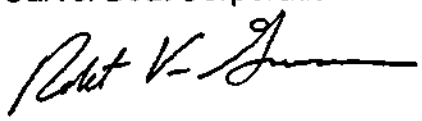
This Owner's Guide will acquaint you with the safe, proper operation and maintenance of your new boat and its systems. Your first duty as Captain of your new Carver should be to read your Owner's Manual and all manufacturer-supplied operating and maintenance instructions found within your Owner's Information.

Secondly, mail in all manufacturer registrations and warranty cards to make your Carver and OEM warranties valid. These warranty cards have been assembled and are contained in the OEM SUPPLIED MATERIALS packets within your Owner's Information.

Thirdly, if you're new to boating, learn the proper rules of seamanship to ensure the safety of your passengers. Refer to Chapman's Piloting, Seamanship and Small Boat Handling and attend a safe boating class offered by the Coast Guard Auxiliary, United States Power Squadron or any enterprise experienced in conducting safe boating courses.

Lastly, once you've become familiar with your new Carver, I ask that you complete and return the questionnaire that is included within this Preface of your Owner's Manual. Thank you for choosing a Carver. I'm confident your new boat will provide you and your family with years of enjoyable cruising.

Carver Boat Corporation



Robert VanGrunsven
President

DECLARATION OF CONFORMITY

Carver Boat Corporation declares that the 350 Mariner complies with the requirements of directive 94/25/ec of the European Parliament and the Council of 16 June 1994 on the approximation of the laws, regulations, and administrative provisions of the Member States relating to recreational craft.

This craft has been built in accordance with all relevant harmonized standards and the recreational craft sectoral guidelines in effect at the time of construction.

REFERENCE: IMCI (#0609)
Treves Centre
Rue De Treves 45
1040 Brussels
Belgium

Model Designation	Type Examination	Certification #
350 Mariner	Self Declaration Module Aa	CAR013

Robin J. Clonkey
Manager Manufacturing Methods
Carver Boat Corporation
790 Markham Drive
Pulaski, WI 54162
USA

USING THE CAPTAIN'S KIT

The materials concerning the operation and maintenance of your new boat have been supplied to you in the Carver Owner's Guide and a variety of OEM supplied materials.

IT IS IMPORTANT THAT YOU READ AND UNDERSTAND ALL MATERIALS CONTAINED WITHIN THE CAPTAIN'S KIT PRIOR TO OPERATING YOUR BOAT OR ANY OF ITS EQUIPMENT.

The Carver Owner's Guide

This guide was prepared and written to serve as an operations manual specifically for your boat. It includes information on your boat and all its systems.

This guide is organized into nine sections, each dealing with a particular facet of your boat's operation. Detailed drawings and diagrams are also included in this guide.

The Carver Owner's Guide was also developed to enhance your boating safety. Safety precautions and operational tips have been organized in the following manner:

!DANGER! describes a hazard which can cause severe injury, death or substantial property damage if the warning is ignored.

!WARNING! describes a hazard that could result in serious personal injury and/or property damage if the proper precautions are not observed.

!CAUTION! is used to describe situations that could damage your boat or its components.

NOTE tells you about problems that can often be avoided by taking preliminary precautions.

TIPS FROM CARVER: There are many people within the Carver organization who are avid boaters. Some of the experience gained during our years of boating are presented in this Owner's Guide. This information will be prefaced with the prefix, "A TIP FROM CARVER."

Original Equipment Manufacturer (OEM) Manuals

The second set of manuals that pertain to your new boat are supplied by manufacturers other than Carver. These manufacturers are referred to as OEM suppliers.

Carver Boat Corporation has purchased and installed a variety of equipment which was manufactured by OEM suppliers. Engines, stoves, refrigerators and air conditioners are examples of this type of equipment.

The majority of Carver's suppliers have created operators and maintenance manuals for their products. This information has been assembled and supplied to you.

Virtually all of your boat's components have their own limited warranty. Warranty registration cards have been provided for those products.

These are your materials. Use a colored highlighter to mark sections of the text that are of special interest. Be sure to supplement your guide with information on wiring or installation of additional equipment that you add to the boat during your period of ownership.

The Carver Owner's Guide and all component manuals are a permanent part of your boat. These materials must remain on the vessel during its operation. These materials must also be transferred to the boat's subsequent owners.

NOTE: Information presented in OEM suppliers literature and manuals takes precedence over information presented in the Carver Owner's Guide. If there is a discrepancy between the Owner's Guide and an OEM supplier's manual, FOLLOW THE INSTRUCTIONS IN THE SUPPLIER'S MANUAL.

Information contained within this Owner's Guide is the most accurate information available at the time of publishing. Carver reserves the right to change without notice materials, part numbers, specifications or system designs.

2 inserts
Supplied

TABLE OF CONTENTS

Section 1

Section 2

Section 3

Section 4

Section 5

Section 6

Section 7

Section 8

Section 9

Section 1

BOATING SAFETY

SAFE OPERATION

Boating safety is your responsibility. You should fully understand the operating procedures and safety precautions in the captain's kit and this owner's guide **before** you operate your new boat. **Safe boating is no accident.**

Safety Recommendations

Safe operation includes, but is not limited to, the following.

- Keep your boat and equipment in safe operating condition. Inspect the hull, engine(s), safety equipment and all boating gear regularly.

NOTE: Federal law requires you, the owner, to provide and maintain safety equipment on your boat. Consult your Coast Guard, state, and local regulations to ensure your boat has all required safety equipment on board. Additional equipment may be recommended for your safety and that of your passengers. Make yourself aware of its availability and use.

- **Be very careful** when fueling your boat. Be sure you know the capacity of your boat's fuel tank and the amount of fuel used when operating at frequently used engine speeds (RPMs). Ask your dealer about the capacity of your boat's fuel tank. See the **"Fueling"** portion of **Section 5** for information on fueling your boat.

- Make sure you have enough fuel onboard for anticipated cruising requirements. In general, use 1/3 of your supply to reach your destination and use 1/3 to return. Keep 1/3 in reserve for changes in your plans due to weather or other circumstances.

- Be sure fire extinguishing and lifesaving equipment is onboard. This equipment must meet regulatory standards, and it should be noticeable, accessible and in safe operating condition. Your passengers should know where this equipment is and how to use it.

- Keep an eye on the weather. Be aware of possible changing conditions by checking local weather reports before your departure. Monitor strong winds and electrical storms.

- Always keep accurate, updated charts of the area you are cruising.

- Before you leave the port or harbor, file a Float Plan with a family member, relative, friend, or other responsible person ashore.

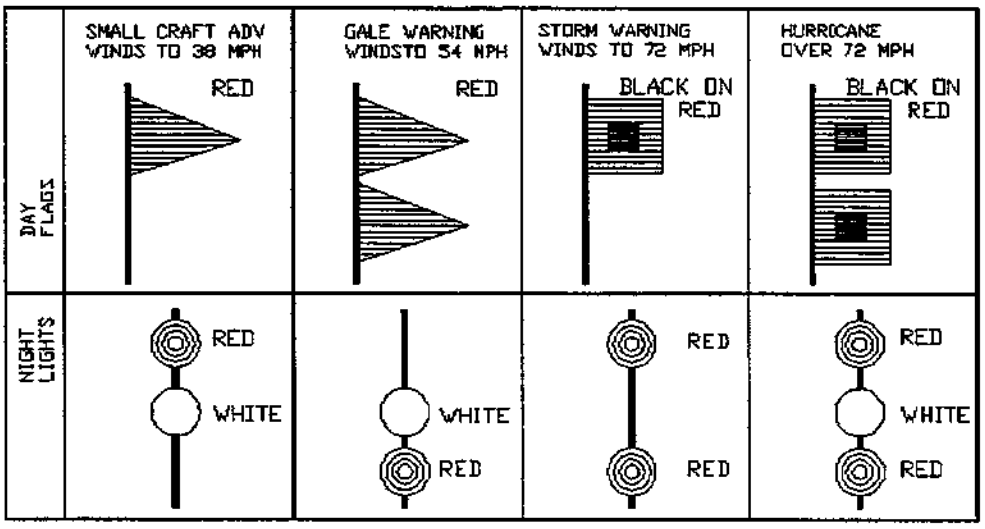
BOATING SAFETY

- Always operate your boat with care, courtesy and common sense.
- Instruct at least one other passenger onboard in the basic operating procedures in handling your boat. This person can take over if you unexpectedly become unable to do so.
- Do not allow passengers to ride on parts of your boat other than designated seating areas.
- Ask all passengers to remain seated while the boat is in motion.
- Do not use the swim platform or boarding ladder while the engine or engines are running.
- Understand and obey the "Rules of the Road." Always maintain complete control of your boat.
- Do not overload or improperly load your boat.
- Do not travel faster than conditions warrant or beyond your abilities.
- Do not operate your boat in weather or sea conditions beyond your skill and experience.
- Do not operate your boat while under the influence of drugs or alcohol, inclusively.
- Do not operate your boat if the your visibility is impaired or blocked.

Adverse Conditions

Weather

Storms rarely appear without advance notice. Check the weather forecast before you begin a day of boating. Be aware, however, that weather



Weather Warning Signals

conditions can change rapidly. If you have a marine radio, listen to the weather reports issued by the U.S. Coast Guard and others. If you have a portable radio, keep it tuned to a station broadcasting frequent weather reports. Many boating clubs fly weather signals. Learn to recognize these signals, and listen to your local forecasts before leaving port.

Your surroundings can also be a good indicator of changing weather conditions. Watch for changes in wind direction or cloud formations. There is no substitute for a good understanding of weather conditions and what to do when the weather takes a turn for the worse.

Fog

Fog is a result of either warm-surface or cold-surface conditions. You can judge the likelihood of fog formation by periodically measuring the air temperature and dew point temperature. If the difference between these two temperatures is small, fog is likely to develop.

Remember the following guidelines:

- Unless your boat is well equipped with charts and navigational equipment, head for shore at the first sign of fog and wait until conditions improve. If you have charts on board, take bearings as fog sets in, mark your position, and continue to log your course and speed.
- Make sure all persons onboard put on their personal flotation devices (PFDs).
- If your boat has sounding equipment, take soundings regularly and match them with depths shown on your charts.
- Station a person forward in the boat as a lookout.
- Reduce your speed. From time to time, stop engine(s) and listen for other fog signals.
- Sound the horn or fog bell intermittently to warn others.
- If there is any doubt in continuing your excursion, anchor. Listen for other fog signals while continuing to sound your fog horn or bell.

Storms

At all times, the boat operator should be aware of present weather conditions and the weather forecast. If storms are a possibility, keep a watch on the horizon, especially to the

West for approaching storms. Monitor the weather forecast on a marine channel or local weather station. It would be best to return to a safe port if time allows.

Other steps to follow to weather the storm include:

- Close portals and hatches and secure them. Stow all loose gear below deck and tie down any gear on deck.
- Reduce speed as the seas build. Make sure all persons onboard have put on their personal flotation devices.
- Drop a sea anchor over the stern to maintain the bow into the seas. If you do not have a sea anchor onboard, use a canvas bucket, tackle box, or other object that will work like an anchor.

Radar reflectors (if installed on your boat) should be 18 inches diagonally. They should be placed 12 feet above waterline. Otherwise, a boat with radar may have trouble "seeing" your boat.

Emergency Procedures

The following is not an exhaustive list of situations which may be encountered while boating. The operator should obtain training to handle any emergencies which may arise.

Fire

⚠ DANGER

A fire onboard your boat is serious. Explosion is possible. Respond immediately. Develop a fire response plan.

To help prevent a fire onboard your boat, keep your bilges clean and check for fuel and gas vapors at regular intervals. Also, DO NOT fit free hanging curtains or other fabrics in the vicinity of or above cookers or other open flame devices. Do not store any materials or equipment of any kind in the engine space.

Every boater should develop a fire response plan to determine what kind of fire (fuel, electrical, etc.) might break out, where it might break out, and the best way to react. Have a plan and, if possible, assign responsibilities to others to allow quicker decisions and reactions.

BOATING SAFETY

⚠ CAUTION

NEVER:
- **Obstruct passage ways to exits and hatches.**
- **Obstruct safety controls, e.g. fuel valves, gas valves, switches of the electrical system.**
- **Obstruct portable fire extinguishers stowed in lockers.**
- **Leave a craft unattended when cooking and/or heating appliances are in use.**
- **Use gas lights in the craft.**
- **Modify any of the craft's systems (especially electrical, fuel or gas).**
- **Fill any fuel tank or replace gas bottles when machinery is running or when cooking or heating appliances are in use.**
- **Smoke while handling fuel or gas.**

In case of fire:

NOTE: Everyone onboard should know where fire extinguishers are and how to operate them.

- Stop the engine(s) immediately.
- If the fire is in the engine compartment, shut off the bilge blower **immediately. Do not open the hatch to the engine compartment!** The fire will flare up if the fresh air supply increases suddenly.
- Keep the fire downwind if possible. If the fire is aft, head into the wind.
- Have all persons onboard put on their personal flotation devices.
- If you can get at the fire, aim the fire extinguisher at the base of the flames and use a sweeping action to put out the fire.
- If the fire gets out of control, make a distress signal, and call for help on the radio.

Deciding whether to stay with the boat or abandon ship will be difficult. If the decision is to abandon ship, all persons onboard should jump overboard and swim a safe distance away from the burning boat.

⚠ WARNING

Smoking, poor maintenance, or carelessness when refueling can cause hazardous conditions. Always follow proper refueling procedures for your boat.

Flooding

If your boat is taking on water from a leak in the hull, turn on your electric bilge pumps. Assign someone to bail out the bilge and investigate the cause of the flooding. When the source of the leak is found, attempt to repair it. Almost anything can be stuffed into a hole to stop the leaking temporarily. Material used to stop a leak will work better if it is applied from the outside where water pressure can help hold it in. If necessary, station a crew member to hold the plug in place if the plug is applied from the inside. In all cases, station a crew member or passenger to watch the plugged area and alert others if it fails.

Swamped or Capsized Boat

If your boat becomes swamped or capsizes, put on a PFD immediately and set off a distress signal. Chances are good a capsized boat will stay afloat. For this reason, stay with the boat. Do not leave the boat or try to swim to shore except under extreme conditions. A capsized boat is easier to see than a swimmer, and the shore may be further away than it appears.

If water is coming over the bow, reduce headway and turn the boat slightly so that the bow is slightly off from meeting the waves head on. Drop a sea anchor over the stern of the boat and adjust the length of the line to hold the bow at the most favorable angle.

BOATING SAFETY

Collision

If a serious collision occurs, first check the persons onboard for injuries. Then inspect the boat to determine the extent of damage.

- Prepare to help the other craft unless your boat or its passengers are in danger.
- If the bow of the other boat penetrated your boat's hull, prepare to plug the fracture once the boats are separated.
- Shore up the hole inside your boat with a spare life jacket or bunk cushion.
- While plugging the hole, trim weight to get the hole above the water level out of the water during repairs.
- If your boat is in danger of sinking, have all persons put on their personal flotation devices.
- If your boat has a radio, contact the U.S. Coast Guard or other rescue authorities immediately ON VHF channel 16 or CB radio channel 22. (You may also be able to use VHF channels 9 or 13 or your cellular phone in some states).

Running Aground

Excessive weight in the fore or aft sections of the boat will cause a trim change and may yield greater draft than expected. Equip your boat with a good quality depth instrument and allow ample water below the hull while operating.

If your boat runs aground, check everyone for injury and inspect damages to the boat or propeller(s). If lightly grounded, shift the weight of passengers or gear to heel the boat while reversing engine(s). If towing becomes necessary, do not attach a tow line to deck cleats. These are not designed to take full load of the boat. A commercial towing service should be used.

⚠ WARNING

Never attach a tow line to a deck cleat or anchor windlass. The cleat or windlass may pull free from the deck and cause serious personal injury or property damage.

Man Overboard

The operator should know what to do in case someone goes overboard. Emergency procedures are published in *Chapman's* and instruction is offered by the U.S. Coast Guard.

If a person falls overboard, hypothermia may be an immediate concern. Hypothermia means a person's body loses heat to the water faster than the body can replace it. If not rescued, the person will become exhausted or likely drown. In general, the colder the

water, the shorter the time for survival. PFDs will increase survival time because they provide insulation.

Water Temperature (°F)	Exhaustion Unconsciousness	Expected Time of Survival
32.5	Under 15 min.	Under 15 to 45 min.
32.5-40	15-30 min.	30-90 min.
40-50	30-60 min.	1-3 hr.
50-60	1-2 hr.	1-6 hr.
60-70	2-7 hr.	2-40 hr.
70-80	3-12 hr.	3 hr.- Indefinite
Over 80	Indefinite	Indefinite

Medical Emergency

No one should act as a doctor if they are not properly trained and educated. Someone onboard your boat should know first aid. First aid training is available through your local Red Cross. Keep a fully stocked first aid kit onboard your boat at all times.

Equipment Failure

Steering, propulsion, or control failure can be prevented by having your boat maintained correctly and checked periodically. If systems onboard your yacht do fail, radio for help or signal with flags and wait until help arrives.

Radio Communication

The operator is responsible for obtaining a radio operator's permit and knowing and following proper rules and procedures. Private yachts are not required to have their radio on at all times; however, if your radio is on, it should be tuned to channel 16 unless it is being actively used. Channel 16 is the frequency for emergency calls or initial calls between boats. After establishing contact on channel 16, change your frequency to channel 22.

More information on radio communications can be found in *Chapman's Piloting*.

Distress Signals

The operator is required to lend assistance to a vessel in distress as long as his life or vessel is not put in harm's way in the process. A Good Samaritan clause protects the operator from liability incurred while giving aid.

BOATING SAFETY

Safety Equipment

NOTE: Federal law requires the owner to provide and maintain safety equipment onboard your boat. Consult your Coast Guard, state, and local regulations to ensure your yacht has all required safety equipment on board. The owner should learn about any additional recommended equipment before operating his boat.

Personal Flotation Devices (PFDs)

There must be one United States Coast Guard approved wearable personal flotation device of Type I, II, or III for each person onboard your yacht. The PFDs must be readily accessible and in serviceable condition. They must also be of a suitable size for each person onboard. Three PFDs (two wearable and one throwable) are required regardless of the number of persons onboard.

PFD Type I, Wearable: This offshore life jacket is most effective for all waters when rescue may be delayed. In the water, its design turns most unconscious persons from a face down position to a vertical or face-up position.

PFD Type II, Wearable: This near-shore buoyant vest is intended for calm inland water or waters where there is a chance of quick rescue. It turns its wearer to a face-up position, but the turning action is not as pronounced as the Type I, and it will not turn as many persons under the same conditions as a Type I.

PFD Type III, Wearable: Classified as a flotation aid, this PFD will not turn a victim to a face-up position. This type of PFD is frequently used in water sports.

PFD Type IV, Throwable: You must also have onboard at least one throwable PFD Type IV device. The design of the Type IV device does not allow it to be worn. It must be thrown to a person in the water and grasped and held by the user until rescued. The most common Type IV PFDs are buoyant cushions or ring buoys. **This PFD must be in serviceable condition and immediately available for use.**

Visual Distress Signals

The U.S. Coast Guard requires that all boats operating on U.S. coastal waters have visual distress signal equipment. Boats owned in the United States and operating on the high seas must also carry this equipment.

Visual distress equipment must be readily accessible and in serviceable condition . Both pyrotechnic and non-pyrotechnic equipment must be U.S. Coast Guard approved. This equipment can become ineffective with age. If your equipment's usage date has expired, replace the equipment before taking your boat out.

Approved pyrotechnic visual distress signals include:

Hand held or aerial red flares
Hand held or floating orange smoke
Launchers for aerial red meteors or parachute flares

Non-pyrotechnic equipment includes an orange distress flag, dye markers, or an electric distress light.

No one signaling device is ideal under all conditions. Consider carrying various types of equipment. Careful selection and proper stowage of visual distress equipment are very important. Select devices with packages which children, but not adults, will find difficult to open, especially if young children are onboard.

Sound Signaling Device

Your Carver yacht must have an operable device that can produce a sound signal if conditions require. A horn is standard equipment on all Carver models.

For boats over 26 feet and under 39 feet, 4 inches, the device can be hand or power operated and must be able to produce a four-second blast which can be heard one half of a mile away. Refer to the U.S. Coast Guard's publication "Navigational Rules, International-Inland" for details about the appropriate signals.

Boats longer than 39 feet, 4 inches, must have a bell and a whistle. These devices must meet the requirements of the Inland Navigational Rules Act of 1980.

Running and Navigation Lights

Your boat must have running and navigation lights for safe operation after dark. Observe all navigation rules for meeting and passing. Do not run at high speeds during night operation. Always use common sense and good judgment.

Fire Extinguishers

Fire extinguishers must be approved by the U.S. Coast Guard. The U.S. Coast Guard classifies fire extinguishers by the type of fire it can extinguish. Coast guard classifications include foam, carbon dioxide, chemical, and Halon type fire extinguishers. Below are the requirements for fire extinguishers at the time this manual was prepared.

Boats longer than 26 feet and shorter than 40 feet: Two Type B-I or at least one Type B-II portable hand extinguishers. If your boat has a fixed fire extinguishing system approved by the U.S. Coast Guard, one Type B-1 extinguisher is required.

BOATING SAFETY

Boats longer than 40 feet and shorter than 65 feet: Three Type B-I or one Type B-I and one Type B-II portable hand extinguishers. If your boat has a fixed fire extinguishing system approved by the U.S. Coast Guard, Two Type B-I or one Type B-II extinguisher is required.

All fire extinguishers should be mounted in a readily accessible location away from the engine compartment. Everyone onboard should know where the fire extinguishers are and how to operate them.

If your fire extinguisher has a charge indicator gauge, cold or hot weather may affect the gauge reading. Consult the instruction manual supplied with the fire extinguisher to determine the accuracy of the gauge.

Check and maintain fire extinguishing equipment in accordance with manufacturer's recommendations. Be sure to replace fire fighting equipment, if expired or discharged, by devices of identical or greater fire fighting capacity.

Recommended Equipment

In addition to required equipment, you may want to carry the following:

- Spare anchor
- Flashlight
- Spare propeller
- Navigational charts
- Spare parts
- Heaving line
- Mirror
- Tool kit
- Mooring line
- Fenders
- Suntan lotion
- Ring Buoy
- Binoculars
- Spare pump

BOATING SAFETY

OWNER'S RESPONSIBILITIES

Safe Boating Courses

Your local U.S. Coast Guard Auxiliary and the U.S. Power Squadrons offer comprehensive safe boating classes several times a year. You may contact the Boat/U.S. Foundation at 1-800-336-BOAT (2628), or in Virginia 1-800-245-BOAT (2628). For a course schedule in your area you may also contact your local U.S. Coast Guard Auxiliary or Power Squadron Flotilla for the time and place of their next scheduled class.

Carver also recommends that you read *Chapman's Piloting, Seamanship and Small Boat Handling* for further information on how to handle your boat in various situations.

Rules of the Road

Navigating a yacht responsibly requires the operator to comply with a set of rules intended to prevent accidents. Just as you assume other car drivers know what they are doing, other boaters assume you know what you are doing.

As a responsible yachtsman, you will comply with the marine traffic rules enforced by the Coast Guard. There are two sets of rules: the United States Inland Navigational Rules and the International Rules. The United States Inland Rules apply to all vessels inside the demarcation lines separating inland and international waters. The Coast Guard publishes the traffic regulations in its publication "Navigational Rules, International-Inland." You can get a copy from your local U.S. Coast Guard Unit or the United States Coast Guard Headquarters, 1300 E. Street NW, Washington, D.C. 20226.

Other helpful publications available from the U.S. Coast Guard include "Aids to Navigation" (U.S. Coast Guard pamphlet #123), which explains the significance of various lights and buoys; the "Boating Safety Training Manual"; and "Federal Requirements For Recreational Boats." Check with your local Coast Guard station, your Carver dealer, or a local marina about navigational aids unique to your area.

Documentation

The owner of a Carver yacht is required to have proof of registration onboard at all times the boat is being operated. In addition, a radio license may be necessary if your boat is equipped with a VHF radio.

In addition to required documents, it is strongly recommended that the operator of a boat keep a log of the boats operation. A navigation log containing compass courses and time records is essential for both cruising and maintenance purposes. Radio logs are mandatory on compulsorily equipped vessels, and can be helpful even if one is not required to be kept. In addition, a maintenance log can help keep your boat operating for years.

BOATING SAFETY

Drugs and Alcohol

Drugs and alcohol affect a person's ability to make sound judgments and react quickly. As a responsible boater, you will refrain from using drugs or alcohol (inclusively) while operating your yacht. Operation of motorized vessels while under the influence carries a significant penalty. Drugs or alcohol decrease your reaction time, impair your judgement, and inhibit your ability to safely operate your yacht.

Distress Calls

If you have a ship-to-shore radio telephone, heed storm warnings and answer any distress calls from other boats. The word "MAYDAY" spoken three times is the international signal of distress. Monitor marine radio channel 16 which is reserved for emergency and safety messages. You can also use this channel to contact the Coast Guard or other boaters if you have trouble. **Never send a "MAYDAY" message unless there is a serious emergency and you are in need of immediate assistance.**

The owner or operator of a vessel is required by law to render assistance to any person or vessel in distress so long as his vessel is not endangered in the process.

Voluntary Inspections

The U.S. Coast Guard Auxiliaries or state boating officials in many states offer courtesy inspections to check out your craft. They will check your yacht for compliance with safety standards and required safety equipment. You may voluntarily consent to one of these inspections, and you are allowed time to make corrections without prosecution. Check with the appropriate state agency or the Coast Guard Auxiliary for details.

Boating Accidents

The operator of a vessel used for recreational purposes is required to file a report whenever an accident results in loss of life or disappearance from a vessel, an injury requiring medical treatment beyond first aid, or property damage in excess of $200 or complete loss of the vessel.

In cases of death and injury, reports must be submitted within 48 hours. In other cases, reports must be submitted within 10 days. Reports must be submitted in the state where the accident occurred.

Boating Regulations

It is the responsibility of the operator to make sure that his boat is in compliance with all federal, state and local regulations. Check with your local U.S. Coast Guard office for relevant federal regulations. Your state's Department of Natural resources may have some publications available which deal with relevant state laws.

Garbage

Dumping garbage into the sea is a worldwide problem. Coast Guard regulations prohibit dumping of plastic refuse and garbage mixed with plastic into any waters and restrict the dumping of other forms of garbage. It is essential that all boaters pitch in to clean up our waterways and properly dispose of all garbage.

Within three miles from the shore of U.S. lakes, rivers and bays it is illegal to dump plastic, dunnage, lining and packing materials that float, and any garbage except dishwater/ greywater or fresh fish parts. From a distance of three to twelve miles it is illegal to dump plastic, dunnage, lining and packing materials that float, and any garbage not ground to less than one square inch. Within 12-25 miles from shore, it is illegal to dump plastic, dunnage, lining and packing materials that float. Outside 25 miles, it is illegal to dump plastics.

Oil

The Federal Water Pollution Control Act prohibits the discharge of oil or oily waste into or upon the navigable waters and contiguous zone of the United States if such discharge causes a film or sheen upon, or discoloration of, the surface of the water, or causes a sludge or emulsion beneath the surface of the water. Violators are subject to a penalty of $5,000.

Waste

On U.S. inland and coastal waters, it is illegal to discharge waste directly overboard. If your boat is equipped with an overboard discharge option, check with your local Coast Guard office to be sure that you are in compliance with federal regulations.

State and Local Ordinances

Your state or locality may have laws limiting speed, noise or your boat's wake. Check with your harbor master to find out whether your boat's operation is restricted in any way by local ordinances or state laws. The boat owner should check with state and local authorities to make sure that he is in compliance with local regulations regarding marine sanitation, noise, speed, and wake.

Records

The owner of a boat registered with the Coast Guard is issued a Certificate of Number. This certificate must be onboard whenever the boat is in use. State registration is also required. If your boat has a VHF radio onboard, a FCC license must also be displayed. Check with the U.S. Coast Guard or your state regulatory agency to determine what other records are required on your boat.

BOATING SAFETY

In addition to the required documentation, it is advised that boaters keep a log book which suits the needs of the individual boater. A navigation log with engine speeds, RPM, compass courses and time records can be an invaluable asset on future cruises. An engine/ fuel log is essential to calculate range and fuel requirements. Radio logs, while not required for voluntarily equipped vessels, can be useful to record unusual events, especially for future litigation. A GPS / Loran log can also be useful if so equipped. Log books are available from maritime supply stores.

Pre-Departure Actions

- Check the weather. Make sure conditions and seas will not be hazardous.
- Make sure all safety equipment is onboard, accessible, and in good working condi tion.
- Check the bilge for fuel fumes or water. Ventilate or pump out as necessary.
- Be sure the horn and navigation equipment and lights are working properly.
- Instruct guests and crew in safety and operational matters.
- Check engine and transmission oil and coolant levels. After starting engines, check overboard flow of cooling water, engine temperatures and oil pressures.
- Fill fuel tanks as full as you need. Know your tank capacity and fuel consumption at various RPMs and the cruising radius this gives. When estimating your range, it is best to count on using 1/3 of your fuel to reach your destination and 1/3 of your fuel to return, with the remaining 1/3 of your fuel in reserve for emergencies.
- Have a second person onboard capable of taking over in case you are disabled.
- Before departing, inform a friend or relative where you intend to cruise and when you will return so they can tell the Coast Guard where to look and the type of boat in case you are delayed. Remember to tell them of your safe return to prevent false alarms. A float plan form is included at the end of this section. Do not file this plan with the Coast Guard. They do not have the manpower to monitor all boats.
- Stow all loose gear securely. Fenders and docklines should be stowed immediately after getting underway.

CARBON MONOXIDE WARNINGS FOR GASOLINE ENGINES

⚠ DANGER

Carbon Monoxide (CO) is a colorless and odorless poisonous gas which is emitted in engine and generator exhaust. Prolonged exposure to CO can result in unconsciousness, brain damage, and death.

In high concentrations, CO can be fatal in minutes; however, the effects of lower concentrations can be just as lethal. Symptoms of excessive exposure to carbon monoxide are:

- Dizziness
- Drowsiness
- Nausea or Vomiting
- Headache
- Ringing in the ears
- Throbbing temples
- Watering, Itchy eyes
- Flushed appearance
- Inattentiveness
- Incoherence
- Fatigue
- Convulsions

Carbon monoxide accumulation requires immediate attention! Thoroughly ventilate cabin and cockpit areas. Determine the probable source of the carbon monoxide and correct the condition immediately. Carver has installed CO detectors on your boat. Have these detectors professionally calibrated at regular intervals.

⚠ DANGER

Persons sleeping onboard can easily be overcome by carbon monoxide without realizing it. Sleeping while the engines or generator are running is NOT recommended!

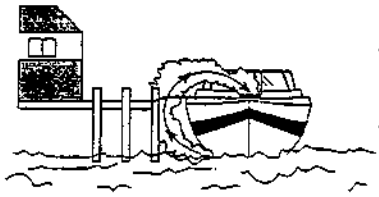
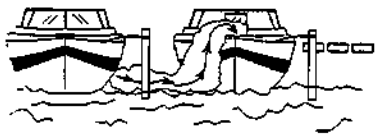
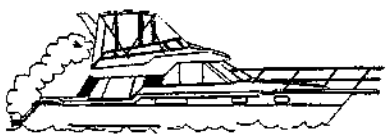
To help prevent carbon monoxide accumulation, ventilate your cabin and cockpit while underway. Open a forward hatch, porthole, or window to allow air to travel through the boat's interior.

Desired airflow through boat

Have a trained marine technician inspect the boat's exhaust systems whenever the boat is in for service or if you notice a change in the sound of an engine or generator. Maintain proper engine adjustments, condition, and performance.

The following page describes some possible situations where CO may accumulate. Become familiar with these examples and the suggested precautions to help prevent a dangerous accident.

BOATING SAFETY

⚠ DANGER THESE CONDITIONS MAY CAUSE CARBON MONOXIDE TO ACCUMULATE.	PRECAUTIONS
 Blockage of exhaust outlets can cause carbon monoxide to accumulate in the cabin and cockpit area -even when the hatches, windows, port-holes, and doors are closed.	Never operate generator while boat is moored against any other boat, dock or wall structure that could block the exhaust outlet.
 Exhaust from another vessel alongside your boat, while docked or anchored , can emit poisonous CO gas inside the cabin and cockpit areas of your boat.	Be alert for generator and engine exhaust from other vessels alongside your boat. Provide adequate ventilation.
 The "station wagon effect" or back drafting can cause CO to accumulate inside cabin, cockpit and bridge areas when operating the boat at a high bow angle or with im-proper or heavy loading.	Provide adequate ventila-tion, redistribute the load or bring your boat out of high bow angle. Open forward hatch or window.
 CO gas can accumulate in the cabin, cockpit and bridge areas when operating your boat at **slow speeds or when the boat is stopped in the water**. A tail wind can also increase accumulation (force of wind entering from aft section of yacht).	Provide adequate ventila-tion or slightly increase speed if possible. Open forward hatch or window.
 The "station wagon effect" or back drafting can cause CO gas to accumulate inside the cabin, cockpit or bridge areas when the boat is underway using protective weather coverings.	Provide adequate ventila-tion when the canvas top, side or back curtains are in their closed, protective positions. Open forward hatch or window.

WARNING LABELS

Warning Labels are posted throughout the 350 Mariner to protect you, your passengers and your property. It is important to identify and understand all warning labels that you encounter. Failure to identify and obey a posted warning label may result in serious injury or damage to personal property. While the following is not a comprehensive list of all warning labels throughout the 350 Mariner, it is a list of important warnings you should be familiar with.

WARNING

GASOLINE VAPORS CAN EXPLODE. BEFORE STARTING ENGINE OR GENERATOR, OPERATE BLOWER FOR 4 MINUTES AND CHECK ENGINE COMPARTMENT BILGE FOR GASOLINE VAPORS. ALWAYS OPERATE BLOWER WHILE GENERATOR IS RUNNING AND BELOW CRUISING SPEED.

⚠ CAUTION

TO PREVENT EXHAUST FUMES FORM ENTERING CABIN, KEEP CLOSED WHEN ENGINE OR GENERATOR ARE RUNNING.

WARNING

TO MINIMIZE SHOCK AND FIRE HAZARDS

- Turn off the boat's shore connection switch before connecting or disconnecting shore cable.
- Connect shore power cable at boat first.
- If polarity warning indicator is activated immediately, disconnect cable and have the fault corrected by a qualified electrician.
- Disconnect shore-power cable at shore-outlet first.

DANGER

This engine compartment is a machinery enclosure. It contains exposed moving parts. Do Not enter this area during equipment operation unless you are a trained service technician.

WARNING

HOT WATER HEATER

WILL BURN OUT IF POWER IS SUPPLIED TO AN EMPTY UNIT

WARNING

Leaking Fuel is a Fire Hazard. Inspect Fuel System Often. Examine Fuel Tank for Leaks and Corrosion at Least Annually.

CAUTION

BATTERIES ARE WET AND CHARGED

BOATING SAFETY

⚠ DANGER

Carbon monoxide is colorless, odorless and dangerous. All gasoline powered engines and generators exhaust carbon monoxide (CO). Direct or prolonged exposure result in CO poisoning, which can be harmful or fatal. Signs of exposure to CO include nausea, dizziness and drowsiness. To prevent excess exposure and reduce the possibility of accumulations of CO in the boat, the operator must insure adequate forced air ventilation in the cockpit and all partially or fully enclosed areas, though utilization of hatches, doors, windows, vents and forward facing canvas or plastic curtains to increase air movement through all areas. The following conditions tend to increase the accumulations CO in the boat and require the operator's particular attention.

1. Operation at slow speeds or dead in water
2. Operation with a bow-high attitude.
3. The utilization of canvas tops, front, side and back curtains, and enclosures.
4. Contributing climate conditions, such as head wind or tail wind.
5. Operation of engines and/or generator in confined spaces or at dockside.
6. Operation of engines and/or generator which have not had fuel mixture and ignition timing properly maintained and adjusted.
7. Any blockage of hull exhaust outlets.

SEE OWNERS MANUAL FOR MORE DETAILS.

"THIS PRODUCT CONTAINS HALON 13 AND R-12 REFRIGERANT WHICH ARE SUBSTANCES THAT CAN CAUSE ENVIRONMENTAL DAMAGE BY DEPLETING THE OZONE CONTENT OF THE UPPER ATMOSPHERE."

CARVER BOAT CORPORATION

Section 2

POWERING THE 12 VOLT BATTERY SYSTEMS

DC ELECTRICAL SYSTEM

Your Carver 350 Mariner is equipped with a 12 volt DC (Direct Current) electrical system. This is a comprehensive system that is designed to meet your present and future 12 volt electrical needs.

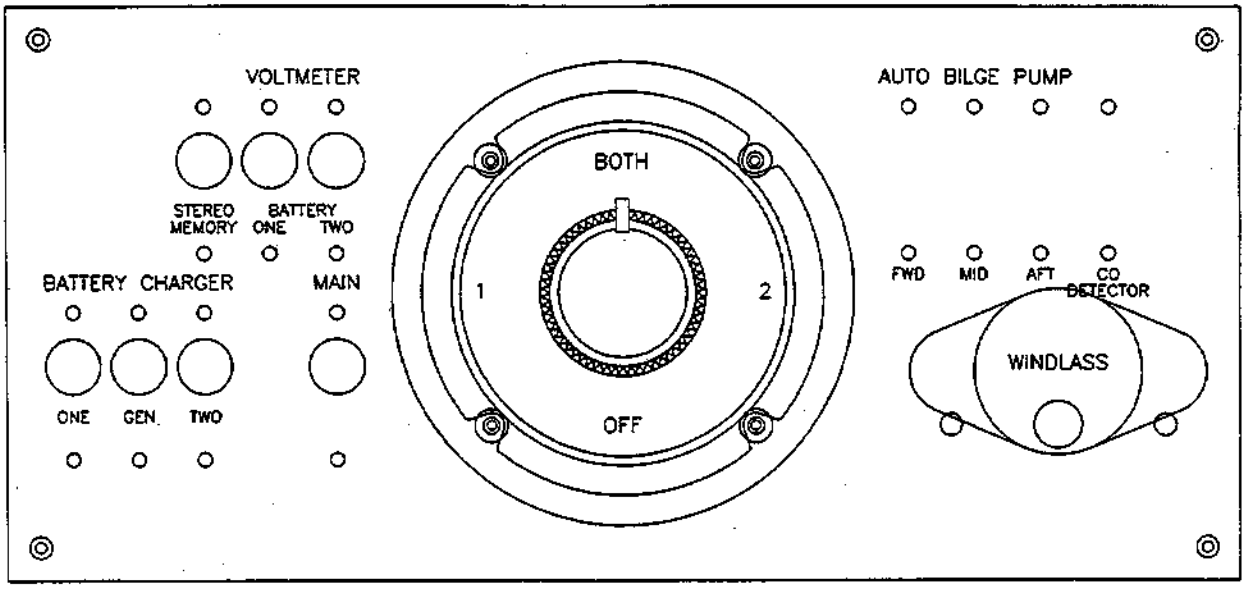
Wire-runs and connections are placed and positioned to prevent abrasion and exposure to moisture, as well as to remain accessible for inspection, repairs and adding additional electrical components. Electrical wire used throughout your boat is plastic coated, color-coded wire. Connections are made using crimped connector points.

Your boat's electrical system is virtually maintenance free, with only the batteries requiring periodic inspection and maintenance.

Battery Selector Switch

The Direct Current or DC electrical system is powered by two 12 volt batteries. These batteries are located in the forward portion of the boat's engine room along the centerline.

The power within these batteries is controlled by the battery selector switch which is located in a locker on the salon's starboard aft wall just above the sofa. The battery selector switch acts as a master disconnect when your boat is equipped with gasoline engines. The selector switch also lets your engines and 12 volt equipment draw power from either battery #1, battery #2, or both batteries together. Refer to the drawing at the end of this section for battery wiring information.



POWERING THE 12 VOLT BATTERY SYSTEMS

Battery Selector Switch Positions

NOTE: **The following information refers only to boats equipped with gasoline engines. If your boat is equipped with diesel engines, the engines are wired directly to battery ON/OFF switches located in the Aft portion of the engine room. With diesel propulsion, the battery selector switch should be used only to parallel both batteries together if the charge in either battery is too low to start your engines.**

Note: **With the battery selector switch in the "OFF" position, all 12 volt DC power to the boat is shut off except for the bilge pumps, voltmeters, battery, charger leads, stereo memory, CO detector. The boat's bilge pumps, and CO detectors are "hard wired" to the selector switch so they operate in the automatic mode even when the boat is unattended and the selector switch is in the "OFF" position.**

⚠ CAUTION

NEVER turn the battery selector switch to the "OFF" position while an engine or engines are running. Doing this will damage the alternator or engine wiring.

#1 Position #1 will use battery #1 to power both engines and all other 12 volt equipment. Battery #2 will be isolated and remain in reserve.

#2 Position #2 will use battery #2 to power both engines and all other 12 volt equipment. Battery #1 will be isolated and remain in reserve.

ALL With the selector switch in the "ALL" position, battery #1 and battery #2 are connected in parallel. Both batteries will be used by the engines and all other 12 volt equipment.

A TIP FROM CARVER = *Carver recommends using ONE BATTERY AT A TIME . The only time you should use the "ALL" position is when a single battery is not capable of starting your engines. After starting the engines in the "ALL" position, switch the selector to either the #1 or #2 position.Running the boat in the "ALL" position combines the output of both batteries and does not permit the engine alternator's voltage regulator to sense the charge level of an individual battery. This could lead to inadequate charging if one battery has been drained lower than the other.* Alternating between position #1 and position #2 will increase the life of your batteries.

POWERING THE 12 VOLT BATTERY SYSTEMS

Voltmeters

Battery condition is indicated on your boat's voltmeter located at the helm station. Use the voltmeter in the following manner:

When Starting Your Engines

⚠ DANGER

Read, understand and follow the procedures described in Section 5 of this Owner's Guide before starting your boat's engines. Improper starting procedures may create hazardous situations.

⚠ CAUTION

TURN OFF all electronic communication and navigation equipment PRIOR TO starting the boat's engines. The large swing in the current supply during engine start-up can damage electronic equipment.

1) Activate the bridge voltmeter gauges by making sure the circuit breakers marked VOLTMETER are in the "ON" position. These breakers are located on the battery selector switch panel located in a locker along the salon's aft, starboard wall just above the sofa..

2) Two active voltmeter gauges are installed at the helm consoles. Look at the helm voltmeters to determine which battery has the LOWEST charge. Charge level is determined by the level of power as indicated in available voltage.

3) If your voltmeter shows that one battery has a lower level of charge than the other, switch the battery selector switch to the battery that has the HIGHEST available voltage.

4) Start one of the boat's engines. When it is idling smoothly, start the remaining engine. Start each engine independently. Never try to start both engines at once.

NOTE: Before starting the engines, read and understand the information supplied in the manufacturer's owner's guide supplied in your captain's kit.

5) After the engines are running, switch the selector switch to the battery bank that had the LOWEST voltage reading. This will allow the engine's alternator to recharge the low battery.

The voltmeter reads static voltage when the engines are off. When the engines are running, one battery will indicate a higher reading than the other. This is because the voltmeter reads alternator charging rate when the engines are running. The position of the battery selector switch determines which battery will be charged by the alternator.

POWERING THE 12 VOLT BATTERY SYSTEMS

12 Volt Equipment

While the engines are running, 12 volt equipment can be used with little concern for excess battery discharge. The power generated by the engine alternators is usually more than adequate to replace any power consumed by 12 volt equipment.

HOWEVER, without an engine running, a battery will discharge as it powers 12 volt equipment. Operating 12 volt equipment without charging a battery will eventually completely discharge the battery. This is why we recommend using either battery bank #1 OR battery bank #2 . The condition of your batteries can be monitored by referencing the helm voltmeters.

Fully charged batteries that have not been charged or discharged for at least 2 hours should indicate between 12.3 to 12.6 volts. A reading below this level indicates a partly discharged battery.

Battery Charger

Your 350 Mariner is equipped with a 35 amp battery charger mounted beneath the dinette's aft-most seat. The battery charger uses AC power to recharge the 12 volt batteries. The battery charger is installed below the dinette's aft-most seat. You can access the battery charger by removing the storage bin below the dinette's center seat.

With the boat connected to a dockside power source, you can provide AC power to the battery charger by turning the AC breaker labeled BATTERY CHARGER to the "ON" position. This breaker is located in the boat's AC breaker panel just below the salon entertainment center.

When activated the battery charger automatically monitors the charge of both batteries, regardless of the position of the battery selector switch. When the voltage in a battery drops below a predetermined level the charger automatically recharges the low battery.

With your boat connected to AC power (either through the shore power cord or by operating the onboard generator) and your battery charger operating, you can use 12 volt equipment (such as cabin lights) with little concern for discharging the boat's batteries.

The battery charger will charge the batteries even when the battery selector switch is in the "OFF" position. More information on using the battery charger can be found in the **"Shore 1"** portion of **Section 3**.

POWERING THE 12 VOLT BATTERY SYSTEMS

12 VOLT BREAKER PANELS

Twelve Volt (Direct Current) power is managed throughout your boat using two 12 volt breaker panels. The first, the 12 volt "Main Circuit Breaker Panel," manages 12 volt electrical power to most of your boats 12 volt systems and accessories. This "Main Breaker Panel" is located in the locker just below the salon's entertainment center.

A second "Safety Breaker Panel" manages safety equipment such as the voltmeters, bilge pumps, the CO detectors that are wired directly to the batteries. The "Safety Breaker Panel" is combined with the battery selector switch. You can find the "Safety Breaker Panel" located along the aft, starboard wall of the boats salon just above the sofa.

These circuit breaker panels enable you to manually interrupt a circuit by switching the breaker on or off. They also protect the electrical system by automatically disconnecting the circuit from the power source in the case of a short or overload.

⚠ WARNING

NEVER reset a breaker that has been automatically tripped without first correcting the problem. Failure to do this may create a dangerous situation.

12 Volt Main Breaker Panel

The following breakers are installed on the 12 volt main breaker panel:

Main
This main breaker controls the supply of electricity to the remaining DC breakers. To supply power to the other breakers, this main breaker must be "ON." To cut the power supply to the remaining breakers, turn the main breaker to the "OFF" position.

LIGHTS

Panel
This breaker controls the flow of electricity to the boat's instrument panel. Turn this breaker "ON" to supply power to the instrument panel.

Nav/Anchor
This breaker controls the flow of electricity to the boat's navigation equipment. Turn this breaker "ON" to supply power to this equipment.

Spot
This breaker controls the flow of electricity to the boat's spotlight controls (if spotlight was factory installed). To activate the spotlight controls located on the helm, turn this breaker "ON."

POWERING THE 12 VOLT BATTERY SYSTEMS

Salon

This breaker controls the flow of electricity to the 12 volt salon lighting installed on your boat. Turn this breaker "ON" before using the salon lights.

FWD

This breaker controls the flow of electricity to the 12 volt lighting installed in forward stateroom. Turn this breaker "ON" before using lights in the forward stateroom.

Exterior

This breaker controls the flow of electricity to the 12 volt courtesy lights installed on the boat's exterior. Turn this breaker "ON" before using the courtesy lights.

Acc'y Bridge

This breaker controls the flow of electricity to any equipment installed after market on the bridge. Turn this breaker "ON" before using any aftermarket bridge accessories installed on this circuit.

Horn

This breaker controls the flow of electricity to your boat's horn. Turn this breaker to the "ON" position to activate the horn's controls located at the boat's helm station.

Trim Tabs

This breaker regulates the flow of electricity to the trim tab controls located at the helm station. Trim tabs are used to improve the running angle of your boat while underway. To manually activate the trim tabs using these bridge controls, you must first turn this breaker "ON." For more information refer to the **TRIM TABS** portion of **SECTION 6**.

Halon

This breaker controls the flow of electricity to your boat's Halon fire suppression system installed in the boat's engine compartment. Turn this breaker "ON" before activating this system.

PUMPS

Fwd Bilge

The forward bilge pump can be manually activated at the boat's instrument panel. A switch labeled forward bilge turns the forward bilge pump OFF and ON. To supply power to the forward bilge control switch, turn this breaker to the "ON" position.

⚠ CAUTION

DON'T FORGET TO TURN YOUR BILGE PUMPS OFF. Leaving the forward, mid or aft bilge pump on for extended periods of time could cause excessive wear to the pump.

POWERING THE 12 VOLT BATTERY SYSTEMS

Mid Bilge

The mid bilge pump can be manually activated at the boat's instrument panel. A switch labeled forward bilge turns the mid bilge pump OFF and ON. To supply power to the mid bilge control switch, turn this breaker to the "ON" position.

Aft Bilge

The aft bilge pump can be manually activated at the boat's instrument panel. A switch labeled Aft Bilge turns the aft bilge pump OFF and ON. To supply power to the aft bilge control switch, turn this breaker to the "ON" position.

Note: Incorporated into each bilge pump is a float switch. The float switch "automatically" activates the appropriate bilge pump when bilge water rises above a predetermined level. Since your bilge pumps are "hard wired" to the battery selector switch, they will operate automatically via their float switch regardless of the position of the breakers on the 12 volt circuit breaker panel or battery selector switch. It's a good idea to periodically test each float switch by lifting the float. The pump should turn on when the float is lifted.

A TIP FROM CARVER = *"A certain amount of water will always collect in your boat's bilge especially in the bilge area where the shaft logs are located. The small amount of water that normally accumulates is usually not enough to activate the bilge pump's automatic float switch.*

While underway and on plane, use the helm station switch to turn your bilge pumps on manually and let them run for 30 seconds to a minute. "

Water

This breaker controls the flow of electricity to the water system's pressure water pump. Turn this breaker "ON" to activate the pressure water pump.

Shower

This breaker controls the flow of electricity to the shower sump pump. Turn this breaker "ON" before using the shower. This shower sump is activated automatically by a float switch whenever water within the sump rises to a predetermined level.

Waste

On boats equipped with overboard discharge, this breaker controls the flow of electricity to the overboard discharge waste pump. Turn this breaker "ON" to activate the boat's waste pump.

Washdown

This breaker controls the flow of electricity to the boat's optional raw water transom washdown pump. To activate the washdown pump, turn this breaker to the "ON" position. When you are finished, turn the washdown pump off by turning this breaker to the "OFF" position.

POWERING THE 12 VOLT BATTERY SYSTEMS

Fuel Transfer

On boats equipped with diesel engines, a fuel transfer pump has been installed to transfer fuel between the starboard and portside fuel tanks should fuel levels become unequal. To activate the fuel transfer pump controls, you must first turn this breaker to the "ON" position. This breaker will be empty on gasoline powered boats.

Bilge Blower

This breaker controls the flow of electricity to the bilge blower controls located at the helm's instrument panel. A bilge blower system has been installed in your boats engine compartment and bilge area to remove hazardous fumes that may have collected. Turn this breaker "ON" to supply power to the helm's bilge blower controls.

⚠ DANGER

ALWAYS run bilge blowers at least 4 minutes before starting the boat's engines or the generator.

Wiper

This breaker controls the flow of electricity to the helm's windshield wiper controls (if available) Turn this breaker to the "ON" position before using the windshield wipers.

Refer

This breaker controls the flow of electricity to the dual voltage refrigerator located in the galley. To operate the galley's dual voltage refrigerator using your boat's 12 volt power, this breaker must be turned "ON."

Your refrigerator will operate on AC when you boat is connected to dockside power or when an onboard generator is running. With the REFER breaker in the "ON" position, the ship's circuitry will automatically switch to DC power when AC current is not available. However, care should be taken when operating your dual voltage refrigerator using 12 volt power without the engines running. A refrigerator left operating on 12 volt power will eventually discharge the ship's batteries.

Accy Salon

This breaker is reserved for any after market accessories you may add to the boat's salon. Turn this breaker "ON" before activating any after market salon accessories installed on this circuit.

Stereo

This breaker controls the flow of electricity to your boat's entertainment center located in the boat's salon. To supply power to the entertainment center's components, turn this breaker to the "ON" position.

Head Fan

This breaker controls the flow of electricity to the head compartment's fan. Turn this breaker "ON" to activate the head compartment fan

Water Monitor (optional equipment)
If equipped, this breaker controls the flow of electricity to the boat's water tank monitor located in the locker just below the entertainment center. To activate the boat's water tank monitor, turn this breaker "ON".

Waste Monitor
This breaker controls the flow of electricity to the boat's waste tank monitor. To activate the boat's waste tank monitor, turn this breaker "ON".

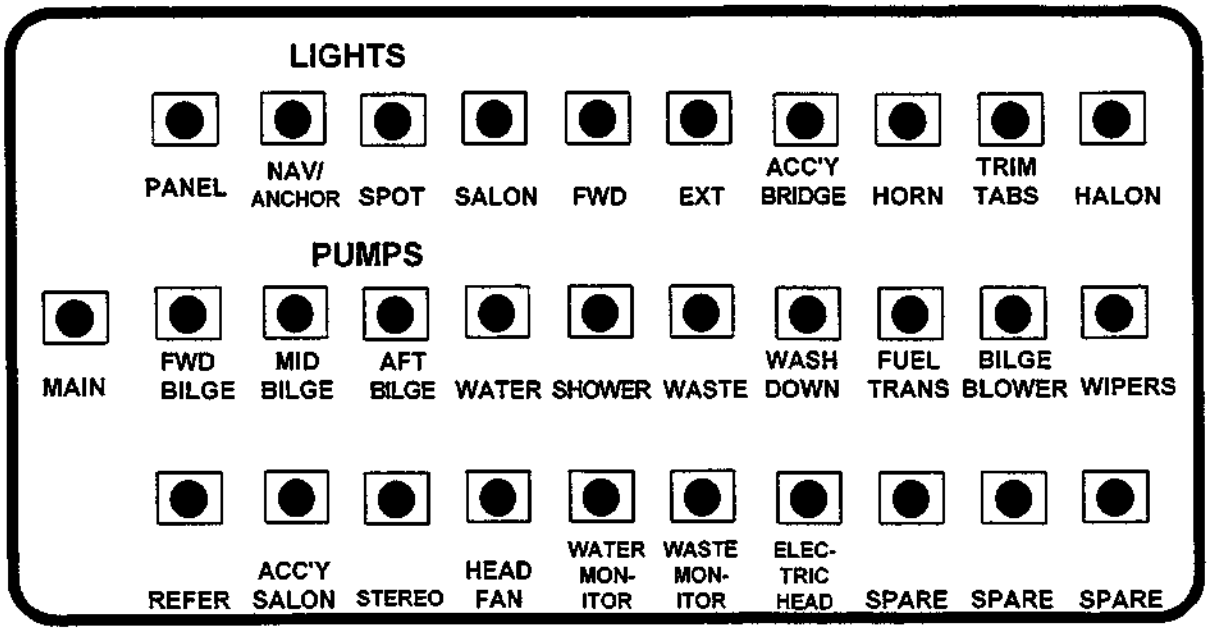
Electric Head
On boats equipped with the electric head, turning this breaker "ON" supplies power to the head unit. Pressing the button labeled "FLUSH" clears waste from the head. For detailed information on maintaining and operating your boat's head system, refer to the manufacturers information supplied in your Captain's Kit.

Spare
This breaker is reserved for any after market accessories you would like to install on your boat.

Spare
This breaker is reserved for any after market accessories you would like to install on your boat.

Spare
This breaker is reserved for any after market accessories you would like to install on your boat.

DC Main Breaker Panel



POWERING THE 12 VOLT BATTERY SYSTEMS

12 volt Safety Breaker Panel (Battery Selector Switch)

Equipment routed through the Safety Breaker Panel remains active at all times unless the breakers are manually interrupted. Some equipment installed on the Safety Breaker Panel is directly wired to the batteries. This allows various pumps and safety equipment active regardless of the position of the battery selector switch. While the safety equipment wired though this safety breaker panel will operate at all times even when the battery selector switch is in the "OFF" position, it will not run should a breaker becomes interrupted. Therefore, it is important to frequently check that these breakers are working properly.

Voltmeter

Voltmeter breakers have been installed on your safety main panel as a protective measure. These breakers control the power flow to the bridge voltmeter gauges. These breakers must be "ON" for the voltmeters to function.

Bilge Pumps (Fwd, Mid, Aft)

These three bilge pump breakers regulate the flow of electricity to the three automatic bilge pumps. These pumps are activated automatically by a float switch whenever water within the bilge area rises to a predetermined level. It is important that this breaker remains in the "ON" position whenever the boat is in the water.

Stereo Memory

When in the "ON" position, the stereo memory breaker keeps a constant supply of power to the 12 volt stereo's memory. Interrupting this breaker will erase the memory stored in you stereo system. Items such as the clock will need to be reset.

Battery Charger

When in the "ON" position, these three breakers protect the 12 volt circuitry between the battery charger and the boat's three 12 volt batteries. These breakers must remain in the "ON" position to protect the battery charger.

Salon Main

This breaker protects the 12 volt Main Breaker Panel located in the salon. This breaker must remain in the "ON" position for power to reach the 12 volt Main Breaker Panel that powers most of the boat's 12 volt accessories.

Windlass

This breaker supplies power to the windlass controls located on the boat's instrument panel. This breaker must be in the "ON" position before attempting to operate the windlass.

CO Detector

Carver installs 2 carbon monoxide detectors on the 350 Mariner. This breaker must remain "ON" for the CO detectors to function.

POWERING THE 12 VOLT BATTERY SYSTEMS

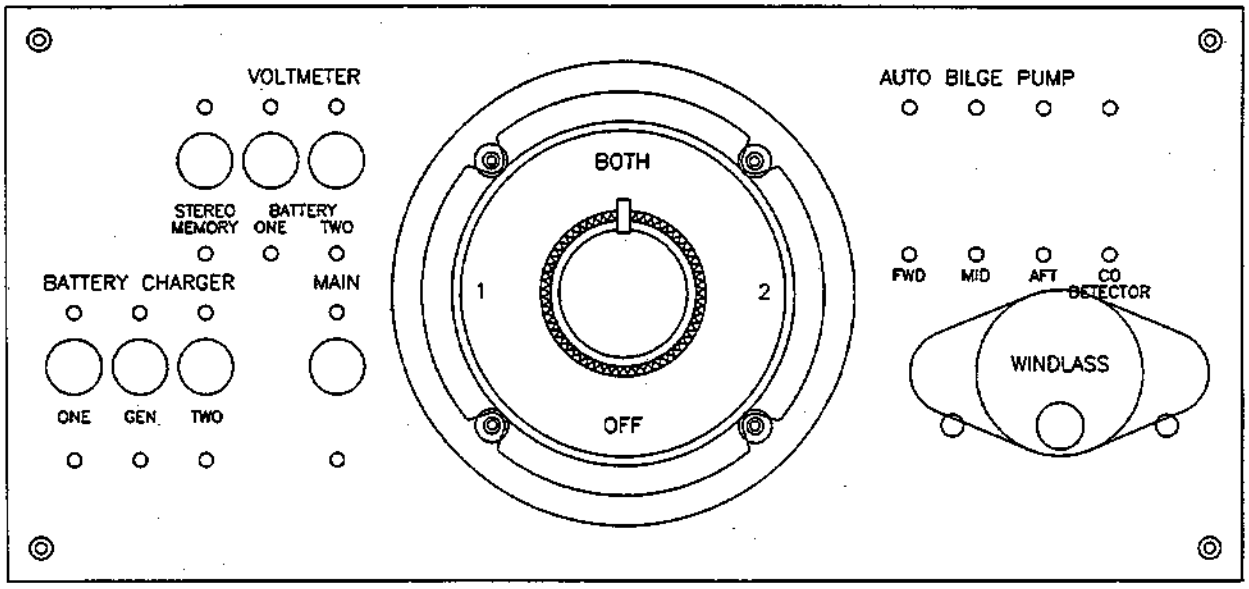
This safety equipment detects the presence of carbon monoxide (abbreviated as CO) within the cabin of your boat. Carbon monoxide is a colorless and odorless gas that is present in engine and generator exhaust fumes. Carbon monoxide is a very dangerous gas that is potentially lethal when inhaled.

When your CO detector is activated, it will alert you to the presence of carbon monoxide in the cabin by emitting a loud, high pitched sound. When you hear this alarm, determine the cause and correct it immediately. There is a test button on each CO detector. Test each unit on a weekly basis. If you suspect that a CO detector is faulty, have your dealer repair or replace it immediately. More information concerning carbon monoxide is included in **Section 1** of your Owner's Guide.

⚠ DANGER

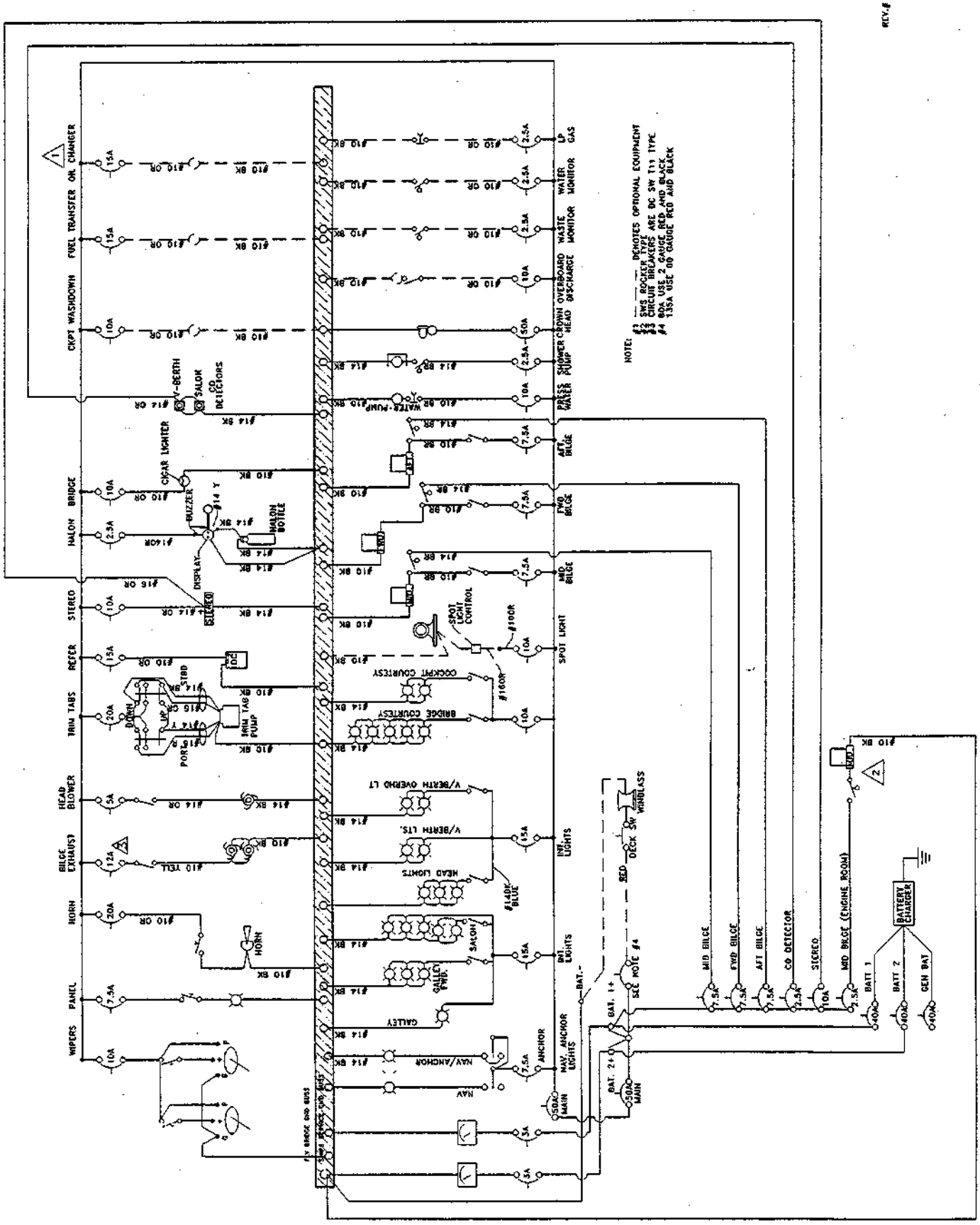
ALWAYS activate the CO Detectors when the boat's engines and/or generator are running. Carbon monoxide is dangerous. Study Section 1 of your Owner's Guide for information on minimizing, detecting and controlling carbon monoxide accumulation.

12 volt Safety Breaker Panel (Battery Selector Switch)



POWERING THE 12 VOLT BATTERY SYSTEMS

DC WIRING SCHEMATIC



POWERING THE 12 VOLT BATTERY SYSTEMS

BATTERY INSTALLATION AND MAINTENANCE

Your boat's 12 volt DC electrical system is powered with two 12 Volt batteries.

While your boat's batteries are relatively maintenance free, there are a few things you can do to increase their effectiveness and life.

⚠ DANGER

Your boat's batteries contain electrolyte which is an acid. Wear gloves and protective eye glasses when working on and around the batteries.

When servicing your boat's batteries avoid spilling electrolyte into the engine compartment or bilge. Also, avoid getting any salt water in or on the battery. Either of these conditions could create a poisonous gas that would be harmful if inhaled.

If you should spill electrolyte ventilate the area. Neutralize the acid in the electrolyte by pouring baking soda on the area of the spill. Neutralized electrolyte can then be cleaned up with a disposable rag or paper toweling.

Maintaining Your Boat's Batteries

1) Keep your batteries fully charged. Batteries that are kept full or near fully charged will last longer than batteries stored with a partial charge. Battery condition can be monitored using the voltmeter that is installed on the helm console.

2) Inspect your boat's batteries at least every 30 days.

3) Periodically clean the battery terminals and cable connections. DISCONNECT THE BATTERIES BEFORE CLEANING.

   Remove any accumulation of dirt on the top of the battery case. Use a wire brush to clean the terminals. Coating the terminals with a terminal protecting product will help reduce corrosion that can form in these areas.

4) Check to make sure that the battery cables are securely attached to the terminal posts. Tighten the terminal wing nuts 1/4 turn beyond finger tight with a pliers.

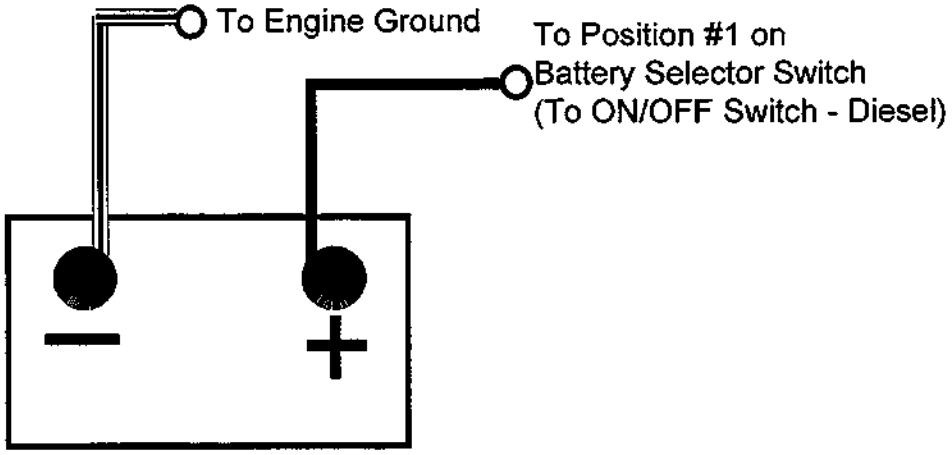
5) Check the level of electrolyte in each cell of each battery. Correct level is just above the plates. If the fluid level is low, top off the cell with DISTILLED water. DO NOT OVERFILL.

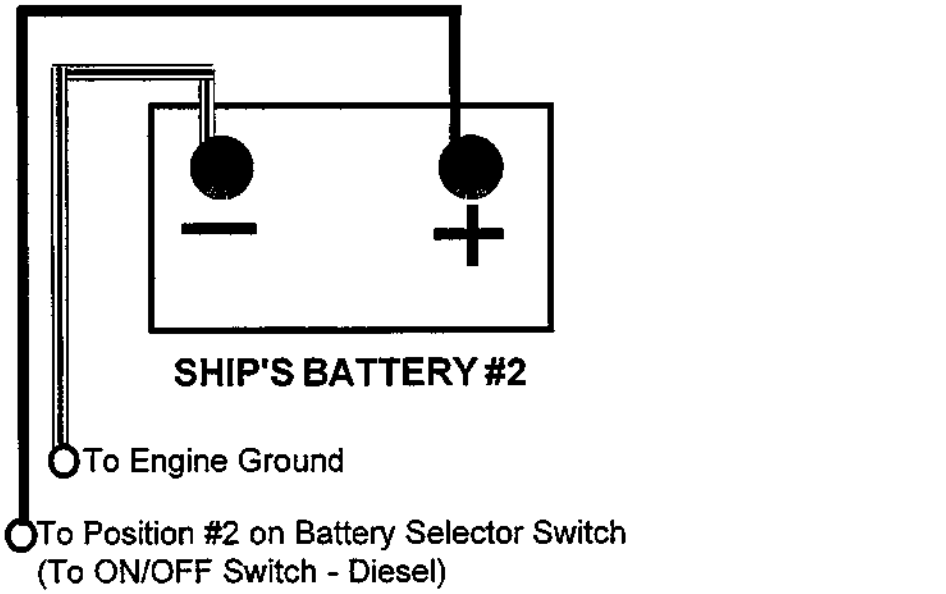
6) Remove the batteries from the boat during periods of extended storage. Store your batteries in a cool (above freezing temperature), dry area. All batteries will lose some charge during storage but the lower the temperature the less loss of charge. Avoid storing the batteries in a humid place. Humidity will lead to corrosion of the terminals.

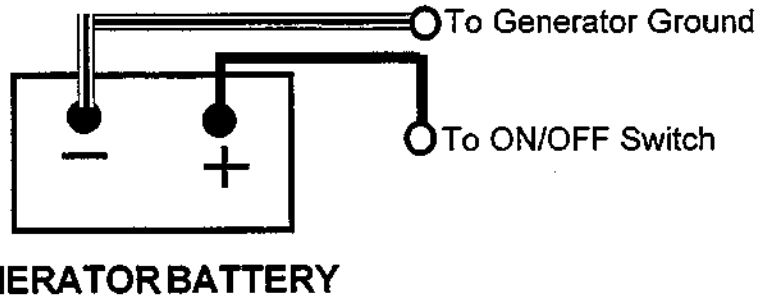
Check the battery charge level every 3 months using a hydrometer or voltmeter. If the specific gravity of the battery is less than 1.225 or voltage less than 12.4 volts charge the battery. Avoid overcharging.

POWERING THE 12 VOLT BATTERY SYSTEMS

BATTERY WIRING (GAS ONLY)







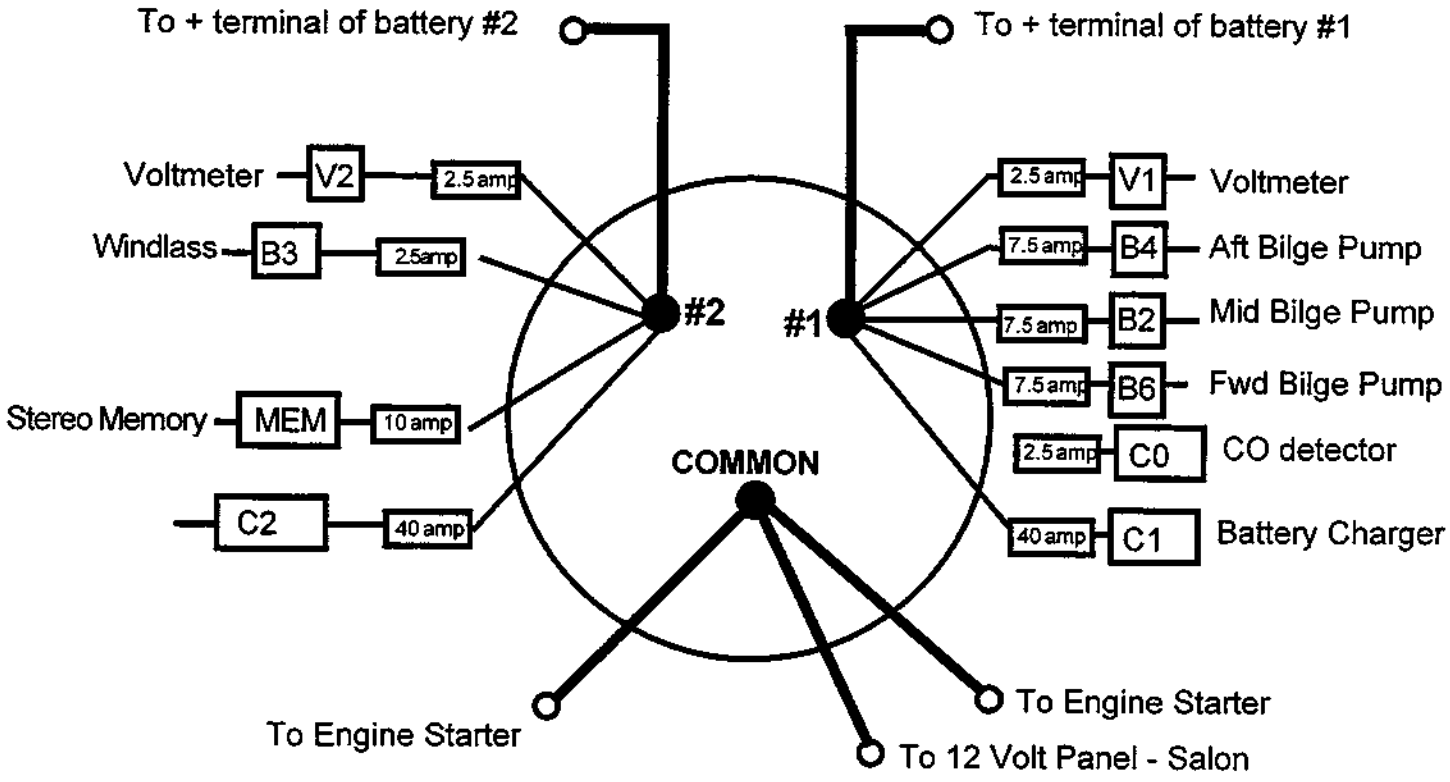
Negative / Black Battery Cable = ═══

Positive / Red Battery Cable = ———

Note: Propulsion engines are connected together with a black ground cable. Generator is connected to a propulsion engine with a black ground cable.

POWERING THE 12 VOLT BATTERY SYSTEMS

BATTERY SELECTOR SWITCH WIRING (Gasoline Engines)



POWERING THE 12 VOLT BATTERY SYSTEMS

TROUBLE SHOOTING 12 VOLT ELECTRICAL SYSTEM

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
12 volt equipment will not function.	Battery selector switch in the "OFF" position.	Turn the battery selector switch to position #1 or position #2.
	Main circuit breaker in the "OFF" position.	Turn on MAIN circuit breaker.
	Weak or dead battery bank.	Reposition battery selector switch and charge battery.
Individual 12 volt component will not operate.	Circuit breaker for that component in the "OFF" position.	Turn circuit breaker for that component on.
	Weak or dead battery bank.	Reposition battery selector switch.
	Loose or disconnected wire within the 12 volt system.	Repair system as needed.
Cabin lights do not come on OR are dim.	Circuit breaker marked CABIN in the "OFF" position.	Turn on CABIN circuit breaker.
	Weak or discharged battery bank.	Reposition battery selector switch and charge weak battery bank as needed.
	Light bulb burned out.	Replace light bulb.
Battery will not hold a charge.	Faulty or old battery.	Replace with new battery.
Engine is running and voltmeter does not indicate adequate voltage.	Engine alternator belt is loose.	Refer to engine manual for instructions on tightening belt.

Section 3

SHORE POWER/GENERATOR POWER

AC ELECTRICAL SYSTEM

Introduction

Your 350 Mariner is equipped with a 30 amp AC (alternating Current) electrical system. Power for this electrical system is routed through the AC electrical panel located in the boat's salon below the entertainment center. You can supply power to your boat's 30 amp electrical system by connecting a dockside power cord(s) to a dockside power source or by operating the onboard generator. If your boat is **not** equipped with air conditioning, all AC power is routed through a single dockside MAIN breaker service called SHORE 1. If your boat is equipped with air conditioning, the air conditioning units are powered through an additional 30 amp breaker service called SHORE 2.

The AC electrical system in your boat can be configured in one of the following ways:

Single 30 Amp Dock side ("SHORE 1")

The SHORE 1 30 amp service is the standard configuration for the 350 Mariner. This system is powered by a single 30 amp shore power cord or the boat's onboard generator.

The SHORE 1 service is wired at the Carver factory in either 110 volt AC or 220 volt AC. 110 volt systems are used throughout North American and Pacific Rim countries. 220 volt is primarily used in European countries whose standard electrical system is based on 220 volt power.

Dual 30 Amp Dock side ("SHORE 2")

If your 350 Mariner is equipped with air conditioning, a second 30 amp service called SHORE 2 has been installed to handle the extra current flow . The SHORE 2 system utilizes two 30 amp services, each service powered by its own 30 amp shore power cord or by the boat's onboard generator. SHORE 2 service is available in either 110 volt or 220 volt configurations. Please refer to the following section that pertains to your boat's wiring configuration.

Wiring System

The SHORE 1 or SHORE 2 electrical service on your 350 Mariner uses three wire, color-coded circuitry. The black wire in a circuit carries the current from the power source to the outlet. Each black wire is connected to and protected by a circuit breaker that is installed in the circuit breaker panel. The white wire carries the current from the outlet back to the power source. Ground wires will be either green or bare copper wires. During normal operation, current does not flow through the ground wires.

Buss bars are used within the electrical system to help route and organize the wires. The system's white or neutral wires are connected together at buss bars. The ground wires are also connected together at another independent buss bar.

SHORE POWER/GENERATOR POWER

⚠ DANGER

The black and white wires are hot, current carrying wires. Do not touch them while the system is connected to a power source.

Reverse Polarity

Reverse polarity only occurs with 110 volt electrical systems. If your boat is equipped with a 220 volt system, disregard this section.

The MAIN circuit within your boat's electrical system is designed to sense the voltage difference between the neutral and ground terminal blocks. If the dockside electrical power source is incorrectly wired and the polarity is reversed, the red reverse polarity light in the dockside electrical box will come on. If reverse polarity occurs while your boat is connected to shore power, the reverse polarity light on your boat's AC electrical panel will come on.

⚠ WARNING

If reverse polarity occurs, turn off the 30 amp main breaker(s) on your AC electrical panel and disconnect your power cord(s) from the shore power supply. Notify marina management of the problem. Use a different dockside electrical box.

AC Electrical Panel

Power within your boat's AC electrical system is routed and controlled via the AC circuit breaker panel. Your circuit breaker panel has a 30 amp MAIN breaker which protects the overall AC electrical system. Another MAIN breaker protects the circuits used if your boat is equipped with air conditioning. Both MAIN breakers are located on the same AC salon panel just below the entertainment center.

Circuit breakers enable you to manually interrupt a circuit by switching the breaker on or off. They also protect the electrical system by automatically disconnecting the circuit from the power source in the case of a short or overload.

⚠ WARNING

NEVER reset a breaker that has been automatically tripped without first correcting the problem. Failure to do this may create a dangerous situation.

Voltmeter and Ammeter Usage

Your boat's electrical system is equipped with a voltmeter and an ammeter. These instruments are located on the main AC circuit breaker panel below the salon's entertainment center. The voltmeter provides you with an indication of the electrical voltage that is entering your boat's AC system.

SHORE POWER/GENERATOR POWER

With your boat's shore power cord(s) attached to a dockside power source the voltmeter should read between 110 and 120 volts in a 110 volt system and between 210 and 240 volts in a 220 volt system. If the voltage indicates a reading of 105 volts (205 volts in a 220 volt system) or less, DO NOT USE THE SYSTEM. If you experience a low voltage reading as described, contact the marina's management to locate the source of the problem.

If the voltmeter is reading zero voltage it is an indication that no current is getting to the AC circuit breaker panel. Check your shore power cord to make sure it is properly attached to both the boat and the dockside electrical box. Also, make sure you have turned on the dockside electrical breaker. After checking these items, if you are still not getting power to the boat, contact marina management to ensure that the dockside power is operable. If indications are that the problem is with the boat's electrical system, have the system inspected by a qualified electrician. The ammeter provides you with an indication of the LOAD that is being put on the boat's 30 amp electrical system.

With all other breakers on the AC circuit breaker panel turned off and only the MAIN breaker switched on, and a reading of between 110 and 120 volts (210 and 240 volts for a 220 volt system), the ammeter should be indicating 0 amps. As you begin to power AC equipment (water heater, battery charger or any other portable equipment powered through the wall-mounted AC receptacles), the ammeter will begin to give readings in excess of 0 amps. More information on amperage and electrical loads can be found in the **Electrical Loads** portion of **Section 3**.

SHORE POWER/GENERATOR POWER

Selecting a Power Source

Power to your AC electrical system can be supplied by an onboard generator or by using a dockside power supply. The lights above the main breakers on your AC electrical panel indicate if your boat is hooked up to a dockside power source or if your generator is running.

NOTE: Remove all perishables from your refrigerator if you leave your boat for more than forty-eight hours. The power supply to your refrigerator may be interrupted and your food may spoil.

Connecting to Dock Side Shore Power

⚠ DANGER

Supplying power to an empty water heater may result in damage to the units heating element and could result in a fire.

1) Turn off the WATER HEATER circuit breaker on your AC panel. Do not turn the breaker back on until your boat's fresh water system and water heater have been filled, pressurized and primed.

2) Be sure the boat's generator is turned "OFF."

3) Make sure the 30 amp MAIN breaker(s) located within the boat's AC circuit breaker panel is turned off.

4) Locate your 50' dockside electrical cord(s). Be certain that all cords are in good repair. Inspect cords for cuts, nicks or abrasions in the exterior plastic cover.

⚠ DANGER

DO NOT use a damaged cord or a cord that is not specifically designed for this purpose. A household extension cord should not be used as a shore power cord for your boat. Using a damaged or improper cord could lead to electrical shock and serious personal injury.

5) Connect the female end of the cord to your boat's shore power receptacles located on the transom. Be sure to secure the nonmetallic threaded locking ring that locks the cordset to the inlet. This prevents accidental disconnection or arcing due to a gap between plug and inlet.

6) Choose a neat and safe way to route the dockside cord(s) to the dockside electrical box.

SHORE POWER/GENERATOR POWER

⚠ WARNING

Do not allow shore power cable end to hang in the water. An electrical field can be caused which can cause injury or death to nearby swimmers or passengers.

7) Turn off the breaker that is installed in the dockside electrical box. Plug the male end of the dockside cord into the dockside electrical box. The shore power plugs have a nonmetallic threaded locking ring that locks the cordset to the dockside inlet. This prevents accidental disconnection or arcing due to a gap between plug and inlet. After the cordset is connected, turn on the dockside electrical box breaker.

8) If the red reverse polarity light comes on, disconnect the shore power cord and contact marina management. If polarity is okay, turn on your boat's 30 amp MAIN Breaker(s).

9) Turn "ON" the AC MAIN breaker(s).

10) Monitor the voltmeter and ammeter while your boat is connected to any electrical power source.

⚠ WARNING

If the red reverse polarity light comes on, DO NOT try to turn on the MAIN breaker. INSTEAD, disconnect the shore power cord immediately. Notify the marina management of the reverse polarity problem and use a different dockside electrical box.

⚠ DANGER

ONLY people who are trained and experienced in working with electricity should service your boat's AC system. Inexperienced or untrained people may be harmed by incorrectly servicing a high voltage electrical system.

⚠ DANGER

Disconnect the power source before attempting to service any electrical system.

SHORE POWER/GENERATOR POWER

AC BREAKERS

Shore 1 (Main Power)

Main breaker

The SHORE 1 service is controlled by a 30 AMP MAIN CIRCUIT BREAKER. This MAIN breaker supplies power to the individual circuit breakers for that service. Each individual breaker will not function unless the MAIN breaker is "ON". The following individual circuit breakers have been installed in your boat.

Receptacles #1

This breaker regulates the power supply to both the the **receptacles** in the STBD portion of the boat. Turning this breaker to the "ON" position supplies power to the various STBD receptacles.

Receptacle # 2 (also includes referigerator):

This breaker regulates the power supply to the following AC equipment: **Refrigerator, Portside Receptacles.** Turning this breaker to the "ON" position activates the refrigerator and supplies power to the various portside receptacle.

NOTE: This breaker must remain in the "ON" position for the refrigerator to function using AC power.

Range:

This breaker regulates the power supply to the boat's **range.** To use the range turn the AC circuit breaker labeled RANGE to the "ON" position. Use the controls mounted on the range to control burners and heat adjustments. Information on the proper use and maintenance of the range is provided by the OEM supplier. Look for this information in the OEM information packet.

Microwave:

An optional microwave oven may have been installed on your boat as original factory installed equipment. This appliances operates on AC power. To power your microwave, switch the AC circuit breaker labeled RANGE to the "ON" position. Refer to the manual supplied by the microwave's OEM supplier for information regarding operation and maintenance.

NOTE: Propane stoves were offered as an option at the time your boat was built. If your boat was equipped from the Carver factory with a propane stove, an additional DC breaker labled LP breaker must be turned to the "ON" position. For further safety and maintenance information using the propane stove, refer to the OEM information packet.

SHORE POWER/GENERATOR POWER

Hot Water:

Hot water can be supplied to your fresh water system through your boat's engine heat exchangers or the hot water heater. When your boat's engines are not running, supply hot water to the fresh water system using the hot water heater. Turning this breaker labeled "WATER HEATER" to the "ON" position supplies power to the water heater. The water heater is located below the forward-most seat in the dinette.

⚠ DANGER

DO NOT supply power to an empty water heater. Fill, pressurize and prime the boat's water system prior to turning on the water heater. Heating an empty water heater will damage to the unit's heating element and could lead to a fire. Refer to the Fresh Water System portion of Section 4 for instructions on filling, pressurizing, and priming the fresh water system. Refer to Section 4 for information on how to operate the onboard water heater. Information on the proper use and maintenance of your boat's water heater has also been provided by the OEM supplier. This information is in the OEM information packet.

Coffee Maker:

This breaker regulates the power supply to the boat's **Coffe Maker** if available. To use the coffee maker, turn the AC circuit breaker "ON."

Battery Charger:

This breaker regulates the power supply to the boat's **Battery Charger.** Turning this breaker to the "ON" position activates the battery Charger.

NOTE: This "Battery Charger" breaker must be turned on for the battery charger to automatically charge the boat's batteries when the boat is connected to a dock side power source. The boat's battery charger is located in a hatch below the forward-most seat of the boat's dinette.

Ice Maker:

This breaker regulates the power supply to the boat's **Ice Maker** if available. Turning this breaker to the "ON" position to activates the ships ice maker.

Spare:

This breaker is reserved for any after-market aaccessories you would like to install on your boat.

Spare:

This breaker is reserved for any after-market aaccessories you would like to install on your boat.

SHORE POWER/GENERATOR POWER

Shore 2 (Air Conditioning System)

The following Shore 2 breakers supply power to your boat's air conditioning system.

Main breaker

The SHORE 2 service is controlled by a 30 AMP MAIN CIRCUIT BREAKER. This MAIN breaker supplies power to the Air Conditioning Breaker. The Air Conditioning Breaker will not function unless the MAIN breaker is "ON".

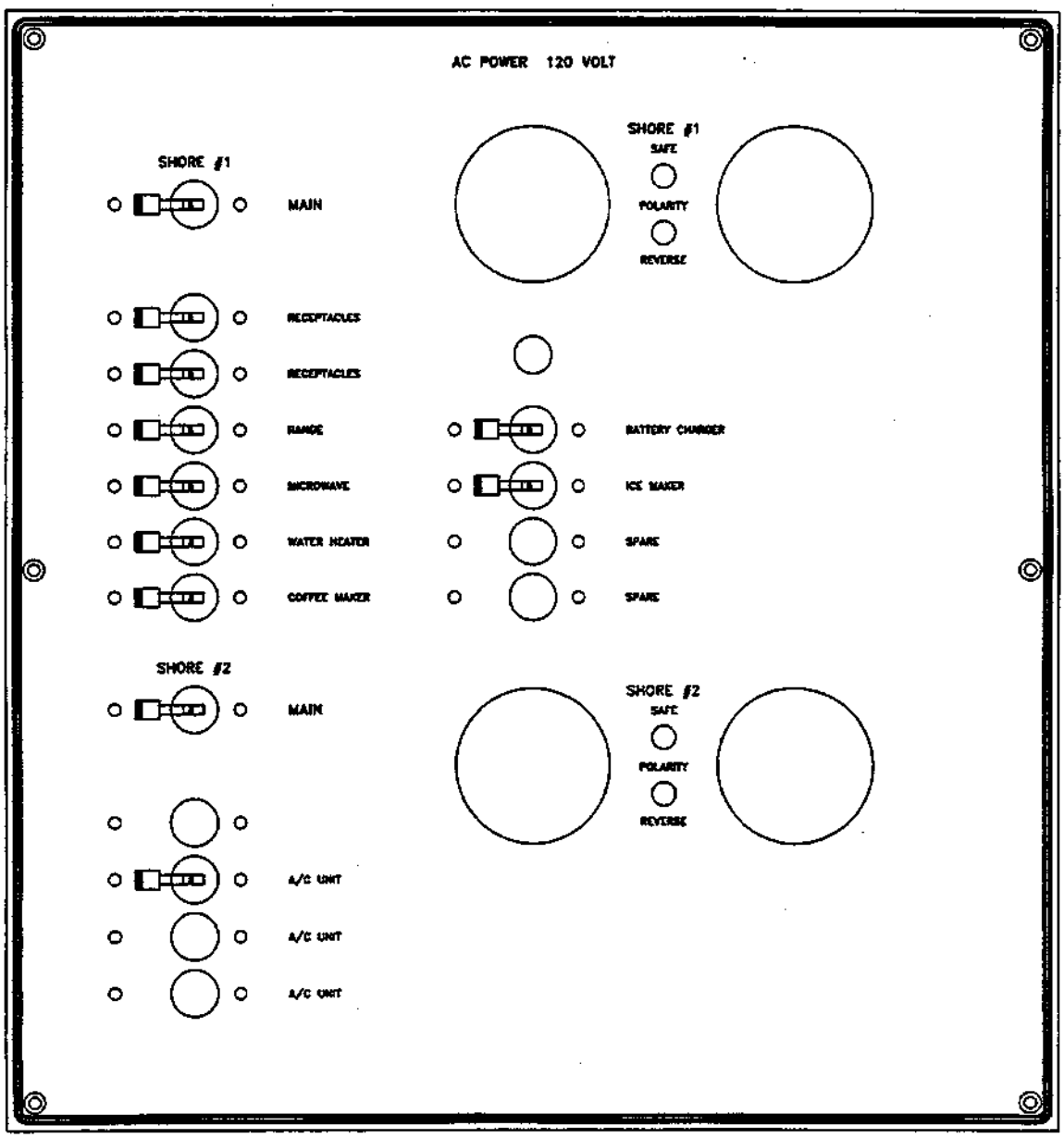
Air Conditioner

This circuit breaker controls the condenser, fan and water pump for the 350's single air conditioning unit. Turn this breaker "ON" to activate the boat's air conditioning system.

NOTE: before turning this breaker "ON", refer to the *Air Conditioning* portion of *Section 4* for detailed instructions on operating the air conditioning system.

SHORE POWER/GENERATOR POWER

Salon AC Main Breaker Panel



SHORE POWER/GENERATOR POWER

Using the Generator

If so equipped, you 350 Mariner's onboard generator will enable you to power AC electrical accessories while away from dockside power. The generator is installed in the center, aft area of the boat's engine compartment. Fuel is drawn from the same fuel tanks used to supply the boat's propulsion engines.

Starting The Generator

1) Read, understand and follow the operator's manual that has been prepared and supplied by the generator manufacturer.

⚠ DANGER

Operate bilge blowers for AT LEAST 4 minutes and inspect the bilge for fuel vapors prior to starting the generator. If you discover fuel vapors in the bilge. DO NOT START THE GENERATOR. Investigate the source of these vapors and fix the problem before starting the generator. Continue to operate the bilge blowers while the generator is running.

2) The generator starter is powered by a dedicated and separate 12 volt deep cycle battery. This battery is installed between the center stringers of the engine compartment. Power to the generator from this battery is controlled by a ON/OFF switch. Turn this switch to the "ON" position prior to starting the generator.

NOTE: The boat's battery charger monitors and charges the generator battery along with the other ship's batteries.

⚠ WARNING

NEVER turn the generator battery ON/OFF switch to the "OFF" position while the generator is running. Doing this will damage the generator or alternator wiring.

3) The generator engine uses sea water as a coolant. The sea water intake valve must be opened prior to starting the generator. This valve is located in the boat's engine compartment just forward and starboard of the generator.

4) The generator is equipped with a fuel selector valve located below the aft-most portion of the engine room's center hatch. This valve that allows the generator to draw fuel from either the port or starboard engine. Position this fuel selector valve to draw fuel from the desired tank.

NOTE: If your boat is equipped with a diesel generator, the generator draws fuel from the port fuel tank only. Refer to the *Fuel System* portion of *Section 5* for more information.

5) Turn the 30 amp MAIN breaker(s) for SHORE 1 and SHORE 2 to the "OFF" position.

6) A spring-loaded generator START/STOP switch is installed in the upper right corner of the boat's AC panel. Push the switch to the "START" position until the generator starts. Release the switch when the generator has started.

⚠ WARNING

The START/STOP switch is spring activated. Release the switch when the generator has started. Failure to release the switch after the generator has started may damage the starter. ALSO, do not activate the generator starter for periods longer than 10 seconds. If the generator fails to start after the first attempt, wait 1 minute before trying again.

7) When the generator is running smoothly, switch the MAIN breaker(s) to the "ON" position. This connects the generator to the boat's AC electrical system. AC receptacles and accessories can now be used in the same manner as when the boat is connected to dockside power.

8) To turn the generator "OFF", turn the START/STOP switch to the "STOP" position. If the generator will not be used for an extended period (a few days or more) turn the generator battery switch to the "OFF" position. This switch is located near the center, starboard portion of the engine room's center hatch just below the cockpit floor.

9) To use dockside power, turn the MAIN breaker(s) to the "OFF position. Then, connect and use the dockside power system as detailed in the **Connecting to Dockside Shore Power** portion of **Section 3**.

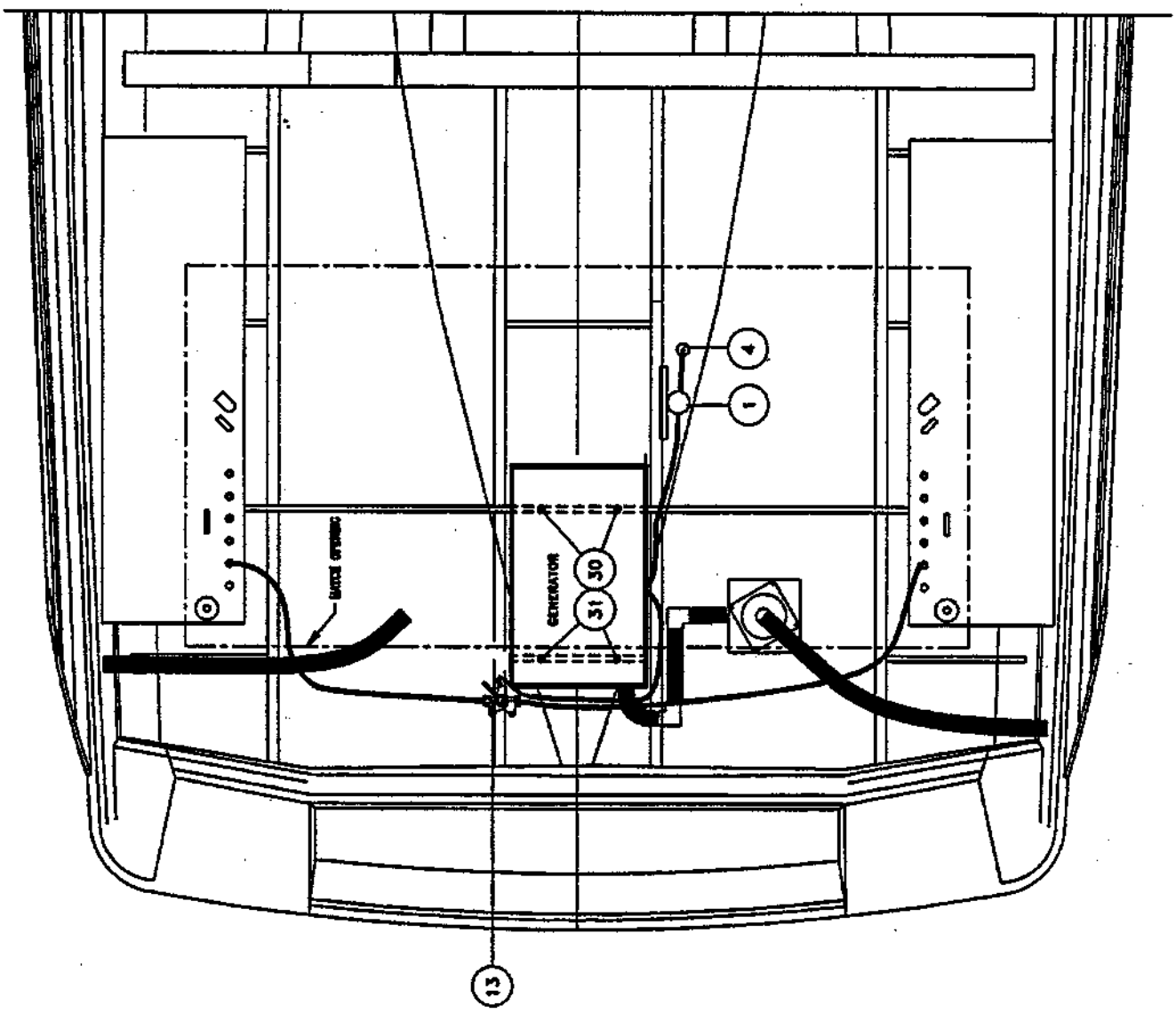
⚠ DANGER

Generator exhaust contains carbon monoxide, a dangerous and poisonous gas. DO NOT INHALE GENERATOR EXHAUST. Refer to Carbon Monoxide portion of Section 1 for more information on engine exhaust and carbon monoxide.

A TIP FROM CARVER: *"Dedicating a 12 volt battery to the generator provides an important safety feature. A dedicated battery enables you to start the generator regardless of the condition of the two 12 volt ship's batteries. If the ship's batteries become discharged to the point where they are not able to start an engine, start the generator and turn on the battery charger. This will recharge the ships batteries and will enable you to start the propulsion engines when the batteries have been recharged to an adequate level."*

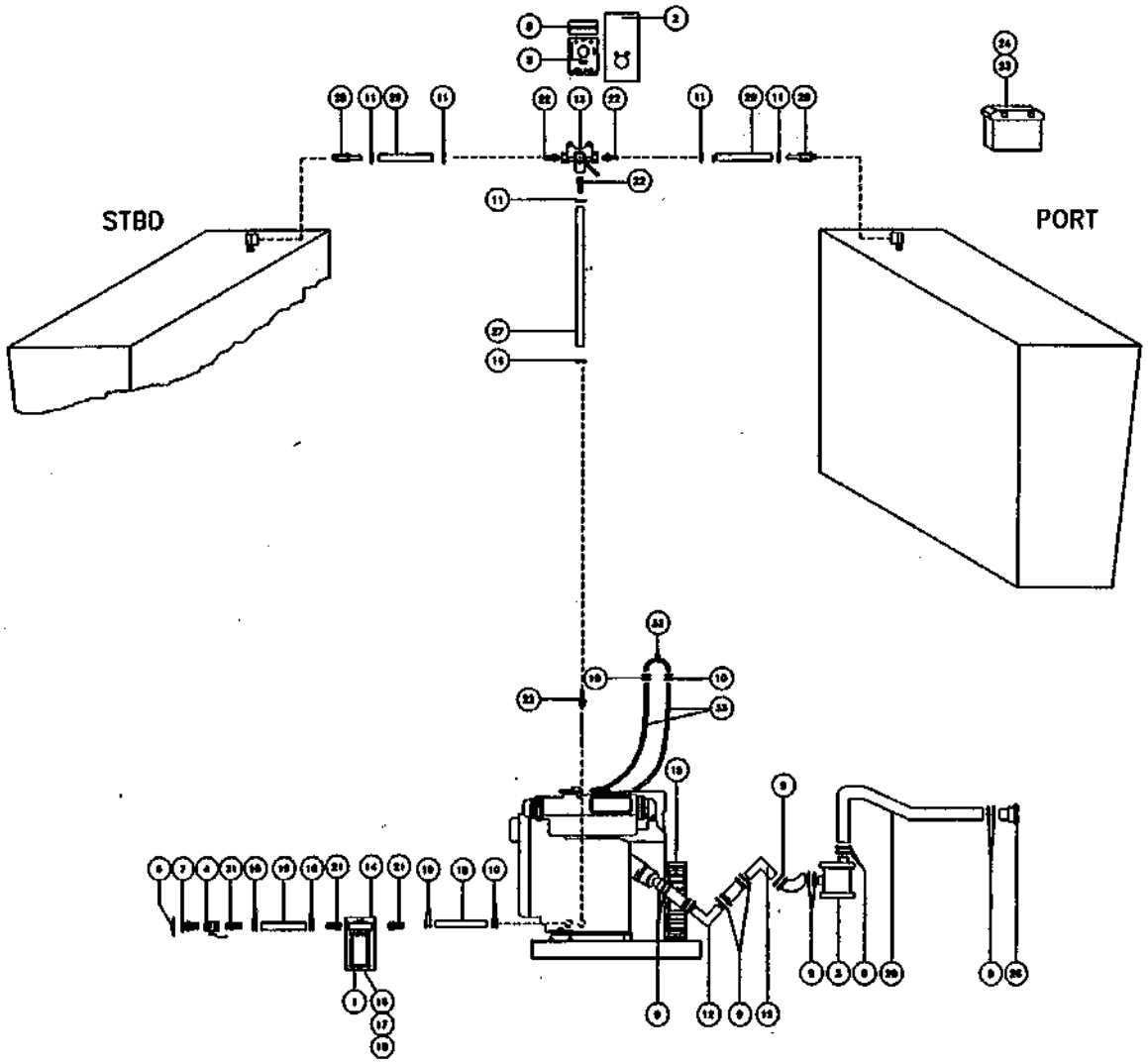
SHORE POWER/GENERATOR POWER

Generator System Layout



Generator System Layout

ITEM	QTY	DESCRIPTION
1	1	STRNR:#5 3/4" INTAKE WATER
2	1	MNT:SLCTR VALVE 3" x 6"
3	1	MFFLR:GEN 2"(NEW)
4	1	VALVE:BALL 3/4" W/DRAIN
5	1	LABEL:FUEL VALVE SELECTOR
6	1	STRNR:RND CVR 3 1/2" NON D
7	1	THRU HULL:3/4 BRONZE
8	1	LABEL:GENERATOR
9	16	CLAMP:HOSE #40 (2 1/16 TO
10	10	CLAMP:HOSE #10 (9/16 TO 1
11	6	CLAMP:HOSE #8 (7/16 TO 7
12	1	HOSE:2" x 26" SUPER FLEX
13	1	VALVE:3-WAY
14	1	BASE:GEN STRAINER
15	1	GEN:6.5KW GAS KOH 120V
16	3	NUT:10-24 SS HH NYLOCK/2 OH
17	3	WASHER:FLAT #10 SS
18	3	SCREW:MACH 10/24 x 1/4
19	2	HOSE:3/4" x 6' WATER/EXHAUST
20	1	HOSE:2" x 6' SUPER FLEX
21	3	FIT:HS BRB 3/4 x 3/4MPT BRZ
22	4	FIT:HS BRB 3/8 x 1/4MPT BR
23	1	BOX:BATTERY SERIES 27
24	1	BATT:SERIES 31 DEEP CYCLE
25	2	ELB:EXHST FRP 2" x 90DEG
26	1	FIT:2" EXH W/BRB BR CHR
27	1	HOSE:3/8" x 6' FUEL
28	2	VALVE:ANTI-SYPH 3/8MPT x 3/8
29	2	HOSE:3/8" x 8' FUEL
30	4	SCREW:3/8 x 3 1/2 LAG SS
31	4	WASHER:FLAT 3/8 SS
32	1	KIT:SIPHON BRK KOHLER-GAS
33	2	HOSE:5/8" x 6' HEATER



NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

SHORE POWER/GENERATOR POWER

Ground Fault Circuit Interrupters Receptacles

Certain receptacles are Ground Fault Circuit Interrupters (GFCI). GFCI outlets provide protection against abnormal current flow from a conductor to ground. Ground fault protection is based on the idea that a normal electrical circuit has all the current flowing in the wires designated for that circuit.

Ground fault protection is provided by measuring the current in each conductor and seeing that whatever flows "down" one conductor in a circuit, flows "back" through the corresponding conductor of the same circuit. If there is an imbalance in the current, it is considered a "fault" in that circuit. Your boat's electrical receptacles are protected from ground fault through the installation of GFCI receptacles.

When a ground fault current is detected, the GFCI outlets will trip and interrupt the flow of current. The advantage of ground fault protection onboard your boat is to provide you and your guests with protection from inadvertent electrical shock.

Testing GFCI Receptacles

GFCI receptacles are identified by a button that is located between the receptacles two outlets. Pushing the button will interrupt the current in that receptacle and all other receptacles on that circuit. If the power IS NOT interrupted do not use the receptacles on that circuit and contact a qualified electrician to make the proper repairs. Press the reset button to restore power of the receptacles in that circuit. Test the GFCI receptacles on a weekly basis to ensure proper operation.

Electrical Loads

When using your boat's AC receptacles be aware that household appliances exert a "load" on an electrical system when they are used. Your boat's system is only capable of carrying a certain electrical load. This load is measured in AMPs. Each MAIN circuit in your boat has an electrical capacity of 30 amps. If the load on this system exceeds the level of amperage it was designed for, a breaker will trip. This is a signal that you have overloaded the circuit. Following is a list of typical household equipment and the approximate loads that could develop during their use.

AC EQUIPMENT ELECTRICAL LOADS

Fans	Up to 0.7 amps
Electric Blanket	Up to 2 amps
Television	Up to 2.7 amps
Coffee Maker	Up to 6.3 amps
Battery Charger	Up to 7.3 amps
Toaster	Up to 10.5 amps
Fry pan	Up to 12.3 amps
Space heater	Up to 13.7 amps
Refrigerator	Up to 1.5 amps

SHORE POWER/GENERATOR POWER

An appliance that uses an electric motor, such as a vacuum cleaner or electric drill, will have a "motor load plate" mounted on the unit. This motor load plate will provide information on the load that will be created while using the device.

As the chart indicates, appliances that utilize a motor or a heating element create rather high loads. Be particularly careful when using curling irons, toasters, coffee makers, hair dryers, mix masters or any other comparable types of equipment.

⚠ WARNING

DO NOT overload the electrical circuits. Use the above chart to judge the load that is being put on an individual receptacle. Exceeding these loads will trip the circuit breaker. Reduce the amperage on a receptacle before resetting a tripped breaker.

Bonding System

Your Carver is equipped with a comprehensive metallic bonding system that effectively interconnects all underwater equipment and thru hull fittings. This is done to ensure that fittings are at equal electrical potential. Bonding minimizes the effects of corrosion due to stray electrical currents.

Included within this bonding system are sacrificial zinc anodes that have been installed on each of the boat's propeller shafts and onto the underwater portion of the boat's transom. These anodes will corrode and deteriorate sooner than the boat's underwater fittings and will provide a visual reference to the level of stray current to which your boat is being exposed.

Your boat's 12 volt system, AC system, and the batteries negative leads are all connected to the bonding system. These systems are interconnected through buss bars located in the engine and aft bilge compartments and connected to the transom mounted zinc plate. This system ensures that the "cases" of all metallic equipment onboard your boat are at the same electrical potential.

⚠ WARNING

DO NOT tamper with or modify the boat's bonding system. Doing so could threaten the integrity of the system.

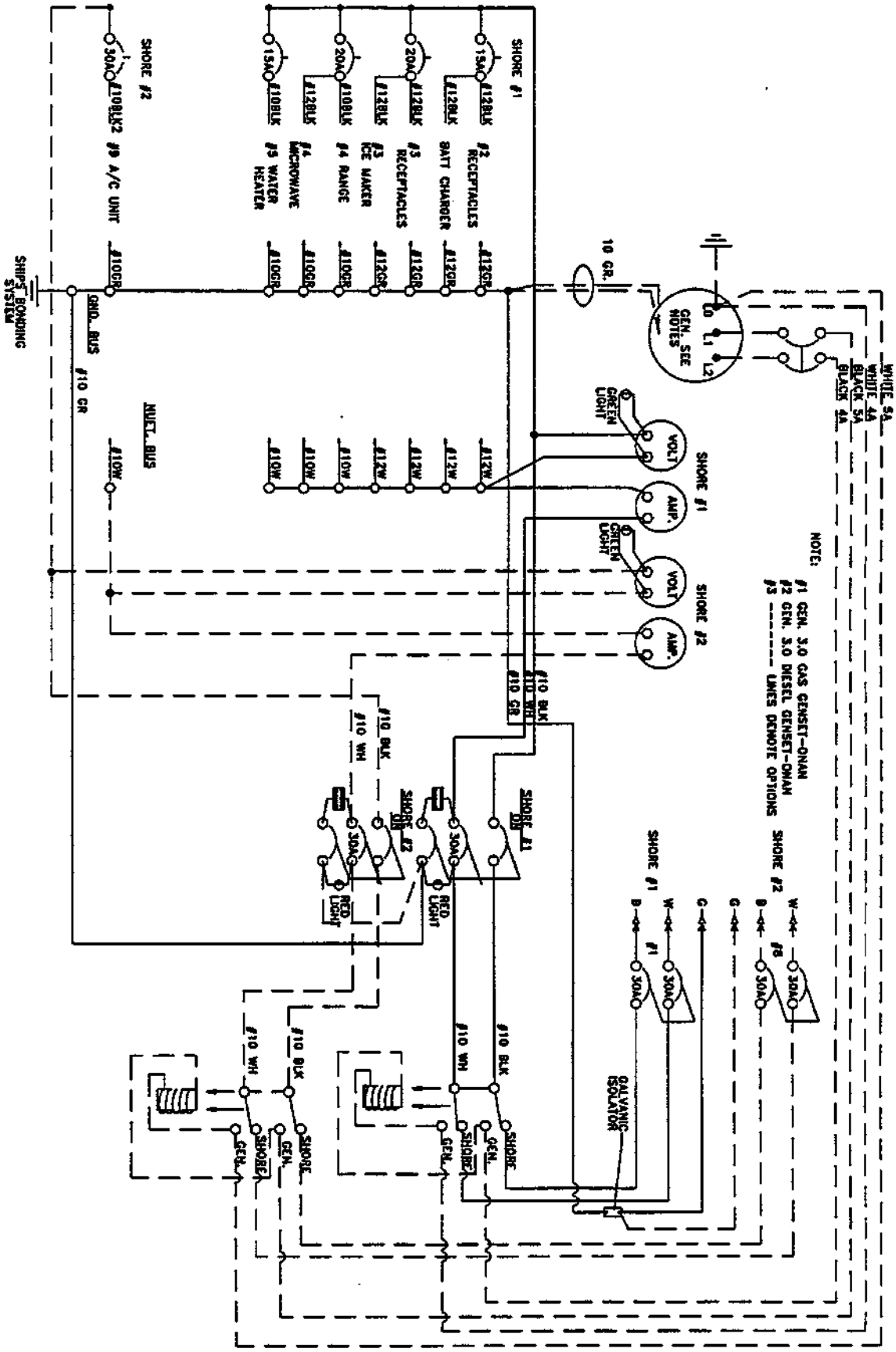
⚠ WARNING

Monitor the condition of your boat's zinc anodes. Replace zinc anodes when you have determined that they have been reduced from their original size by 50%. DO NOT allow the zinc anodes to completely deteriorate. Refer to Section 5.5 for additional precautions concerning the sacrificial anodes.

NOTE: Damage resulting from stray current or galvanic corrosion is NOT covered under the Carver limited warranty.

SHORE POWER/GENERATOR POWER

AC Electrical Schematic



SHORE POWER/GENERATOR POWER

Trouble Shooting AC Electrical System

PROBLEM	POSSIBLE CAUSE	SOLUTION
No AC power as indicated by voltmeter.	Shore power cord not connected.	Inspect shore power cord.
	Power not turned on at dock box.	Turn dock box breaker ON.
	30 Amp MAIN breaker tripped or in OFF position.	Reset MAIN breaker or turn to ON position.
	Loose or disconnected electrical wire.	Contact Carver Dealer.
No power at cabin AC outlets.	30 Amp MAIN breaker tripped or turned to the OFF position.	Reset or turn ON the 30 Amp MAIN breaker.
	Breakers labeled REC or REC GALLEY turned to the OFF position.	Turn breakers ON.
	Ground fault interrupter tripped.	Locate and reset ground fault interrupter.
	Shore power cord disconnected.	Reattach shore power cord.
30 AMP MAIN breaker continues to trip.	Faulty MAIN breaker.	Contact Carver dealer to have breaker replaced.

Section 4

POWERING THE INTERNAL SYSTEMS

AIR CONDITIONING SYSTEM

Air conditioning is offered on the 350 Mariner as a factory installed option. The procedures outlined in this section pertain only to units installed at the Carver factory. Air conditioning systems installed as aftermarket accessories may not necessarily operate in the manner described within this section.

Factory installed systems depend upon a source of AC power (supplied by shore power or an onboard generator) and a supply of sea water (salt or fresh).

The air conditioning unit used on the 350 Mariner also has the capability to produce heat in their reverse cycle mode. This reverse cycle operation, however, is affected by the temperature of the sea water. As sea water temperature decreases so does the units ability to produce warm air. We recommend that the air conditioning system installed on the 350 Mariner not be used in reverse heat mode when the sea water temperature is below 40 degrees F.

A single air conditioning unit has been installed below the bridge immediately aft of the foredeck sun lounge. You may access this AC unit by removing the back rest of the fordeck sun lounge. Condensation for this single air conditioning unit drains directly overboard.

To Use The Air Conditioning Systems:

1) Turn the AC MAIN breakers to the "OFF" position.

2) A single pump is used to supply the air conditioning unit with sea water. Locate and open the thru-hull valve that supplies sea water to the pump. You can access this water supply valve by pulling the hatch below the galley floor.

3) A strainer is installed between the above-mentioned water supply valve and the A/C pump. This strainer stops foreign matter from being ingested into the pump or air conditioning units. Inspect and clean this strainer prior to using the pump. You can access this sea water strainer by pulling the hatch in the salon floor.

4) Supply power to the AC breaker panel on your boat. Power can be supplied to the AC breaker panels by connecting to a dockside power source or by starting the onboard generator. Refer to **Selecting a Power Source** portion of **Section 3**.

5) Once you have connected to an AC power source, turn the Shore 2 MAIN breaker to the "ON" position.

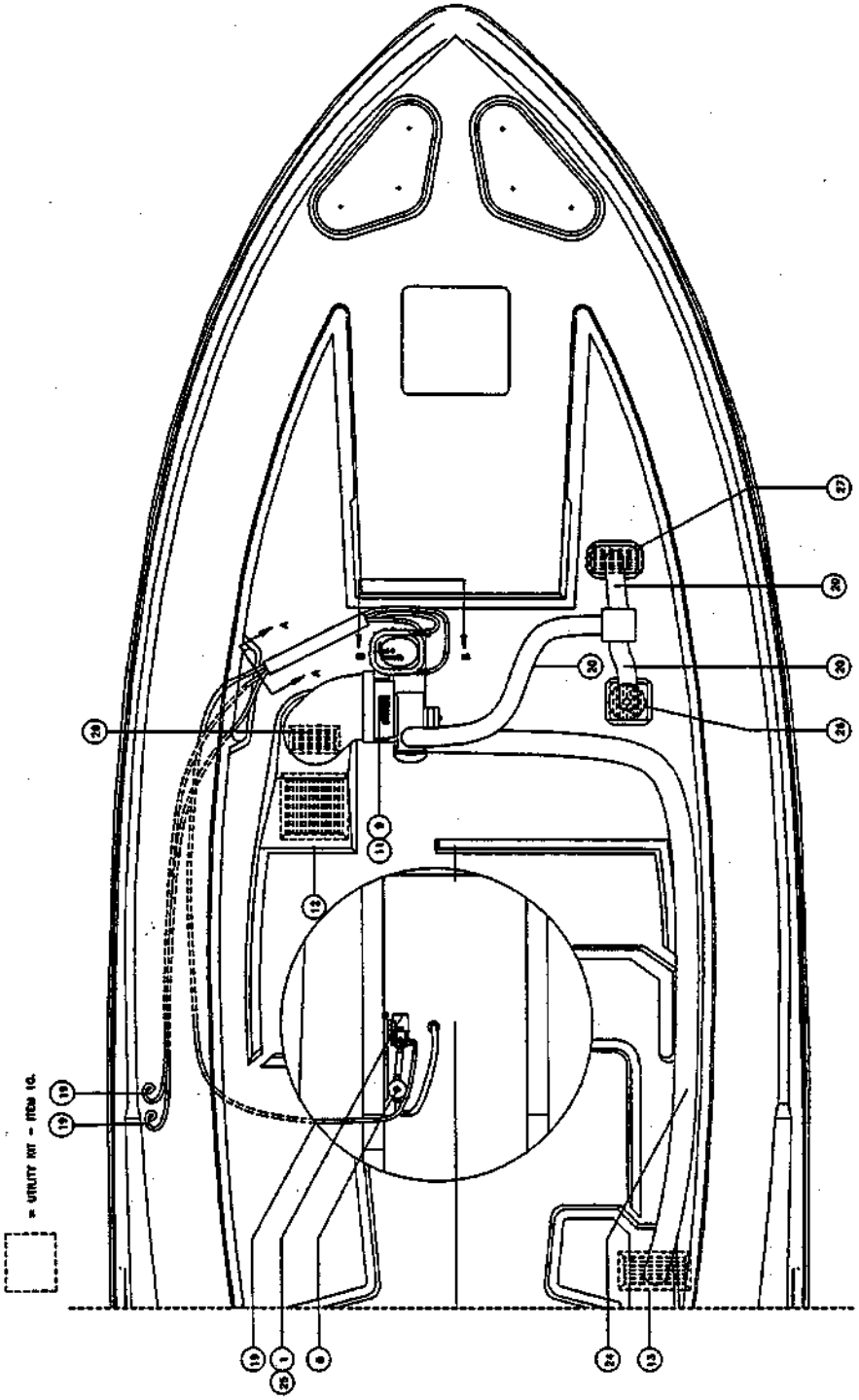
6) Turn "ON" the breaker labeled "AIR CONDITIONING".

7) Make sure that water is being pumped to the air conditioning unit. A sea water discharge outlet is installed through the center, portside of your boat's hull.

POWERING THE INTERNAL SYSTEMS

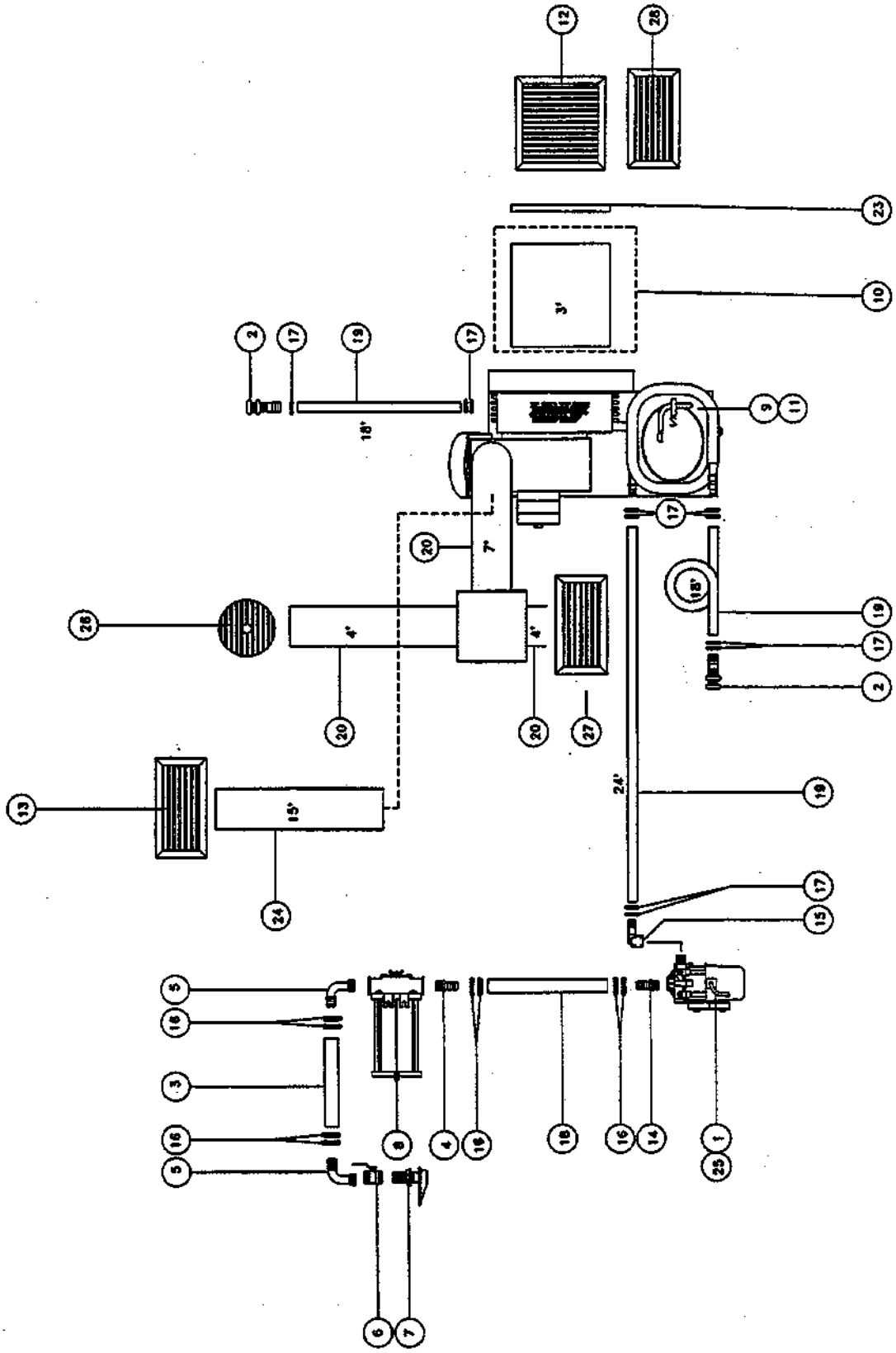
8) The air conditioning unit is controlled by its own Control Unit located near the salon's entertainment center just above the sofa. Refer to the instructions provided by the manufacturer for detailed information on operating and maintaining the air conditioning system.

Air Conditioning Layout



POWERING THE INTERNAL SYSTEMS

Air Conditioning Layout



POWERING THE INTERNAL SYSTEMS

Air Conditioning Layout

ITEM	QTY	DESCRIPTION
1	1	PUMP:SEAWATER(P500)
2	2	THRU HULL:5/8 WHITE
3	2'	HOSE:WATER EXHAUST 3/4"
4	1	FIT:HS BRB 3/4 x 3/4MPT BRZ
5	2	FIT:HS BRB 3/4 x 3/4 90 BZ
6	1	VALVE:BALL 3/4" W/DRAIN
7	1	STRNR:SCOOP INTAKE 3/4" T
8	1	STRNR:#5 3/4" INTAKE WATR
9	1	A/C:16000 BTU OCEAN 110V
10	1	KIT:UTILITY 3597
11	1	A/C:16000 BTU OCEAN 220V
12	1	GRILL:AWHT RETURN 16 x 9
13	1	GRILL:AWHT RETURN 10 x 4
14	1	FIT:3/4MPT x 3/4HB NYLON
15	1	FIT:90 1/2HB x 1/2FPT PW PV
16	8	CLAMP:HOSE #10 (9/16 TO 1
17	11	CLAMP:HOSE # 8 (7/16 TO 7
18	9"	HOSE:WATER EXHAUST 3/4"
19	60'	HOSE:BILGE EX HD 5/8
20	1	HOSE:4 x 15' INS FLEX DUCT
21	2	BRACKET:PIPE SUPPORT
22	1	MNT:A/C UNIT PLATFORM
23	1	RNG:R/A MNT 14"D
24	1	HOSE:7 x 15' INS FLEX DUCT
25	1	PUMP:SEAWATER(P500)
26	1	GRILL:4" RND AIR OFF-WHT
27	1	GRILL:AWHT SUPPLY 8 x 4
28	1	GRILL:AWHT SUPPLY 14 x 6

NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

POWERING THE INTERNAL SYSTEMS

FRESH WATER SYSTEM

Your 350 Mariner is capable of carrying approximately 86 gallons of fresh water. Water is carried within the boat's 75 gallon water tank with an additional 11 gallons of hot water within the hot water tank.

Filling The Water Tank

The fresh water tank is filled through a single water fill deck plate labeled "WATER". You can find this water fill plate mounted inside the bow's starboard fender storage locker. Refer to the **Fill Plate Locations** portion of **Section 9** for the water fill location.

NOTE: Thoroughly flush and sanitize the water system before initial use and at least once each season.

Put only clean, fresh water into your water tank. Your tank is full when water is discharged from the water tank vent fitting installed through your boat's hull. Refer to the **Above the Waterline Thru-Hull Fittings** portion of **Section 9** for the exact location of the water tank vent fitting. DO NOT overfill your water tank OR leave a fill hose unattended while the tanks are being filled.

Priming The Water System

After filling the tanks:

1) Partially open all cold water faucets and the cold water side of the shower mixing valves.

2) Position the battery selector switch (refer to the Battery Selector Switch portion of Section 2) to either the #1 or #2 position. This switch is located in a locker on the salon's aft, starboard wall just above the sofa

3) Switch the 12 volt MAIN circuit breaker and the 12 volt circuit breaker labeled WATER to the "ON" position.

The system will be primed by purging all air from the system's pipes. Monitor each faucet and the shower mixing valves. When a steady steam of water is being discharged from the COLD side of a faucet or shower head you may turn the valve controls for that faucet or shower head to the HOT side. As a steady steam of water flows from the hot side of each faucet or shower head, they can be turned off. Pressure within the system will build and the pressure water pump will automatically shut off. Priming the system also fills and maintains the water level within the water heater.

⚠ DANGER

DO NOT supply electric power to an empty water heater. Supplying power to an empty heater will damage the element and may start a fire.

POWERING THE INTERNAL SYSTEMS

System Operation

The fresh water system is designed to operate in the same manner as the water system within your home. After filling the tank and turning on the proper 12 volt circuit breakers, simply turn a faucet valve to receive fresh water.

Sometimes a recently filled system or one that has not been used for some time may need re-priming. This is normal and is caused by an accumulation of air bubbles at the pressure water pump.

A TIP FROM CARVER: *"If your boat will be left unattended for an extended period (three days or more) turn the 12 volt circuit breaker labeled PRESSURE WATER to the "OFF" position. If the this breaker is left on, pressure within the system may fall and cause the water pressure pump to engage. If this happens frequently, it could needlessly discharge your batteries."*

Water Heating System

An 11 gallon water heater is part of your boat's onboard fresh water system.
The water heater is located below the dinette's forward-most seat. The water heater is automatically filled by the pressure water pump. Fresh water can be heated two different ways:

1) Water can be heated when AC power is applied to the water heating unit. Switch the AC MAIN circuit breaker and the AC circuit breaker labeled WATER HEATER to the "ON" position AFTER the water system has been filled, pressurized, and primed.

⚠ DANGER

DO NOT supply electric power to an empty water heater. Supplying power to an empty heater will damage the element and may start a fire.

2) Your boat is also equipped with an ENGINE HEAT EXCHANGER. The heat exchanger utilizes the heat from the boat's engine coolant to heat the water contained within the water heater.

A TIP FROM CARVER: *"If you are at anchor and have no access to dockside power you can still have hot water. Simply start the starboard propulsion engine. After letting the engine run for a short time you'll have water warm enough for a shower."*

For more information on your boat's water heater refer to the information supplied by the unit's manufacturer. This information is contained in the OEM supplied materials packet.

POWERING THE INTERNAL SYSTEMS

Shower

Your 350 Mariner is equipped with a shower in the head compartment. This shower requires a minimum of preparation before use and cleanup after showering.

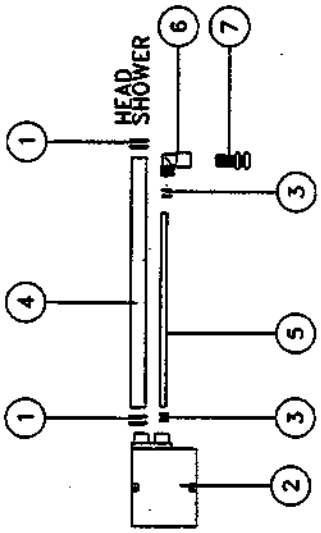
The drain basin of each shower is positioned lower than the boat's water line. Because of this, a shower sump pump is needed to drain the basin and to discharge the shower drain water overboard or into a grey water holding tank. With the 12 volt breaker labeled SHOWER in the "ON" position, the shower sump pump is triggered automatically when water within the shower's drain basin rises above a predetermined level.

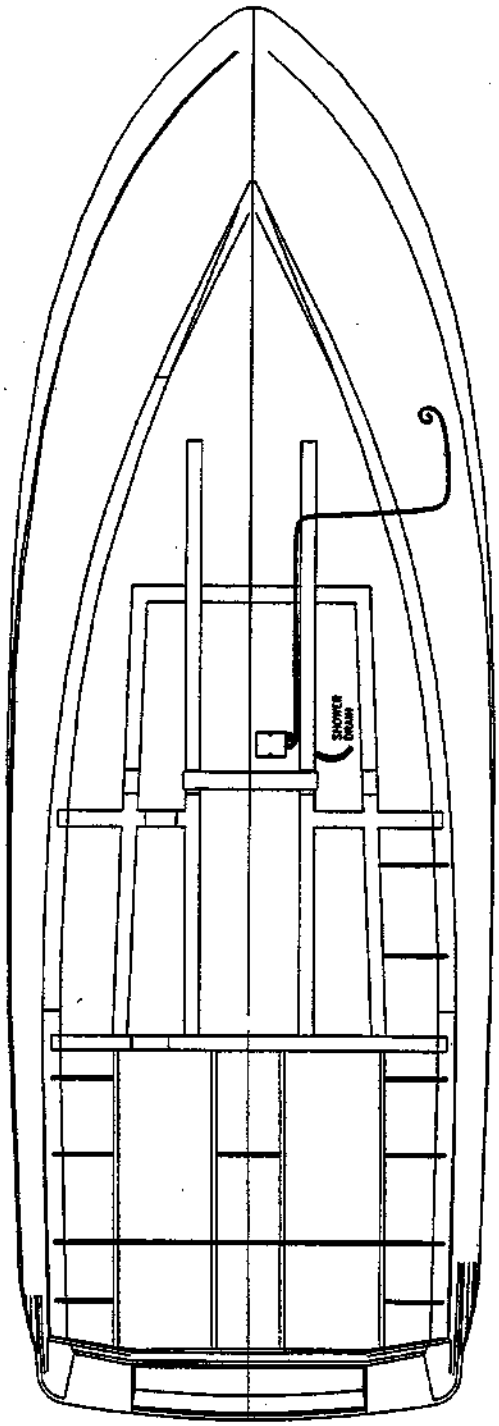
NOTE: Although the shower sump is designed to work automatically, the 12 volt "SHOWER" breaker located on the salon's 12 volt main panel must be in the "ON" position for the shower sumps to be active.

A TIP FROM CARVER: *"To obtain the most consistent shower temperature, turn the COLD water valve on full, then mix hot water until the desired temperature is achieved. This system will keep the pressure water pump running, eliminating widely fluctuating water temperature."*

POWERING THE INTERNAL SYSTEMS

Shower Sump Layout





ITEM	QTY	DESCRIPTION
1	4	CLAMP:HOSE #28
2	1	PUMP:SHOWER SUMP SYSTEM
3	4	CLAMP: HOSE #10
4	1	HOSE: 1 1/4" x 3' HD
5	1	HOSE: 3/4" x 15' HD
6	1	FIT:90 3/4HB x 3/4FPT NYLON
7	1	THRU HULL:3/4" WHITE

NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

POWERING THE INTERNAL SYSTEMS

Water System Maintenance

If the water flow from the shower appears to become restricted, it may be due to the accumulation of sediment at the shower head. If this happens, remove the head, rinse with clean water and clean the discharge holes with a fine wire.

Periodically remove and clean the filter screens from the faucet discharge spouts. Clean the screens with a fine wire if necessary. A buildup of debris in the faucet filter screens can create enough restriction to cause the pump to repeatedly cycle on and off.

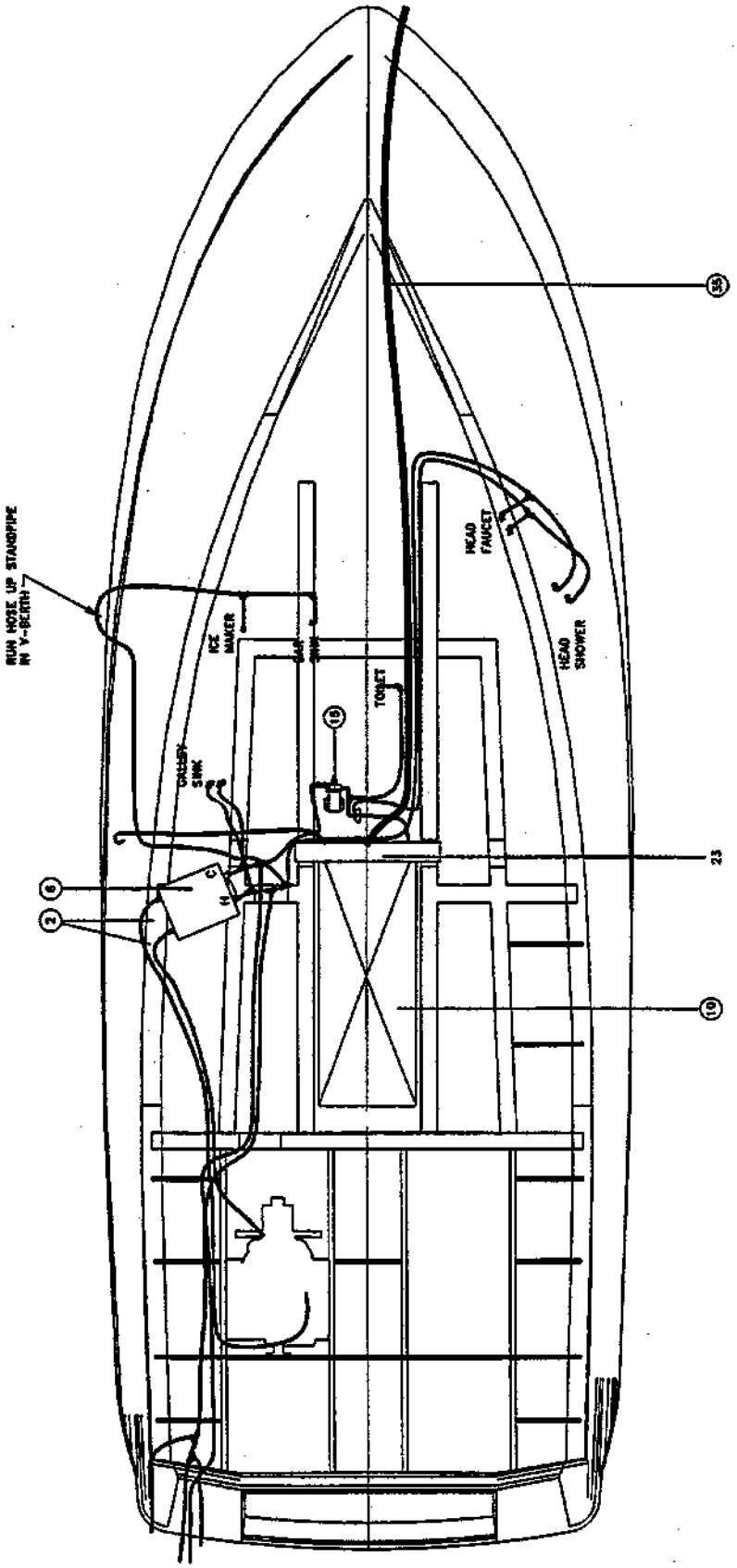
There is an in-line filter installed near the pressure water pump. Clean this filter on a monthly basis. Clean the screen in the water tank vent on an annual basis.

Flush and sanitize your water system at least once per season. Flushing involves draining all water from the system. Sanitizing involves using a commercially made tank sanitizing liquid that is available at any well stocked marine supply store.

NOTE: Your boat's fresh water system INCLUDING THE WATER HEATER AND HEAT EXCHANGER must be drained prior to winter lay-up. Failure to winterize the water system could lead to damaged pipes, valves, faucets, tanks, or a ruptured water heater. Refer to the Winterization section of this manual for more information.

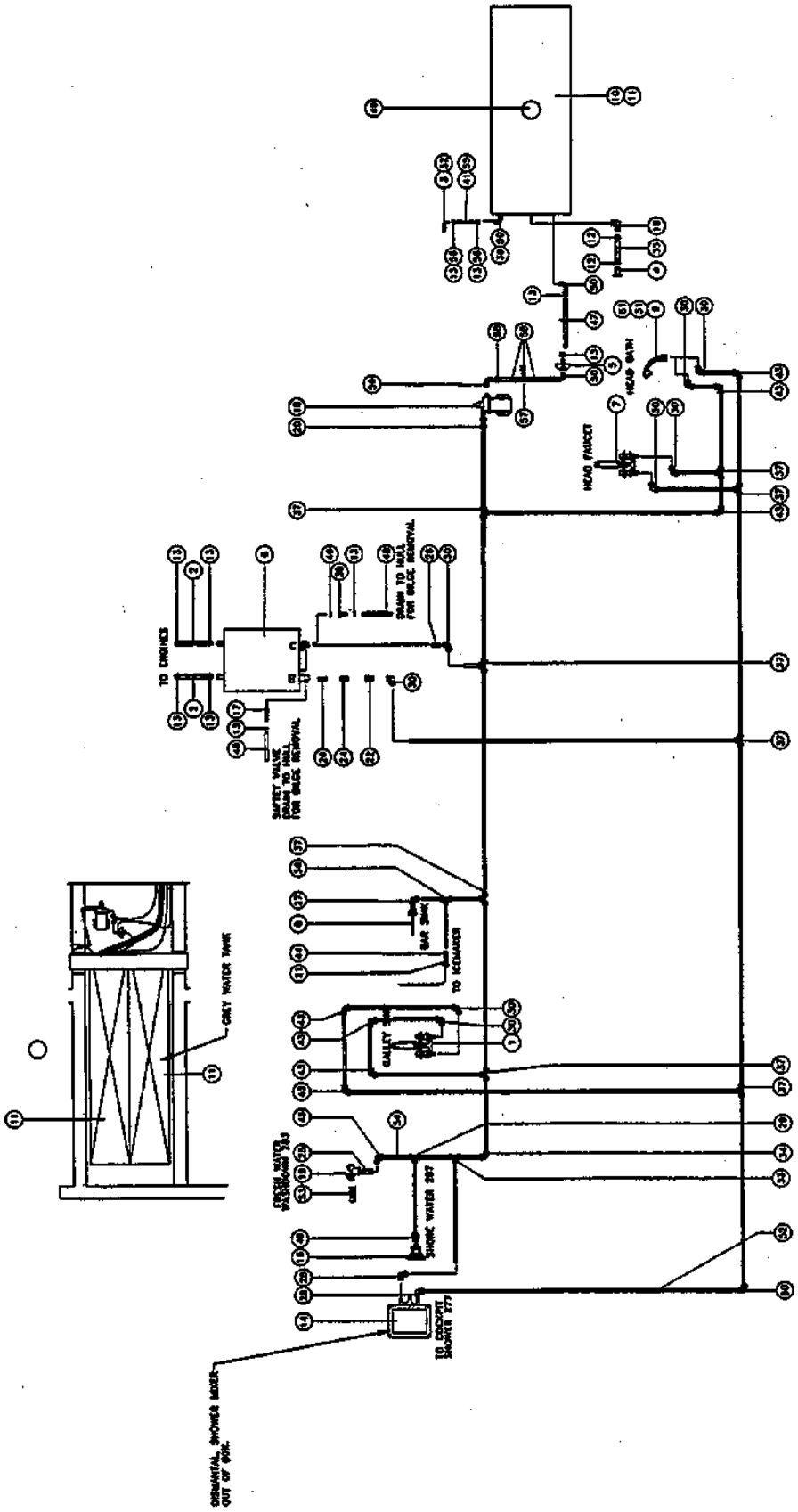
POWERING THE INTERNAL SYSTEMS

Water System Layout



POWERING THE INTERNAL SYSTEMS

Water System Layout



POWERING THE INTERNAL SYSTEMS

Water System Layout

ITEM	QTY	DESCRIPTION
1	1	FAUCET:GLLY CHROME
2	1	HOSE:HEATER 5/8" x 24' BLK
3	1	VENT:90DEG THRU HULL
4	1	PLT:DECK WATER FIT
5	1	FLTR:WATER TWIST-ON
6	1	HEATER:HOT WATER 11 GALLON
7	1	HEAD:FAUCET
8	1	FAUCET:CKPT (CHROM
9	1	SHWER:SCNDVK:ASY W/5' HS
10	1	TANK:WATER 75 GAL
11	2	TANK:WATER 40 GAL
12	4	CLAMP:HOSE #28
13	14	CLAMP:HOSE #8
14	1	SHWR:TRANSOM H & C
15	1	PUMP:SURFLO PRESS
16	1	INLET:REGULATOR SHORE WAT
17	1	FIT:1/2HB x 1/2MPT
18	1	FIT:90DEG 1 1/2HB x 1 1/2MPT
19	1	SILLCOCK:1/2" CHR/
20	1	FIT:1/2WL x 1/2FP
21	1	KIT:1/4" OD COPP T
22	1	VALVE:1/2x1/2 CHEC
23	1	TIE BAR:STRINGER
24	1	FIT:1/2MPT ADAPTOR
25	1	NIPPL:1/2MPT x 2"
26	2	NIPPL:PIPE BRASS 1
27	1	FIT:90DEG 1/2"WL x 1/2FPT
28	2	FIT:90DEG 1/2WL x 1/2FPT
29	1	FIT:'T' 1/2"WL
30	8	FIT:90DEG 1/2WL x 1/2FPT
31	1	SHOWER:FAUCET
32	1	VENT:FUEL 90DEG W/SS TRIM
33	1	FIT:'T' 1/2"WL
34	1	FIT:90DEG 1/2"WL
35	1	HOSE:VACUUM EX HD 1 1/2 x 25'
36	1	FIT:'T' 1/2"WL
37	8	FIT:'T' 1/2"WL
38	1	FIT:WATER HEATER DRAIN
39	1	FIT:90 1/2HB x 1/2MPT PW NYL
40	1	WASHER:F/7427601
41	1	HOSE:BILGE EX HD 5/8 x 12'
42	1	TUBE:WATERLINE GREY 1/2" x 114'
43	7	FIT:90DEG 1/2"WL
44	1	FIT:ADAPT 1/2FPT x 1/2WL AD
45	1	FIT:90 1/2WL x 1/2FPT
46	1	FIT:ADAPT 1/2FPT x 1/2WL AD
47	1	HOSE:HD WATER 5/8" x 5'
48	2	HOSE:BILGE EX HD 5/8 x 3'
49	1	SNDR:WATER TANK,CENTROID
50	3	FIT:90 1/2HB x 1/2MPT PW NYL
51	1	SHWR:HLDR SCNDVK ADJSTBL
52	1	TUBE:WATERLINE GREY 1/2" x 12'
53	1	LABEL:FRESH WATER WASHDOW
54	1	TUBE:WATERLINE GREY 1/2" x 15'
55	1	HOSE:BILGE EX HD 5/8 x 12'
56	4	CLAMP:HOSE #8
57	1	FIT:1/2HB x 1/2HB x 1/2HB NY
58	8	CLAMP:HOSE #8
59	1	FIT:90 1/2HB x 1/2FPT PW PV
60	1	FIT:901/2WL

NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

POWERING THE INTERNAL SYSTEMS

Transom Shower

The transom shower option is a convenient item that allows you and your guests to rinse off with warm, fresh water after swimming. This option is especially handy on boats used in salt water.

Using the Transom Hand Shower

The optional transom hand shower is an integral part of your boat's fresh water system. Use it just as you would use a shower located in the boat's head compartment. The transom hand shower and mixing valves are located in the upper portside corner of the transom's portside locker.

Fresh Water Washdown

The optional fresh water washdown enables you to use fresh water from the boat's water storage tanks to washdown and clean your boat. Fresh water washdown is particularly useful in salt water areas.

Using Fresh Water Washdown

1) Be sure the fresh water system is primed and full as detailed in the **Fresh Water System** portion of **Section 4**.

2) Locate the transom-mounted hose fitting and 12 volt switch labeled "WASHDOWN" located on the lower starboard corner of the transom's portside locker.

3) Attach a nylon water hose to the transom deck hose fitting. Screw a nozzle to the other end of the hose. The best type of nozzle to use is the "pistol grip" type that can be opened and closed by squeezing your hand.

4) Turn on the 12 volt breaker labelled WASHDOWN. This breaker activates the 12 volt automatic pump that creates water pressure within the fresh water system. When the hand nozzle is in the closed position the pressure will build within the washdown system and the automatic pressure pump will shut off when a predetermined amount of pressure has been reached. Opening the hand nozzle will release pressure and will engage the pressure water pump.

A TIP FROM CARVER: *"Remember that the fresh water washdown system draws its water from the boat's fresh water storage tanks. Prolonged use will quickly reduce the amount of fresh water contained within the onboard storage tanks."*

Raw Water Washdown

The optional raw water washdown enables you to use sea water for washdown and cleaning.

1) Locate the cockpit-mounted hose fitting. This fitting is located in transom's portside locker along the inward wall.

POWERING THE INTERNAL SYSTEMS

2) Open the seacock that supplies sea water to the raw water washdown pump. The seacock is located within the engine compartment just aft and port of the batteries.

3) Attach a 3/4" nylon water hose to the transom hose fitting. Screw a nozzle to the other end of the hose. The best type of nozzle to use is the "pistol grip" type that can be opened and closed by squeezing your hand.

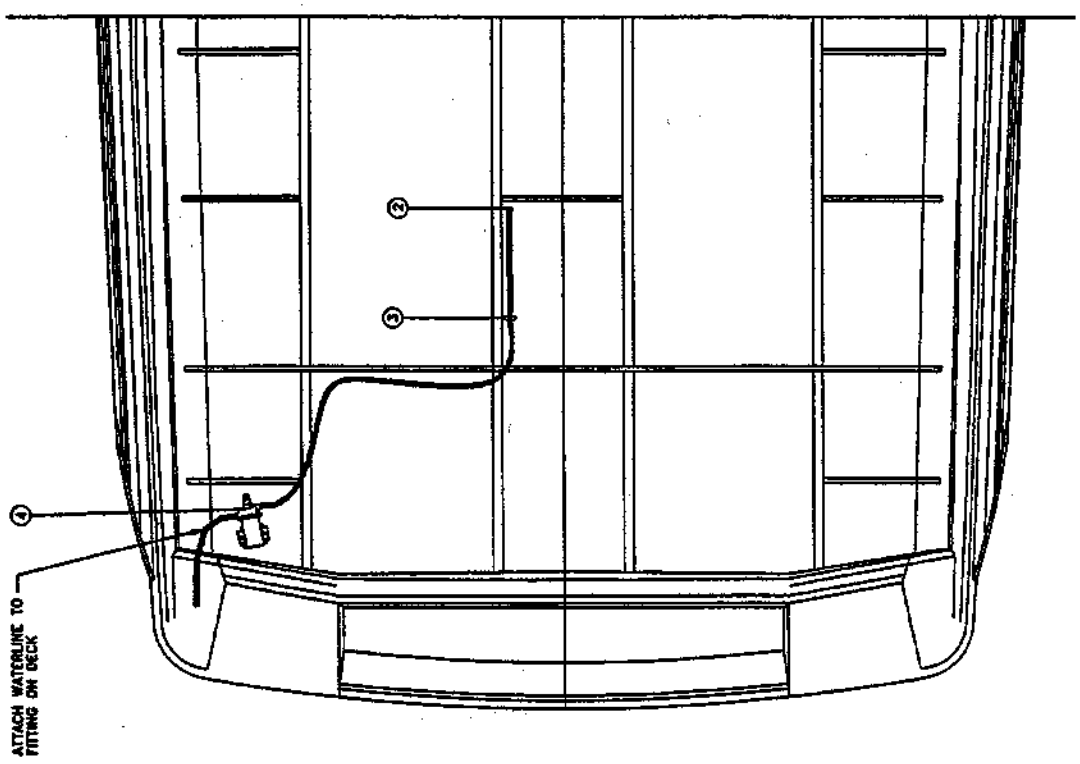
4) Turn the battery selector switch to position #1 or #2. Turn the 12 volt MAIN circuit breaker to the "ON" position. Turn "ON" the 12 volt breaker labeled WASHDOWN.

5) The washdown system uses an automatic 12 volt pump to create pressure. When the hand nozzle is in the closed position the pressure will build within the system. The automatic pressure pump will shut off when a predetermined amount of pressure has been reached. Opening the hand nozzle will release pressurized water and will engage the pressure water pump.

⚠ CAUTION

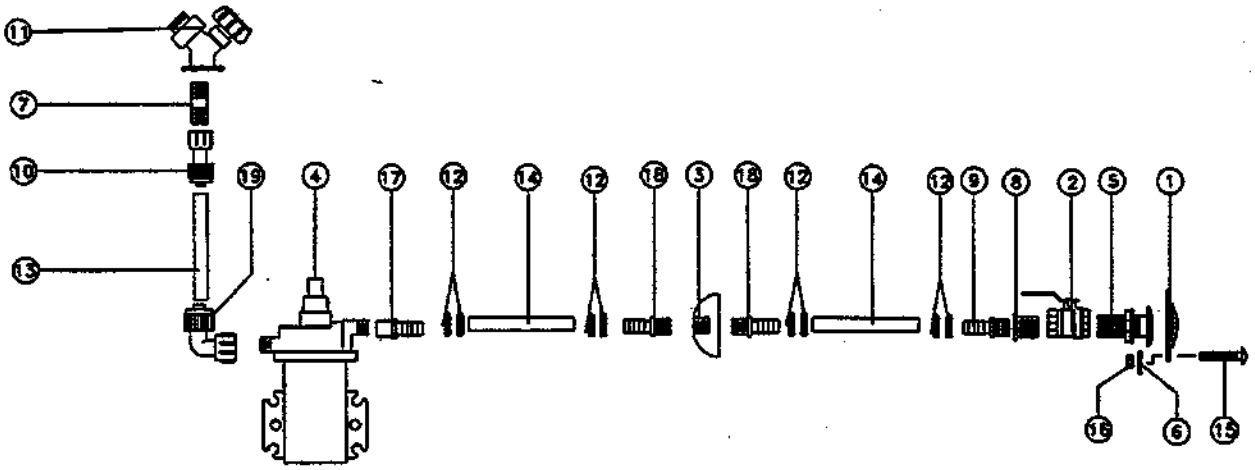
DO NOT run the washdown pressure water pump when the seacock that supplies sea water to the system is closed. The pump may become damaged if it is allowed to operate with no water. Be sure to clean the raw water filter frequently.

Raw Water Washdown Layout



POWERING THE INTERNAL SYSTEMS

Raw Water Washdown (Continued)



ITEM	QTY	DESCRIPTION
1	1	STRNR:RND CVR 3 1/2" NON DIR
2	1	VALVE:BALL 3/4" W/DRAIN
3	1	FLTR:WATER TWIST-ON
4	1	PUMP:SURFLO PRESSURE WATER
5	1	THRU HULL:3/4" BRONZE
6	4	WASHER:FLAT #10 SS
7	1	NIPPL:1/2MPT x 2" LONG PV
8	1	FIT:1/2FPT x 3/4MPT BR ADAP
9	1	FIT:HS BRB 5/8 x 1/2MPT 90 BRZ
10	1	FIT:1/2WL x 1/2FP SWIVEL ADAPT
11	1	SILLCOCK:1/2" CHR/PLT/BRZ
12	8	CLAMP:HOSE #10
13	1	TUBE:WATERLINE GREY 1/2" X 15'
14	1	HOSE:HEAVY DUTY WATER 5/8" x 20'
15	4	SCREW:#10 x 1 1/2" OH SMS GR
16	4	NUT:#10-24 SS NN NYLOCK
17	1	FIT: 1/2HB x 1/2FPT PW NYLON
18	2	FIT:1/2HB x 1/2MPT NYLON
19	1	FIT:90DEG 1/2WL x 1/2FPT
20	1	HOSE:VACUUM EX HD 1 1/2 x 12"
21	1	LABEL:SEA WATER

NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

Shore Water Hookup

Shore water hookup utilizes dockside city water as the fresh water source while your boat is docked. When your boat is connected to shore water you are not drawing from the fresh water supply stored within your onboard water tank.

To Connect to Shore Water Hookup

1) Locate the shore water hookup fitting labeled "SHORE WATER." This fitting is located in the upper starboard corner of the transom's portside locker.

2) Attach a water hose between the shore water fitting and the dockside water tap.

3) Turn the dockside water tap "ON."

Connecting your boat to shore water bypasses the boat's water tank and pressure water pump. Connecting the boat to shore water does not "automatically" fill the fresh water tank. The only way to fill the onboard tank is through the water fill deck plate.

⚠ CAUTION

Shore water should not be left connected when your boat is unattended. Any break in the water lines inside your boat will allow an unlimited amount of water to enter your boat. Disconnect the shore water connection whenever leaving you boat unattended.

BILGE SYSTEM

Your 350 Mariner has been equipped from the Carver factory with three automatic bilge pumps located beneath the cabin floor. The bilge is the lowest point in the interior of the boat's hull where any liquid that finds its way into the hull will accumulate. Each pump has a rated ability to pump up to 1500 gallons of water per hour. These pumps have been strategically installed to remove water that accumulates in each bilge area.

The 350 Mariner bilge is divided into three sections:

1) The forward bilge which starts below the boat's galley/dinette compartment and continues to the bow of the boat. You can access this bilge pump by pulling the hatch in the galley floor.

2) The amidship's bilge area contains water tanks, waste and water pumps, air conditioning pump, and various other gear. The mid bilge pump is mounted below the stairway leading from the salon to the cockpit. You can access this bilge pump by pulling the hatch in the salon floor.

3) The aft bilge contains the ship's steering linkage, rudder ports, fuel tanks, and engine equipment. You can access the aft bilge pump by pulling the center engine hatch in the cockpit.

Bilge Operation
For safety and convenience, each bilge pump can be operated manually or automatically when needed.

Automatic Operation

Each bilge pump is wired to a breaker located in the Safety Main panel and then routed to the batteries. The bilge pumps are also wired to an individual breaker in the boat's 12 Volt Distribution panel. Incorporated into each bilge pump is a float switch. The float switch "automatically" turns on the appropriate bilge pump when bilge water rises to a predetermined level. These float switches are wired to the breakers in the Safety Main panel. The bilge pumps will operate automatically via their float switches, regardless of the position of the breakers on the 12 volt circuit breaker panel or the position of the battery selector switch. Test each switch by lifting the float. Lifting the float should turn the bilge pump on.

NOTE: The breakers for the bilge pumps in the Safety Main panel should be in the "ON" position at all times so that the pumps will operate automatically via their float switch.

Manual Operation

The bilge pumps can also be operated manually. A set of bilge pump control switches have been installed at the bridge helm station to manually control the pumps. For manual operation, turn the 12 volt circuit breakers labeled FWD BILGE, MID BILGE and AFT BILGE to the "ON" position. At the helm station, turn the switches marked FWD, MID or AFT BILGE PUMP to the "ON" position.

A TIP FROM CARVER: *"A certain amount of water will always collect in your boat's bilge, especially in the bilge area where the shaft log is located. The small amount of water that normally accumulates is usually not enough to activate an automatic float switch.*

"While underway and on plane, use the helm station switches to turn your bilge pumps on manually and let them run for 30 seconds to a minute.

"The mid and aft bilge pumps on your boat are located in the aft most section of each bilge. When your boat is on plane bilge water will flow to the aft area of the bilge and be pumped overboard by your manually activated bilge pumps. The forward pump is near the lowest point in the hull at rest."

POWERING THE INTERNAL SYSTEMS

⚠ CAUTION

WHEN OPERATING THE BILGE PUMPS IN THE MANUAL MODE, DON'T FORGET TO TURN THEM "OFF" AFTER WATER HAS BEEN REMOVED FROM THE BILGE. Leaving a pump run dry could seriously damage the pump.

Your boat's bilge pumps will remove nearly all the water that may collect within the bilge. Yet, a small amount of water will remain in the bilge area. If you insist upon an absolutely dry bilge you will need to remove the last bit of water with a sponge and bucket.

Bilge Pump Maintenance

Periodically inspect and clean the bilge pump strainers. DO NOT allow dirt and debris to clog the intakes of the bilge pumps. Frequently check the operation of each bilge pump switch to ensure that they are operating properly.

The bilge area should be kept clean by removing any dirt or debris and by using any of the commercially available bilge cleaners that are available from your Carver Dealer. Keeping a dry, clean bilge will help reduce moisture and minimize odor within your boat.

The bilge area of your boat should never be used as a storage area. Storing loose items in the bilge could damage pumps, pipes or other components that are essential parts of your boat's operational system.

NOTE: **Before operating your boat's bilge pumps, wipe up any oil that may have accumulated in the bilge area. Pumping oil overboard contributes to water pollution and is in violation of the Federal Water Pollution Control Act. Violators are subject to a substantial penalty.**

⚠ CAUTION

If you keep your boat in a cold climate where temperatures can drop below freezing, make sure that all water within the bilge is drained prior to storing the boat for the winter. Water left to freeze in the bilge could lead to severe damage to your boat and its components.

POWERING THE INTERNAL SYSTEMS

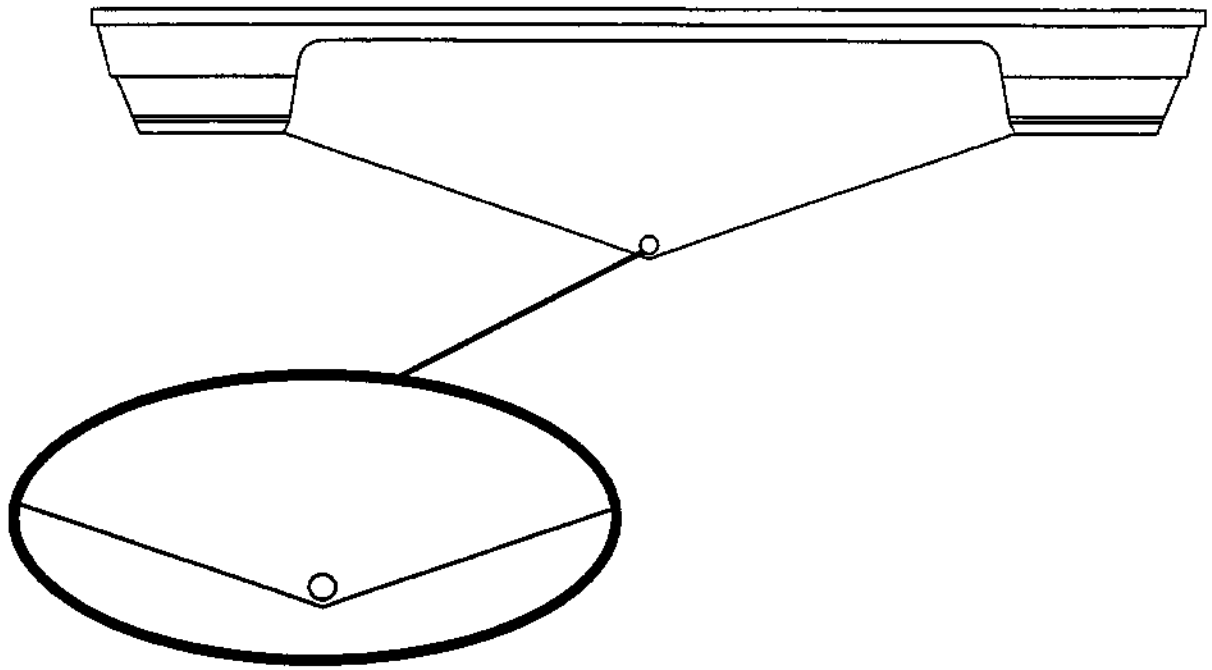
Garboard Drain

Your 350 Mariner is equipped with one garboard drain. This drain has been installed to allow water to drain from the bilge while the boat is in dry storage. The boat and cradle should be positioned in a manner that will allow water to flow toward the garboard drain. The garboard drain is located in the transom in the deepest portion of the hull's "V."

⚠ CAUTION

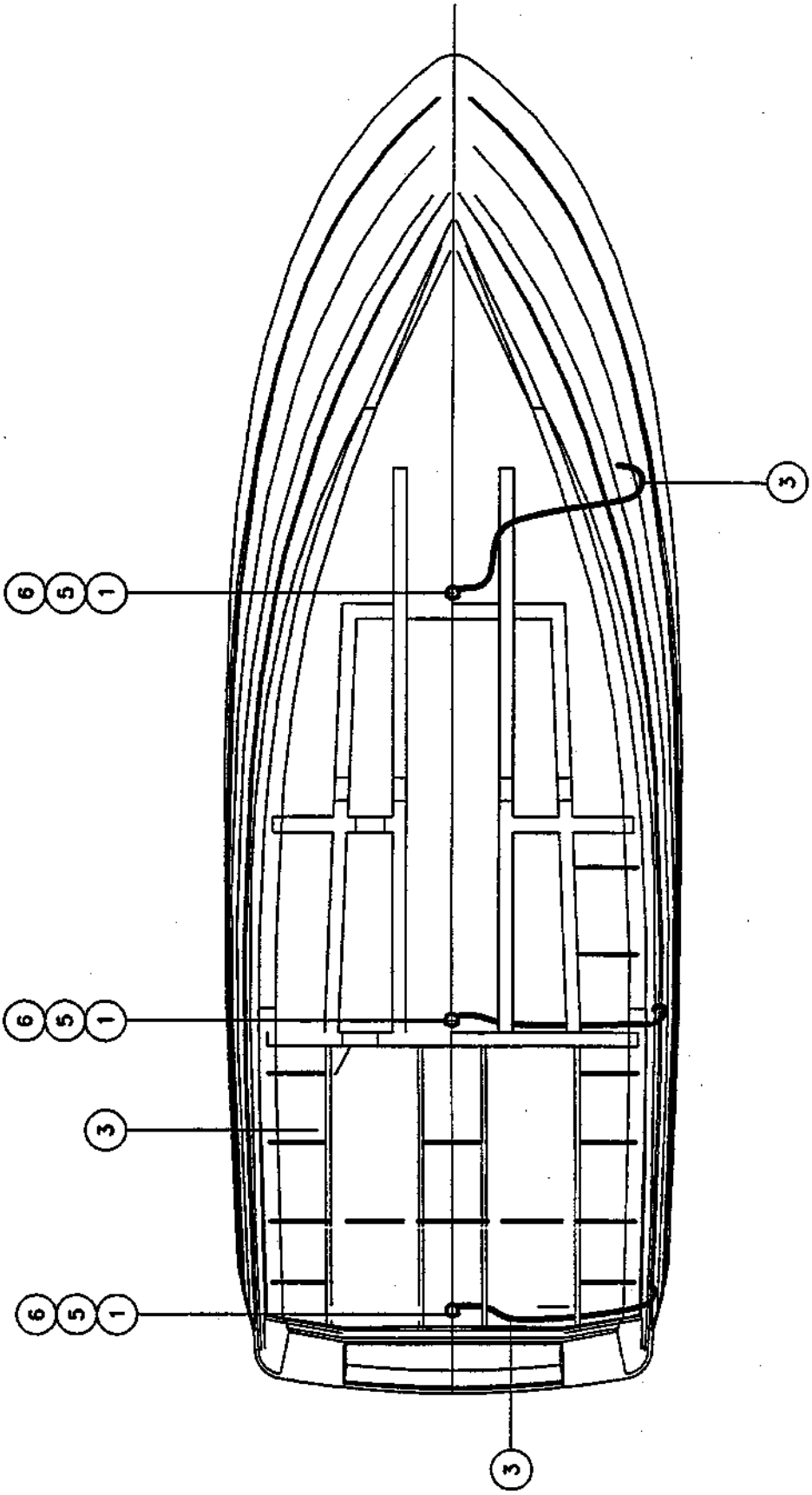
Be certain that the garboard drain plug is securely screwed into the garboard drain BEFORE launching the boat.

A TIP FROM CARVER: *"Coat the threads of the garboard drain plug with waterproof grease prior to installing the plug into the garboard drain fitting. This will make it easier to remove at a later date."*



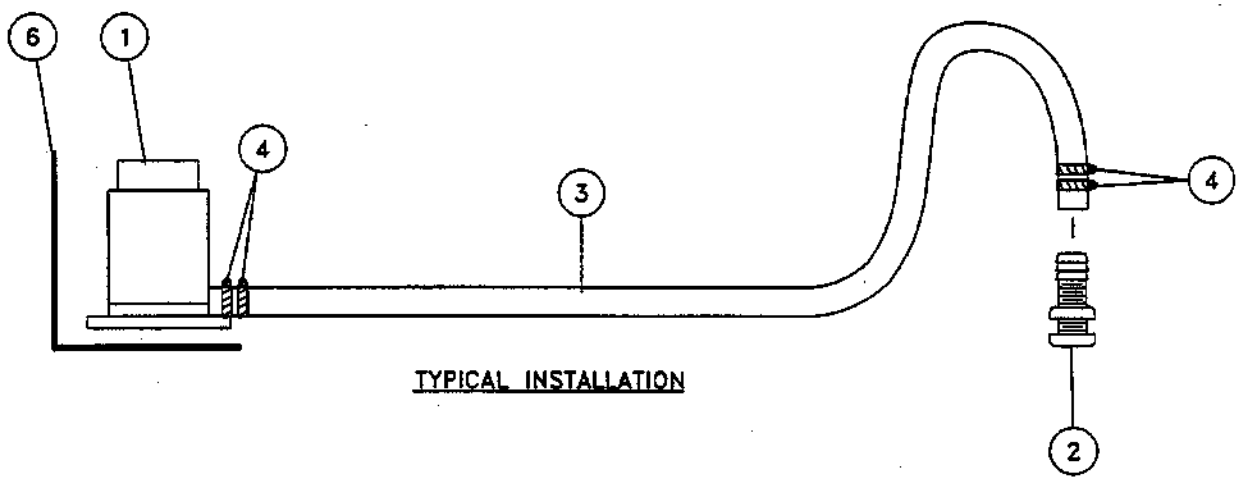
POWERING THE INTERNAL SYSTEMS

BILGE SYSTEM LAYOUT



POWERING THE INTERNAL SYSTEMS

BILGE SYSTEM LAYOUT



TYPICAL INSTALLATION

BILL OF MATERIALS		
ITEM	QTY.	DESCRIPTION
1	3	PUMP:BILGE 1500
2	3	THRU HULL:1-1/8" WHITE
3	3	HOSE:BILGE FLEX KING 1-1/8" x 23'
4	12	CLAMP:HOSE #20
5	3	SW:RULE-A-MATIC
6	3	FRP:MNT BILGE L SWITCH
7	3	ELB:1 1/4FPT x 1"HB

NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

POWERING THE INTERNAL SYSTEMS

SANITATION SYSTEMS

Heads

Your 350 Mariner is equipped with a self-contained head/sanitation system that, when properly used, conforms to all United States antipollution laws. The head systems available on your Carver 350 Mariner use an electric pump and raw or fresh water to clear the head of waste.

Electric Head

The electric head system installed on your boat may be flushed using your boat's fresh water supply or with raw water. If your boat is equipped to use raw water, you must supply raw water to the head units by opening the raw water pickup valve. The head's water pickup valve is located below the hatch in the galley floor. If your boat uses fresh water flushing, water will be supplied to the head units when your water system is primed.

The electric head is flushed with the aid of a motor powered by 12 volt DC power. Operate the electric head by turning the battery selector switch to the #1 or #2 position. Switch the 12 volt MAIN circuit breaker located in the 12 volt circuit breaker panel to the "ON" position. A breaker labeled ELECTRIC HEAD is mounted on the 12 volt electrical panel. This breaker must be in the "ON" position before using the electric head. Flush the electric head by pressing the "FLUSH" button mounted near the head. The head will continue to flush for as long as the switch is depressed.

A FEW TIPS FROM CARVER: *"Before leaving the boat for an extended period (more than 48 hours) flush the head for at least 10 seconds. This ensures that waste has cleared the sanitation transfer hose and has entered the holding tank. Waste left within the transfer hose tends to dry-out and harden. This could restrict the internal size of the hose and hamper future operation.*

"Make sure that there is always a small amount of water left in the bowl of the head. This acts as a trap and will reduce unwanted odors.

"Sea water is used to flush electric head. Material suspended in sea water (seaweed, aquatic organisms, etc.) can become trapped within the passages of the system and lead to bowl staining and unwanted odors. In-line deodorant dispensers are available from your marine supply dealer that will minimize these types of problems."

Emptying The Waste Holding Tank

The standard 350 Mariner waste system utilizes a 20 gallon waste tank made of molded polyethylene that is installed below the galley floor. This waste tank can be emptied using a dockside pump-out station. Or, if your boat is optioned with an overboard or direct overboard discharge system, you can empty waste tanks directly overboard where law prohibits.

POWERING THE INTERNAL SYSTEMS

Using Dockside Discharge

Waste is transferred to and stored in the waste holding tank. This tank is then emptied using a dockside pump-out station.

1) Locate a dockside pump-out station.

2) Remove the deck fitting labeled "WASTE" using the cap removal tool supplied with your boat. This waste pumpout plate is located inside the bow's portside anchor locker. Refer to the **Fill Plate/Pumpout Locations** portion of **Section 9** for the waste cap location.

3) Attach the pump-out vacuum hose to the "WASTE" deck plate. The transfer process uses a vacuum action making a secure connection between the transfer hose and the deck fitting essential.

4) If your boat is equipped with overboard discharge, locate the waste system's selector valve mounted below the hatch inside the forward stateroom. This waste selector valve lets you direct waste overboard or to the "WASTE" deck fitting using a waste pumpout facility. Position the valve to direct the waste through the overboard hull fitting.

5) Activate the pump-out vacuum. The pump-out vacuum will transfer onboard waste to a dockside holding station.

6) After all waste is removed, flush the waste tank by pouring a few gallons of fresh water through the waste deck plate. Reattach the vacuum hose to the deck fitting and activate the waste pumpout station as detailed in the previous step.

A TIP FROM CARVER: *"The cap for the WASTE deck plate IS NOT connected to the deck plate and it does not float. Be careful that you don't drop the cap in the water when you remove it. But, if you do lose one you can order a replacement cap from your Carver Dealer. Waste fitting caps are dropped overboard frequently enough that we suggest you carry an extra cap in your onboard spare parts kit."*

The waste holding tank is vented to the outside of the boat's hull. As the tank is filled, air is displaced and vented outside the boat. Refer to the **Above the Waterline Thru-Hull Fittings** portion of **Section 9** for the exact location of the waste tank vent.

Optional Overboard Discharge

Waste is transferred to and stored in the waste holding tank. This tank is then emptied overboard through the use of an onboard 12 volt transfer pump.

In certain coastal areas of the world it is lawful to directly discharge waste into the sea. To accommodate this procedure Carver offers the overboard discharge option.

POWERING THE INTERNAL SYSTEMS

Optional overboard discharge is available on boats that will be exported or used in the coastal areas of the United States only. With the overboard discharge option, you can empty the waste tanks directly overboard, or use a dockside pump-out facility where direct overboard discharge is not allowed.

⚠ WARNING

It is against the law to discharge waste overboard in many areas of the United States. It is your responsibility to make sure that you are in compliance with Federal and local laws when using your boat's overboard discharge system. People who discharge waste overboard in restricted areas are subject to sizable penalties.

1) Open the overboard discharge thru-hull valve located below the hatch inside the forward stateroom.

2) Locate the waste pumpout Y-valve also located below the hatch inside the forward stateroom. This valve allows you to direct waste overboard or use a waste pumpout facility at the marina . Position the valve to direct the waste overboard.

3) Turn "ON" the 12 volt MAIN circuit breaker and the breaker labeled "WASTE PUMP". Turning this "WASTE PUMP" breaker "ON" will activate the waste pump and waste will begin to be pumped overboard.

4) After all waste is pumped overboard, turn off the pump and pour a few gallons of fresh water through the waste plate deck fitting. This fitting is located inside the bow's portside anchor locker. Reactivate the waste pump and flush any remaining waste from your tank.

5) Remember to turn the "WASTE PUMP" breaker to the "OFF" position once the waste tank is empty. Leaving the pump run while no waste is being pumped overboard will damage the pump.

⚠ WARNING

DO NOT run an overboard discharge transfer pump for an extended period after waste has been transferred from the tank. Letting this pump run when dry will damage the pump.

Using the sanitation system in this manner allows you to utilize the waste holding tank when in restricted discharge areas. When the boat enters an unrestricted area, you can then empty the tanks using the overboard transfer pump.

POWERING THE INTERNAL SYSTEMS

A TIP FROM CARVER: *"The overboard discharge system incorporates a good deal of sanitation hose and numerous sanitation components. If waste is permitted to remain within the sanitation hose for extended periods it may dry out and harden. This will reduce the interior size of the hose and reduce the efficiency of the system. We suggest you clear the lines by flushing each head for at least 10 seconds prior to leaving the boat for an extended period (48 hours or more). Also, when using the system in the direct overboard or overboard transfer mode, allow the head to flush or the transfer pump to run long enough to clear the sanitation hose of all waste."*

Optional Direct Overboard Discharge

Waste is transferred from the head and pumped directly overboard each time the head is flushed - bypassing the waste holding tanks. Or, waste may be transferred to a waste holding tank. Waste stored in the holding tank can later be pumped directly overboard or removed using a waste pumpout facility.

In certain coastal areas of the world it is lawful to directly discharge waste into the sea. To accommodate this procedure Carver offers the direct overboard option. Direct overboard discharge is available on boats that will be exported or used in the coastal areas of the United States only. With the overboard discharge option, you can flush the head directly overboard - bypassing the waste holding tanks (if available).

⚠ WARNING

It is against the law to discharge waste overboard in many areas of the United States. It is your responsibility to make sure that you are in compliance with Federal and local laws when using your boat's overboard discharge system. People who discharge waste overboard in restricted areas are subject to sizable penalties.

Flushing Waste Directly Overboard

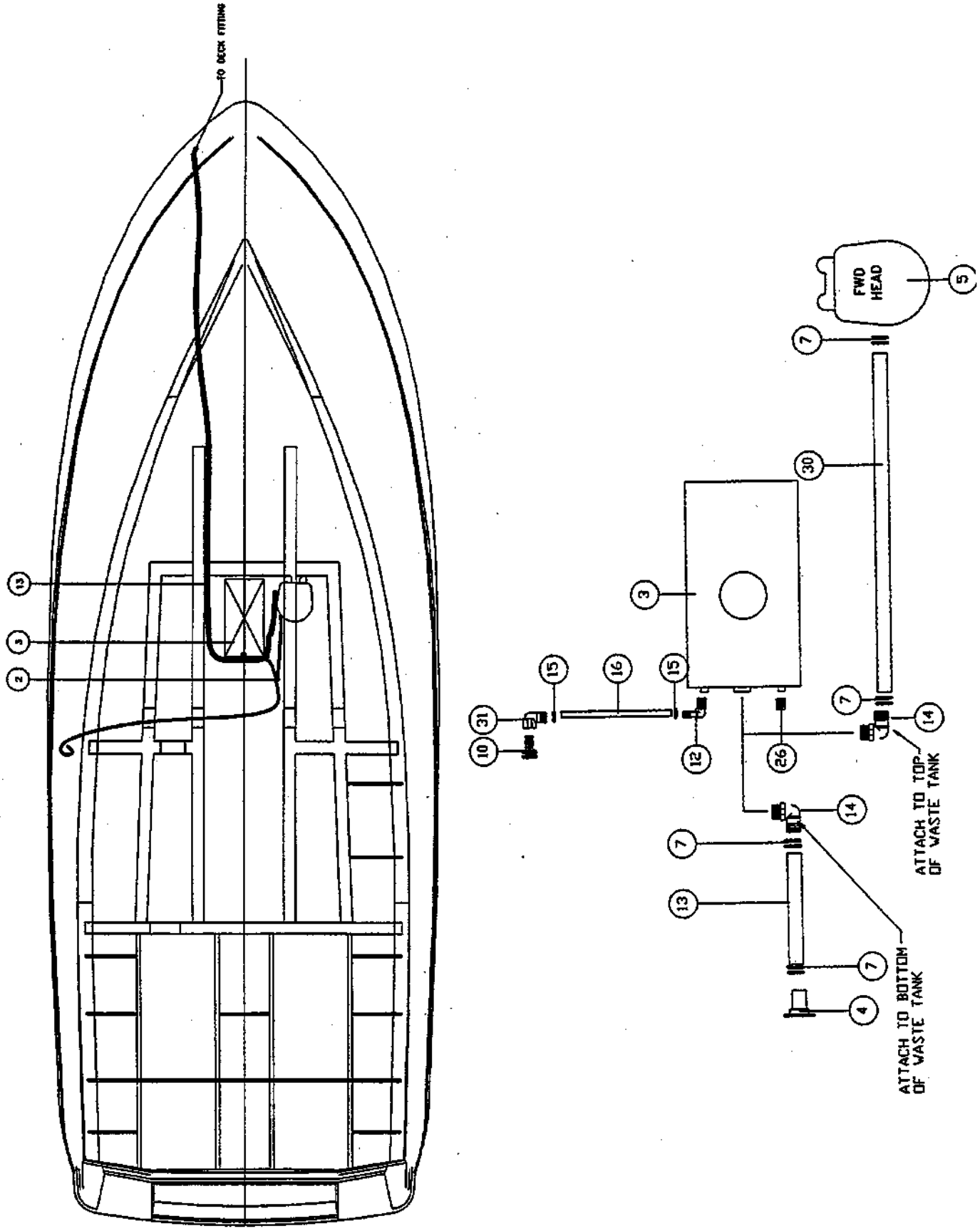
1) Open the direct overboard discharge thru-hull valve located below the hatch inside the forward stateroom.

2) Locate the waste selector Y-valve also located below the hatch inside the forward stateroom. This valve allows you to pump waste to the waste holding tanks (when available) or directly overboard. Position the valve to pump the waste directly overboard.

3) Waste will be pumped directly overboard each time the head is flushed.

POWERING THE INTERNAL SYSTEMS

Standard Waste System Layout



POWERING THE INTERNAL SYSTEMS

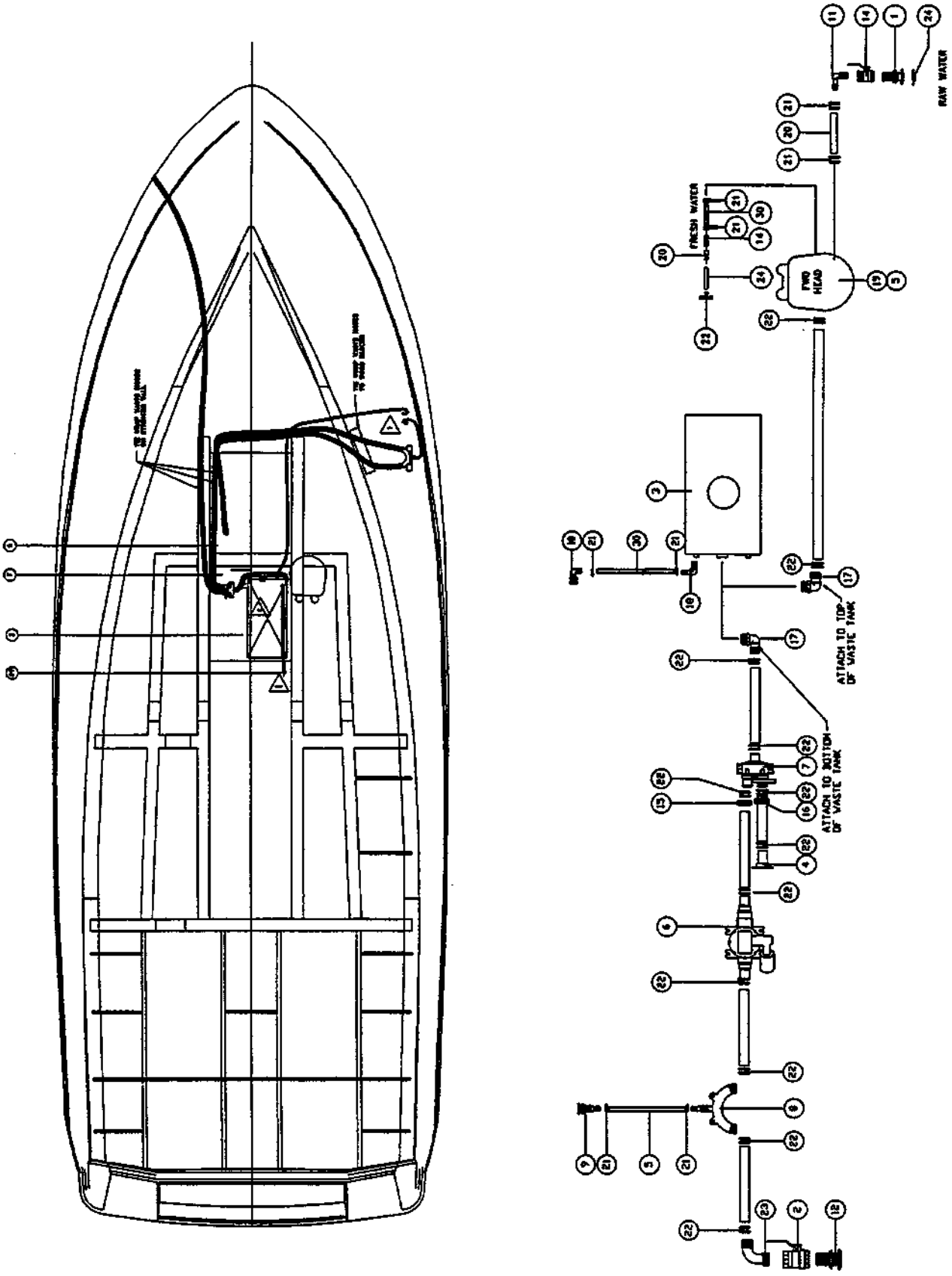
Standard Waste System Layout

ITEM	QTY	DESCRIPTION
1	1	THRU HULL: 3/4 BRONZE
2	1	VALVE: BALL 3/4" W/DRAIN
3	1	TANK: WASTE 20 GAL
4	1	PLT: DECK WASTE FITTING
5	1	HEAD: CROWN 90DEG ROTATED
6	1	STRNR: RND CVR 3 1/2" NON DIR
7	8	CLAMP: HOSE #28
8	4	CLAMP: HOSE #10
9	1	HOSE: BILGE HD 3/4" X 5'
10	1	THRU HULL: 5/8" 90DEG FITTING
11	1	FIT: 3/4 x 3/4HS BARB 90DEG
12	1	FIT: 90 1/2HB x 1/2MPT PW NYLON
13	1	HOSE: 1 1/2" x 25' HD VACUUM
14	2	FIT: 90 1 1/2HB x 1 1/2MPT PW N
15	2	CLAMP: HOSE #8
16	1	HOSE: BILGE EX HD 5/8" x 12'
17	1	FIT: "T" 1/2"WL
18	1	TUBE: WATERLINE GREY 1/2" x 10'
19	1	FIT: ADAPT 1/2"WL x 1/2FPT
20	1	FIT: 3/4HB x 1/2MPT NYLON
21	4	CLAMP: HOSE #8
22	1	HOSE: BILGE EX HD 5/8" x 12'
23	1	HEAD: PAR ELECTRIC
24	1	SW: MOMENTARY F/CROWN HEAD
25	1	PNL: SW HEAD PRL
26	1	FIT: PLUG 1/2MPT NYLON
27	1	SNDR: TANKWATCH III N/VENT
28	1	KIT: UNIVERSAL FLANGE
29	1	HOSE: BILGE EX HD 3/4"
30	1	HOSE: 1 1/2" x 7' HD VACUUM
31	1	ELB: 1 1/4FPT x 1"HB

NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

POWERING THE INTERNAL SYSTEMS

Optional Overboard Discharge Layout



POWERING THE INTERNAL SYSTEMS

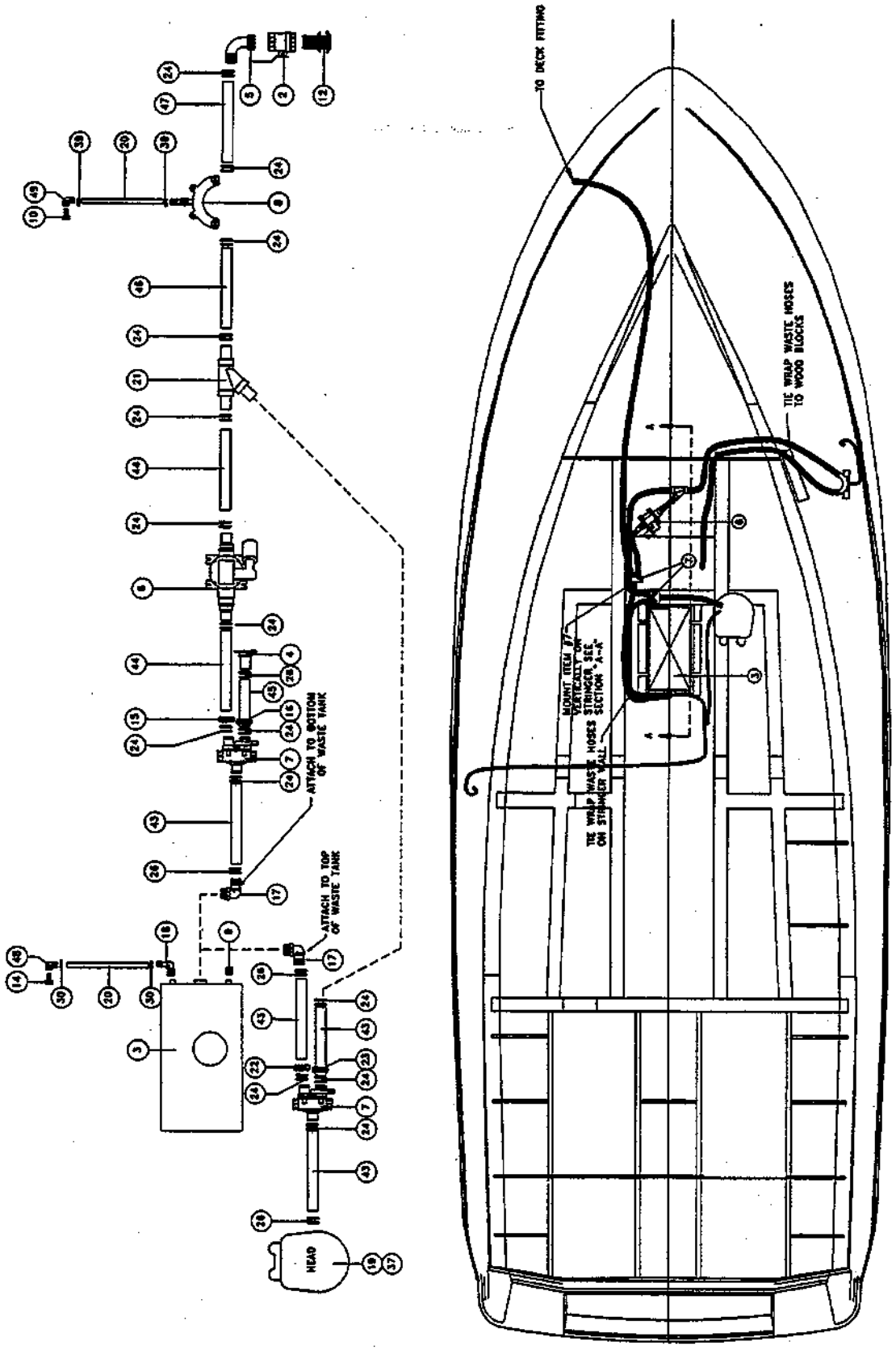
Optional Overboard Discharge Layout

ITEM	QTY	DESCRIPTION
1	1	THRU HULL: 3/4 BRONZE
2	1	VALVE: BALL 1 1/2" W/DRAIN
3	1	TANK: WASTE 20 GAL
4	1	PLT: DECK WASTE FITTING
5	2	HOSE: BILGE EX HD 5/8" x 12'
6	1	PUMP: T-SERIES DISCHARGE
7	2	VALVE: 3 WAY 1-1/2" UNIDIR
8	1	LOOP: VENTED 1-1/2" W/5/8"
9	1	THRU HULL: 5/8 PLASTIC FIT
10	1	THRU HULL: 5/8" 90DEG FITTING
11	1	FIT: 3/4 x 3/4HS BARB 90DEG
12	1	THRU HULL: 1-1/2" BRONZE
13	1	HOSE: 1 1/2" HD VACUUM
14	1	VALVE: BALL 3/4" W/DRAIN
15	1	LABEL: DIRECT OB DSCHG
16	1	LABEL: DECK DISCHARGE
17	2	FIT: 90 1 1/2HB x 1 1/2MPT PW N
18	1	FIT: 90 1/2HB x 1/2MPT PW NYLON
19	1	HEAD: RARITAN P.H.
20	1	HOSE: BILGE HD 3/4"
21	4	CLAMP: HOSE #10
22	24	CLAMP: HOSE #28
23	1	FIT: 1 1/2PT x 1 1/2HS BRB 90DE
24	1	STRNR: RND CVR 3 1/2" NON DIR
25	1	TUBE: WATERLINE GREY 1/2" x 24'

NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

POWERING THE INTERNAL SYSTEMS

Optional Direct Overboard Discharge - With Holding Tank



POWERING THE INTERNAL SYSTEMS

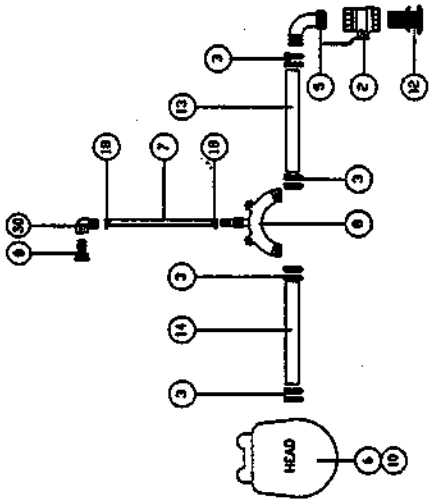
Optional Direct Overboard Discharge - With Holding Tank

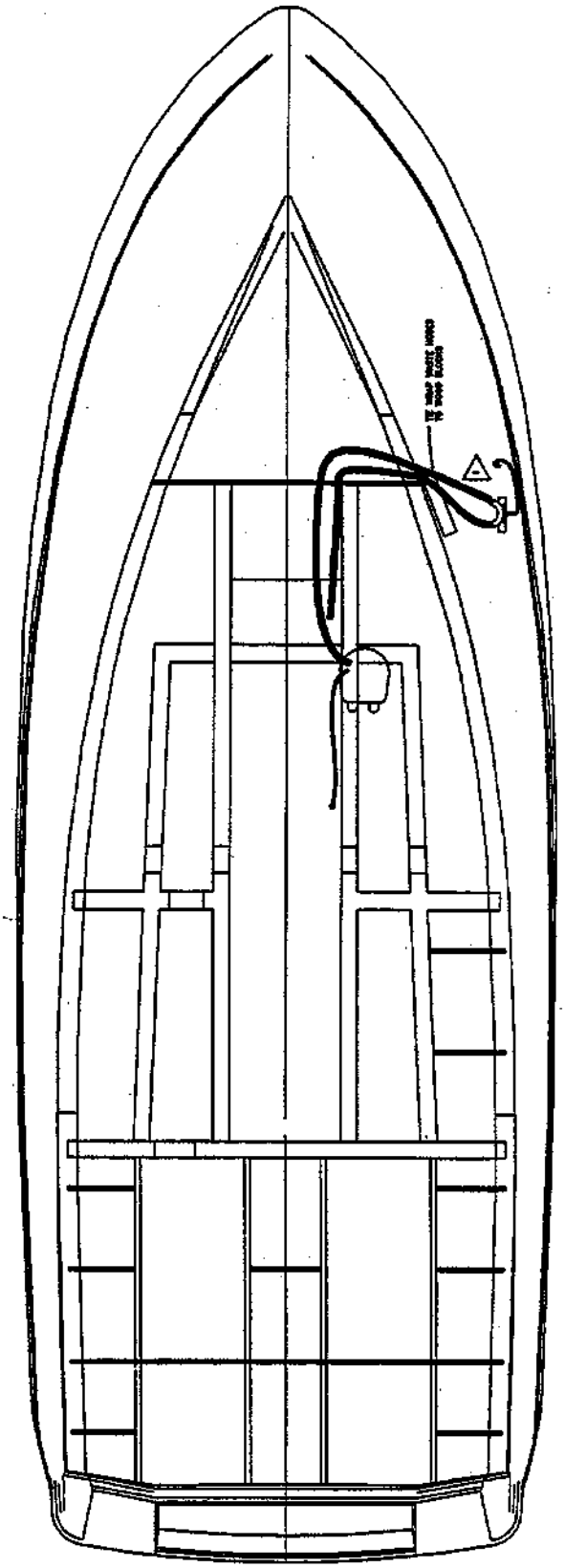
ITEM	QTY	DESCRIPTION
1	1	THRU HULL:3/4 BRONZE
2	1	VALVE:BALL 1 1/2" W/DRAIN
3	1	TANK:WASTE 20 GAL
4	1	PLT:DECK WASTE FITTING
5	1	FIT:1 1/2PT x 1 1/2HS BRB 90DE
6	1	PUMP:T-SERIES DISCHARGE
7	2	VALVE:3 WAY 1-1/2" UNIDIR
8	1	LOOP:VENTED 1-1/2" W/5/8"
9	1	FIT:PLUG 1/2MPT NYLON
10	1	THRU HULL:5/8" FITTING
11	1	FIT:3/4 x 3/4HS BARB 90DEG
12	1	THRU HULL:1-1/2" BRONZE
13	1	KIT:UNIVERSAL FLANGE
14	1	THRU HULL:5/8" FITTING
15	1	LABEL:DIRECT OB DSCHG
16	1	LABEL:DECK DISCHARGE
17	2	FIT:90 1 1/2HB x 1 1/2MPT PW N
18	1	FIT:90 1/2HB x 1/2MPT PW NYLON
19	1	HEAD:CROWN 90DEG ROTATED
20	2	HOSE:BILGE EX HD 5/8" x 12'
21	1	FIT:"Y" 1 1/2" MS (KIT)
22	1	LABEL:HOLDING TANK
23	1	LABEL:DIRECT DISCHARGE
24	28	CLAMP:HOSE #28
25	1	STRNR:RND CVR 3 1/2" NON DIR
26	8	CLAMP:HOSE #28
27	4	CLAMP:HOSE #10
28	1	HOSE:BILGE HD 3/4" x 5'
29	1	VALVE:BALL 3/4" W/DRAIN
30	2	CLAMP:HOSE #8
31	1	FIT:"T" 1/2WL
32	1	TUBE:WATERLINE GREY 1/2" x 10'
33	1	FIT:ADAPT 1/2WL x 1/2FPT
34	1	FIT:3/4HB x 1/2MPT NYLON
35	1	SW:MOMENTARY F/CROWN HEAD
36	1	PNL:SW HEAD PRL
37	1	HEAD:PAR ELECTRIC
38	1	SNDR:TANKWATCH W N/VENT
39	2	CLAMP:HOSE #8
40	4	CLAMP:HOSE #8
41	1	HOSE:BILGE EX HD 5/8" x 12'
42	1	HOSE:BILGE HD 3/4" x 5'
43	4	HOSE:1 1/2" x 5' HD VACUUM
44	2	HOSE:1 1/2" x 1' HD VACUUM
45	1	HOSE:1 1/2" x 20' HD VACUUM
46	1	HOSE:1 1/2" x 54" HD VACUUM
47	1	HOSE:1 1/2" x 8' HD VACUUM
48	1	FIT:90 1/2HB x 1/2FPT PW PV
49	1	FIT:90 1/2HB x 1/2FPT PW PV
50	1	BRD:"Y" VALVE MOUNT

NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

POWERING THE INTERNAL SYSTEMS

Optional Direct Overboard Discharge





POWERING THE INTERNAL SYSTEMS

Optional Direct Overboard Discharg

ITEM	QTY	DESCRIPTION
1	1	THRU HULL: 3/4 BRONZE
2	1	VALVE: BALL 1 1/2" W/DRAIN
3	8	CLAMP: HOSE #28
4	1	STRNR: RND CVR 3 1/2" NON DIR
5	1	FIT: 1 1/2PT x 1 1/2HS BRB 90DE
6	1	HEAD: CROWN 90DEG ROTATED
7	1	HOSE: BILGE EX HD 5/8" x 4'
8	1	LOOP: VENTED 1-1/2" W/5/8"
9	1	THRU HULL: 5/8 PLASTIC FIT
10	1	HEAD: PAR ELECTRIC
11	1	FIT: 3/4 x 3/4HS BARB 90DEG
12	1	THRU HULL: 1-1/2" BRONZE
13	1	HOSE: 1 1/2" x 8' HD VACUUM
14	1	HOSE: 1 1/2" x 9' HD VACUUM
15	4	CLAMP: HOSE #10
16	1	HOSE: BILGE HD 3/4" x 5'
17	1	VALVE: BALL 3/4" W/DRAIN
18	2	CLAMP: HOSE #8
19	1	FIT: "T" 1/2"WL
20	1	TUBE: WATERLINE GREY 1/2"
21	1	FIT: ADAPT 1/2WL x 1/2FPT
22	1	FIT: 3/4HB x 1/2MPT NYLON
23	4	CLAMP: HOSE #8
24	1	HOSE: BILGE EX HD 5/8"
25	1	PNL: SW HEAD PRL
26	1	SW: MOMENTARY F/CROWN HEAD
27	1	SNDR: TANKWATCH III N/VENT
28	1	KIT: UNIVERSAL FLANGE
29	1	HOSE: BILGE HD 3/4" x 5'
30	1	FIT: 90 1/2HB x 1/2FPT PW PV

NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

POWERING THE INTERNAL SYSTEMS

Optional Grey Water System

Certain areas of the United States and Europe have initiated antipollution regulations that require the installation of a grey water waste system. This system drains all sink and shower drain water into an onboard holding tank, rather than directly overboard.

If your boat is equipped with a grey water system, the galley sink and equipment and the head sink and shower drain into a waste holding tank. Sink and shower water drains into a sump which then transfers the drain water into the waste tank. Holding tank deodorizer should be used within each waste tank between pump-outs.

⚠ WARNING

DO NOT overfill the grey water or waste holding tanks. Monitor the level of fluid within the tanks and empty them when they become full. Overfilling could clog the vent or rupture the tank.

Emptying The Grey Water Holding Tank

1) Locate a dockside pump-out station.

2) Remove the deck fitting labeled "WASTE" using the cap removal tool supplied with your boat. This waste pump-out plate is located inside the bow's portside fender locker. Refer to the Fill Plate/Pump-out Locations portion of Section 9 for the waste cap location.

3) Attach the pump-out vacuum hose to this "WASTE" deck plate. The transfer process uses a vacuum action making a secure connection between the transfer hose and the deck fitting essential.

4) Activate the pump-out vacuum. The pump-out vacuum will transfer onboard waste to a dockside holding station.

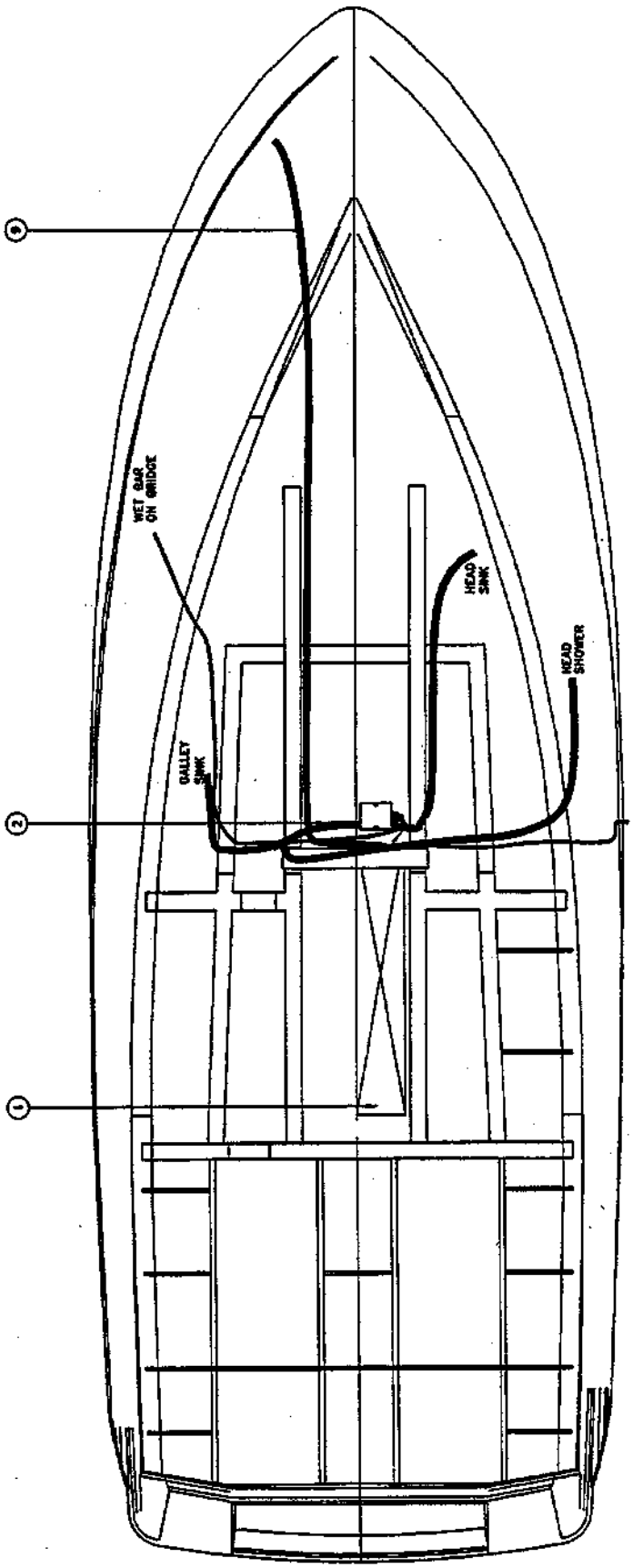
5) After all waste is removed, flush the waste tank by pouring a few gallons of fresh water through the waste deck plate. Reattach the vacuum hose to the deck fitting and activate the waste pump-out station as detailed in the previous step.

A TIP FROM CARVER: "*The cap for the WASTE deck plate IS NOT connected to the deck plate and it does not float. Be carefully that you don't drop the cap in the water when you remove it. But, if you do lose one you can order a replacement cap from your Carver Dealer. Waste fitting caps are dropped overboard frequently enough that we suggest you carry a spare cap in your spare parts kit.*"

The grey water holding tank is vented to the outside of the boat's hull. As the tank is filled, air is displaced and vented outside the boat. Refer to the **Above the Waterline Thru-Hull Fittings** portion of **Section 9** for the location of the grey water holding tank vent.

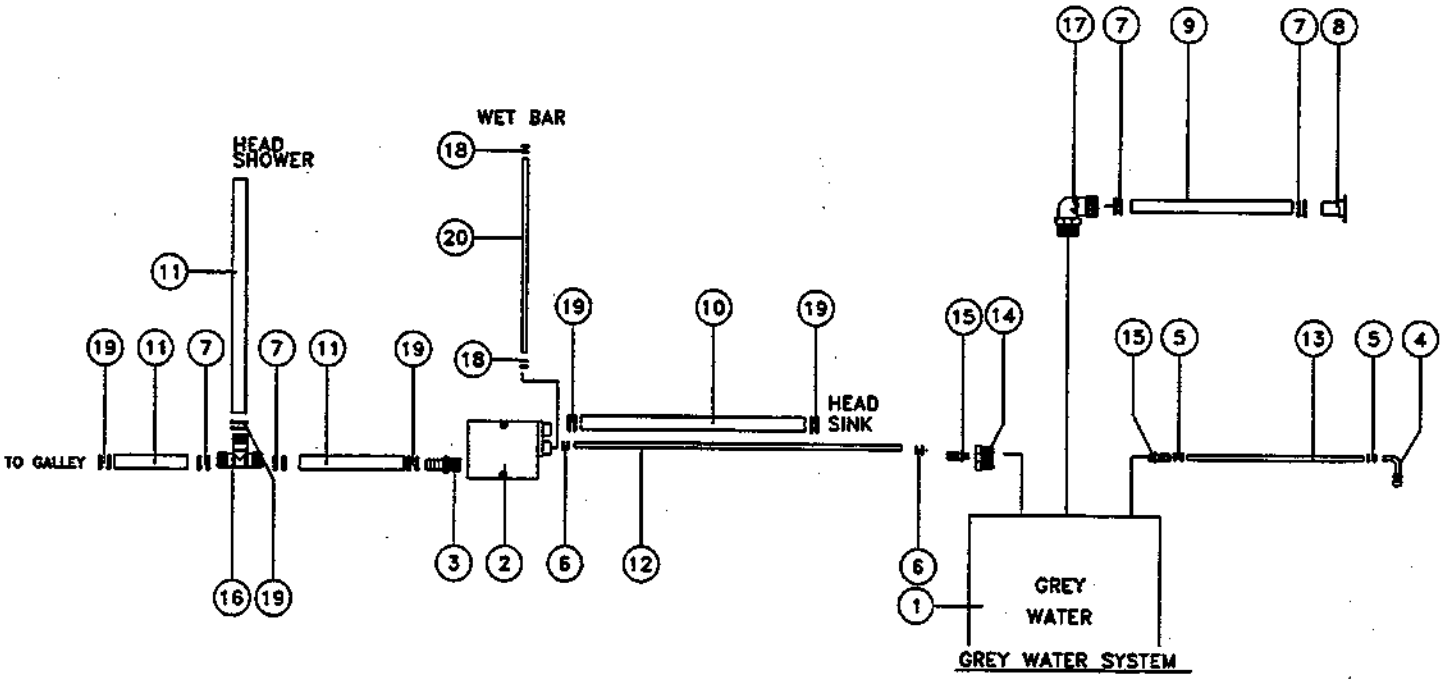
POWERING THE INTERNAL SYSTEMS

Optional Grey Water System Layout



POWERING THE INTERNAL SYSTEMS

Optional Grey Water System Layout



ITEM	QTY	DESCRIPTION
1	1	TANK:WATER GREY 40 GAL
2	1	PUMP:SHOWER SUMP SYSTEM
3	1	FIT: 1 1/2" THRU HULL WHITE
4	1	VENT:90DEG THRU HULL
5	4	CLAMP:HOSE #8
6	4	CLAMP: HOSE #10
7	8	CLAMP:HOSE #28
8	1	PLT:DECK WASTE FITTING3
9	1	HOSE:HD VACUUM 1 1/2" x 25'
10	1	HOSE:HD 1 1/4"x10'
11	2	HOSE:BILGE FLEX 1 1/2" x 10'
12	1	HOSE:HD 3/4"x4'
13	1	HOSE:HD BILGE 5/8" x 10'
14	1	FIT:1 1/2MPT x 1/2FPT PW PV
15	2	FIT:INSERT 3/4" HB x 1/2" MPT NYLON
16	1	FIT:T 1 1/2HB PW PV
17	1	FIT:90 1 1/2HB x 1 1/2MPT PW NYL
18	4	CLAMP:HOSE #10
19	10	CLAMP:HOSE #28
20	1	HOSE:HD BILGE 5/8" x 20'

NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

POWERING THE INTERNAL SYSTEMS

PROPANE STOVE

The propane stove option includes the propane stove and a liquid propane storage tank. For information on using the propane stove, refer to the owner's manual provided by the manufacturer. This manual can be found in the OEM supplied materials in your boat's Captain's Kit.

An LPG fuel tank has been installed in a fiberglass box on the boat's swim platform. The system is designed to be used with LPG (liquid propane gas) only. DO NOT USE ANY OTHER TYPE OF FUEL. The LPG tank must be firmly secured to the boat with the tank in a horizontal position. The ABYC (American Boat and Yacht Council) has developed specific standards on how LPG tanks must be installed. Carver has installed this tank according to those ABYC standards. DO NOT relocate or reposition the tank.

NOTE: The LPG tank valve outlet fitting and the regulator system nut, by law, have LEFT HAND THREADS. The nut is so marked with a slot.

Always close fuel supply line valves and cylinder valve when appliances are not in use. Close valves immediately in an emergency. Be sure that appliance valves are closed before opening the cylinder valve.

⚠ CAUTION

Fuel burning appliances consume cabin oxygen and release products of combustion into the craft. Ventilation is required when appliances are in use. Do not operate the stove or oven for space heating. Never obstruct ventilation openings.

Never obstruct quick access to the LPG system components and shut-off valves. Keep valves on empty cylinders closed and disconnected. Keep protective covers, caps or plugs in place. Store reserve or empty cylinders on open decks or in gas tight lockers vented overboard intended for the purpose. Do not use LPG cylinder housings or lockers for storage of any other equipment. Never leave craft unattended when LPG consuming appliances are in use. Do not smoke or use open flame when replacing LPG cylinders. Hoses in system must be inspected regularly, at least annually, and replaced if any deterioration is found. Inspect flue pipes at least annually. Replace if deterioration or openings are found.

Checking the System For Leaks:

⚠ WARNING

Never use flame to check your LPG system for leaks.

Propane systems are inspected and pressure checked as part of Carver's quality assurance process. We do, however, suggest that you Test the system for leaks regularly. Use the following system inspection process every time you remove and reinstall the LPG tank. The following information has been taken from the SeaWard Products Owner's Manual For Gas Operated Stoves:

POWERING THE INTERNAL SYSTEMS

1) After the LPG tank has been installed, the regulator system connected, the hose run and connected to both appliance and regulator, slowly crack open the LPG tank valve and observe the pressure gauge on the regulation system. The gauge should read approximately 110 psi at 70 degrees F. (Higher if warmer, or lower if cooler atmospheric temperature).

2) Close the LPG tank valve and observe the pressure gauge. It should hold a constant reading. If you can detect a falling in pressure over a 15-minute period of time, there is a leak. LEAKS CAN BE DANGEROUS.

   a. If a leak occurs, Close cylinder valve and have the system repaired before using. System repairs should be made by a competent person.

   b. Check all fittings with a soap and water solution. NEVER USE FLAME TO CHECK FOR LEAKS.

⚠ CAUTION

Do not use solutions containing ammonia.

3) If you cannot find the leak, contact SeaWard Products or your Carver Dealer.

⚠ DANGER

LPG is heavier than air and if allowed to leak, settle, and accumulate LPG could ignite and explode.

Section 5

POWERING THE ENGINES

Fuel System

Fuel Tanks

The 350 Mariner hold a maximum 210 gallons of fuel within two tanks. Fuel systems installed by Carver meet or exceed the requirements of the U.S. Coast Guard, the Boating Industry Association, and the American Boat and Yacht Council during the time your boat was constructed. Each tank must pass a rigid test conducted by the tank manufacturer. In addition to this test, all fuel systems are inspected and pressure tested by Carver.

Your Carver Dealer also makes a full inspection of the fuel system prior to delivering your boat. An entry on the Carver Pre-Delivery Service Record will attest to the dealer's performance of this fuel system inspection.

Gasoline Fuel Systems

Each gasoline engine in the 350 Mariner is plumbed to its nearest fuel tank (ie. port engine to the port fuel tanks, starboard engine to the starboard fuel tanks).

If your boat is equipped with a factory installed generator, a fuel selector valve has been installed to control the fuel supply to the generator. The generator can draw fuel from either the port or starboard fuel tank. This fuel selector valve is located just aft of the generator. Refer to the **Fuel System Layout (Gasoline)** portion of **Section 9** for selector valve and fuel tank locations.

Anti-siphon check valves are installed in gasoline fuel systems between the fuel hose and the fuel tank withdrawal tube. Anti-siphon check valves are spring loaded and will "automatically" stop the flow of fuel in the case of a ruptured or disconnected fuel hose.

⚠ DANGER

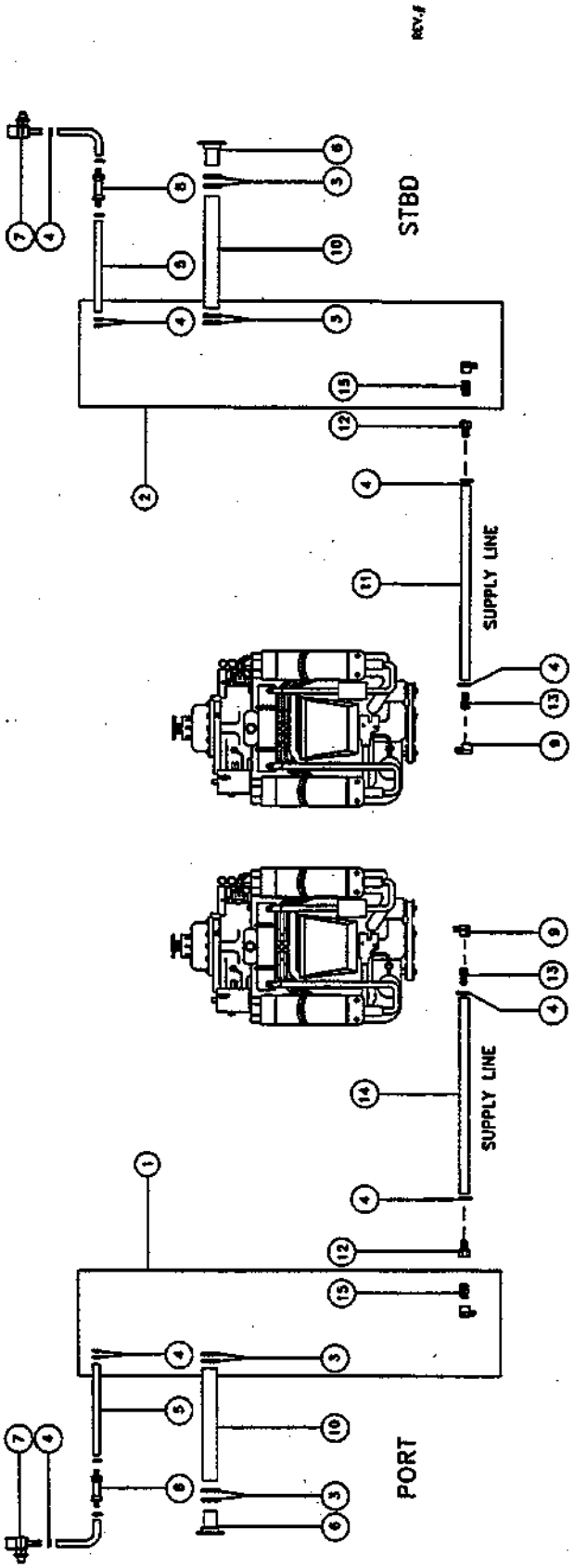
Anti-siphon check valves are important safety components. DO NOT remove anti-siphon valve(s) from the fuel system. Clean and or replace clogged or sticky valves.

On electronically fuel injected systems, fuel return lines have been installed. With electronic fuel injected engines, the fuel selector valves select both the fuel feed and fuel return lines simultaneously. The fuel return lines return the fuel to the tank the fuel was drawn from, preventing the other tanks from overflowing.

NOTE: Fuel return lines are not used with carbureted propulsion systems.

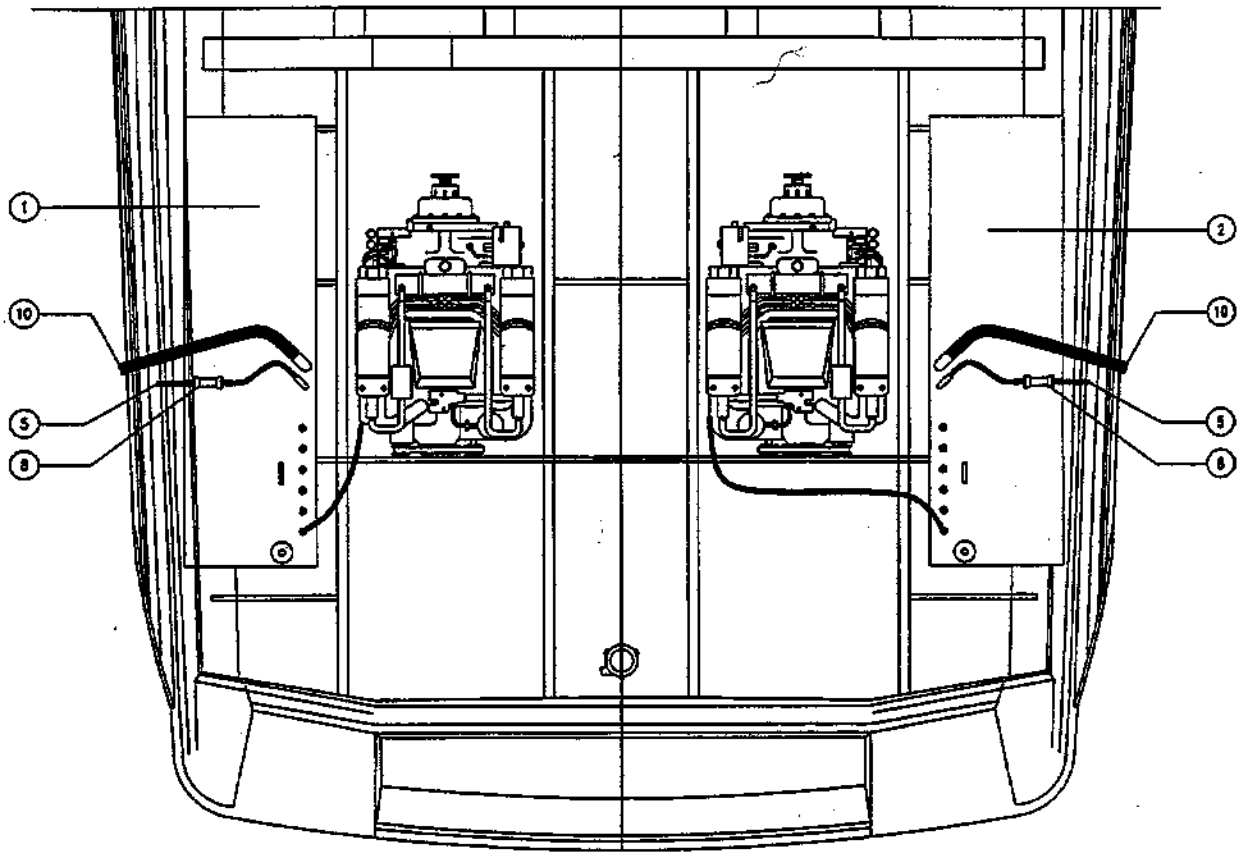
POWERING THE ENGINES

Gasoline Fuel System Layout (Carbureted)



POWERING THE ENGINES

Gasoline Fuel System Layout (Carbureted)

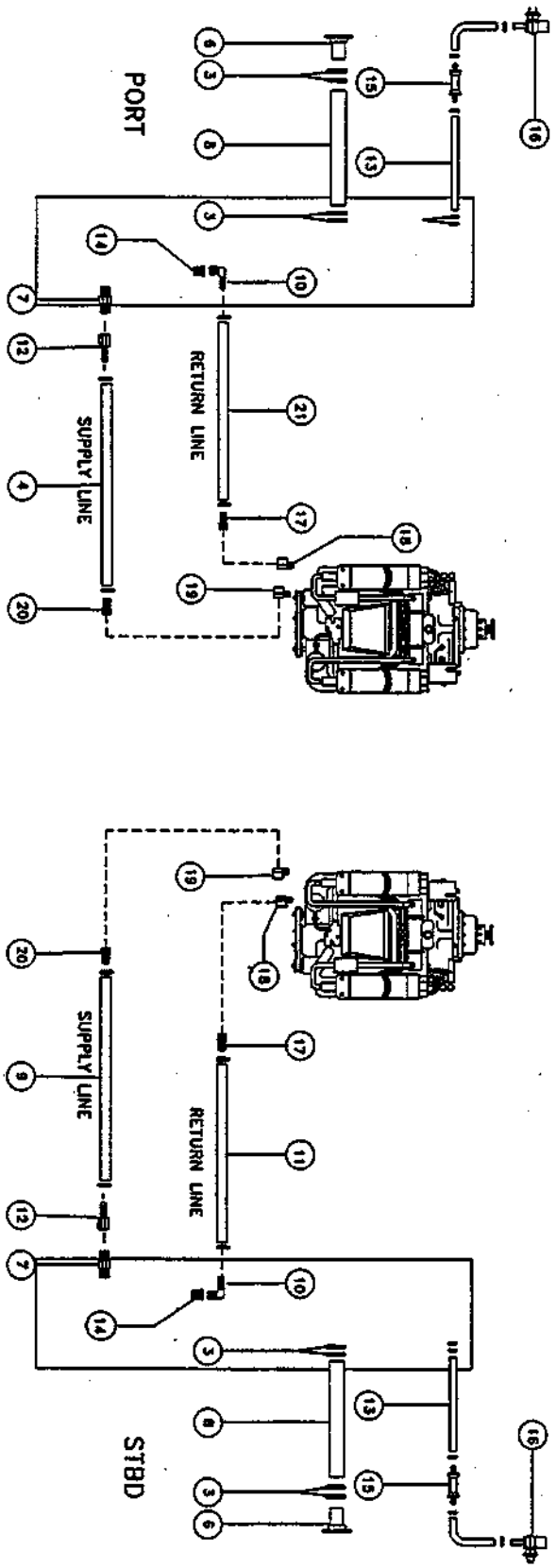


BILL OF MATERIALS		
ITEM	QTY.	DESCRIPTION
1	1	TANK: FUEL 128 GAL PORT
2	1	TANK: FUEL 128 GAL STBD
3	8	CLAMP: HOSE #28
4	10	CLAMP: HOSE #10
5	2	HOSE: 5/8" FUEL VENT x 5'
6	2	PLT: DECK GAS 2"
7	2	VENT: 90DG W/SS TRIM
8	2	SEPARATOR:FUEL/AIR LG50
9	2	FIT:ST EL 90DEG 1/4BR
10	2	HOSE:2" FUEL FILL x 4 1/2'
11	1	HOSE: 3/8" FUEL x 6.5'
12	2	FIT:HS BRB 3/8 x1/2FPT BR
13	2	FIT:3/8x1/4MPT BR
14	1	HOSE: 3/8" FUEL x 4.5'
15	2	VALVE:CHECK 1/2 x 1/2MPT

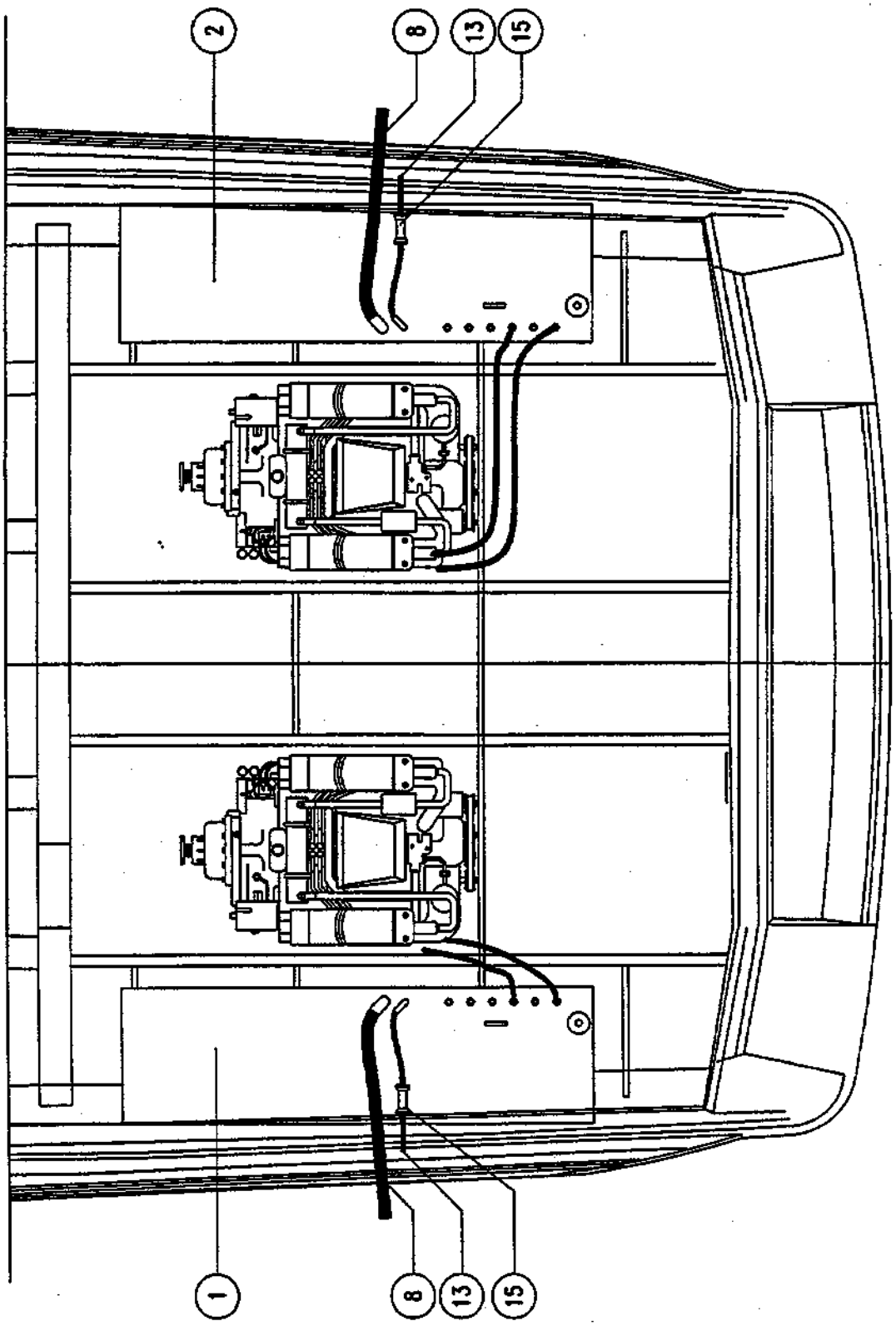
NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

POWERING THE ENGINES

Gasoline Fuel System Layout (Fuel Injected)



Gasoline Fuel System Layout (Injected)



POWERING THE ENGINES

Gasoline Fuel System Layout (Injected)

BILL OF MATERIALS		
ITEM	QTY.	DESCRIPTION
1	1	TANK: FUEL 128 GAL PORT
2	1	TANK: FUEL 128 GAL STBD
3	8	CLAMP: HOSE #28
4	1	HOSE: 1/2" FUEL x 7'
5	14	CLAMP:HOSE #8
6	2	PLT: DECK GAS 2" SM
7	2	VALVE:CHECK 1/2x1/2MPT
8	2	HOSE:. 2" FUEL FILL x 4 1/2'
9	1	HOSE: 1/2" FUEL x 9'
10	2	FIT:HSBRB 3/8 x 3/8MP 90 BR
11	1	HOSE: 3/8" FUEL x 6.5'
12	2	FIT:HS BRB 1/2 x 1/2FPT BR
13	2	HOSE: 5/8" FUEL VENT x 5'
14	2	FIT:BSHG 1/2MPT 3/8FPT SS
15	2	SEPARATOR:FUEL/AIR LG50
16	2	VENT: 90DG W/SS TRIM
17	2	FIT:HS BRB 3/8 x 1/4MP
18	2	FIT:ST EL 90DG 1/4BR
19	2	FIT:ST EL 90DG 3/8PT BR
20	2	FIT:HS BRB 1/2 x 3/8MPT BR
21	1	HOSE: 3/8" FUEL x 4.5'

NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

POWERING THE ENGINES

Diesel Fuel Systems

Diesel propulsion systems utilize fuel "supply" and fuel "return" lines. The supply lines feed fuel to the engine. Return lines transfer fuel not burned by the engine back to the fuel tank. Each diesel engine in the 350 Mariner is plumbed to its nearest fuel tank (ie. port engine to the port fuel tank, starboard engine to the starboard fuel tank). The generator draws fuel from the forward port tank only.

Fuel Transfer Pump

A fuel transfer pump is included with diesel fuel systems. Since the generator draws fuel from the forward portside tank, this tank may be used at a greater rate. If the two forward tanks become noticeably unequal, use the fuel transfer pump to equalize the volume of fuel between the two forward tanks.

To activate the fuel transfer pump, turn "ON" the 12 volt the circuit breaker labeled FUEL TRANSFER that is installed on the 12 volt panel. A control switch, located on the helm console, utilizes a three position, center "OFF" switch. To transfer fuel: monitor your forward fuel tank gauges to identify the tank that has the highest volume of fuel. Turn the fuel transfer switch towards the fuel tank to which you want the fuel to flow. Monitor the fuel gauges and continue to transfer fuel until the tanks are equalized.

Fuel shut-off valves

Fuel shut-off valves are installed in diesel fuel systems between the fuel line and the fuel tank. Both supply and return lines incorporate fuel shut-off valves located on top of the fuel tanks. These valves must be open when running the diesel engines. Refer to the **Fuel System (Diesel)** portion of **Section 9** for locations of the diesel system tanks and equipment.

⚠ WARNING

DO NOT operate a diesel engine with its fuel "RETURN" line valve in the closed position. Failure to allow unburned fuel to return to the tank will create excessive pressure within the fuel system that could lead to fuel system failure.

Fuel Tank Vents (Gasoline and Diesel)

Each fuel tank is vented overboard. While the tank is being filled, air is displaced by fuel and escapes through the vent. All Carver yachts are equipped with fuel catches on the vent line to prevent fuel spillage through the vent while fueling. Refer to the **Above The Waterline Through Hull Fittings** portion of **Section 9** for fuel tank vent locations.

AUXILIARY SYSTEMS

See your the manufacturer's manual for care and maintenance of your engine. This manual can be found in your owner's packet.

Engine Ventilation

Your engine compartment is equipped with a ventilation system consisting of intake ducts, exhaust ducts and bilge blowers. After fueling, run the bilge blowers for five minutes to evacuate any fuel fumes from the engine compartment. Inspect the engine compartment. Sniff the engine compartment for fuel vapors. After fueling, do not operate onboard equipment until you are sure that the boat is rid of fuel vapors.

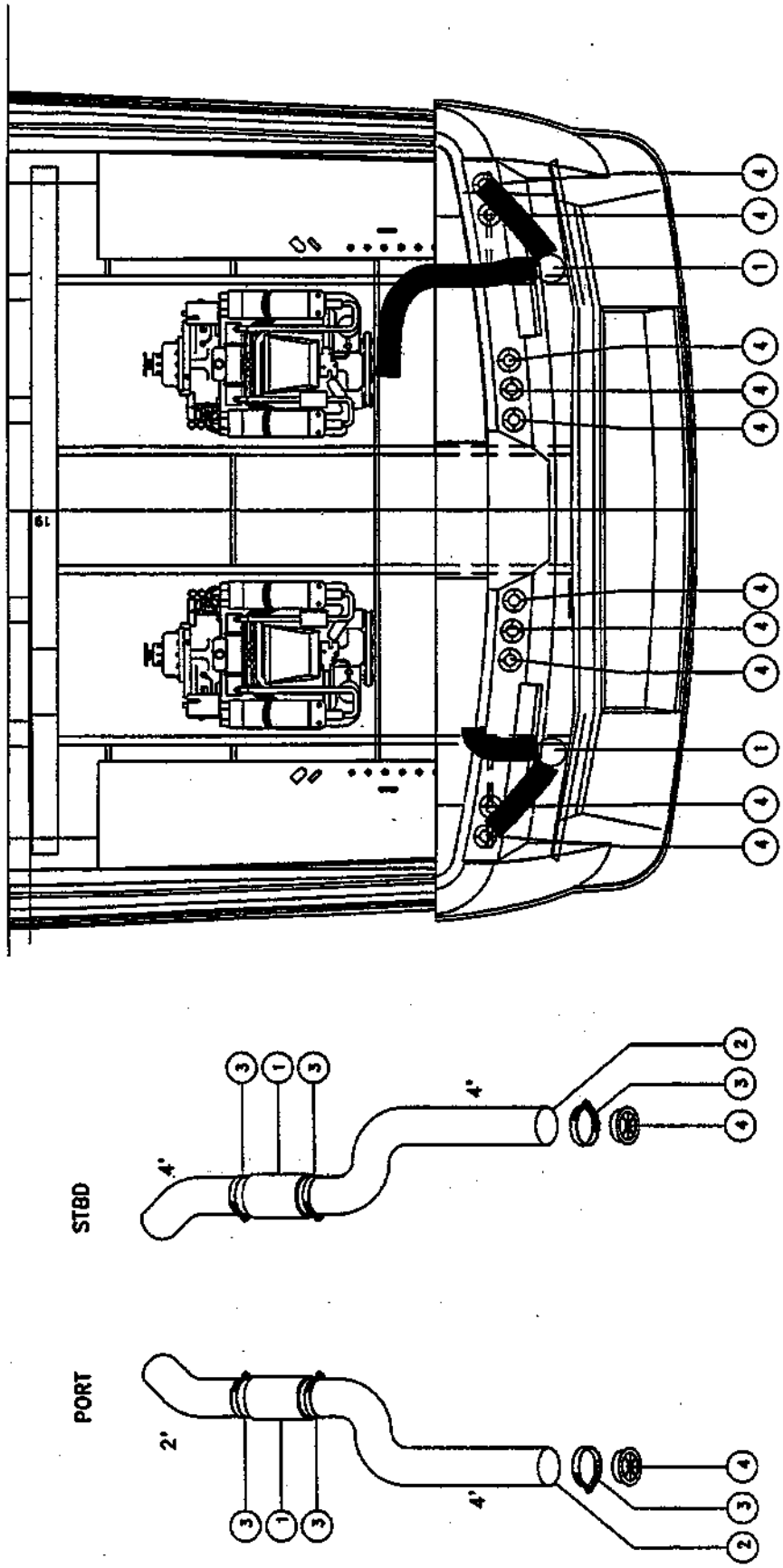
Continue to operate your blowers. When operating below cruise speed, this will help disperse excess heat in the engine compartment and also prevents the accumulation of CO which may form under some operating conditions.

⚠ DANGER

Operate bilge blowers for AT LEAST 5 minutes and inspect the bilge for fuel vapors prior to starting the engines or the generator. If you discover fuel vapors in the bilge, DO NOT START THE ENGINES or GENERATOR. Investigate the source of these vapors and fix the problem before starting the generator. Continue to operate the bilge blowers while the engines or generator is running.

All owners are responsible for keeping their boat's ventilation system in operating condition. **Do not obstruct or modify the ventilation system in any way.** Ensure that openings are free of obstructions. Inspect ducts regularly. Make sure that ducts are not blocked, collapsed or torn, and blowers are operating properly. Replace any worn out components with equivalent type equipment.

Bilge Blowers/Engine Ventilation System



ITEM	QTY	DESCRIPTION
1	2	BLOWER:BILGE 240CFM 4 IN/
2	14'	HOSE:VENT 4"
3	6	CLAMP:HOSE #64 (3 9/16 TO
4	10	GRILL:4" VENT WH 2358

NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

Cooling System

Your cooling system removes excess heat from your engine and exhaust system. Closed systems use a freshwater/antifreeze mixture to cool the engine. The coolant runs through a heat exchanger where the excess heat is transferred to raw water taken in through the seacocks. Open cooling systems use raw water to cool the engine directly. If you are not sure, contact your dealer to find out which type of system you have.

Both open and closed cooling systems require sea water to function. Before each cruise, make sure your strainers are free of sea weed and other debris. Open the cooling system seacocks before you start your engines. The seacock valve for each engine's cooling system is located just forward of their respective engine. See the **Below the Waterline Thru-Hull Fittings** portion of **Section 9** for seacock locations. If you have a closed system, make sure that you have a sufficient level of coolant in the system.

⚠ WARNING

Running your engine with an inadequate supply of antifreeze, or with blocked or restricted water pickups or water strainers can cause serious damage to your boat's systems.

After starting your engines, check your engine exhaust outlet. If water is not being ejected through the outlet, shut your engine down immediately and ascertain why sea water is not being pumped into the system. Have the problem corrected before restarting your engines.

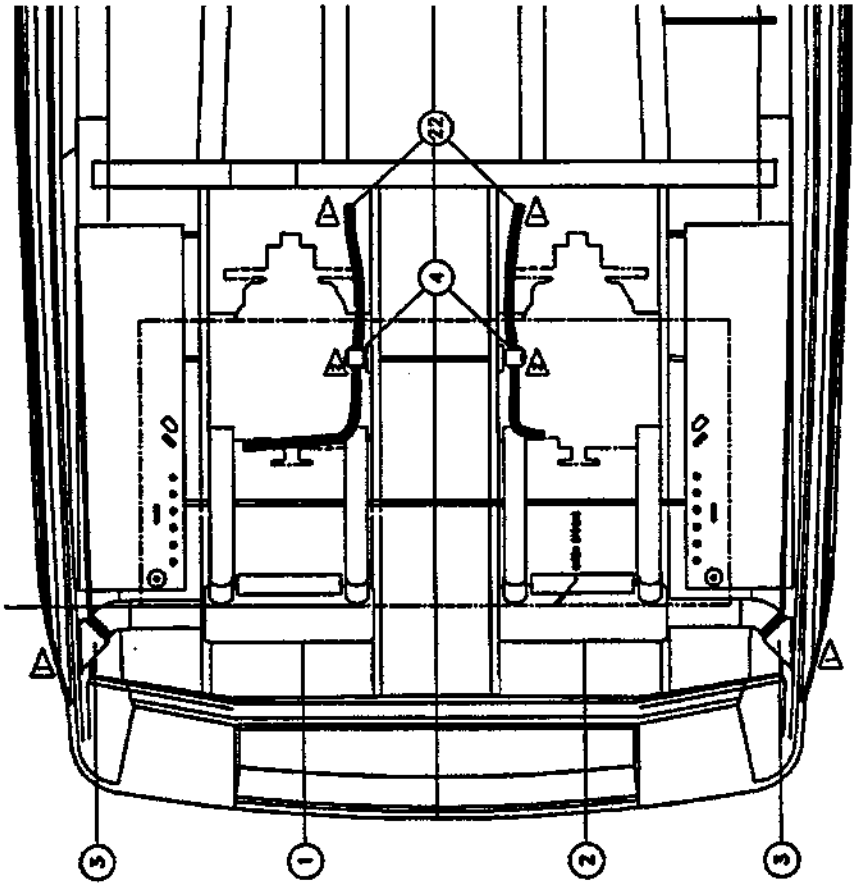
If your engine temperature gauges register a higher than normal temperature reading, your cooling system may need to be repaired. If the needles start a rapid movement toward a high temperature reading, shut your engines down immediately and have your cooling system checked and repaired.

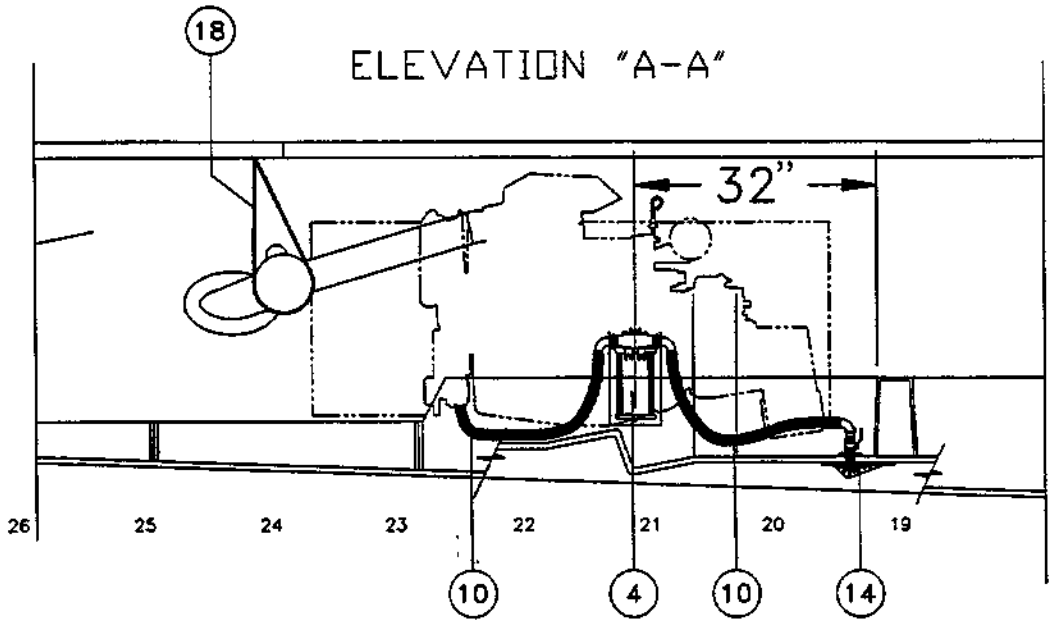
Exhaust System

The exhaust system consists of an exhaust manifold, a muffler, and the exhaust pipes used to remove engine exhaust from your engine to the atmosphere. If your exhaust system is ruptured or compromised in any way, dangerous carbon monoxide may escape and endanger you or your passengers. Check your exhaust system regularly for leaks. Any change in engine noise should be carefully investigated.

POWERING THE ENGINES

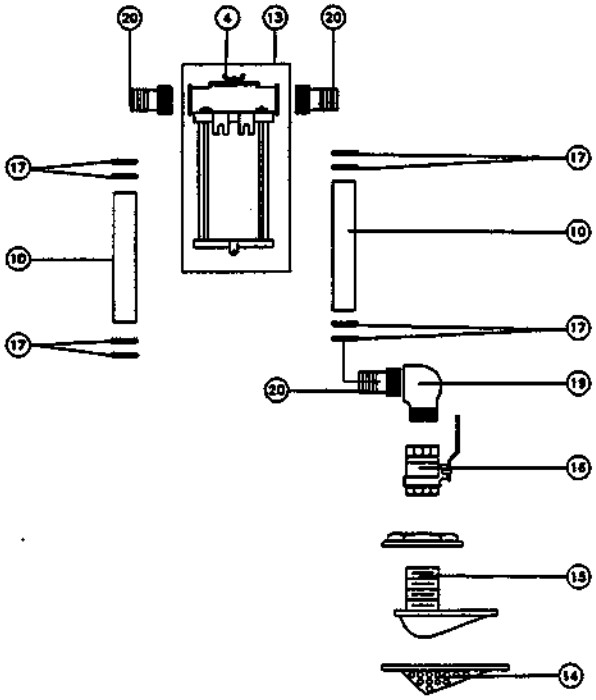
Cooling & Exhaust System Layout - Gasoline



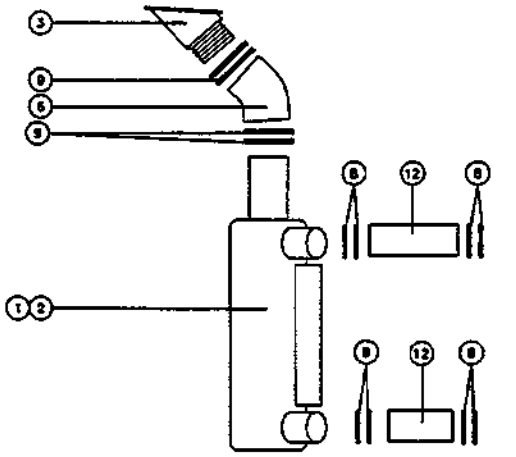


POWERING THE ENGINES

Cooling & Exhaust System Layout - Gasoline



TYPICAL INTAKE INSTALLATION



TYPICAL MUFFLER INSTALLATION (PORT SHOWN)

ITEM	QTY	DESCRIPTION
1	1	MFFLR: 3597 PORT
2	1	MFFLR: 3597 STBD
3	2	FLNG: EXHST 5IN 45 DEG
4	2	STRNR: #7 1-1/4" INTAKE WHT
5	6	FIT: 1-1/4" X 1-1/4" HS BRB 90DEG
6	2	ELB: EXHST RUBR 5" 45DEG
7	2	CPLNG: EXHST 5" RUBBER
8	16	CLAMP: HOSE 4" HEAVY DUTY
9	8	CLAMP: HOSE 5" RUBBER
10	4	HOSE: 1-1/4" WATER/EXHAUST
11	2	PIPE: FRP 5"
12	4	HOSE: 4" EXHAUST
13	2	BASE: ENGINE FILTER
14	2	STRNR: RAW WATER EXTRNL W/SCREEN
15	2	STRNR: SCOOP INTAKE 1-1/4" THRU
16	2	VALVE: BALL 1-1/4" W/DRAIN
17	16	CLAMP: HOSE #20
18	2	WEB: DACRON BLACK 1"
19	2	FIT: ST EL 90DG 1-1/4PT BZ
20	6	FIT: 1 1/4PT x 1 1/4HS BRB B

NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

Fire Suppression

An automatic fire suppression system is installed in the engine compartment of your 350 Mariner. This system provides an added measure of fire safety in the event of an onboard engine compartment fire.

A Halon tank is installed on the engine compartment's centerline. A system monitor is installed near the helm station. The system monitor is wired to an ignition switch. The monitor's light should be "ON" when the ignition switch is turned "ON."

Read the instruction booklet provided by the manufacturer for more information on the fire suppression system. This booklet is included with the OEM materials in your boat's Captain's Kit.

Halon systems installed in boats equipped with diesel propulsion engines incorporate an engine shut-off circuit. When the Halon system is activated, the diesel engines are automatically shut down. An override switch is incorporated in the monitor for starting the diesel engines after the system has been activated. Read the manufacturer's manual for further instructions.

When replacing parts of the fire fighting installation, only matching components shall be used, bearing the same designation or being equivalent in their technical and fire resistant capabilities.

⚠ CAUTION

This craft is equipped with a fixed fire extinguishing system for the engine room, using Halon. Before discharging, SHUT DOWN ENGINES AND BLOWERS AND EVACUATE THE CRAFT.

⚠ WARNING

Engine compartment has fixed extinguishing system: the fore extinguishing medium may act as an asphyxiation. AFTER DISCHARGE, VENTILATE CRAFT BEFORE ENTERING.

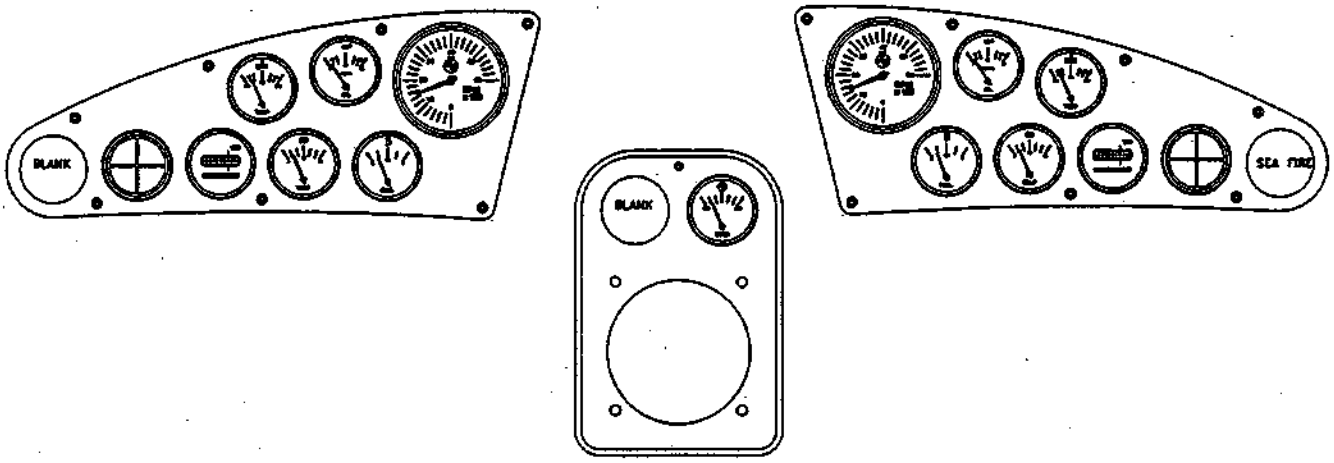
ENGINE GAUGES

Each helm station is equipped with a complete set of gauges. These instruments allow you to monitor the operation and condition of your boat's engines. Gauges located on the starboard side of the helm station correspond to the starboard engine, port side gauges correspond to the port engine. Familiarize yourself with these gauges before running your engines for the first time.

⚠ CAUTION

Engine operator's manuals have been included within your boat's OEM supplied materials package. The engine manual is a detailed and comprehensive manual that will provide you with information on proper operation and maintenance of the engines. DO NOT START OR OPERATE YOUR BOAT'S ENGINES WITHOUT FIRST READING THE ENGINE OPERATOR'S MANUAL.

Instrumental Panel Gauges



Tachometer

The tachometer monitors and indicates the speed of an engine as measured in "revolutions per minute" or RPM. This engine speed will not show your boat's speed over the water nor does a tachometer necessarily indicate the speed of propeller rotation. The tachometer may not register zero RPM when the respective engine's ignition key is turned off. This is normal.

NOTE: **The engine manufacturer has established a maximum RPM rating for your engines. This rating can be found in the engine's operator's guide. Refer to your engine operator's guide for further information concerning maximum RPMs. DO NOT EXCEED THE MAXIMUM RPM RATING.**

Temperature Gauge

A temperature gauge monitors the cooling system of an engine. Every engine is designed to operate within a specified temperature range. A sudden increase in an engine's temperature could indicate that the cooling water intake system has become blocked, a water intake hose has failed, or the engine's water pump has malfunctioned.

Your engines are equipped with alarms that will sound when an engine's temperature rises beyond a predetermined level. If this alarm sounds shut down the overheated engine immediately.

Also, while your engines are equipped with high temperature alarms you should still visually monitor each temperature gauge. If an engine's temperature gauge indicates excessive engine temperature, shut down that engine immediately.

⚠ WARNING

The engine manufacturer has established a safe operating temperature rating for your engines. This rating can be found within the engine operator's guide. Refer to your engine's operator's guide for further information concerning engine temperature. DO NOT EXCEED THE ENGINES SAFE OPERATING TEMPERATURE.

A TIP FROM CARVER: *"A cold engine has a tendency to stall when first put into gear. Let your engines warm up a few minutes before departing your dock or anchorage. "*

Oil Pressure Gauge

Each engine has an oil pressure gauge. This gauge provides an indication of the pressure within the engine's lubrication system. The oil pressure reading will change as engine speed changes. However, a drop (either sudden or gradual) in an engine's oil pressure while you are maintaining a constant speed, may be an indication of an oil pump failure, or leak in the lubrication system, or excessive engine wear.

Your boat is equipped with audible alarms that will sound when oil pressure drops below a predetermined level. These alarms will sound upon initially starting an engine or anytime an ignition switch is "ON" and the engine is not running. The alarm sounds under these situations because the engine does not yet have adequate oil pressure. The alarm will cease as soon as oil pressure rises to the proper level.

If this alarm sounds when the boat has been running, or if the alarms fail to become silent within 15 seconds after starting the engines, look at your engine oil pressure gauges. If either gauge indicates abnormally low oil pressure shut down the corresponding engine immediately.

Also, while your engines are equipped with low oil pressure alarms you should still visually monitor each oil pressure gauge. If an oil pressure gauge indicates low pressure, shut down that engine immediately.

Voltmeter

The voltmeters monitor the condition of your boat's batteries. A fully charged battery will indicate approximately 12.5 volts. As power within a battery is used, the indicated voltage for that battery will decrease as indicated on the appropriate voltmeter. The 350 Mariner utilizes a voltmeter gauge for each battery located at the helm station. Voltmeters are protected by circuit breakers located on the battery selector switch panel.

A detailed explanation on how to use the voltmeters to monitor battery capacity is included in the **Voltmeter and Ammeter** portion of **Section 2**.

Fuel Gauges

Your boat's fuel gauges display an approximate indication of the level of fuel that is held within each fuel tanks. These gauges are not calibrated and should not be regarded as a precise or highly accurate method of measuring available fuel quantities.

The fuel gauge will display a reading when the ignition switch for the port engine is turned to the "ON" position.

Gauge Maintenance

The gauge panel should be protected from the sun and weather when not in use. Instrument gauges are not waterproof. Protecting them from the elements will prolong their life.

NOTE: **Some gauges can collect condensation within the gauge assembly. This condition is indicated by small beads of moisture behind the gauge's glass bezel. This moisture does not indicate a defective gauge. The Carver Limited Warranty does not include replacing gauges that are cosmetically affected by condensation.**

Electronic gauges can be affected by static electricity that may build up on the glass face of the gauge. Periodic washing of the gauge face with warm water and mild liquid detergent will help reduce the static electricity problem and improve gauge accuracy.

⚠ WARNING

The engine manufacturer has established a safe oil pressure rating for your engines. This rating can be found within the engine's operator's guide. Refer to your engine operator's guide for further information concerning oil pressure. DO NOT OPERATE AN ENGINE BELOW ITS MINIMUM OIL PRESSURE RATING.

CONTROLS

Gear And Throttle Controls

Shift Levers

Shift levers are installed on the port side of the steering wheel. The outside lever controls the port engine and the inside lever controls the starboard engine. The shift levers allow you to shift from neutral to forward or reverse. These levers are designed to permit independent shifting of each engine. This improves maneuverability in tight quarters.

⚠ WARNING

DO NOT shift into, or out of, gear while the engine speed (as indicated on the tachometers) is above IDLE. Costly damage to your boat's drive train could result.

A neutral safety switch is incorporated into the linkage of each gear shift. When properly adjusted, this safety switch will not permit you to start an engine while it is in gear.

A TIP FROM CARVER: *"If you turn the ignition switch key and the engine starter fails to engage it may be because the neutral safety switch for that engine is slightly out of adjustment. If this happens, wiggle the gear shift for that engine fore and aft until the starter engages."*

Throttle Levers

The throttles are installed on the starboard side of the steering wheel. The inside throttle lever controls the port engine and the outside throttle controls the starboard engine.

The throttles allow you to increase or decrease the speed of each engine. These levers are also designed to permit independent control of each engine's speed.

⚠ WARNING

ALWAYS return a throttle to its extreme low speed position before shifting the engine into, or out of gear. Failure to follow this procedure may result in drive train damage.

On a dual engine boat such as the 350 Mariner it is recommended that both engines be operated at the same speed while cruising. This reduces engine noise and vibration and improves engine efficiency. Use the engine synchronizer gauge to monitor the speed of each engine. Adjust the throttles so the synchronizer gauge needle is centered. Attempting to synchronize the engines by aligning the throttle levers will seldom work. When the engines are properly synchronized the throttle levers may not necessarily be aligned.

POWERING THE ENGINES

Throttle Synchronizer (optional equipment)

Your 350 Mariner may be equipped with a throttle synchronizer. If so equipped, this throttle synchronizer allows you to electronically and mechanically interconnect BOTH engine throttles. Interconnecting the throttles allows you to increase and decrease engine speed by using one throttle lever. This also allows you to maintain precisely synchronized RPM levels.

To operate the throttle synchronizer:

1. Have both engines running and advance speed slightly above idle.

2. Switch Synchronizer "ON" - Pilot light will be "ON."

3. Move "SLAVE ENGINE" (port engine) lever to maximum speed position - since the Synchronizer is now controlling the slave engine, the lever is "limp" or non-effective. Advancing the slave engine lever eliminates the Synchronizer of undue strain in moving the entire control cable system.

4. Both engines are now under the control of a single movement of the lead engine (starboard) control and may be advanced and retarded through the entire cruising range.

5. To disengage - switch OFF Synchronizer - move slave engine lever back towards idle until you feel resistance. It will automatically reengage with the engine control. A safety collar assures positive return to idle when switching OFF and moving lever back.

Use of the Synchronizer at minimum and maximum engine speeds call for engine speed settings to be as follows:

SLAVE engine IDLE set LOWER than LEAD engine.

SLAVE engine MAXIMUM set HIGHER than LEAD engine.

Automatic deactivation of the synchronizer will result from conditions contrary to the above settings. The pilot light will go OFF, the synchronizer will be deactivated. To reengage, switch OFF and ON again.

POWERING THE ENGINES

Additional operating instruction can be found in the instruction manual provided in the OEM-supplied materials portfolio.

Control Cables

Push - Pull type cables are used to connect the shift and throttle controls to the engine. Refer to the information provided by the control manufacturer for more information on adjusting and maintaining your boat's engine controls.

Steering

The 350 Mariner uses a hydraulic steering system. Hydraulic steering provides better response than mechanical steering when used on large boats like the 350 Mariner.

The boat's helm is connected to the rudders through a hydraulic pump, a network of hydraulic lines, an oil reservoir, a hydraulic cylinder, and a tiller tie rod. By turning the helm, oil is pumped through the hydraulic line which activates the hydraulic cylinder. This cylinder is connected to the tiller tie rod. Extending and retracting the cylinder moves the rudders and enables you to steer the boat. With hydraulic steering the effort needed to turn the helm remains the same regardless of the speed of the boat.

Your hydraulic steering system depends upon a proper and adequate source of hydraulic fluid and sufficient pressure within the hydraulic pump and lines. Refer to the operator's manual for the hydraulic steering system for more information on its operation and maintenance.

POWERING THE ENGINES

PREPARING FOR CRUISING

Fueling

Your fuel tanks are designed to flow a maximum of 9 gallons per minute (GPM) when the tank is between 25% and 75% full. During this time the pressure inside the tank must not exceed 4 psi. When the tanks are completely empty, or when they are reaching full capacity during fueling, slow down the rate fueling. This will help prevent fuel backup and spillage when the tank is full or fuel surge and rupture when fueling an empty tank. Be aware that many marine fuel pumps can easily deliver fuel at rates up to 35 GPM. This high fueling rate should never be used without risking damage to your fuel system.

Prior To Fueling

NOTE: Refer to the engine manual for the fuel type and octane rating recommended for your boat's engines.

1) Ensure that the boat is securely moored.

2) Close all ports, windows, hatches and doors.

3) Stop fans, motors or any other device that could create a spark. Turn off the stove and oven. Shut down the generator.

4) DO NOT SMOKE OR ALLOW ANYONE NEAR THE FUEL DOCK TO SMOKE.

5) Turn the battery selector switch to the "OFF" position.

6) Have all guests and passengers leave the boat. Only the fuel handlers should be in the area.

Fueling

1) Locate the fuel fill deck plates and remove the deck plate caps. Refer to the **Fill Plate/Pumpout Locations** portion of **Section 9** for fuel fill plate locations

2) Be certain that the fuel you are about to pump into your boat is the proper type recommended by the engine manufacturer.

3) Have an approximate idea how many gallons of fuel you will be taking on.

4) Pump fuel into the fuel tanks. Begin at a slow rate (no more than 9 gallons per minute). As the tank nears full capacity, slow the fuel flow rate to less than 9 GPM until the tank is full. While fueling, keep the fuel hose nozzle in contact with the metal fuel fill deck plate at all times. This is a safe guard against static spark.

⚠ CAUTION

Avoid spilling fuel on the gelcoat surface of your boat. Fuel can stain the gelcoat and damage the hull accent stripes.

5) Monitor the fuel tank air vents. When the fuel tank is almost full, air will whistle through the vent.

⚠ CAUTION

Each fuel tank vent on your 350 Mariner is equipped with a fuel catch valve that prevents fuel from spurting overboard through the vent. When your fuel tank reaches maximum capacity the fuel catch valve will close. When the valve closes, air and fuel can no longer pass though the fuel tank vent. Therefore, continuing to fill your fuel tank once they have reached maximum capacity can cause fuel to backup the fuel system. Such a condition can rupture your fuel tank and damage your fuel system. To prevent fuel from backing up in your system, monitor your fuel tank vents and stop fueling immediately once the fuel tank vent closes.

After Fueling

1) Replace the fuel fill deck plate caps.

2) Wash down or wipe up all spilled fuel.

3) Ventilate the cabin by opening ports, windows, doors and hatches.

4) Turn the battery selector switch, the 12 volt MAIN breaker and the BILGE BLOWER breaker to the "ON" position.

5) Turn "ON" and run the bilge ventilation blower for at least 5 minutes prior to starting an engine or generator.

6) Inspect the engine compartment. Sniff the engine compartment for fuel vapors.

7) Operate onboard equipment ONLY after you are sure that the boat is free from all fuel vapors.

Pre-start Checklist

1) Read and understand the information contained in the Owner's Guide and all OEM supplied literature.

POWERING THE ENGINES

2) Open and inspect the engine compartment.

- Sniff for fuel fumes.
- Check the bilge water level.
- Check for oil in the bilge.
- Check the crank case oil level in each engine.
- Make an overall inspection of the engine compartment to look for signs of potential problems.
- Follow all periodic maintenance instructions as detailed in **Section 7**

3) Turn the battery selector switch to either the #1 or the #2 position.

4) Go to your 12 volt electrical panel and turn the MAIN breaker, the BILGE BLOWER breaker and any other breakers for equipment you may need (horn, trim tabs, etc.) to the "ON" position. Turn the helm console bilge blower switch "ON."

5) Check the output level of the bilge ventilator by holding your hand over the bilge vent grill installed on the port side of the boat's hull. You will feel air being blown from the output bilge vent if the bilge blower is operating properly.

⚠ DANGER

Operate the bilge blower for AT LEAST 5 minutes prior to starting an engine AND whenever running the boat at idle speed. Check bilge blower output before starting engines.

During the 5 minutes the bilge blower is running you can complete the following steps:

6) Be sure that all safety gear is onboard and operative. Check out items such as navigational lights, VHF radio, depth sounder, etc. Make sure your boat carries the safety equipment required to meet Federal and local regulations.

7) Check to make sure you have an adequate supply of fresh water. Check level of waste holding tank.

8) Remove and store shore power cord and dock side water lines.

9) Once all tanks are properly filled, return the fuel fill deck plates and secure them.

POWERING THE ENGINES

Starting the Engines

1) Read, understand and follow the operator's manual that has been prepared and supplied by the engine manufacturer. The information supplied in the engine manual takes precedence over information presented in the Carver Owner's Guide.

2) Put gear shift controls into NEUTRAL.

3) Select the engine you will start first. NEVER start both engines at the same time.

4) Put the shift level into neutral and slightly advance the throttle. Keep one hand on the throttle and engage the engine starter by turning the ignition key with your other hand. Release the key when the engine starts.

⚠ WARNING

The ignition switch is spring activated. Release the key when the engine has started. Failure to release the ignition key after the engine has started may damage the starter.

⚠ WARNING

DO NOT operate the starter by engaging the ignition key for more than 10 seconds. If the engine does not start after engaging the starter for 10 seconds, release the key and try again.

The oil pressure warning buzzer will sound for the first few seconds after the engine has started. This is normal. When oil pressure builds the buzzer will stop. A cold engine may run rough and require some slight advancing of the throttle lever to start the engine and keep it running.

After Your Engines Have Started

1) Check your engine gauges. Make sure the oil pressure complies with the engine manufacturer's recommendations. Voltmeter should read about 12.5 to 13.4 Volts.

2) Check your fuel gauge to make sure you have adequate fuel for your trip.

3) Take a look into the engine compartment. Visually inspect the fuel system hoses and exhaust hoses. If you discover a leak or suspect that anything is out of order, shut down the engines and investigate.

⚠ DANGER

The engine compartment contains moving, hot machinery. KEEP YOUR HANDS, FEET AND BODY OUT OF THE ENGINE COMPARTMENT WHILE ONE OR BOTH ENGINES ARE RUNNING.

Section 6

OPERATING/MANEUVERING

BEFORE OPERATING

Navigation

Navigation is very important on the open seas. Information on how to navigate goes beyond the scope of this manual. The owner is encouraged to read *Chapman's Piloting and Seamanship* and obtain instruction regarding how to navigate this boat.

Charts

You can obtain charts of the waters in which you will be navigating from the National Ocean Survey, a branch of the National Oceanic and Atmospheric Administration in Washington D.C. The NOS offers a publication listing the charts you will need for your area; however, this listing may not include inland rivers. Charts of inland rivers are also available from the appropriate district office of the U.S. Army Corps of Engineers. Your dealer may also have charts of the waters in which you intend to cruise.

Keeping your charts up-to-date is a very important part of navigation. The Weekly Notice to Mariners available from the Defense Mapping agency or the U.S. Coast Guard is an excellent resource for updating charts.

Compass

Your compass is the most important piece of navigation equipment onboard your boat. To operate properly, the compass must be in an area free from local magnetic influences and electrical components.

Refer to your compass manufacturer's owner's guide and use a small, nonmagnetic screw driver to compensate your compass. We recommend having a professional compensate your compass.

Horn

If you are caught in fog or are navigating at night, your horn will tell other boaters where you are. Your boat's horn meets U.S. Coast Guard requirements.

Depth Sounder

Install a depth sounder onboard your boat. This can be an invaluable tool to insure that you do not get caught in waters too shallow for your boat. A depth sounder could also aid in navigation.

Speed Log

Keeping a speed log is essential when trying to determine your position over time. For your convenience, a speed log has been included at the back of this owner's guide. Use the information recorded on this log to plot your approximate position from a previous known position.

OPERATING/MANEUVERING

Shallow Water Operation

Always pay attention to the depth of the waters in which you are cruising. Do not venture into waters which are too shallow for your boat's draft. Shallow water navigation can be very hazardous. If you do find yourself in shallow waters, reduce speed immediately. Consult nautical charts and try to ascertain your position. Try to plot a course out of the shallows through waters deep enough for your boat's draft.

If your boat runs aground, radio for help and wait until it arrives. Do not attempt to relaunch your boat. You may do serious damage to your hull or underwater gear.

Launching

Have a professional launch your boat. Your dealer employs experienced people to do this or he can recommend someone who can.

On The Boat

Every boat owner should know how to perform the following maneuvers competently. Do not attempt any of the following procedures or maneuvers without first receiving adequate training.

Loading

Have someone on the pier hand it to you after you have boarded the boat. Stow all items securely to prevent shifting while your boat is in motion.

If your boat is loaded near capacity, or if seas get rough, distribute the weight evenly and keep the load low. Don't make any abrupt changes in its distribution. Shift the load or move about only after stopping or slowing.

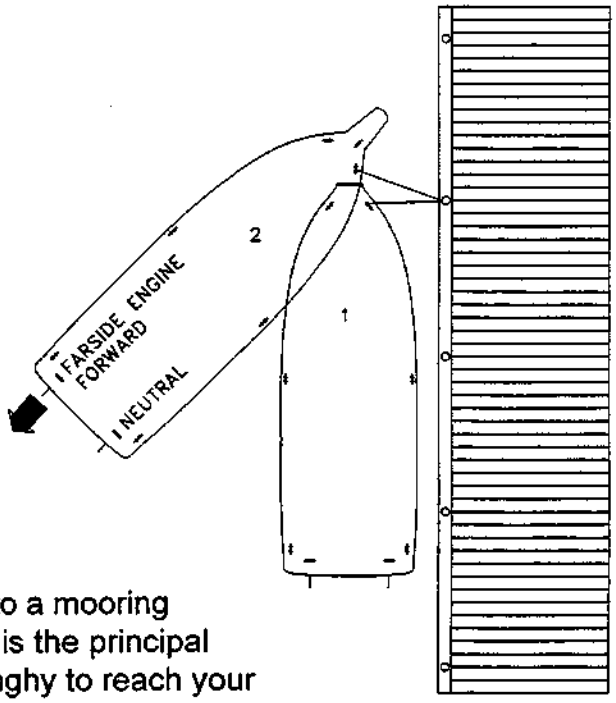
Docking and Casting Off

The following maneuvers can be hampered by the presence of wind and current. It is important to use the current by approaching or leaving with the current instead of fighting against it. Also, the operator should be sure to adequately fender his boat against collisions with docks or other boats.

OPERATING/MANEUVERING

Leaving a Pier or Mooring

Getting underway from a pier is normally accomplished by taking in all lines except the bow spring. With a neutral rudder, power the boat forward using only the engine farthest from the pier. The boat will pivot around the bow spring line, moving the stern out and away from the pier. A fender should be placed between the bow and the pier to prevent scraping as the boat pivots about the bow spring. Once the stern is clear of boats and other obstructions, the bow spring is taken in and the boat is backed away.

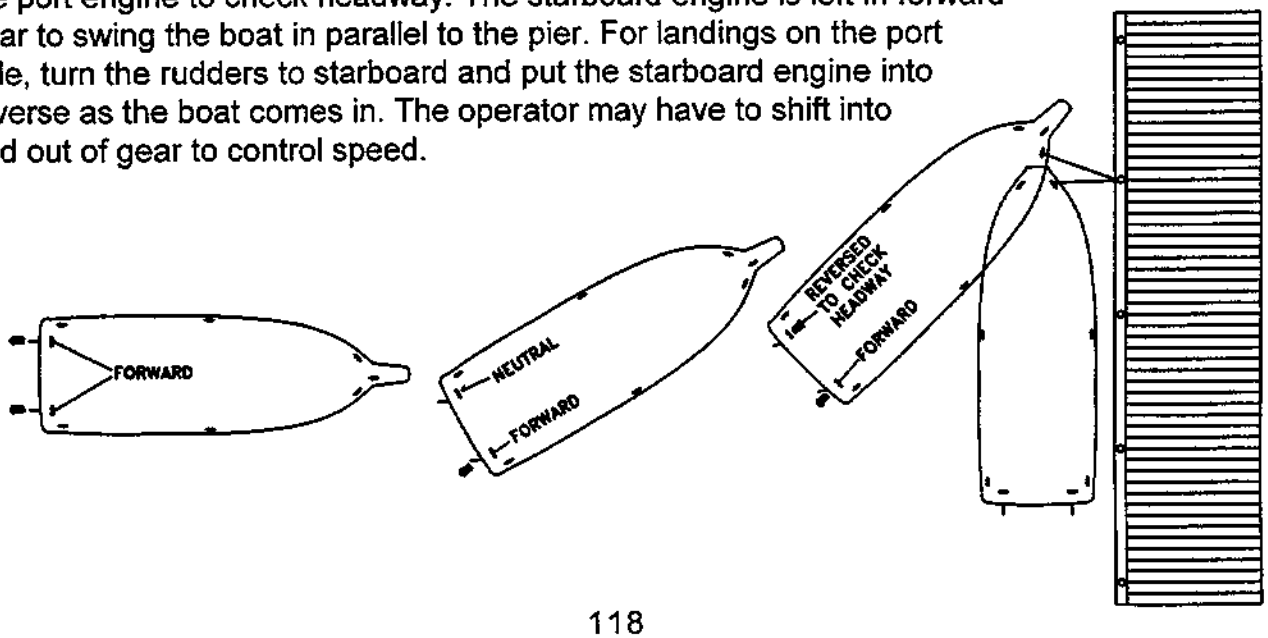


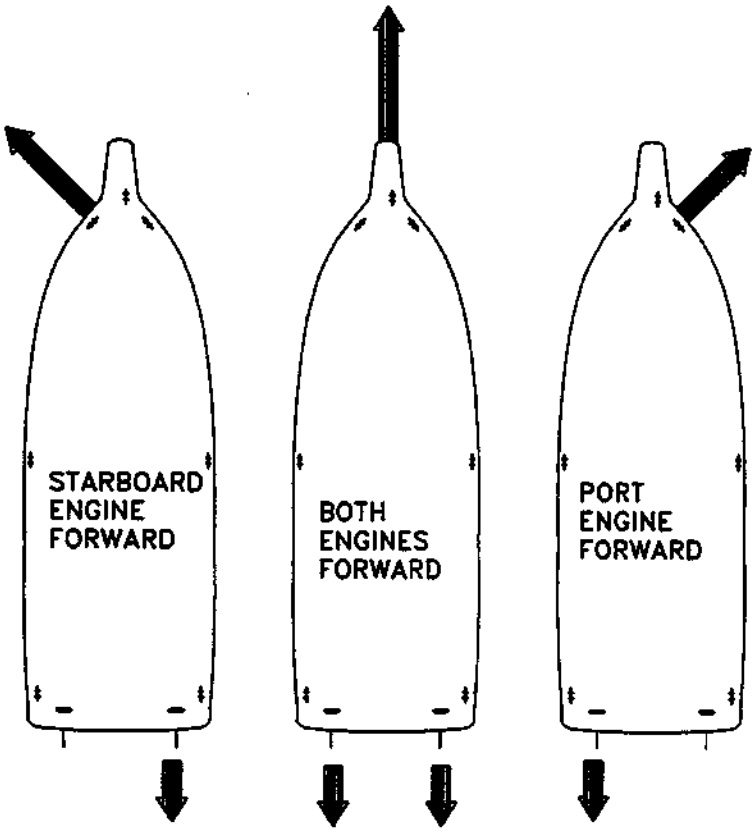
At marina anchorages, boats are often secured to a mooring buoy. Fouling your propeller with a mooring line is the principal hazard when leaving a mooring. If you use a dinghy to reach your boat, make sure the dinghy line does not foul the propeller.

After getting onboard, start the engines and send someone forward to slacken the line. Release the line. In a river with current, the boat will gain headway with the current. After you are clear of the buoy, power the boat forward. In a calm bay, if there is neither wind nor current, back the boat away a few boat lengths. As you power forward, keep the buoy in sight and give it ample room until you are clear. Run slowly until you clear the anchorage to avoid creating a nuisance with your wake.

Landing at Pier

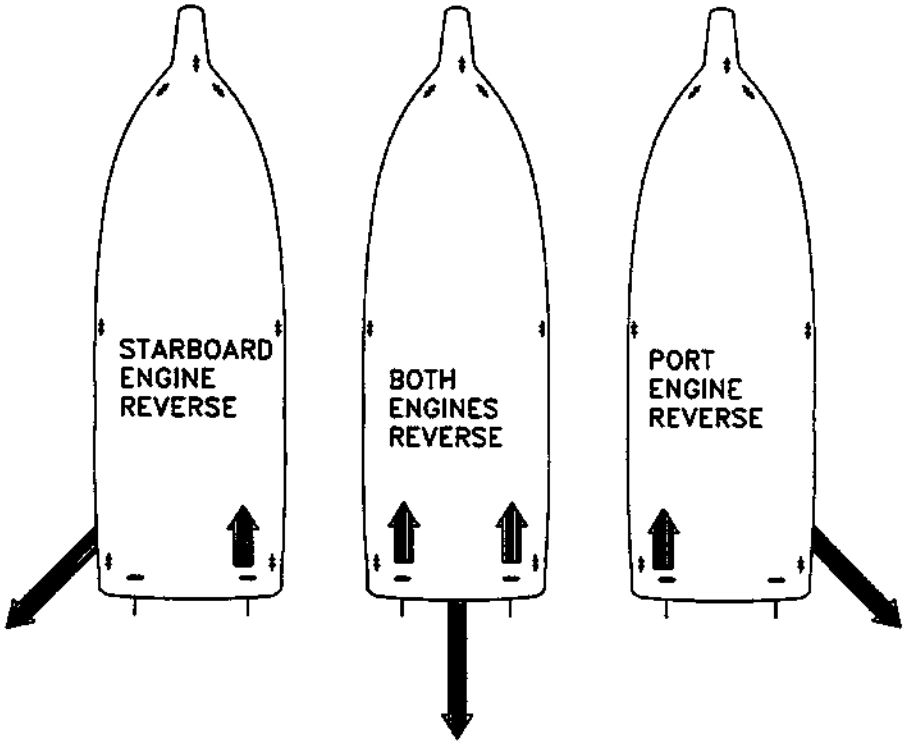
To land at a pier, the boat should come toward the pier at a right angle. If a starboard side landing is desired, place the rudders to port and reverse the port engine to check headway. The starboard engine is left in forward gear to swing the boat in parallel to the pier. For landings on the port side, turn the rudders to starboard and put the starboard engine into reverse as the boat comes in. The operator may have to shift into and out of gear to control speed.





Tracking Forward (props only)

Tracking Astern (props only)



OPERATING/MANEUVERING

Picking up a Mooring

As you return to the anchorage, approach your mooring at slow speed. Take notice of how other boats are lying at their buoys. They are heading into the wind or current and your approach course should be roughly parallel to their heading. Stay clear of other moorings to avoid fouling them. If you tow your dinghy, station a crew member at the helm to keep the dinghy line from fouling the propeller.

Slip the clutch into neutral when you estimate that the boat's forward momentum will carry you up to the buoy. Station someone at the bow with a boat hook to pick up the pennant float. If you are about to overshoot your mark, check headway as the bow comes up to the buoy. If you fall short, a few short turns of the propeller should suffice. Keep the engine running until the pennant eye has been secured on the bitt or bow cleat.

If your crewman can not reach the pennant or if you overshoot, get clear and calmly try again.

Maneuvering

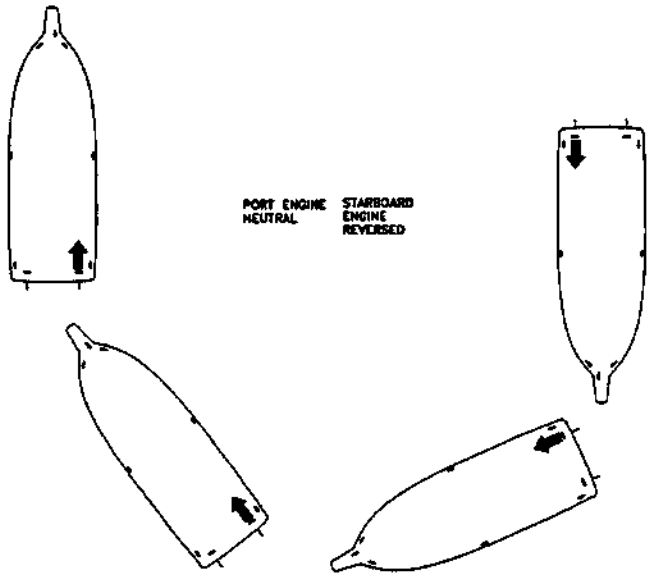
The propellers on your boat rotate in opposite directions. With only your port propeller rotating, your boat would track forward and to starboard in forward gear or backwards to port in reverse. With the starboard propeller rotating, your boat would track forward to port in forward gear or backwards to starboard in reverse. With both propellers rotating at the same speed and your rudder amidships, your boat will track straight forward.

During backing, your rudders are not as effective and the side force from the twin screws is used to steer the boat.

Maneuvering astern

Backing a boat may be necessary in a crowded marina. Your boats twin inboards allow the boat to track straight astern or to either side. When backing, be sure to keep your trim tabs up. To make a turn to port, shift the port engine to neutral. A starboard turn astern is made by shifting the star-board engine to neutral.

Check sternway (stop reverse motion) by shifting your engines to forward gear and throttling forward .



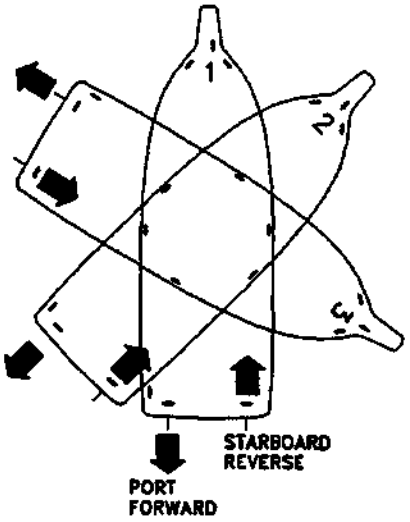
Full stern turns can be executed, but watch the bow. The bow cuts a much wider arc than the stern and collisions could occur in crowded areas.

Checking Headway

Stopping the boats forward motion is referred to as checking headway. You should learn how to confidently stop your boat within any required distance. You can check headway by shifting engines to neutral and coming to a complete stop over a long distance, or reversing engines and stopping within a shorter distance.

Close quarters turns

To execute a close quarters turn, **check your headway** and shift one engine into reverse while shifting the other into a forward gear. As you advance the throttles, the opposing forces will cause the boat to pivot about a point centered between the propellers. You can assist the rate of turn by turning the rudders in the direction of the turn.



Anchoring

An anchor's holding power depends on it's weight and the length of the anchor line. The most effective length is six to seven times the depth of the water you intend to anchor in. If the water is 10 feet deep, you should have 60-70 feet of anchor line.

Approach your selected anchor site from downwind and come to a dead stop over the spot where you want to drop anchor. Have a crew member lower the anchor. When the anchor hits bottom, reverse engines and slowly move the boat backwards to add length to the anchor line as the crew member keeps a slight tension on the line. When the proper length is out, the crew member can snub the line by winding it around the bow cleat. This should cause the anchor flukes to dig in and hold effectively.

Check for anchor drag. Immediately after anchoring, observe shoreline landmarks. After thirty minutes, observe the landmarks again. If the points of reference have changed, reset your anchor.

When weighing or pulling in your anchor, pull the line in until the anchor line is vertical. When the line is taut, a hard tug will pull the anchor's shank up. If the anchor is stuck, wrap some of the line around a bow cleat and keep tension on the line. The boat's momentum may free the anchor. If there is a swell, wind the line around a bow cleat when the bow drops into a wave trough. As the bow lifts, it may free the anchor. If neither of these methods works, pay out a few feet of line, secure it around the bow cleat, and maneuver around the anchor. Keep the line tight until you find the angle that will pull the anchor loose.

An electric windlass simplifies the above procedures. Follow the above procedures and use the windlass control at the helm to drop anchor. To relieve strain on the windlass, hooks called *devil's claws* engage the chain when the anchor is down.

If you intend to stay at anchor over night or if you anchor your boat close to another structure, consider dropping another anchor from the stern. This will prevent your boat from swinging around if the winds or currents shift.

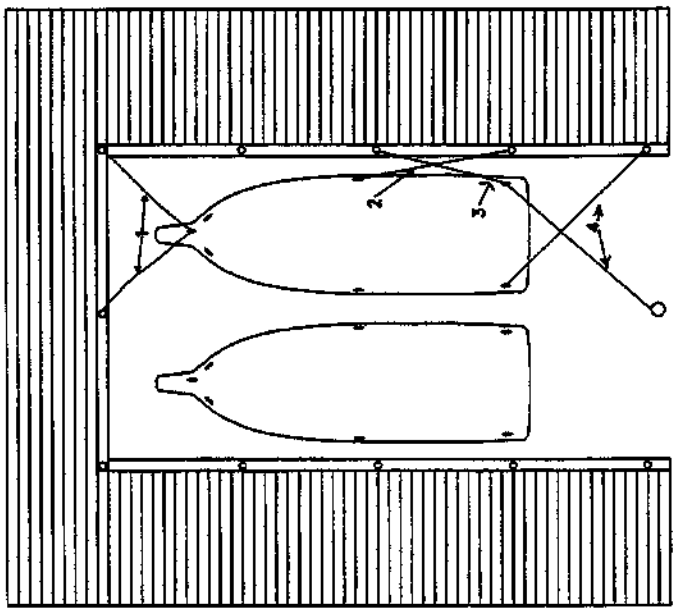
In a strong blow, you may need two anchors also. If you drop your spare anchor, make sure the two anchors are laid out at an angle. If both anchors are set in-line, a dragging anchor may cut a trough for the other to follow.

Stern Anchors

In some anchorages, boats lie to anchors bow and stern. To get these anchors down, let the bow anchor go first and drop back on an extra long scope (15-18 times the depth). Drop the stern anchor and adjust the scope on both as necessary.

Mooring Lines

The owner should familiarize himself with mooring line terminology and their use. If necessary, obtain training dealing with mooring your boat. Learn how to tie the various knots used in seamanship and when to use them. Boats which are not tied up correctly can suffer serious damage. The following information serves only as a guide to mooring your boat.



Mooring Illustration

OPERATING/MANEUVERING

The mooring illustration demonstrates possible docking lines for a small vessel include the (1) bow line, (2) after bow spring, (3) after quarter spring and (4) stern lines. Of the two dockings shown, the boat on the bottom is used when docking your boat in an alongside berth. The top docking is used when tying up at four corners of the boat.

The two spring lines are crossed and running to separate deck cleats. If possible, the stern line should be run to the off shore quarter cleat. Spring lines are useful in preventing undesired movement ahead or astern in a berth; They also keep a moored vessel in position when there is a significant rise or fall in tide.

Towing

Always offer assistance to a vessel in distress. However, towing a capsized boat or a boat with a damaged hull is not recommended. In these situations, lend aid to the occupants and call the proper authorities. Remember, you are obligated to lend aid to any person in distress, but not to the vessel. If you believe your vessel can not tow the vehicle in distress, do not attempt it. One disabled boat is better than two.

OPERATING/MANEUVERING

GETTING UNDERWAY

It takes training and experience to become an "expert yachtsman." Reading and understanding this Owner's Guide is only part of the knowledge you'll need to operate a boat safely and skillfully.

Carver Owners have a wide range of abilities, from seasoned yachtsman with years of experience to absolute beginners with a new-found love for the water. Be honest with yourself in appraising your level of skill.

The Shakedown Cruise

Before taking your boat on its first outing, be sure that the following tasks have been completed:

1) Dealer has completed Pre-Delivery commissioning. This inspection has been documented on the Pre-Delivery Service Document and has been signed by the dealer and the owner.

2) ALL warranty registration cards have been completed and mailed.

3) You have read and understand The Carver Owner's Guide and all other literature pertaining to your boat's systems.

4) Safety equipment onboard your boat is in compliance with Federal and local regulations.

5) Your boat has been documented or registered and displays the appropriate identification on the hull.

6) A representative from your Carver Dealer has reviewed the operation of the boat and its systems with you and answered your questions.

If possible, pick a calm day for your first outing. The shakedown cruise with a new boat is not the best time to bring friends or guests along. Entertaining guests will distract you from the real purpose of the cruise, which is to familiarize yourself with your new boat. Bring only those people (spouse and children) who will make up your regular crew. Invite the sales person who sold you the boat or a member of your Carver Dealer's service staff along for the ride.

Carry a pad and pencil with you during this first outing. Write down any questions that come to mind during the cruise so you can discuss them with your dealer.

Follow the procedures outlined at the beginning of this section for fueling and starting the boat's engines.

OPERATING/MANEUVERING

This may be the first time you have been in total command of your new boat. Proceed slowly. Have fun but remember that the objective of the cruise is to learn more about how your boat operates and handles. Operate at different RPM settings. Try different trim angles. Monitor the gauges. Practice backing down and turning slow speed tight corners that simulate docking maneuvers. Write down any questions you may have so you can review these items with your dealer when you return to the dock.

Operating at Planing Speed

The 350 Mariner utilizes a "planing" hull. Planing hulls skim "over" the water rather than "through" the water. To do this, however, they first have to reach a certain hull speed, called "planing speed."

When you first accelerate from a dead stop, the trim angle of the boat will increase and cause the bow of the boat to rise and the stern of the boat to drop. Continue to accelerate and the boat will eventually achieve plane and the bow will slowly drop to a more level attitude.

⚠ CAUTION

It is important to get on plane as soon as possible and avoid speeds that cause the boat to plow through the water with the boat in a bow high attitude. A bow high attitude will obstruct your vision and limit your handling and performance capabilities.

Once the boat is on plane, you can back the throttles off to a point where the hull is still planing and the engines are operating at a fuel efficient speed.

Trim Tabs

Your boat is equipped with a set of electric / hydraulic trim tabs. Trim tabs allow you to trim the boat to adjust for variables such as load, passengers, seas or wind. Under normal conditions the 350 Mariner will not need adjustments to the trim tabs to achieve plane. Use the tabs at planing speeds to make minor adjustments in the fore and aft and beam to beam angle of the boat.

Use the trim tabs in the following way:

1) Turn the 12 volt circuit breaker labeled TRIM TABS to the "ON" position.

2) The trim tab control is mounted at the boat's helm console. The control has two switches. The port switch corresponds to the port tab and the starboard switch to the starboard tab. The control is labeled "BOW UP" and "BOW DOWN."
   Before advancing the throttles, depress both switches on the BOW UP side for 5 seconds. This lifts the tabs to the full "up" position.

3) Advance the throttles to bring the boat on plane. Adjust engine RPM for cruising speed.

4) Use the trim tabs individually to make beam to beam adjustments. If the majority of your passengers are sitting on the port side, you may find that the starboard side of your boat is riding higher than the port. Push the BOW DOWN side of the starboard trim tab control switch for a ONE-HALF SECOND interval. Continue to adjust in half second intervals until the desired trim angle is achieved.

   If your passengers decide to shift to the other side of the boat level your boat by pressing the BOW UP side of the starboard trim tab control for a few seconds. This neutralizes your prior adjustment. Next, press the BOW DOWN side of the port tab control switch to adjust the trim of the boat.

5) Trim tab switches can be used together to bring the bow of the boat to a lower attitude. This adjustment is often used when running into choppy seas. Bringing the bow down uses the sharper part of the boats "V" hull to break through waves. Press both BOW DOWN switches together at HALF-SECOND intervals to bring the bow down. Be careful when making bow down adjustments. Excessive bow down trim can cause considerable bow spray hampering visibility and reduced control of your boat.

⚠ CAUTION

DO NOT OVERTRIM. Make your adjustments in HALF-SECOND intervals and allow the boat to adjust to trim tab input. Over-trimming could cause the bow to veer and may lead to loss of control.

ALWAYS reset the tabs to the BOW UP position BEFORE advancing throttles to achieve plane. Initial acceleration with lowered tabs could lead to a loss of control.

Section 7

MAINTENANCE

GENERAL INFORMATION

Your boat was constructed to the standards of the National Marine Manufacturer's Association.

Materials

Your new boat is constructed from a variety of high quality materials. These materials work together to provide a vessel that is uniquely suited to the marine environment.

Fiberglass

Many of the pieces used to build your boat, such as the hull, deck and shower stalls, are made of molded fiberglass. Dozens of fiberglass components are used to make a 350 Mariner. Many of the fiberglass parts in your boat are further reinforced by laminating core materials between layers of fiberglass. Natural materials like balsa wood and plywood are used as are a variety of synthetic materials like "cormat" and aluminum.

The exterior or exposed surface of many fiberglass parts is coated with a layer of gelcoat. Gelcoat acts as a cosmetic and protective layer, much like the paint on your car. Below the waterline hull surfaces have a layer of vinylester under the gelcoat.

The exterior walking surfaces of your boat have been textured with nonskid. This provides a solid footing surface on the boat's deck, walkways, ladder steps and swim platforms.

Wood

Several different types of wood are used in your 350 Mariner.

Fir Plywood

Several carefully selected types and thicknesses of premium quality, exterior grade plywood are used throughout your boat to construct and reinforce a variety of components.

Finish Plywood

Finish plywood is used on the interior of your boat to fabricate bulkheads, door panels and cabinets. Plywood has outer layers of high grade veneer, and a fir or pine inner plywood core.

⚠ CAUTION

Be careful if you sand the finish plywood portions of your boat's interior. Heavy sanding will damage the veneer.

Solid Mahogany Lumber:

High grade, mahogany lumber is used in a variety of dimensions in areas that provide structural strength to the boat and interior framework.

Solid Maple or Teak:

Maple or teak are the primary woods in the 350's decor.

Metal

Stainless steel and aluminum are used throughout your 350 Mariner These metals provide high strength-to-weight ratios, are nonmagnetic, and are highly resistant to moisture.

The safety rails on the 350 Mariner are welded from stainless steel rail. Information on how to care for the rails and hardware of your boat can be found later in this section.

High Pressure Laminate (HPL)

HPL is used within the 350 Mariner to surface bulkheads, cabinets and counter tops. These laminates are selected for their strength and durability, are easy to clean, and add colorful highlights to the inside of your boat.

Formed Plastics

Formed plastic is used in a variety of ways throughout the interior and exterior of your boat. Plastic offers a high strength-to-weight ratio and excellent resistance to the affects of moisture. A few of the areas where formed plastics are used are in the boats water and sanitation tanks, bridge seat forms, venturi windshield and electrical wire covers.

Fabrics, Wall Covering and Carpet

A wide variety of fabrics can be found throughout the interior and exterior of your boat. Woven fabrics are used for interior mattresses and chairs, and vinyl fabrics are used for exterior cushions and helm seats. The vinyl coating of the interior wall coverings and headliner makes them easy to clean. The carpet and fabric selected for your boat are of premium grade and have been treated with a popular stain resistant product.

MAINTENANCE

Construction

Your 350 Mariner was built using a modular construction technique. This method of building boats uses the physical properties of many components to add strength and rigidity to the boat's hull and deck. The interior liners of the boat are securely bonded to the hull and deck to increase strength while minimizing the boat's overall weight.

Hull

The hull is made of numerous layers of various types of laminated fiberglass. Its strength is derived from laminating several carefully selected, hand laid layers of fiberglass material that have been impregnated and bonded together with polyester resin. Your hull does not contain any balsa wood coring materials. The actual thickness of your boat's hull varies depending upon the structural requirements of a particular area. The thickness, however, generally increases as you go from the sheer to the keel area of the hull.

Carver protects the underwater portion of your hull from marine growth with a layer of antifouling bottom paint.

⚠ CAUTION

DO NOT install an item into or through the hull without sealing the area penetrated by the fastener or fitting. Improper or inadequate sealing may lead to hull leaks or serious hull damage. Consult your Carver Dealer for recommendations on what type and brand of sealer to use.

Deck

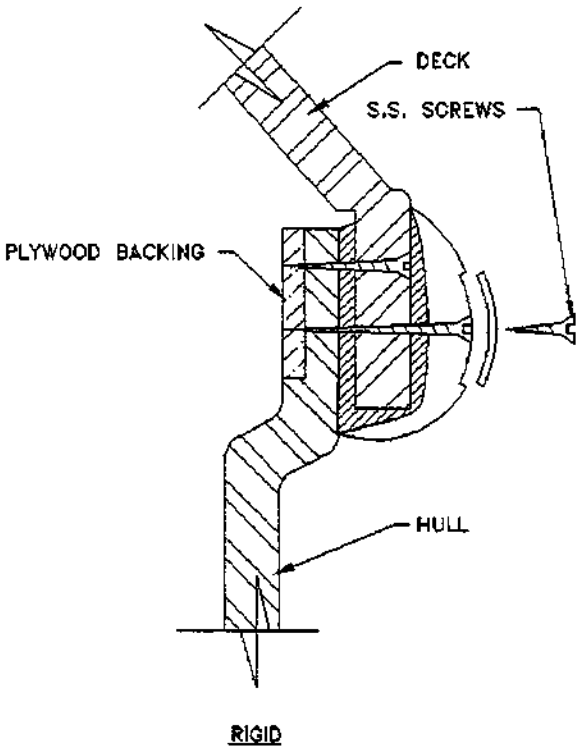
The deck of the CARVER 350 Mariner uses a complex system of laminated fiberglass to give it the ability to support the superstructure of the boat. All exterior surfaces, including the nonskid areas are coated with pigmented gelcoat. Where equipment and hardware are fastened, wooden or metal backing plates are used. Many of these backing plates can't be seen on a completed boat because they are actually laminated into the fiberglass. High stress areas receive additional layers of fiberglass laminates as reinforcement. The hull and deck are fastened together using the Carver "shoe box" hull-to-deck joint. This joint creates a strong and highly water tight union between these two critical components of your boat.

MAINTENANCE

Interior Modules

Carver utilizes a modular construction process. Major components and cabin modules are built independent of the hull and deck. These components are then fitted into the hull before the deck is positioned and secured.

Modules are designed to work with the hull and deck to add strength to the boat.



Carver "shoe box" hull-to-deck joint

MAINTENANCE

Maintenance Schedule

This section provides guidelines that will make you aware of the areas within your boat that need periodic attention. Time periods listed in this section are only rough guidelines. The more frequent your boat is used, the more often periodic maintenance needs to be performed. Boats used in salt water will require more maintenance, especially on the exterior of the boat.

OEM supplied manuals include information on detailed maintenance procedures that you should follow. Read these manuals and follow the component manufacturers suggestions.

Maintenance tasks have been divided into 4 categories:

TYPE "A" MAINTENANCE

Type A maintenance should be performed 48 hours after a new boat has been launched AND 48 hours after a boat has been launched following a period of onshore storage.

TYPE "B" MAINTENANCE

Type B maintenance should be performed after the first 25 hours of operation following initial launching and after periods of onshore storage.

TYPE "C" MAINTENANCE

Type C maintenance should be performed twice each season, every 6 months or every 100 hours, whichever period is more frequent.

TYPE "D" MAINTENANCE

Type D maintenance is performed seasonally, every 12 months or after every 200 hours of use, whichever period is more frequent.

A maintenance log is included at the end of this owner's guide. The items on the log correspond to the items on the following pages. Make several copies of the log. As you go through your routine maintenance, use the log to check the projects you have completed on the maintenance schedule.

A blank log sheet has been provided for your use when you do maintenance on your engine, generator, and head. Make a copy of this page and write in the suggested items from your OEM materials.

MAINTENANCE

GENERAL MAINTENANCE SCHEDULE

	Type A 48 hours after launching	Type B 25 engine hours after launching	Type C 6 months or 100 engine hours	Type D 12 months or 200 engine hours
ENGINES AND DRIVE SYSTEM				
Maintenance as outlined in the engine manual.	As recommended by manufacturer.	As recommended by manufacturer.	As recommended by manufacturer.	As recommended by manufacturer.
Inspect water intake hoses & connections.		X	X	X
Inspect exhaust system hoses & connections.	X	X	X	X
Inspect exhaust guard cover.				X
Check prop for balance & nicks				X
Check strut bearings				X
Check rudder alignment				X
Check all thru-hull fittings				X
Inspect shaft log packing nut	X	X	X	X
Check engine and shaft alignment	X	X	X	X
Spray ignition switch with contact cleaner				X
Tighten engine mounts		X		X
Weigh halon bottle			X	X
CONTROL SYSTEM				
Throttle and shift adjustments		X		X
Test neutral safety switch				X
Lubricate cables and controls				X
STEERING SYSTEM				
Inspect linkage and connections		X		X
Inspect hydraulic fluid level	X	X	X	X
Inspect rudder packing nut	X	X	X	X
Inspect tiller tie bar linkage		X	X	X
Inspect trim tab reservoir		X	X	X

MAINTENANCE

	Type A 48 hours after launching	Type B 25 engine hours after launching	Type C 6 months or 100 engine hours	Type D 12 months or 200 engine hours
ELECTRICAL SYSTEM				
Inspect and clean batteries			X	X
Check battery fluid levels		X	X	X
Check operation of all 12 volt equipment	X	X	X	X
Check operation of all AC equipment		X	X	X
Inspect shore power cord			X	X
Inspect generator water intake and discharge		X	X	X
Inspect zincs			X	X
Generator maintenance	As recommended by manufacturer.	As recommended by manufacturer.	As recommended by manufacturer.	As recommended by manufacturer.
FUEL SYSTEM				
Clean engine fuel filters		X	X	X
Inspect for fuel leaks	X	X	X	X
Inspect fuel lines for signs of chafe		X	X	X
Check propane system for leaks		X	X	X
Inspect propane storage system			X	X
FRESH WATER SYSTEM				
Flush water tank and system			X	X
Clean in-line water filter			X	X
FIBERGLASS / WOODWORK				
Clean fiberglass				X
Wax hull & all non-tread areas				X
Repair chipped fiberglass			X	X
Clean interior woodwork				X

MAINTENANCE

	Type A 48 hours after launching	Type B 25 engine hours after launching	Type C 6 months or 100 engine hours	Type D 12 months or 200 engine hours
INTERIOR				
Head maintenance	As recommended by manufacturer.	As recommended by manufacturer.	As recommended by manufacturer.	As recommended by manufacturer.
Inspect thru-hull fittings	X	X	X	X
Clean refrigerator			X	X
Clean stove			X	X
Lubricate door hinges and locks			X	X
Clean vinyl fabrics & wall coverings				X
Spot clean woven fabrics				X
Spot clean carpet				X
EXTERIOR				
Check compass for magnetic diviation				X
Check trim tab system for leaks		X		X
Check deck hardware tightness & caulking				X
Clean vinyl upholstery			X	X
Clean plexiglass surfaces				X
Lubricate hinges, latches & locks			X	X
Wash weather covers				X
BILGE SYSTEM				
Check garboard drain plug	X	X		X
Check and test bilge pumps	X	X	X	X
Inspect shower sump pump			X	X
Check & test bilge blower	Each time before starting engine.	Each time before starting engine.	Each time before starting engine.	Each time before starting engine.

MAINTENANCE

Exterior Maintenance

Fiberglass Surfaces

The exterior fiberglass surfaces of the 350 Mariner are coated with a protective layer of gelcoat. Gelcoat offers a hard, smooth and durable surface. It does, however, contain very small pores that will collect dirt and discolor if the surface is not kept clean.

Washing the boat with fresh water after each outing will help keep the gelcoat clean. This is especially important for boats that are used in salt water. Periodically wash the boat with fresh water and a mild soap solution. DO NOT USE ABRASIVE CLEANERS. Abrasive cleaners will scratch and dull the gelcoat surface. Use a sponge to wash smooth surfaces and a stiff nylon or natural bristle brush to wash nonskid surfaces.

Wax all non-tread areas at least once a season. Use a high quality, non-yellowing, marine wax. Waxing your boat will provide a shiny surface and it will seal the pores in the gelcoat surface and make it easier to keep clean.

⚠ WARNING

DO NOT wax the nonskid surfaces. It will make them slippery and dangerous to walk on.

Gelcoat will eventually become dull with age, much like the paint on your car. When it becomes dull we suggest cleaning the gelcoat with an electric buffer and a fine grade polishing compound. Be careful, as the continued and overly frequent use of abrasive polishing compounds will eventually erode the gelcoat surface. Use the finest grade compound that will accomplish the task. Ask your Carver Dealer what brand and grade of polish to use.

Stress cracks are a common occurrence on all fiberglass boats. In the majority of instances these cracks are cosmetic and limited to the gelcoat surface only. Gelcoat stress cracks are rarely an indication of structural failure. If you discover stress cracks on your boat contact your Carver Dealer.

NOTE: The repair of cosmetic non-structural gelcoat stress cracks is not included under the terms of the Carver Limited Warranty.

Gelcoat Repair

Cosmetic repair of minor gelcoat nicks and scratches is not difficult nor does it require the use of special or unique tools. Any boat owner with a little practice can make visually satisfying repairs. Repairs to fiberglass laminates or structural fiberglass components are best left to the experienced technicians at your Carver Dealer.

A gelcoat repair kit is available from your Carver Dealer (Carver part number 82036-03). This kit includes color matched gel, gel hardener, and detailed instructions on making gel repairs.

MAINTENANCE

Gelcoat Blisters

While fiberglass is a durable and economical material, it is not indestructible as is often assumed by many boaters. The most commonly known problem associated with fiberglass is blistering. These blisters generally form in the gelcoat or in the outer most layer of laminate. They can range in size from microscopic, to two inches or larger in diameter.

The appearance of fiberglass blisters does not indicate structural problems or faulty hull lamination. Gelcoat blisters are formed through a natural process and are quite common.

If you discover blisters on the underwater portions of your boat's hull, contact your Carver Dealer.

Anti-Fouling Bottom Paint

The underwater surfaces of your boat are coated with a high-quality, factory-applied coat of antifouling bottom paint, applied after the hull has been carefully dewaxed and primed. Carver uses Rule KL-990 Epoxycop, a tough, abrasion-resistant paint for moderately-fouling water conditions. The paint has a high copper load and antifouling elements that will retard the growth of marine life on the bottom of your boat's hull. The antifouling elements within this paint have a limited life span, usually about 12 months. Because of this, Carver suggests you repaint the hull with a fresh coat of bottom paint on an annual basis. Be sure to use Rule KL-990 Epoxycop to avoid compatibility problems. Failure to do so can void your bottom paint warranty.

To prep the boat for painting, lightly rough up the existing paint with 80 grit or 100 grit sandpaper. Paint can be applied by brush, roller or spray. For multiple-season protection in moderately-fouling waters, apply an additional medium to heavy coat of KL-990 Epoxycop (Mfgr's #K52 black). For severely-fouling conditions, apply an additional medium to heavy coat of KL-990 Super Epoxycop (Mfgr's #K62 black). For both products, allow a 3 to 6 hour dry time between coats if two coats are applied. KL-990 paints are available through most marine distributors nationwide.

Caulking and Sealants

Deck fittings, rail bases, window frames and all underwater fittings have been sealed with the finest quality sealants available. These sealants however will not last indefinitely. The working action of the boat and the expansion and contraction caused by variations in outside temperature will eventually break down the sealant.

Fittings that have begun to leak must be resealed. Remove the fitting and clean the old sealant from both mating surfaces. Reseal the fitting using the sealant recommended by your Carver Dealer.

MAINTENANCE

Stainless Steel Rails and Hardware

Stainless steel is not rust resistant nor is it stain resistant. When left in contact with the marine environment it will rust and corrode. Proper care will help keep the stainless fittings on your boat looking bright and shiny.

Wash your boat with fresh water after each outing. Boats used in salt water should be washed with fresh water at least once per week, even if they have not been used. Clean stainless rails and fittings with soap and water. Glass cleaner is also good for cleaning stainless steel. Rust must be removed as soon as it is discovered. Failure to remove rust will lead to irreversible pitting. Use brass, silver or chrome polish to remove rust on stainless steel. Waxing stainless fittings and rails will help keep them in top shape. Use the same wax you use on the fiberglass surfaces of the boat.

⚠ CAUTION

NEVER use abrasives like sandpaper or steel wool to clean stainless steel fittings or rails. NEVER use mineral acids or bleach to clean stainless steel. NEVER let stainless steel come into prolonged contact with iron, steel or other metals which cause contamination leading to rust or corrosion.

Decorative Striping Tape

A variety of decorative stripes are used on the exterior of the 350 Mariner. Striping tapes are custom made to Carver's color and size specifications. Replacement striping tape is only available through authorized Carver Dealers. To remove a damaged section of tape, heat the area with a hair dryer. This will soften the adhesive and make the tape easier to remove. Adhesive residue can be removed with acetone.

⚠ CAUTION

Be careful when fueling your boat. Avoid spilling fuel on the decorative boot stripe or any other tape. Spilling fuel on the striping tape will damage the tape.

Windows

The window and hatch frames on your 350 Mariner are fabricated from aluminum. Some of these frames are painted with enamel. Clean painted and unpainted frames with fresh water and a mild soap solution. Use a sponge to clean window frames. Using a brush or abrasive cleaner will scratch and damage the appearance of the painted frame surface.

The cabin windows on the 350 Mariner are made from tempered glass. Clean these surfaces with a soft rag and glass cleaner. The bridge wind screen is made from formed plexiglass. DO NOT use glass cleaner to clean plexiglass. Use a mild solution of soap and fresh water.

MAINTENANCE

Exterior Vinyl Upholstery

The exterior vinyls on the 350 Mariner are made to resist the effects of sun, heat, acid rain, and soiling under normal conditions. Exterior vinyl can be cleaned with a mild solution of soap and water. Please consult the cleaning recommendations on the following insert. All cleaning methods must be followed by a thorough rinse with water. An occasional treatment with a vinyl protectant will enhance the appearance of your boat's exterior cushions and upholstery. Avoid saturating the exterior cushions with water.

Cleaning Supplies Include:

Ivory Dishwashing Liquid and water
Clean, white towels
Medium-soft brush
Fantastik Spray Cleaner

NOTE: The following cleaners should not be used on seats repaired by Dr. Vinyl. These cleaners will damage the repair spot.

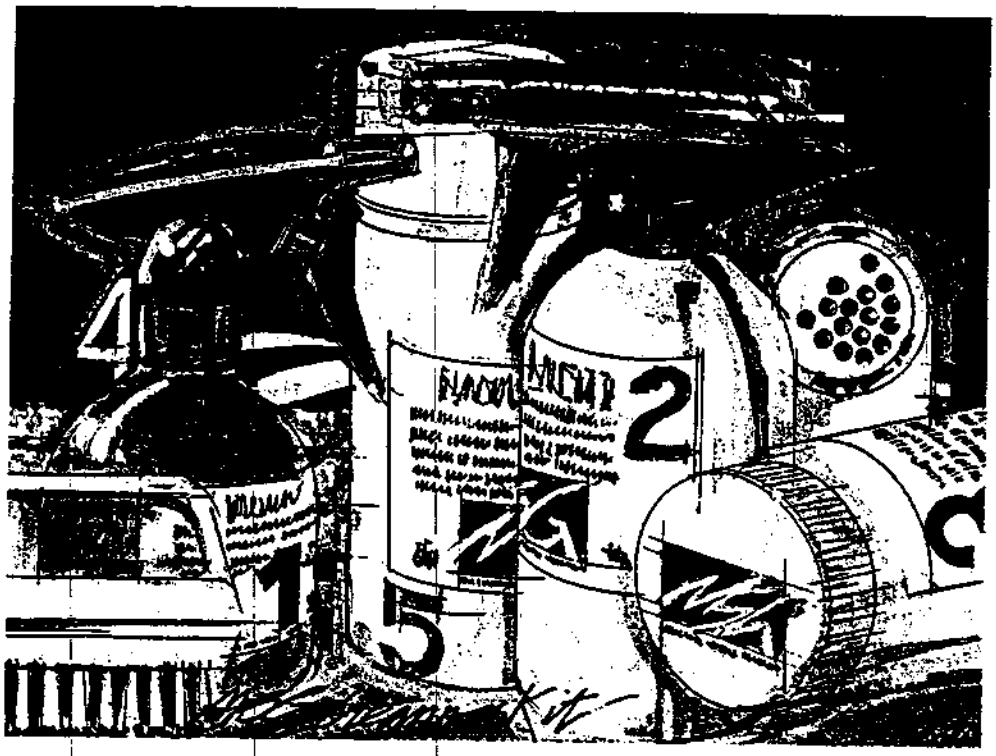
Denatured Alcohol
3M Citrus Cleaner (order call 404-447-7132)
Ammonia and hydrogen peroxide

1) Basic Stains, Grease, Pencil, Dirt:
   - Use Ivory Soap and water or Fantastik Spray Cleaner applied with a medium-soft brush
2) Tough Stains, Adhesive, Teak Oil, Rust:
   - Use 3M Citrus Cleaner; rinse with soap and water
3) Ink
   - Use Denatured alcohol
4) Mildew Stains:
   - To kill bacteria creating the mildew, vigorously brush the stained area with a 4-to-1 mixture of water and ammonia; rinse with water
5) Tough Mildew Stains:
   - Apply a mixture of one teaspoon ammonia, one-fourth cup of hydrogen peroxide, and three-fourths cup of distilled water; rinse with water.

Always clean stains immediately. DO NOT use 409 Cleaner or Armor-All.

Exterior Carpet

Rinse the bridge and deck carpet with fresh water when cleaning the other portions of the boat's exterior. When the exterior carpet becomes soiled remove the carpet from the boat and wash with hot water and any brand of carpet detergent suitable for hot water extraction. To remove stains refer to the materials provided by the manufacturer of the carpet, which is included in the OEM materials pouch.



VINYL CLEANING & CARE

Important information concerning your G&T vinyls. G&T vinyls are made to withstand the effects of sun, heat, acid rain, and soiling under normal conditions. Please consult these cleaning recommendations.

Steps	1	2	3
Betadine	B	A	
Chewing Gum	D	A	B
Eyeshadow	B		
Motor Oil	B		
Spray Paint	B	E	
Mildew or Wet Leaves*	C	A	B
Shoe Polish*	D	B	E
Yellow Mustard	A	B	C
Oil Base Paint (fresh)	D	B	E
Oil Base Paint (dried)	D	A	B
Suntan Lotion*	A	B	E

Steps	1	2	3
Tar/Asphalt	D	A	B
Lipstick	A	B	
Latex Paint	A	B	E
Crayon	D	B	
Ketchup	A	B	
Grease	D	B	E
Ballpoint Ink*	A	B	E
Household Soil	A	B	
Permanent Marker*	B	C	E
Coffee, Tea, Chocolate	B		

A. Medium-soft brush, warm soapy water/Rinse/Dry

B. Fantastik Spray Cleaner/Rinse/Dry

C. One (1) tablespoon ammonia, one-fourth (1/4) cup of hydrogen peroxide, three-fourth (3/4) cup of water/ Rinse/Dry

D. Wipe or scrape off excess (Chill gum with ice)

E. 3M Citrus Base Cleaner Rinse/Dry (617-733-1110 #55)

F. Denatured Alcohol/Rinse/Dry

Note: All cleaning methods must be followed by a thorough rinse with water.

*Suntan lotion, shoe polish, wet leaves, and some other products contain dyes that stain permanently.

Certain household cleaners, powdered abrasives, steel wool and industrial cleaners can cause damage and discoloration and are not recommended. Dry cleaning fluids and lacquer solvents should not be used as they will remove the printed pattern and gloss. Waxes should be used with caution. Many contain dyes or solvents that can permanently damage the protective coating. Alway remove stains immediately.

96 Willard Street, Suite 201, 1726 Mariners Square, Cocoa, FL 32922, (800) 628-3775 — 700 Collins Road, Elkhart, IN 46516, (800) 343-1565
1726 Henry G Lane, Maryville, TN 37801, (800) 247-9901 — 475 36th Street, S.E., Grand Rapids, MI 49548, (800) 967-7753

For More Personalized Information About Our Products and Services:

1-800-247-9901

DO NOT USE
409 CLEANER
OR
SILICONE BASE PRODUCTS!!!

MARINE SPECIALTIES GROUP
G&T INDUSTRIES

IMPORTANT INFORMATION
REGARDING YOUR VINYL

WHILE YOUR VINYL IS MADE TO WITHSTAND THE ELEMENTS, IT IS IMPORTANT TO CARE FOR IT BY KEEPING IT CLEAN AT ALL TIMES. MANY SUBSTANCES MAY STAIN YOUR VINYL IF LEFT ON OVER A PERIOD OF TIME. REMEMBER TO REMOVE ANY CONTAMINANT AND CLEAN VINYL IMMEDIATELY.

MAINTENANCE

Canvas

White Vinyl

White exterior enclosures are made from vinyl coated materials. Clean this material with a sponge and mild soap solution. Heavy dirt can be removed using a vinyl cleaner. Treat the vinyl with a vinyl protectant product twice each season.

Sunbrella

Colored canvas enclosures are made from Sunbrella fabric. Sunbrella should be cleaned regularly before dirt is allowed to accumulate and become embedded in the fabric. The fabric can be cleaned without removing it from the stainless steel bow supports. Brush off all loose dirt and hose down with a mild solution of natural soap and lukewarm water (no more than 100 degrees F.). Rinse with fresh water to remove soap. DO NOT USE DETERGENTS.

For stubborn stains: Remove the fabric from the bow supports. Soak fabric for 20 minutes in a solution of no more than 1/2 cup (4 oz.) Clorox and 1/4 cup (2 oz.) natural soap per gallon of lukewarm water (no more than 100 degrees F.). Rinse with fresh water to remove soap and let air dry.

⚠ WARNING

Excessive soaking in Clorox can damage sew threads. Cleaning Sunbrella using the method described above may remove part of the fabric's water repellency. Treat the fabric with an application of an air-curing fluorocarbon water repellent treatment to restore water repellency.

DO NOT SUBJECT CANVAS FABRICS TO EXCESSIVE HEAT. Fabric must be air dry before storage and stored in a dry, ventilated area.

Enclosure Curtains

The enclosure curtain's clear vinyl windows are easily scratched if cleaned incorrectly. Because of this, use only NON-ABRASIVE cleaners and a soft cloth to clean these surfaces. Glass cleaner and a clean , soft cloth can be used to remove water spots. Dirt and dust can be removed with a very mild soap solution and a clean, soft cloth. DO NOT use paper towel to clean the clear vinyl enclosure windows. Paper towel will scratch the windows.

There are several cleaners available that are made specifically for vinyl windows. If you elect to purchase and use one of these cleaners, try the product on a small, inconspicuous area to make sure the product does not damage or scratch the vinyl surface.

MAINTENANCE

Interior Maintenance

One of the best things you can do on a continued basis to maintain the interior of your boat is to make sure the cabin is well ventilated. Do not allow moisture to accumulate in the boat's interior. This will lead to a damp, musty environment. Mildew will form if the interior of the boat is damp. Ventilate the boat's interior whenever possible.

Woodwork

Solid hardwood and hardwood veneer is used throughout the interior of the 350 Mariner. Treat the interior woodwork of your boat like you treat your finest furniture. Dust the interior woodwork on a regular basis with lemon oil and a soft rag. Avoid using wax based furniture polish.

Avoid laying wet or damp towels or clothing on or against the finished hardwood surfaces.

Carver finishes interior woodwork with MOHAWK POUR-N-WIPE FINISH #603-3017. This is an industrial/commercial grade finish that is not commonly found at local paint and hardware stores. You can order MOHAWK POUR-N-WIPE (Carver part number 81069-00) through your Carver Dealer. Follow the manufacturers instructions on the product packaging when applying this product to your wood surfaces.

High Pressure Laminate (HPL)

HPL is used on many of the cabinet faces and counter tops within the boat's interior. HPL is extremely durable and is easy to clean. Clean the laminated surfaces with a cleaner made for use on household counter tops. Avoid using the counter tops as cutting surfaces. Cutting or slicing on the HPL surfaces will permanently scratch them.

Woven Fabrics

The fabrics used on the interior of the boat have been treated with a popular stain retardant product. The manufacturer of many of the fabrics used on the 350 Mariner has provided Carver with the following recommendations on cleaning interior woven fabrics. Woven fabrics are used to make drapes, pillow shams and bed spreads. Sofas and barrel chairs are also covered with woven fabrics. The following instructions can also be used to clean woven (fuzzy) headliner.

Cleaning Supplies Include:

Westley's Clear Magic (order call 1-800-545-0982)
Lendow Glass Cleaner (order call 1-313-777-2236)
Lift-Off-Spot Remover (order call 1-216-881-4070)
Clean white towels
Clothes shaver
Source of compressed air (if available)

MAINTENANCE

1) Basic Stains, Ink, Grease, Pencil, Dirt:
   - Use Westley's Clear Magic

2) Adhesives, Teak Oil, Gum, Tar:
   - Use Lift-Off Spot Remover

3) Water Stains:
   While fabric is still wet, use an air hose and nozzle to go over the wet area. This will force the stain into the back of the fabric.

   For stains that have dried, spray Lendow Glass Cleaner over the stained area. Let the foam dissipate, then rub the area with a clean white towel. Repeat.

4) Tough Stains, Set Water Stains:
   Always try the technique outlined in #3 first. If that doesn't remove the stain...

   Spray Westley's Clear Magic on the area, going 2" around the stain or, if possible, bring wetness to a break point, such as a bulkhead. Spray water on the area as directed on the product bottle. Let set about 5 minutes. Rub the area with a clean towel, rotating the towel as the stain is removed. As you rub, go a little beyond the wetness with the towel, flaring the edges.

   Allow to dry or blow complete area with compressed air. Repeat if necessary or try the Lendow cleaner. After the stain is removed, use the clothes shaver to remove "fuzzies".

FABRIC CLEANING & CARE

Important information concerning your G&T Marine Headliner and Fabrics

Steps	1	2	3
Water Stain	B	C	E
Motor Oil	A		
Spray Paint	A	D	F
Mildew	A	E	
Yellow Mustard	A	D	
Wet Leaves*	A		
Oil Base Paint	A	D	F
Suntan Lotion*	A	F	
Chewing Gum	D		
Tar	D	A	
Lipstick	A		

Steps	1	2	3
Ketchup	A		
Grease	A	D	
Ball Point Ink	A		
Household Soil	A		
Permanent Marker*	A	F	
Coffee, Tea	A		
Chocolate	A		
Adhesive	D		
Teak Oil	D		
Latex Paint	A	D	F
Crayon	A	D	

A. White cloth - Westley's Clear Magic. 1-800-545-0982

B. White cloth - Westley's Clear Magic - air hose.

C. Lendow Glass Cleaner. 313-777-2236

D. Lift Off Spot Remover. 216-881-4070

E. Clothes shaver to remove lint.

F. Follow instructions of staining agent manufacturer.

*Suntan lotions, wet leaves, permanent markers and some other products contain dyes that permanently stain.

Always clean immediately. Test an unseen area of fabric before cleaning stain.

96 Willard Street, Suite 201, 1726 Mariners Square, Cocoa, FL 32922, (800) 628-3775 — 700 Collins Road, Elkhart, IN 46516, (800) 343-1565
1726 Henry G Lane, Maryville, TN 37801, (800) 247-9901 — 475 36th Street, S.E., Grand Rapids, MI 49548, (800) 967-7753

For More Personalized Information About Our Products and Services:

1-800-247-9901

MSG©
MARINE SPECIALTIES GROUP

MAINTENANCE

Carpet

The carpet used on the interior of the boat has been treated with a popular stain retardant product. Care for this carpet as you would care for the carpet within your home. Vacuum often, shampoo as needed.

When your boat is new, the carpet will shed and need to be vacuumed frequently. This is normal. The shedding will stop after a few weeks.

Interior Fiberglass and Plexiglass

Interior Fiberglass

Gelcoated fiberglass is used to form interior components such as the shower stall, lower station helm module and the master stateroom bed platform. Interior fiberglass can be cleaned with any household cleaner that has been made for cleaning fiberglass. Many of these types of cleaners are marketed as "tub and tile" cleaners. Do not use abrasive cleaners on the interior fiberglass surfaces. Abrasive cleaners will scratch and dull the shiny gelcoat surface.

Plexiglass

Plexiglass is used to fabricate the shower door and mirrored face of the head compartment medicine cabinets and other areas of your boat. DO NOT USE GLASS CLEANER TO CLEAN THESE SURFACES!!! Glass cleaner will etch the polished surface.

Clean plexiglass with water and mild liquid detergent. Avoid use of abrasive cleaners and aromatic solvents. Remove fine scratches with fine automotive acrylic rubbing and polishing compound.

MAINTENANCE

Mechanical System

Engines / Generator

Maintain engines and generator in accordance with the instructions provided in the respective manufacturer's owner's manual. There is an in-line sea water strainer installed in each engine and generator water intake lines. These strainers must be opened and cleaned at least every 30 days. If you are operating the boat in dirty waters or areas with a high degree of aquatic vegetation, inspect these strainers more frequently. A clogged strainer will restrict the intake of sea water which could lead to an overheated engine.

Thru-Hull Valves

Inspect the thru-hull valves on a monthly basis. Make sure the connections between the hose and the valve are tight. Look for water leaks around the area where the valve and hull meet. Every 30 days open and close each valve two or three times. This will guard against the valve seizing in the open or closed position. While doing this make sure the valve handle is securely fastened. Tighten any loose handles.

Propeller Shaft Stuffing Box

⚠ DANGER

Inspect propeller shaft stuffing boxes ONLY when the engines are off. The engine compartment contains moving and hot machinery. KEEP YOUR HANDS, FEET AND BODY OUT OF THE ENGINE COMPARTMENT WHILE ONE OR BOTH OF THE ENGINES ARE RUNNING.

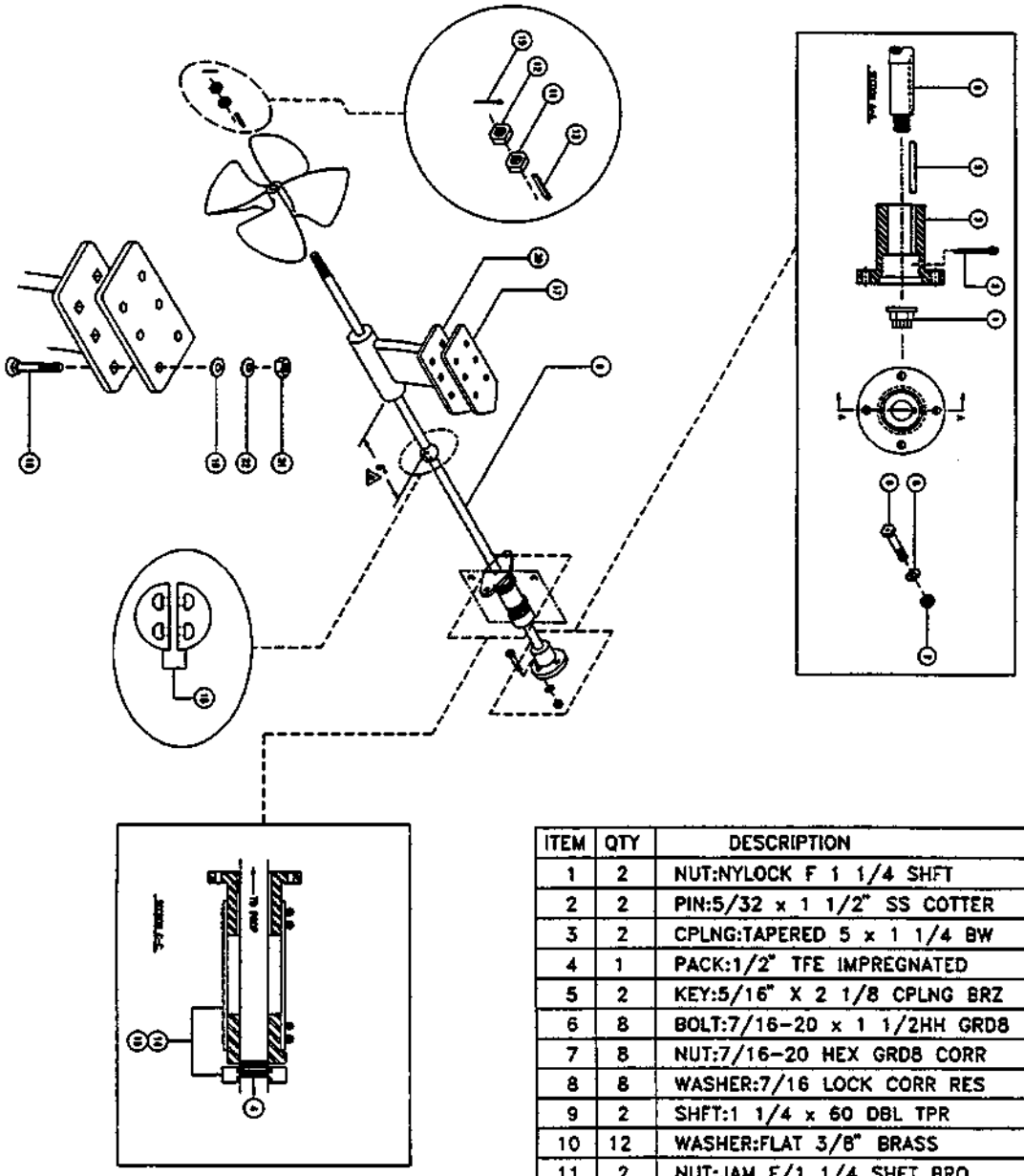
The propeller shaft extends through a water tight fitting called a shaft log. Check the shaft log every month. A slight seepage of water through the shaft log while the shaft is turning is normal. However, there should be minimal, if any seepage when the shaft is not turning. Tighten the shaft log packing nut if more than 6 drops of water seep through the shaft log in a minute.

Use two wrenches to tighten the packing nut. Use one wrench on the packing nut and the other on the jam or lock nut. The propulsion system on your boat is "counter rotating." The thread rotation utilized in the shaft log packing nut is specified in accordance with the propeller shaft rotation. If the shaft rotates clockwise (viewed from the stern), the packing nut utilizes a left hand thread. A right hand thread is used on packing nuts where the shaft turns counterclockwise. In the case of the 350 Mariner the port shaft log uses a right hand thread and the starboard shaft log is left hand thread.

Slightly tighten the packing nut and tighten the lock nut. DO NOT OVER TIGHTEN THE PACKING LOG. Make minor adjustments and tighten just enough to reduce the seepage to a drop or two a minute. Over tightening the packing log will damage the shaft log.

MAINTENANCE

Propeller Shaft Layout



ITEM	QTY	DESCRIPTION
1	2	NUT:NYLOCK F 1 1/4 SHFT
2	2	PIN:5/32 x 1 1/2" SS COTTER
3	2	CPLNG:TAPERED 5 x 1 1/4 BW
4	1	PACK:1/2" TFE IMPREGNATED
5	2	KEY:5/16" X 2 1/8 CPLNG BRZ
6	8	BOLT:7/16-20 x 1 1/2HH GRD8
7	8	NUT:7/16-20 HEX GRD8 CORR
8	8	WASHER:7/16 LOCK CORR RES
9	2	SHFT:1 1/4 x 60 DBL TPR
10	12	WASHER:FLAT 3/8" BRASS
11	2	NUT:JAM F/1 1/4 SHFT BRO
12	2	NUT:PROP F/ 1 1/4 SHAFT BRO
13	2	KEY:5/16 x 2 1/2 PROP BRZ
14	1	SHFTLG:1 1/4LH THD-RH EN
15	1	SHFTLG:1 1/4RH THD-LH EN
16	2	ZINC:1 1/4" ELECTRL COLLAR
17	2	PLT:BCKG STRUT (2-13042)
18	12	BOLT:CRR 3/8-16 x 4 S/BRZ
19	2	PIN:5/32 x 1 1/2 SS COT
20	2	STRUT:3297
21	12	NUT:3/8-16 S/BRZ HH
22	12	WASHER:LOCK 3/8" SILC/BRZ

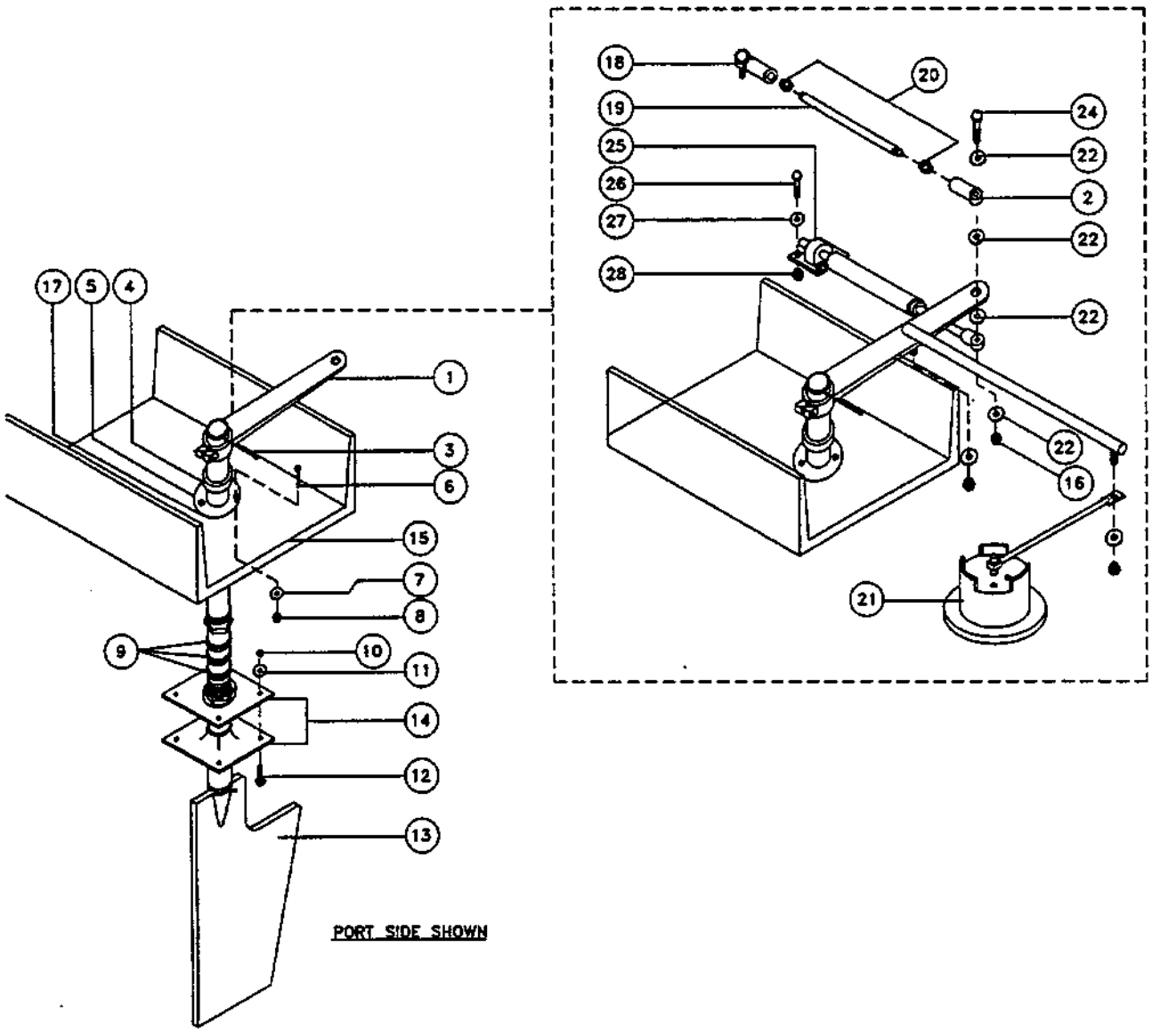
NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

MAINTENANCE

Rudder Port

The rudder port provides a water tight fitting for the rudder shaft. It is normal for a slight amount of water to seep between the rudder shaft and the rudder port packing. The rudder shaft port packing nut should be tightened if more than 6 drops of water seep through the port every minute.

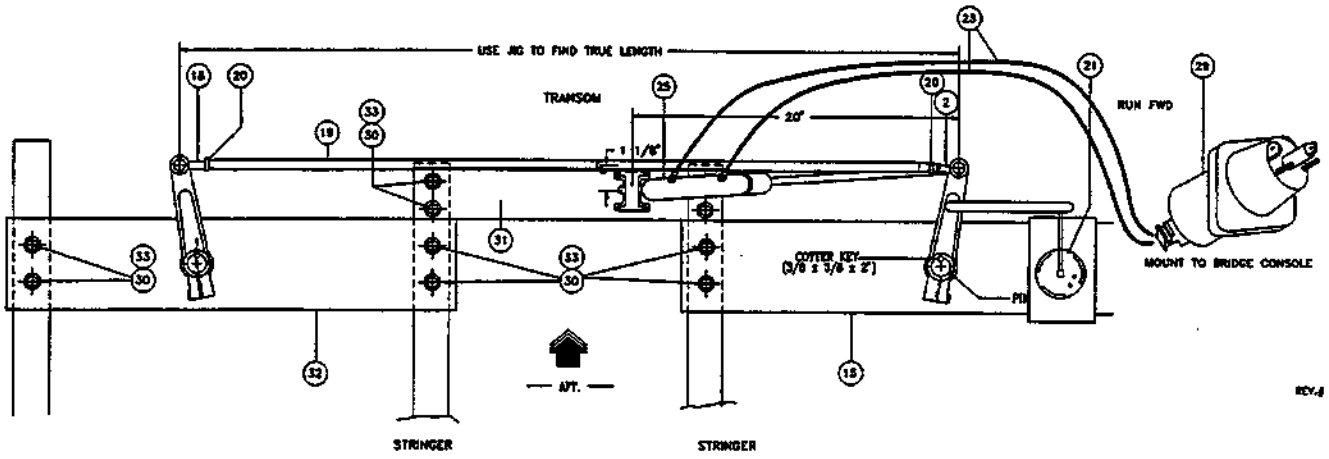
Tighten the rudder port packing nut using the same technique used to tighten the shaft log packing nut. Make note however that both rudder port packing nuts use right hand threads. Tighten the packing nut ONLY ENOUGH to bring the seepage to 1 or 2 drops a minute. If you tighten the nut too tight it will make steering difficult.



Rudder Layout

MAINTENANCE

Rudder Layout



ITEM	QTY	DESCRIPTION
1	2	TILLER:STRGHT W/1/4 KEYWAY
2	1	TIE BAR:END 1/2 W 1/2 THR HOLE
3	2	PIN:5/32 x 1 1/2" SS COTTER
4	2	COLLAR:RDDR F/ 1 1/4 IN SH
5	2	FLNG:RDDR BEARING
6	6	SCREW MACH 10/24 x 2 FR OH
7	6	WASHER:FLAT #10 SS
8	6	NUT:10/24 SS HH NYLOCK
9	6	PACK:IMPREGNATED FTE 1/4"
10	8	NUT:3/8"-16 FIN SIL BRONZ
11	8	WASHER:BRASS 3/8"BR SILC
12	8	BOLT:CARR 3/8" 16 x 2 BRON
13	2	RDDR:1 1/4 x 14 1/2" SHA
14	2	RDDR PRT:90° 1 1/4" EXT
15	1	MNT:RDDR BEARING PORT
16	1	NUT:1/2-13 SS HH NYLOCK
17	2	ISOLATOR:RDDR BEAR 1 1/2"
18	1	TIE BAR:END 1/2 W 1/2-20
19	1	TIE BAR:3/4 x 47.25 3597
20	2	NUT:1/2-20 MS HH JAM ZP
21	1	SNDR:RDDR ANG TEL SNG STA
22	4	WASHER:FLAT 1/2"SS
23	1	TUBE:3/8 OD TELEFLEX NBR
24	1	BOLT:HH 1/2-13 x 2 1/2" HX HD SS
25	1	CYLNDR:TELEFLEX 1 3/8"
26	4	BOLT:HH 5/16"-18 x 1 1/2"SS
27	4	WASHER:FLAT 5/16" SS
28	4	NUT:5/16"-18 SS HH NYLOCK
29	1	HELM:SEASTAR I, TELEFLEX
30	12	SCREW:3/8 x 3 1/2 LAG SS
31	1	BAR:FLAT 3/8 x 23
32	1	MNT:RDDR BEARING STBD
33	12	WASHER:FLAT 3/8" SS

NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

MAINTENANCE

Props

Nicked or out-of-balance props will affect performance and smooth operation. Damaged props also can develop serious vibrations that may lead to drive train damage.

Inspect your props often. Carry a swim mask in the boat so you can take a look at the props while swimming. Have the propellers balanced by an established propeller repair shop at least once a year. Repair or replace damaged props.

A TIP FROM CARVER - *"Consider purchasing and carrying a spare set of props onboard your boat. Many marine dealers do not carry a full inventory of replacement propellers. A spare set will allow your vacation or cruise to continue in the event you should damage your boat's primary set of props."*

⚠ WARNING

The blades of a propeller are sharp. Wear gloves when handling a propeller.

Struts

Propeller shaft struts require very little maintenance. Within each strut is a strut or cutlass bearing that provides a smooth surface for the shaft to rotate. These bearings occasionally need to be replaced. Replacement will be needed more often in water that has a lot of sand or abrasive material suspended in it. Have your marine technician inspect the strut bearings whenever the boat is pulled. Have the bearing replaced upon the technician's recommendation.

12 Volt System

The majority of 12 volt difficulties that are experienced on a boat are caused by poor battery maintenance. The factory installed batteries on the 350 Mariner should provide several years use if properly maintained. Factory installed batteries are heavy duty batteries that have the ability to be discharged and recharged repeatedly without damaging the battery. However, completely discharging and overcharging a battery can result in a shortened battery life span.

Avoiding the following two situations will dramatically extend the useful life of your boat's batteries:

1) Do not store batteries that are only partially charged. Recharge batteries to a voltage reading between 12.3 and 12.6 volts before storing. Monitor the voltage reading every 30 days during storage and recharge if the voltage drops below 12.3 volts.

2) Don't overcharge your batteries. Stop charging the batteries when voltage is between 12.3 and 12.6 volts. Don't continuously trickle charge the batteries. Even trickle charging a fully charged battery will reduce its useful life.

MAINTENANCE

While using the boat, use the voltmeters to frequently monitor the charge level of each battery bank. Monitor the charge level with the engines turned off (static condition). Use the onboard battery charger or the engine alternator to recharge the batteries when they are not fully charged. A fully charged battery bank will indicate between 12.3 and 12.6 volts on the voltmeter.

Avoid charging batteries that are already fully charged. Engine alternators will not overcharge the batteries. The AC battery charger installed on your boat however will switch to a trickle charge mode but will not "automatically" turn itself completely off.

⚠ CAUTION

Disconnect the batteries when performing maintenance tasks on the 12 volt system. Failure to do so could lead to electrical shock.

Inspect the batteries every 30 days. Clean any corrosion that has developed on the battery terminals. Spray a terminal protector on the terminals and battery cable eye connections. Make sure the battery cables are securely fastened to the terminals. Tighten the wing nuts SLIGHTLY beyond finger tight with a pliers.

Check the level of fluid in each battery cell. Top off low cells with "distilled" water. The fill level is marked along the side of the battery case.

Spray the connections for the bridge instruments and switches with an electrical connection protector every 6 months.

MAINTENANCE

Water, Bilge and Sanitation System Maintenance

Water System Maintenance

Maintain your boat's water system by emptying, flushing, and sanitizing the system at least once per season. Products are available at your local marine supply store that are made to sanitize fresh water systems.

Clean the in-line water filter every 6 months or twice per season. This filter is located near the pressure water pump. A water tank vent has been installed through your boats hull. This vent includes a screen over the opening to prevent dirt and insects from entering the vent hose. Clean these vent screen every 6 months or twice a season. Refer to the **Above The Waterline Thru-Hull Fittings** portion of **Section 9** for water vent locations.

Clean the shower sump frequently. Hair, dirt and soap scum will collect in the sump and if left unattended will eventually clog the sump pump system.

Bilge

Keeping your boat's bilge clean is important. A dirty bilge will lead to clogged bilge pumps and unwanted cabin odors.

Wipe all oil and dirt from the bilge. Treat the bilge with a commercially available bilge cleaning detergent twice a season. Clean the bilge pumps twice a season. Wipe any dirt or oil from the exterior surface of the pump. Clean the float switch so that it operates freely. Remove dirt from the bilge pump inlet screen.

Sanitation System

A marine sanitation system that is not maintained properly can create a variety of unpleasant problems. Unlike other systems within the boat that only require periodic attention, sanitation system maintenance is an ongoing process that must be maintained to avoid problems.

Always use waste system deodorizer. Use the brand recommended by your Carver Dealer. A boat's head and sanitation system is not like the toilet and sewer in a home. Do not flush any items down the head that the head was not designed to accommodate. Instruct non-boating guests on how to use the head before problems arise. Refer to the OEM supplier's manual for further advice on how to use, service and maintain the head.

Flush the holding tank with clean water EVERY TIME IT IS EMPTIED. This will help remove the last remnants of waste that may collect within the tank. Empty the holding tank often and when you know the boat will not be used for an extended period.

Section 8

WINTERIZATION

Start the winterization process by draining and winterizing the following systems:

Engines

Proper procedures must be followed to prepare the boat's engines for winter storage. Detailed winterizing instructions are included in the engine operators manual found in your Captain's Kit.

Fresh Water System

⚠ CAUTION

Your boats fresh water system INCLUDING THE WATER HEATER AND ENGINE HEAT EXCHANGER must be drained prior to winter lay-up. Failure to winterize the water system could lead to damaged pipes, valves, faucets, tanks or a ruptured water heater.

To drain the water system:

1) Disconnect power to the boat's water heater by turning the WATER HEATER breaker to the "OFF" position.

⚠ DANGER

DO NOT supply electric power to an empty water heater. Supplying power to an empty heater will damage the element and may start a fire.

2) Provide power to the 12 volt pressure water pump by switching the "WATER" circuit breaker to the "ON" position.

3) Open all faucets and let the water drain completely.

4) Shut off the 12 volt pressure pump by turning "OFF" the 12 volt breaker Labeled "WATER."

5) Drain the water heater located beneath the dinette's forward most seat. Refer to the units operating instructions supplied with the OEM material in your Captain's Kit.

To winterize the onboard water system:

1) Purchase 15 gallons of NONTOXIC recreational vehicle antifreeze from your Carver Dealer.

2) Pour this nontoxic antifreeze into your boat's fresh water tank through the water fill deck fitting located inside the bow's starboard anchor locker.

3) Close all faucet and shower valves and provide power to the 12 volt pressure water pump by switching the 12 volt "WATER" circuit breaker to the "ON" position.

4) Open the galley sink cold water valve and purge the system until a steady stream of antifreeze flows from the faucet. Repeat for the hot water valve. Repeat this process for the head sink and shower (including the transom hand shower and the fresh water washdown - if available).

5) Turn "ON" the "SHOWER" breaker located on the 12 volt panel. This breaker acti vates the shower sump pump.

6) Pour a quart or two of nontoxic antifreeze into the shower drain until the shower sump pump turns ON and a stream of antifreeze flows from the shower drain discharge fittings. Refer to the **Above the Waterline Thru-Hull Fittings** portion of **Section 9** for the exact location of the discharge fittings.

7) Pour a quart of nontoxic antifreeze into each sink drain.

⚠ WARNING

Using the wrong type of antifreeze could damage your boat's sanitation system. Refer to Technical Bulletin #VF-005 supplied by SeaLand Technologies for more information regarding the proper type of antifreeze to use. This technical bulletin can be found at the end of this section. Damage caused by using improper antifreeze IS NOT covered by Carver or the OEM supplier of the boat's sanitation components.

8) The engine heat exchanger will also need to be included in the winterization proc ess. A 5/8" heater hose runs from the port engine to the water heater and back to the engine. This heater hose must be drained prior to winter storage. Remove both heater hose connections from the engine and use air pressure to blow water from the line. Antifreeze can then be poured into the hose.

Spring Commissioning

Flush the complete water system with fresh water during spring commissioning. Nontoxic antifreeze is colored, so your system is adequately flushed when uncolored water flows from the faucets and shower.

Transom Shower (optional equipment)

The transom shower is an integral part of your boat's fresh water system. Winterize the transom shower along with the boat's fresh water system. As you winterize the water system, turn on the transom shower cold water valve until a stream of antifreeze flows from the shower head. Repeat this procedure for the hot water valve.

WINTERIZING THE BOAT

Fresh Water Washdown

Fresh water washdown is an integral part of the boat's fresh water system. Winterize the fresh water washdown system along with the boat's fresh water system.

Remove the hose and nozzle from the washdown fitting. Turn the washdown pump on until a stream of antifreeze flows from the washdown fitting. Catch this antifreeze in a bucket.

Raw Water Washdown

1) Locate and close the thru-hull valve that supplies the washdown pump with sea water. This valve is located below the engine room's center hatch just aft and port of the boat's batteries.

2) Remove the hose that is connected to this valve. Put this end of the hose into a bucket that contains about a gallon of antifreeze.

3) Remove the washdown hose from the transom mounted washdown fitting.

4) Place a bucket under the transom mounted washdown fitting. Turn the washdown pump on and leave it on until a stream of antifreeze flows from the washdown fitting.

5) Turn the washdown pump off and re-secure the hose to the washdown supply valve.

⚠ WARNING

Using the wrong type of antifreeze could damage your boat's sanitation system. Refer to Technical Bulletin #VF-005 supplied by SeaLand Technologies for more information regarding the proper type of antifreeze to use. This technical bulletin can be found at the end of this section. Damage caused by using improper antifreeze IS NOT covered by Carver or the OEM supplier of the boat's sanitation components.

Bilge

Open the garboard drain. Leave the drain open throughout the storage period.

Clean the bilge, removing all dirt, oil, etc. Remove all water from the bilge.

Sanitation System (standard head)

To winterize the sanitation system:

1) Empty the contents of the waste holding tank and thoroughly flush the system with FRESH water. Remove as much of the water used in flushing as possible in the final pumping of the tank. Refer to the **Sanitation System** portion of **Section 4** for information on emptying the waste holding tank.

2) On boats equipped with raw water flushing, shut off the water supply to the head by closing the head water pickup valve. This valve is located below the hatch at the galley floor. Refer to the **Below the Waterline Thru-Hull Fittings** portion of **Section 9** for the exact location of the head water pickup valve. Remove the water pickup hose from the valve.

3) Flush the head until all water is drained from the water pickup hose. Attach the water pickup hose to the valves and leave the valve in the closed position.

4) Purchase at least 4 gallons of antifreeze from your Carver Dealer. Refer to Technical Bulletin #VF-005 issued by SeaLand Technology for their recommendations concerning the proper type of antifreeze to use. This technical bulletin can be found at the end of this section. Mix the antifreeze following the instruction supplied on the antifreeze label.

5) Flush the antifreeze through the head and allow it remain in the waste holding tanks during storage.

⚠ WARNING

Using the wrong type of antifreeze could damage your boat's sanitation system. Refer to Technical Bulletin #VF-005 supplied by SeaLand Technologies for more information regarding the proper type of antifreeze to use. This technical bulletin can be found at the end of this section. Damage caused by using improper antifreeze IS NOT covered by Carver or the OEM supplier of the boat's sanitation components.

6) In spring pour 5 gallons of fresh water through the heads and pump the waste holding tanks. Open the water pickup valves. Flush the heads a few times to prime the systems.

7) Charge the waste tank by adding deodorizer. Use the brand of deodorizer recommended by your Carver dealer.

Overboard Discharge

NOTE: The boat must be pulled from the water and stored on land to perform the following procedure. The following instructions serve as an overview. Please refer to the owner's instructions supplied by the head manufacturer for more information about winterizing the sanitation system.

1) Empty the waste holding tank. Flush the tank with FRESH water and empty the tank again. Refer to the **Sanitation Systems** portion of **Section 4** for information on emptying the waste holding tank.

2) On boats equipped with a raw water head, close the raw water pickup valve. Re move the water pickup hose from the valve fitting. Flush the head until all water is removed from the water pickup hose. Reinstall the water pickup hose onto the closed water pickup valve.

3) Purchase 20 gallons of nontoxic antifreeze from your Carver Dealer. Follow the recommendations provided in Technical Bulletin #VF-005 by SeaLand Technology regarding the type of antifreeze to use to avoid damaging the lining of the sanitation hose. This technical bulletin can be found at the end of this section.

4) Select overboard discharge using the waste selector valve located below the hatch inside the forward stateroom. This will allow your waste tank to pump directly overboard. Flush 10 gallons of antifreeze through each head and into the holding tanks.

5) Open the thru-hull overboard discharge valve located below the hatch at the en trance to the forward stateroom. Turn the 12 volt "WASTE PUMP" breaker to the "ON" position. This breaker is located on the salon's 12 volt panel. Let the waste pump run until a stream of antifreeze flows through the overboard discharge fitting. Refer to the **Below The Waterline Thru-Hull Fittings** portion of **Section 9** for the exact location of the overboard discharge fitting.

6) Turn the "WASTE PUMP" breaker to the "OFF" position and close the overboard discharge valve.

7) In spring, flush and pump the holding tanks to remove the antifreeze and continue to use the system in the normal fashion.

⚠ WARNING

Using the wrong type of antifreeze could damage your boat's sanitation system. Refer to Technical Bulletin #VF-005 supplied by SeaLand Technologies for more information regarding the proper type of antifreeze to use. This technical bulletin can be found at the end of this section. Damage caused by using improper anti-freeze IS NOT covered by Carver or the OEM supplier of the boat's sanitation components.

Grey Water System

1) Locate a dockside pump-out station.

2) Remove the deck fitting labeled "WASTE" using the cap removal tool supplied with your boat. This waste pumpout plate is located inside the bow's portside anchor locker. Refer to the **Fill Plate/Pumpout Locations** portion of **Section 9** for the waste cap location.

3) Attach the pump-out vacuum hose to this "WASTE" deck plate. The transfer process uses a vacuum action making a secure connection between the transfer hose and the deck fitting essential.

4) Activate the pump-out vacuum. The pump-out vacuum will transfer onboard waste to a dockside holding station.

5) After all grey water waste is removed, flush the waste tank by pouring a few gallons of fresh water through the waste deck plate. Reattach the vacuum hose to the deck fitting and activate the waste pumpout station as detailed in the previous step.

6) Turn "ON" the 12 volt breaker labelled "SHOWER." This will activate the shower sump pump.

7) Pour a quart of non-toxic antifreeze down the grey water deck fitting, one quart down the galley sink, and one quart down both the head sink and shower drain. This antifreeze will drain into the shower sump which will transfer the antifreeze to the grey water holding tank.

A TIP FROM CARVER: *"The cap for the WASTE deck plate IS NOT connected to the deck plate and it does not float. Be careful that you don't drop the cap in the water when you remove it. But, if you do lose one you can order a replacement cap from your Carver Dealer. Waste fitting caps are dropped overboard frequently enough that we suggest you carry an extra cap in your onboard spare parts kit."*

The grey water holding tank is vented to the outside of the boat's hull. As the tank is filled, air is displaced and vented outside the boat. Refer to the **Above the Waterline Thru-Hull Fittings** portion of **Section 9** for the exact location of the waste tank vent.

Exterior

The boat should be cleaned prior to winter storage. This will make preparing the boat for the next season that much easier. Wash the exterior of the boat, particularly the underwater portions. Remove as much aquatic growth as possible while it is still wet. Once it has dried it will be more difficult to remove.

Check the zinc sacrificial anodes for deterioration. If the zincs shows signs of deterioration have them replaced before spring launch. Check stainless steel rails and fittings for signs of rust. Remove rust prior to winter lay-up.

Inspect the underwater portions of the hull. Review anything that looks out of the ordinary with your Carver Dealer.

Interior

The boat's interior should be cleaned prior to winter lay-up. Air out the cushions and make sure they are dry. Storing damp cushions will lead to mildew. Position the cushions so air can circulate around them. Purchase and position moisture accumulators throughout the boat. This will help reduce the amount of moisture that accumulates during storage. Remove everything from the boat that could spoil or freeze during winter storage. Also remove all dried food. Food attracts mice and insects.

WINTERIZING THE BOAT

Storage

Dry Storage

Carver has designed a cradle made specifically for use with the 350 Mariner. We recommend using this cradle to support the boat during off-season storage. The forward end of the cradle should be slightly elevated to position the boat in a bow high attitude. This will allow water to flow to the back of the aft bilge compartment and drain through the garboard drain. Always store the boat with the garboard drain plug removed.

Protecting the boat from the elements during winter storage is advised. Have your marina shrink wrap the boat or have a winter storage cover made. Check on the boat throughout the storage period to make sure that it is in good condition. If your boat will be in outside storage, properly support a storage cover and secure it over the boat. Do not secure the cover to the boat too tightly. Allow adequate ventilation to protect against dry rot. Do not store the boat in a damp storage enclosure. Purchase and position moisture accumulator packets between the shrink-wrap and your boat's enclosures to help prevent moisture and mildew. Excessive dampness can lead to electrical problems, corrosion and dry rot.

NOTE: Do not use the bridge enclosure, aft deck enclosure, bimini top or convertible top canvas in place of a winter storage cover. These are not designed for long-term storage purposes. The life of these enclosures may be significantly shortened if exposed to harsh weather elements for prolonged periods.

Wet Storage

Wet storage procedures vary from region to region. Consult your dealer before preparing to leave your boat in the water over the winter.

LIFTING AND DRY STORAGE

Lifting And Dry Storage

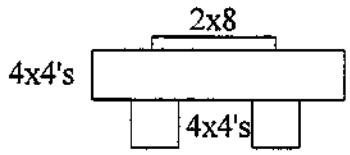
Lifting

Proper support of the hull during lifting is imperative. Improper lifting can lead to serious and permanent hull deformation. Only people experienced and trained in lifting yachts should perform the lifting operation. Use proper lifting straps. "SLING" tags have been installed on the side-deck of the boat. These are the only places where slings should be positioned for lifting. Caution must be taken not to position a lifting sling around the boat's shaft or any other underwater gear component. Never stand, sit or crawl under a boat that is suspended in a lift.

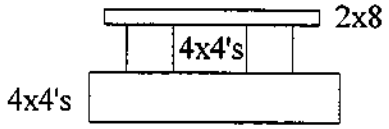
WINTERIZING THE BOAT

Blocking

When storing the boat for the winter it is important to block and support the boat's hull correctly. Failure to block and support your boat properly can cause damage to your boat's hull. You can construct a single blocking support with (4) three-foot 4x4's and one 2' section of 2"x8" (see illustrations below).



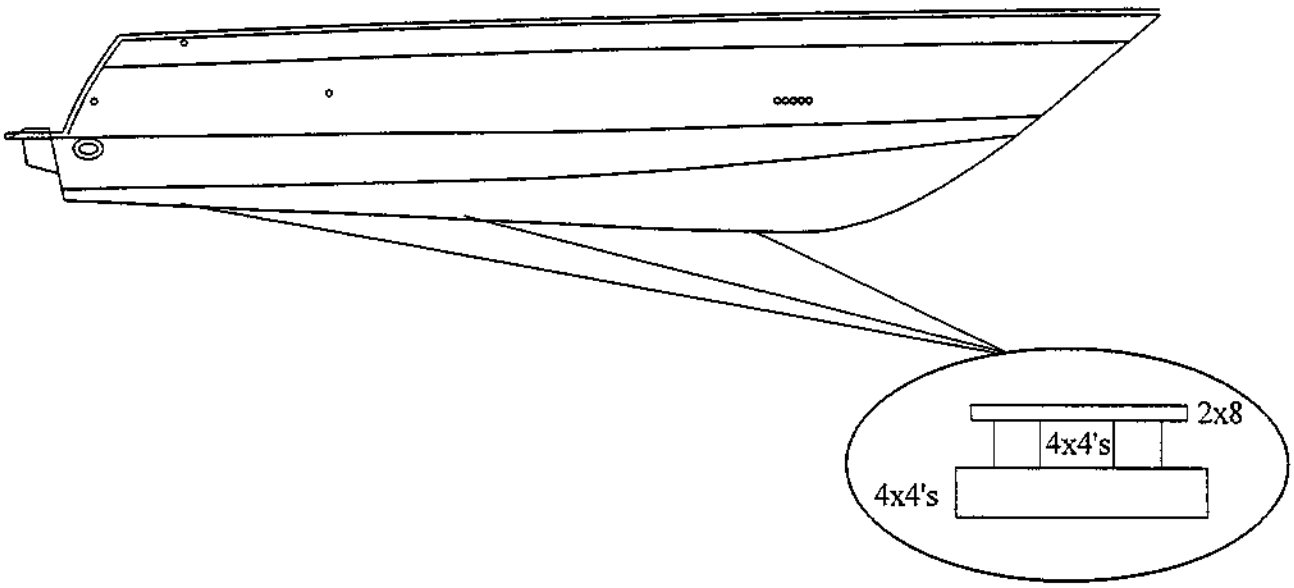
Aft View



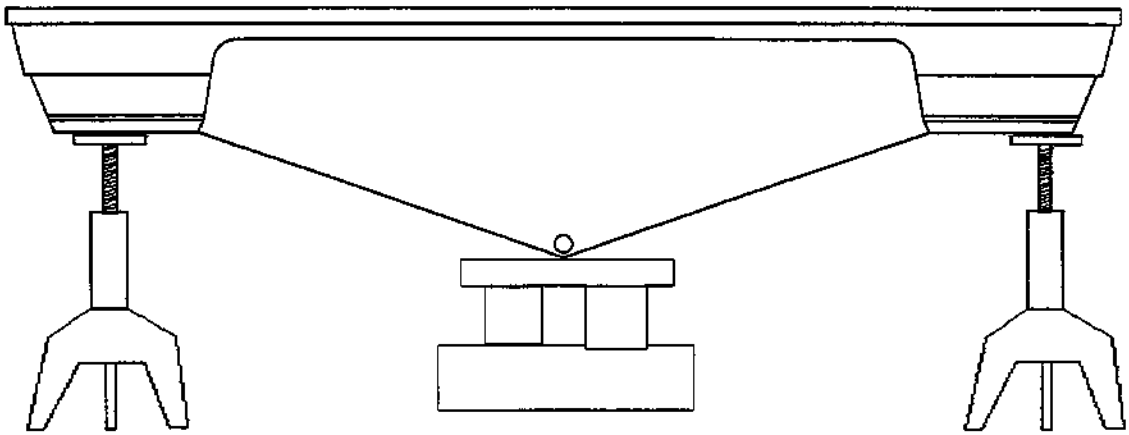
Side View

Position the blocking support under the boat's keel beneath a transverse stringer in three locations: forward, amidship and aft. Position additional side supports on each side of the boat adjacent the keel blocking. These supports prevent the boat from shifting during storage. Refer to the general illustrations on the following pages.

Blocking Profile



Blocking Aft View



WINTERIZING THE BOAT

Important Antifreeze Bulletin

SeaLand TECHNOLOGY, INC. Technical Bulletin

P.O. Box 38, Fourth Street, Big Prairie, Ohio 44611 • Telephone: 216/496-3211 In Ohio • 800/321-9889 • Fax: 216/262-1727

Bulletin Number: VF-005
Effective: February 15, 1990

SANITATION HOSE MALODOR: ALCOHOL ANTIFREEZE

Affected Installations: Any pleasure craft sanitation systems utilizing SeaLand heavy duty, smooth wall hose (identified with "SeaLand" marked in blue on outer surface).

Symptoms: A strong malodor is evident from a non-specific source. No indication of leakage or a loose fitting is present.

Cause: SeaLand heavy duty, smooth wall sanitation hose is especially formulated with a malodor resistant ingredient. This ingredient is designed to prevent malodor molecules from permeating the hose wall. If an alcohol based antifreeze is used, the malodor resistant ingredient in the hose is removed and failure will result sometime later.

One brand which has been found to definitely cause this type of failure is **ARTIC BAN** from Camco Manufacturing Company. This statement is supported by gas chromatography and scanning electron microscopy studies at the Institute of Polymer Science, University of Akron.

Note: Other liquids such as petroleum solvents, fuels and pine oil cleaners will also produce similar results.

Troubleshooting: 1.) Carefully inspect all fittings and joints to assure malodor is not coming from a loose fitting or hose joint. 2.) With a clean paper towel or cloth, rub the outside of the hose. At regular intervals check the cloth to determine if malodor has been transferred to cloth or paper. 3.) Determine if boat has been winterized using antifreeze, and if so, determine the type. SeaLand can verify if the hose has failed due to chemical attack by examination of a small sample.

Corrective Action: Once a hose has been degraded by exposure to an alcohol based antifreeze, it cannot be repaired. The only remedy is to replace the contaminated hose. It is clearly stated in the SeaLand Owner's Manuals that alcohol based products should never be used (see exhibit on reverse side). Hose failure for this reason is considered misuse and is not covered by SeaLand's warranty policy.

The recommended antifreeze is propylene glycol base without alcohol. Brands recommended by SeaLand are listed on the reverse side.

Information concerning proper hose care should be given to all boat owners. An information card with this information is enclosed. Instructions for ordering copies are on the card.

WINTERIZING THE BOAT

Important Antifreeze Bulletin

Winterizing

At the end of each boating season, the VacuFlush® system must be winterized for storage. The following procedure should be used:

CAUTION: DO NOT use chlorine, alcohol or alcohol based products in the system.

1. Thoroughly flush system with fresh water.
2. Pump out holding tank.
3. Shut off water supply to toilet(s), remove water line.
4. Press flush lever until all water is drained from toilet.
5. For each toilet, flush 4 gallons of permanent type anti-freeze and water in a 50:50 mixture through toilet. Each installation is different so amounts may vary. User discretion is required to assure adequate protection.
6. Turn off electrical power.

Maintenance

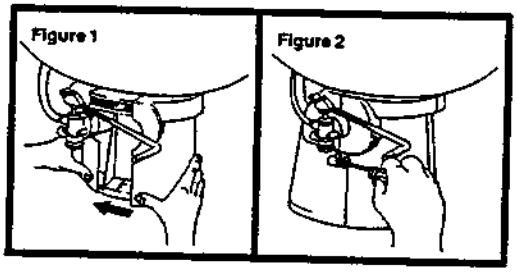
SeaLand Technology has endeavored to provide the boatowner with a toilet system which provides "at home" convenience and reliability. As with any quality product, satisfactory use depends on proper maintenance.

Maintenance intervals and normal parts replacement vary widely depending on numerous factors such as; type of vessel, frequency of system use, quality of flushing water, etc. The chart below is intended strictly as a general guideline. Owner discretion and consideration of actual usage must be the first basis for determining proper maintenance levels.

Pedestal Cover Installation

Before installing pedestal and pedal covers, unit must be mounted to floor flange and water supply line connected.

1. Install pedestal cover around base and snap bottom into place (see Figure 1).
2. **Tall base unit only.** Install (2) mounting screws (see Figure 2).
3. Slide pedal cover onto foot pedal rod (see Figure 3).
4. Attach pedal cover side plate and secure with (2) mounting screws (see Figure 4). For short base units, secure front screw, then press foot pedal down completely to secure second screw.
5. To remove, reverse above procedure.



RECOMMENDED ANTIFREEZE PRODUCTS

"WINTER-PRUF"

CENTURY CHEMICAL PRODUCTS
28790 C.R. 20 W.
P.O. Box 1442
Elkhart, IN 46515

219/293-9521
800/348-3505 (Outside Indiana)

Fax: 219/522-5723

"FREEZE BAN"

CAMCO MANUFACTURING, INC.
121 Landmark Dr.
Greensboro, NC 27409-9626

919/668-7661
800/334-2004

Fax: 919/668-2049

WINTERIZING YOUR BOAT

SPRING RECOMMISSIONING CHECKLIST

Pre-Launch

Hull

- ☐ Remove old antifouling bottom paint
- ☐ Fill nicks and gouges
- ☐ Inspect props, struts, rudders
- ☐ Inspect through hull fittings
- ☐ Apply new antifouling bottom paint
- ☐ Buff out minor hull scratches
- ☐ Remove dirt, stains
- ☐ Apply wax

Deck and Cabin

- ☐ Inspect hatches and windows for leaks
- ☐ Wax non-walking surfaces

Engines

- ☐ Follow manufacturer's recommissioning guidelines
- ☐ Check crankcase, transmission oil levels
- ☐ Inspect belts, hoses
- ☐ Tune-up engine
- ☐ Replace fuel filters

Electrical System

- ☐ Check battery water level
- ☐ Charge batteries
- ☐ Inspect connections for corrosion

Plumbing

- ☐ Purge antifreeze
- ☐ Replace taste/ odor filters
- ☐ Inspect, lube sea valves
- ☐ Inspect, repair marine head
- ☐ Chemically charge holding tank
- ☐ Fill potable water tanks

Safety equipment

- ☐ Inspect PFDs
- ☐ Replace old distress signals
- ☐ Inspect fire extinguishers
- ☐ Inspect, test bilge pump
- ☐ Inspect mooring lines, fenders

After Launching

- ☐ Check for engine cooling water flow
- ☐ Check propshaft alignment
- ☐ Check stuffing box adjustment
- ☐ Have compass professionally readjusted

Section 9

WARRANTY AND SERVICE INFORMATION

Carver Warranty Policy

Carver warrants every boat we manufacture as detailed in the Carver Limited Warranty Document. Your copy of the Carver Limited Warranty appears at the end of this section. Please review this document carefully.

The warranty on your new Carver is the joint responsibility of the Carver Boat Corporation, your Carver Dealer and yourself. All three parties have certain responsibilities to ensure that the warranty remains in force. Carver's responsibilities are outlined in the limited warranty document that is included within this Owner's Guide.

Carver Dealer Responsibilities

The Carver Dealer will review the terms of the warranty and make certain the warranty is registered with Carver. Your Carver Dealer will instruct you on how to obtain warranty service.

The Carver Dealer will prepare your boat for delivery in accordance with the procedures detailed on the Pre-Delivery Service Record. Your dealer will sign the Pre-Delivery Service Record and provide you with a copy. A representative from your Carver Dealership will conduct a review of how your boat and its systems operate.

Owner's Responsibilities

Make certain the boat's pre-delivery service record has been completed and mailed to Carver. The pre-delivery service record is contained in the preface of this manual. Read and follow all OEM supplied materials. Complete and mail all OEM warranty cards. Review the Pre-Delivery Service procedure with your dealer. Read the Pre-Delivery Service Record. Be certain you sign a copy of the Pre-Delivery Service Record and retain a copy for your records.

At time of delivery, make a complete inspection of the boat and its systems. Document any work that needs to be completed by the dealer in order to meet the terms of your agreement. Read, understand and follow the Carver Owner's Guide and all materials contained within the Captain's Kit. Contact your dealer if you have any questions. Perform all maintenance in accordance with the operator and service guides.

WARRANTY/PARTS INFORMATION

Many of the complex components (engines, generators, stoves, etc.) within your boat are warranted by their respective manufacturer. These companies have programs designed to resolve problems with their products. Your Carver Dealer can implement these services as required.

Warranty Registration

A Carver Pre-Delivery Service Record is included in the beginning of this Owner's Guide. Registration of your boat and its engines is also required by the Federal Safe Boating Act of 1971. Your Carver Dealer will complete and mail your engine warranty cards as part of the Pre-Delivery Service procedure.

Many of the other complex components installed on your boat must also be registered with their respective manufacturer. Warranty cards have been assembled and are contained in the OEM SUPPLIED MATERIALS packet that is part of your Captain's Kit.

ALL WARRANTY CARDS MUST BE COMPLETED AND FORWARDED TO THE APPROPRIATE COMPANY WITHIN 5 DAYS AFTER TAKING DELIVERY OF YOUR CARVER.

Obtaining Warranty Service

The following requirements must be met before warranty work can be performed on your boat:

1) Your boat must be registered with the Carver Boat Corporation. Registration is accomplished by completing and submitting the Pre-Delivery Service Record to the Carver Boat Corporation, P.O. Box 1010, Pulaski, WI 54162-1010.

2) Pre-Delivery Service must be completed by your Carver Dealer. Information concerning Pre-Delivery Service can be found in the preface of this manual. The Pre-Delivery Service Record must be signed by both the dealer and the owner.

Your Carver Dealer is the ONLY person authorized to approve warranty work. If warranty service is needed you MUST contact your Carver Dealer first. There are no exceptions to this policy.

Your Carver Dealership is staffed with knowledgeable professionals who are familiar with your boat and are capable of providing the highest level of service. The Carver Dealership service personnel will communicate with The Carver Boat Corporation to ensure you fast and satisfactory solutions to any problem that may arise.

WARRANTY/PARTS INFORMATION

Second Owner Registration

A "Second Owner Registration Card" has been provided in the beginning of this guide. The purchaser of a "pre-owned" Carver should complete this card and submit it to the Carver Boat Corporation, P.O. Box 1010, Pulaski, WI 54162-1010.

Registration of a "pre-owned" Carver does not extend or in any way modify a boat's original limited warranty. However, purchasers of a pre-owned Carver can and should register ownership with Carver. Having this information on file will benefit you should Carver ever need to contact you.

Hull Identification Number (HIN)

The United States Coast Guard has established a universal system of numerically identifying vessels by using a hull identification number or "HIN." This number identifies a boat's make, model, hull number, month, and year of manufacture.

The HIN is found on a boat's transom. Look for it on the starboard side, just below the rub rail or on the transom platform.

Provide your Carver Dealer with your boat's HIN when contacting them for parts or service.

The HIN consists of 12 alpha or numeric characters.

WARRANTY/PARTS INFORMATION

Original Equipment Manufacturer (OEM) Manuals

Carver Boat Corporation has purchased and installed a variety of equipment which was manufactured by OEM suppliers. Engines, stoves, refrigerators and air conditioners are examples of this type of equipment. The majority of Carver's suppliers have created operators and maintenance manuals for their products. This information has been assembled and supplied to you.

Virtually all of your boat's components have their own limited warranty. Warranty registration cards have been provided for those products. These are your materials. Use a colored hilighter to mark sections of the text that are of special interest. Be sure to supplement your guide with information on wiring or installation of additional equipment that you add to the boat during your period of ownership.

The Carver Owner's Guide and all component manuals are a permanent part of your boat. These materials must remain on the vessel during its operation. These materials must also be transferred to the boat's subsequent owners.

NOTE: Information presented in OEM suppliers literature and manuals takes precedence over information presented in the Carver Owner's Guide. If there is a discrepancy between the Owner's Guide and an OEM supplier's manual, FOLLOW THE INSTRUCTIONS IN THE SUPPLIER'S MANUAL.

Information contained within this Owner's Guide is the most accurate information available at the time of publishing. Carver reserves the right to change without notice materials, part numbers, specifications or system designs.

ORIGINAL EQUIPMENT (OEM) SUPPLIERS

Your Carver Dealer is the best "first source" for answers when you have questions about any of your boat's equipment. If however your dealer is unable to help you, a call to the original manufacturer of the equipment may be in order.

A listing of Carvers OEM suppliers follows. Use this list to contact the manufacturer of a particular component with regard to operation, service and replacement parts. Be prepared to provide the serial number of the component when requesting information. A serial number record sheet for your boat appears after this Section.

WARRANTY/PARTS INFORMATION

ORIGINAL EQUIPMENT SUPPLIERS (OEM)

Use this listing of Carver's OEM suppliers to contact the manufacturer with regard to operation, service and/or replacement of a particular component. Be prepared to provide the serial number of the component when requesting information.

ENGINES

Mercury Marine
3003 N. Perkins Road
Stillwater, OK 74074
(405) 743-6566

Thermo-Electron/Crusader Corporation
7100 E. 15 Mile Road
Sterling Heights, MI 48312
(810) 264-1200

Volvo Penta of North America
1300 Volvo Penta Drive
Chesapeake, VA 23320
(804) 436-5100
Fax (804) 436-5313

Cummins Engine Company
875 Lawrence Drive
DePere, WI 54115
(414) 337-1991

Caterpillar Tractor Company
Attn: Marine Customer Service
Engine Division
P.O. Box 610
Mossville, IL 61552-0610
1-800-447-4986

FUEL FILTERS

Racor Industries, Inc.
P.O. Box 3208
Modesto, CA 95353
(209) 521-7860

DRIVE SYSTEMS

Walters Machine Company
84-98 Cambridge Avenue
Jersey City, NJ 07307
(201) 656-5654

Velvet Drive Transmissions
200 Theadore Rice Blvd.
Newbedford, MA 02745
(508) 979-4800

ZF Industries
Attn: Marine Dept.
777 Hickory Hills Drive
Vernon Hills, IL 60061
(847) 634-3500

GENERATORS

Kohler Generators / Kohler Company
444 Highland Drive
Kohler, WI 53044
(414) 565-3381

Onan Corporation
1400 73rd Avenue N.E.
Minneapolis, MN 55432
(612) 574-5000

Westerbeke Corporation
41 Ledin
Avon, MA 02322
(508) 588- 7700

STEERING SYSTEMS

Hynautic Marine Systems
1579 Barber Rd.
Sarasota, FL 34240
(941) 379-0500

Teleflex Steering Systems
640 N. Lewis Road
Limerick, PA 19468
(610) 948-5100

HEADS

SeaLand Technology, Inc.
P.O. Box 38
4th Street
Big Prairie, OH 44611
(216) 496-3211

Raritan Engineering Corporation
P.O. Box 1157
530 Orange Street
Millville, NJ 08332
(609) 825-4900

WATER HEATERS

SeaWard Products
3721 Capitol Drive
Whittier, CA 90601
(310) 699-7997

AIR CONDITIONERS

Marine Air Systems
2000 N. Andrews Avenue Extension
Pompano Beach, FL 33069
(954) 973-2477

WARRANTY/PARTS INFORMATION

TRIM TABS

Bennett Marine Inc.
550 N.W. 12th Avenue
Deerfield Beach, FL 33442
(305) 427-1400

Boat Leveler Company
7305 Natural Bridge
St. Louis, MO 63121
(314) 385-7470

ENTERTAINMENT EQUIPMENT (110V)

JVC Service & Engineering Company of America - Div. of JCV Corporation
107 Little Falls Rd.
Fairfield, NJ 07004
1-800-537-5722
(110 volt stereo system)

Quasar
Capitol Sales Co.
3110 Neil Armstrong Blvd.
Eagan, MN 55121
1-800-545-2672
(TV)

Clarion - 12V Audio
Marine Audio Sales
16137 Westwoods Business Park
Ellisville, MO 63021
(314) 394-2631
(12 volt AM/FM/CD stereo system)

BATTERY CHARGERS

Professional Mariner
2970 Seaborg Ave.
Ventura, CA 93003
(805) 644-1886

Guest Corporation
95 Research Parkway
Meridin, CT 06450
(203) 235-4421

Charles Marine Products
5600 Apollo Drive
Rolling Meadows, IL 60008
(708) 806-6300

REFRIGERATORS & ICE MAKERS

Norcold Inc. (Division of Stolle Co.)
P.O. Box 4248
2655 Cambell Rd.
Sidney, OH 45365
1-800-543-1219

Nova Kool Mfg., Inc.
1457 Barrow St.
North Vancouver, B.C.
Canada V7JIB6
(604) 984-7794

Raritan Engineering Corporation
P.O. Box 1157
530 Orange Street
Millville, NJ 08332
(609) 825-4900

General Electric Company
Consumer Affairs Dept.
Appliance Park
Louisville, KY 40225
1-800-626-2000

RANGES AND MICROWAVES

SeaWard Products
3721 Capitol Drive
Whittier, CA 90601
(310) 699-7997

Kenyon Marine
351 New Whitfield St.
Guilford, CT 06437
(203) 453-4374

Origo USA, Inc.
1121 Lewis Avenue
Sarasota, FL 34237
(941) 365-3660

MISCELLANEOUS ACCESSORIES

Teleflex Marine, Inc.
1816 57th Street
Sarasota, FL 34243
(941) 355-7721
(Instruments)

Teleflex Marine
Mechanical Products
640 North Lewis Rd.
Limerick, PA 19468
(610) 948-5100
(Controls)

Teleflex of Canada LTD
3831 No. 6 Road
Richmond, British Columbia
Canada V6V 1P6
(604) 270-6899
(Steering)

VDO Yazaki Corporation
188 Brooke Road
Winchester, VA 22603
(540) 665-0100
(Gauges)

Guest Company, Inc.
95 Research Parkway
Meriden, CT 06450
(203) 235-4421
(Spot Lights)

WARRANTY/PARTS INFORMATION

Morse Controls - IMO
21 Clinton Street
Hudson, OH 44236
(216) 653-7701
(Controls, Throttle & Shift Cables)

ITT Jabsco
152 South West 8th St.
Miami, FL 33130
(7" & 8" Spotlights)

E.S. Ritchie & Sons Inc.
P.O. Box 548
243 Oak Street
Pembroke, MA 02359
(617) 826-5131
(Compass)

Alson Corporation
42 Union Street
Hillsdale, MI 49242
(517) 439-1411
(Shower Controls)

Maxwell Winches, Inc.
1610 Babcock St.
Costa Mesa, CA 92627
(714) 631-2634
(winches)

Sea-Fire
Division of Metalcraft, Inc.
9331-A Philadelphia Road
Baltimore, MD 21237
(410) 687-5500
(Halon System)

MTI Industries - Division of Marine
Technologies, Inc.
1000 Brown Street
Suite 107
Wauconda, IL 60084
1-800-383-0269
(CO Detector)

Bomar, Inc.
South West Street
P.O. Box W
Charlestown, NH 03603
(603) 826-5791
(Hatches)

Aluminum 2000, Inc.
595 East Oregon Road
Lititz, PA 17543
(717) 569-2300
(Doors)

Serial Number listings

SPECIFICATIONS

Physical Measurements

Length Overall (LOA) with swim platform: 36'7" / 11,15 m

Beam: 12'9" / 3,89 m

Bridge Clearance (waterline to arch): 14'2" / 4,32 m

Draft: 37" / 0,61 m

Weight
(estimated dry weight) 15,400 lbs. / 6,804 kg
(estimated weight w/fuel & water) 17,414 lbs. / 7898,99 kg

Water: 75 gal. / 283,90 liters

Hot Water: 11 gal. / 41,64 liters

Waste: 20 gal. / 75,71 liters

Fuel: 246 gal. / 794,93 liters

A draft of 37" to the bottom of the boat's hull has been calculated based upon the boat's 15,400 lbs. dry weight .

WARRANTY/PARTS INFORMATION

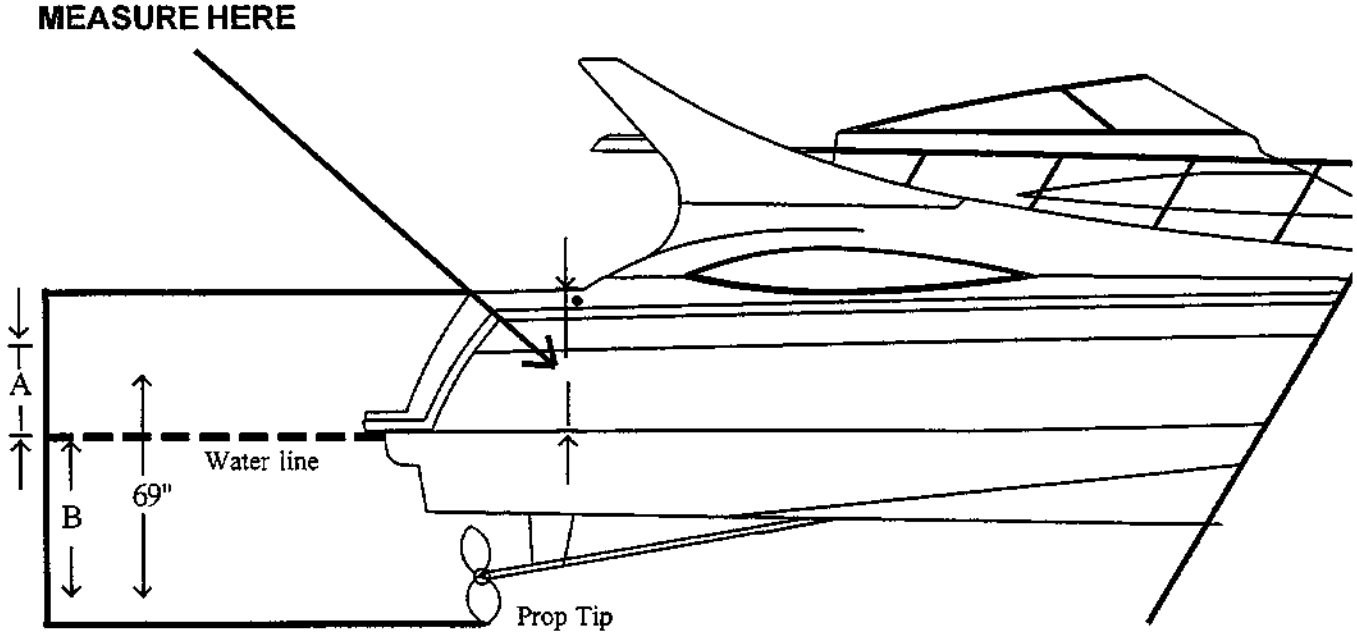
Determining Your Boat's Draft

1. Measure the distance from the bottom edge of the swim platform's rub rail to the water line. Refer to the drawing for the proper place along the hull to measure. Measure both the port and starboard sides.

2) Locate the smaller of the two measurements you have taken on column "A" on the chart below. Read the draft of your boat in column "B."

DRAFT CONVERSION

"A"	"B"
41" (104,14 cm)	37" (93,98 cm)
40" (101,60 cm)	38" (96,53 cm)
39" (99,06 cm)	39" (99,06 cm)
38" (96,53 cm)	40" (101,60 cm)
37" (93,98 cm)	41" (104,14 cm)
36" (91,44 cm)	42" (106,68 cm)



WARRANTY/PARTS INFORMATION

Dry Weight: 15,400 lbs / 6985,44 kg

Dry weight does not include fuel, water, optional equipment, food, beverages, safety gear or anything else a family is likely to have onboard their boat. The actual weight of your boat will be greater than the dry weight figure listed here.

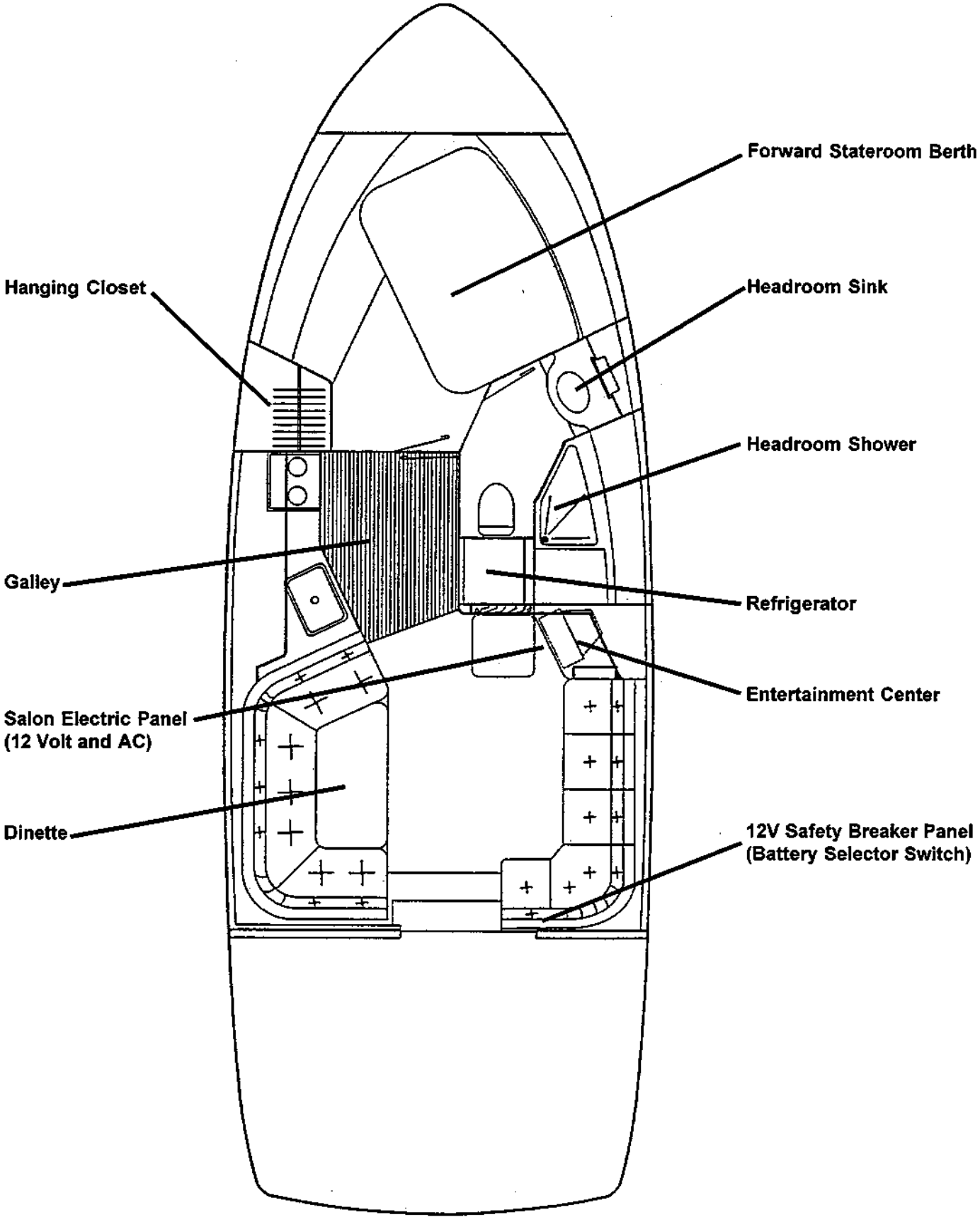
The approximate weight of your boat can be estimated when the actual draft is known. It will require approximately 1,225 lbs (555,66 kg) to increase a 350 Mariner's draft by 1" (2,54 cm). If a 350 Mariner draws 37" (0,94 m) at its "dry" weight of 15,400 lbs (6985,44 kg), a boat that draws 41" (1,04 m) will weigh approximately 20,300 lbs (9208,08 kg).

41" - 37" = 4" X 1225 lbs = 4,9004 lbs + 15,400 lbs = 20,300 lbs est. total weight

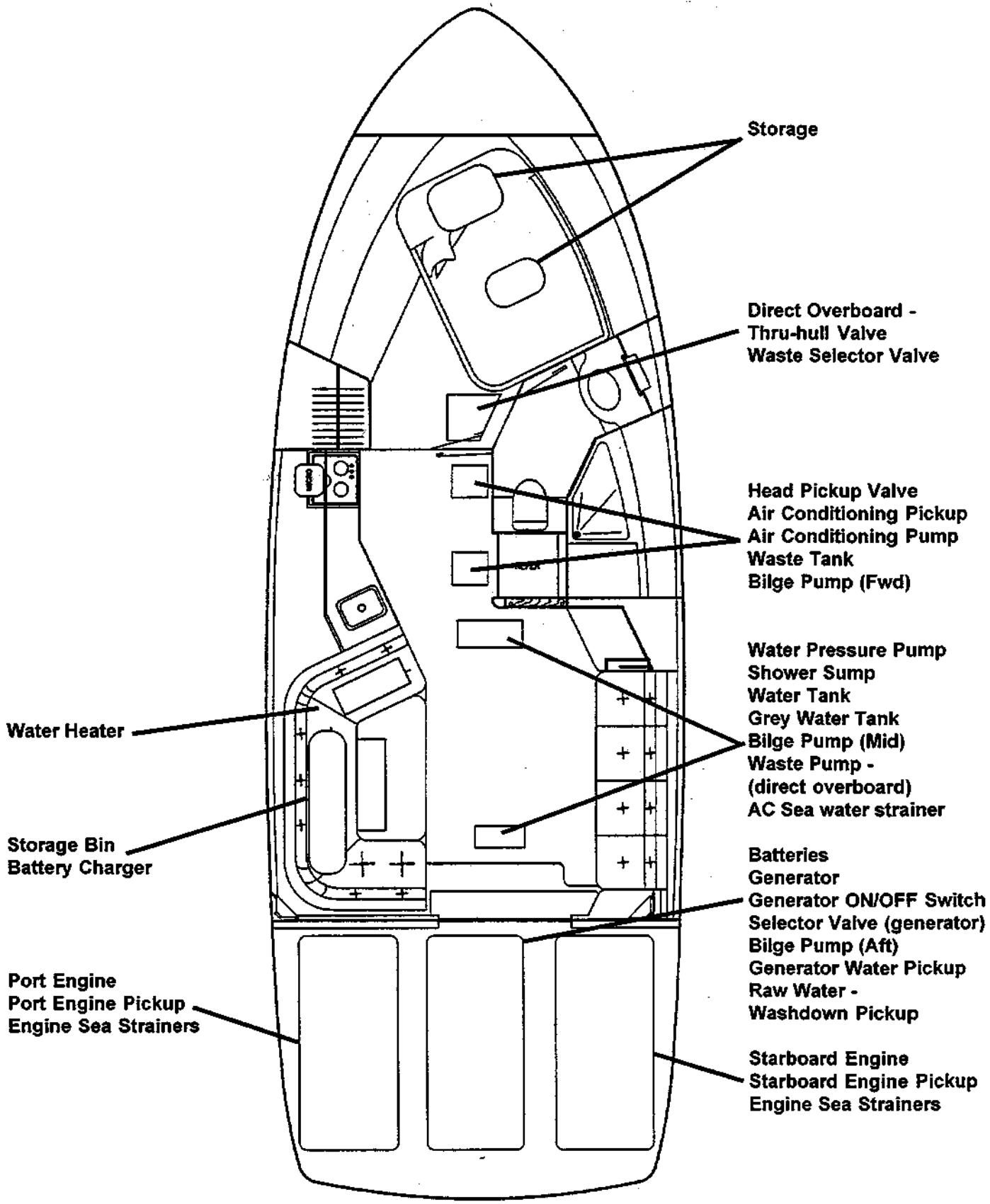
We can't over emphasize that this computation is for estimating purposes only. Use it to generate a rough approximation of your boat's total weight.

The 1,225 lbs (555,66kg) figure used for this draft/weight computation is unique to the shape of the 350 Mariner's hull. You can not use this figure on boats other than the 350 Mariner.

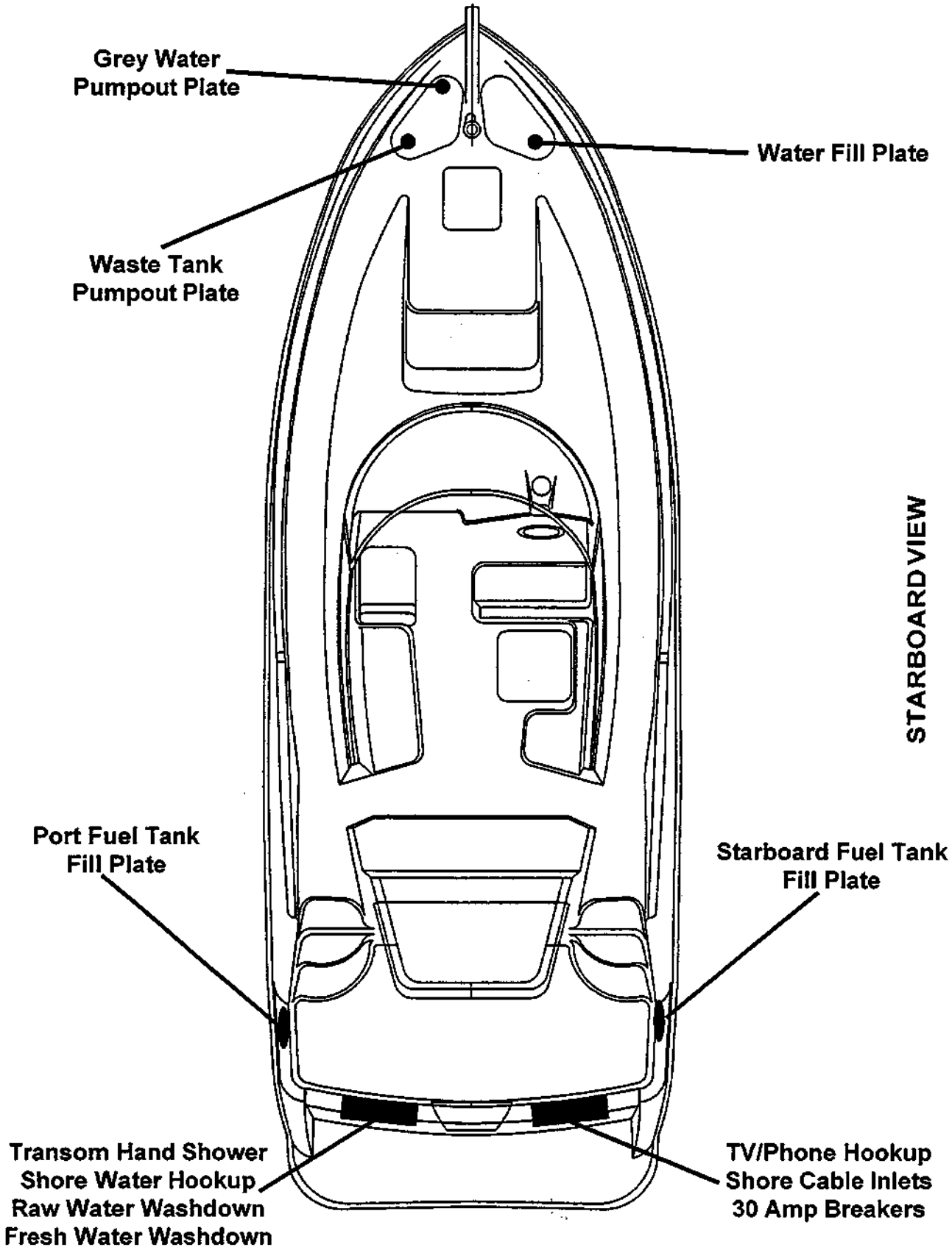
Interior/Cabin Layout



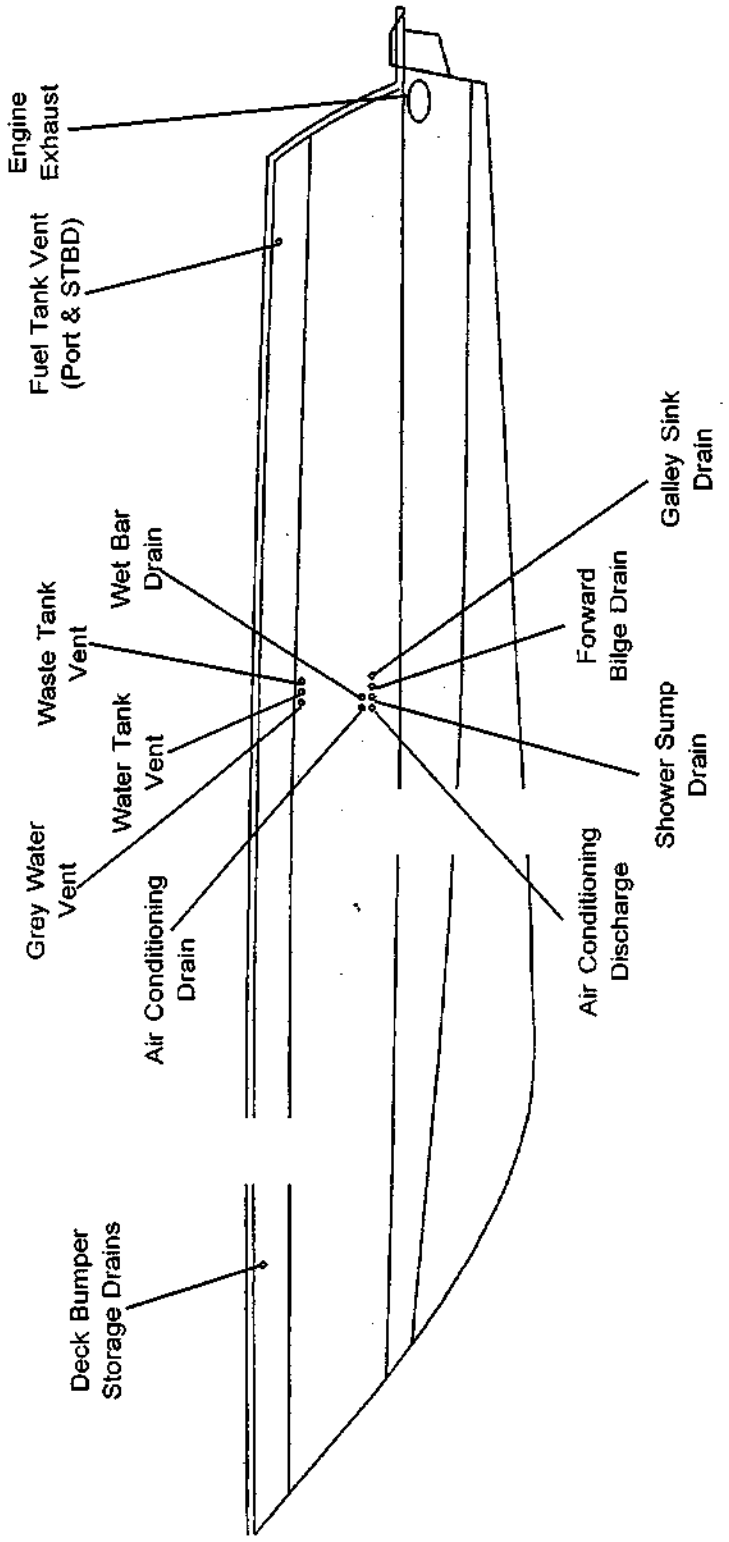
Interior Hatch Locations



Fill Plate/Pumpout Locations

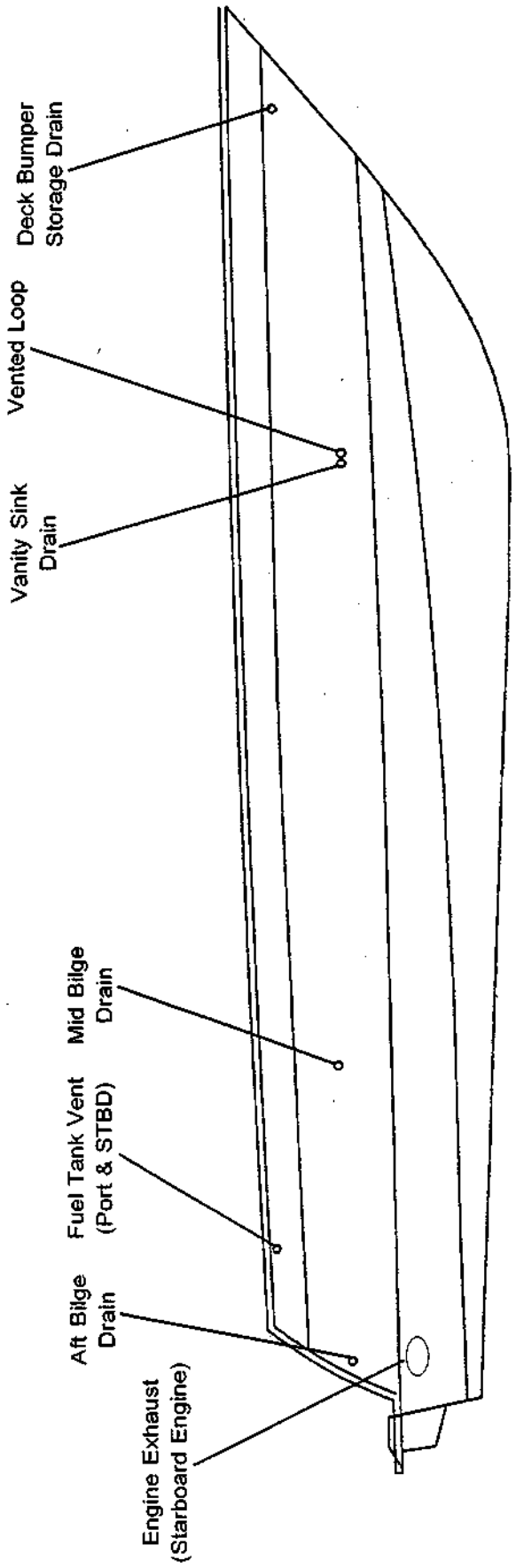


Above Waterline Thru-Hull Fittings



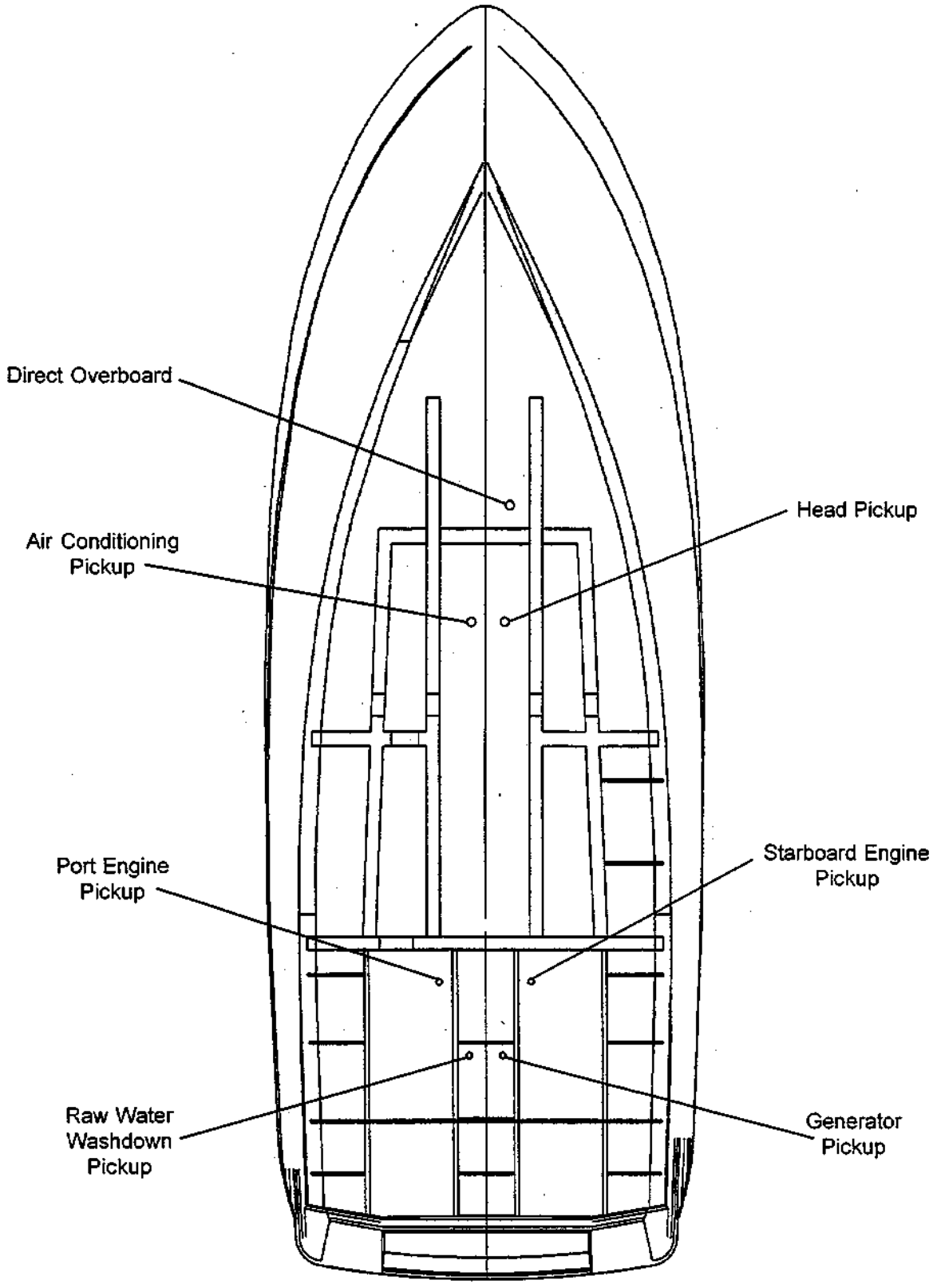
PORT VIEW

Above Waterline Thru-Hull Fittings



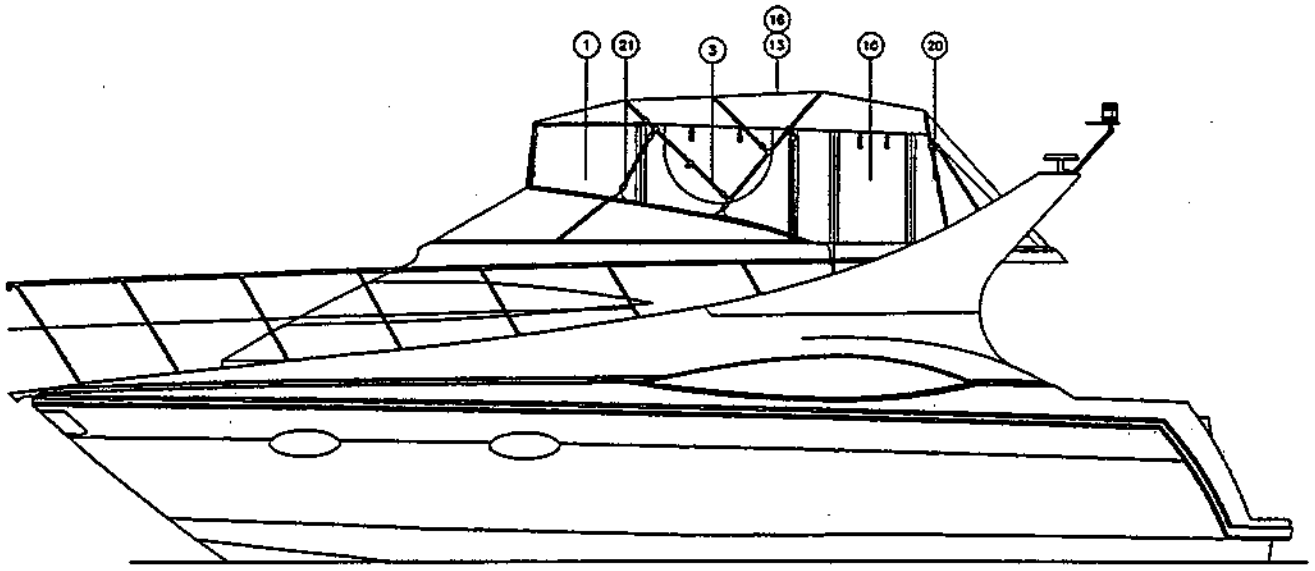
STARBOARD VIEW

Below Waterline Thru-Hull Fittings

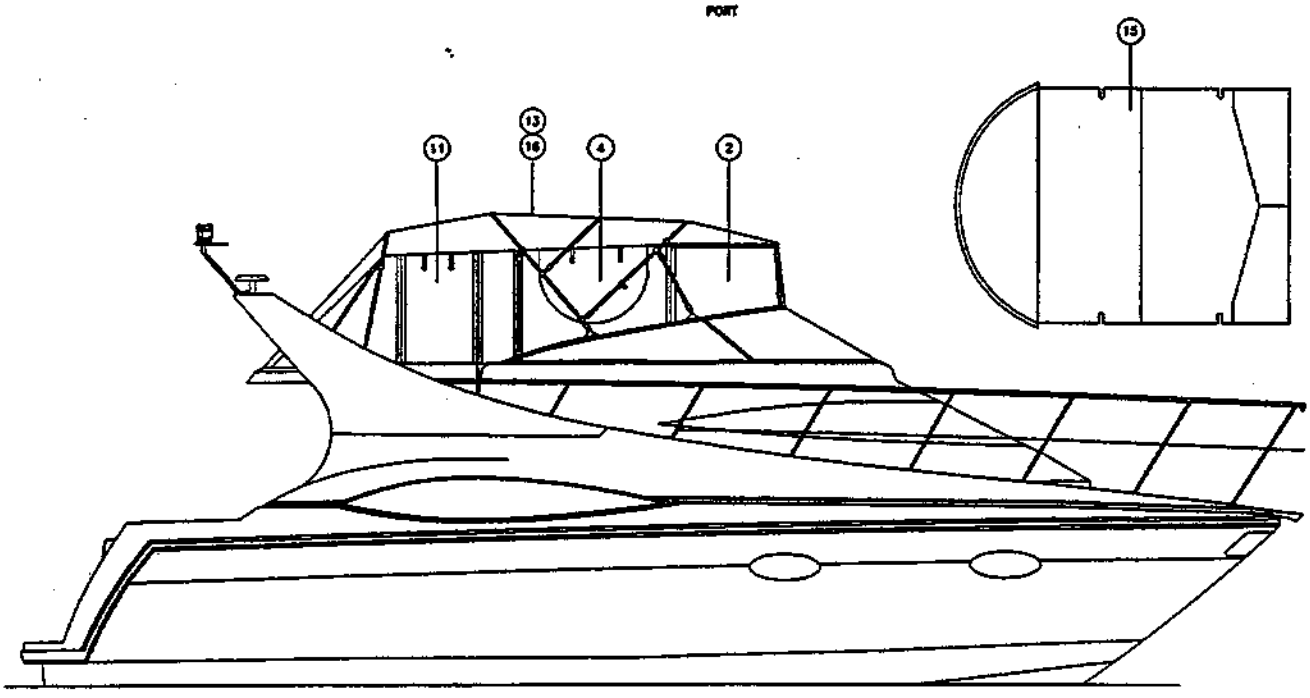


WARRANTY/PARTS INFORMATION

Bridge Canvas/Upholstery

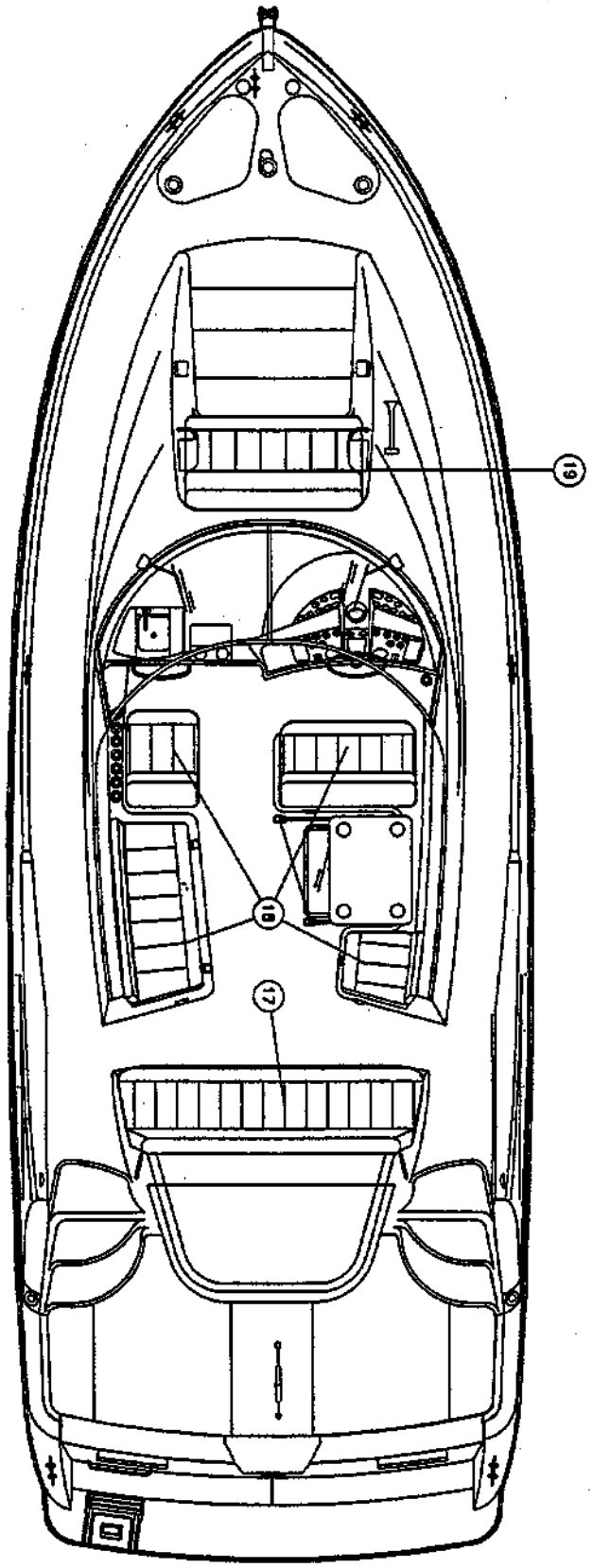


PORT

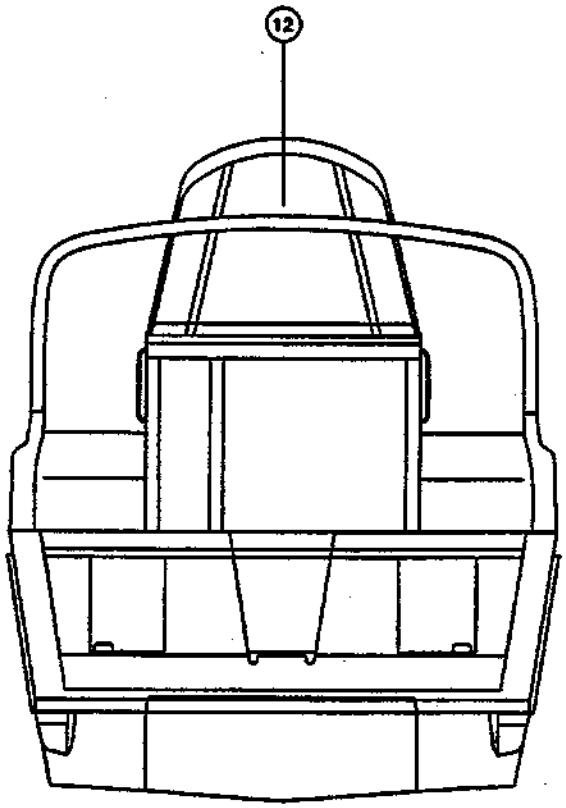


STBD

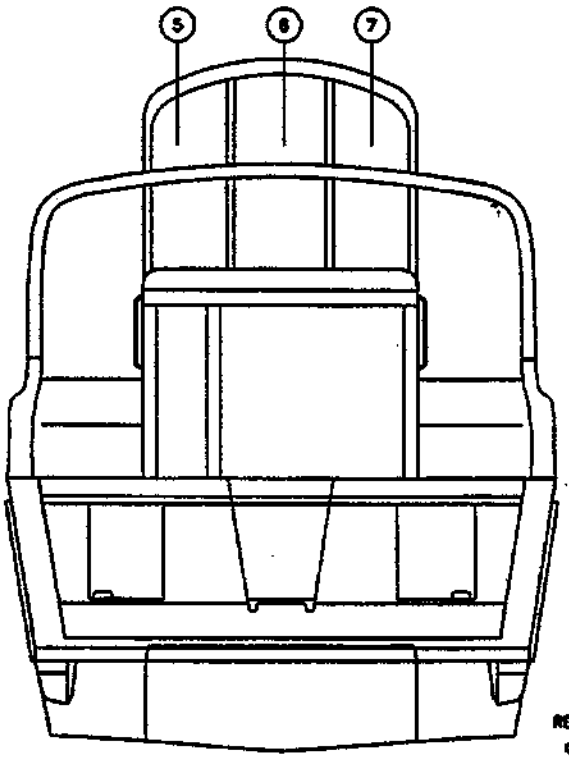
Bridge Canvas/Upholstery (Continued)



Bridge Canvas/Upholstery (Continued)



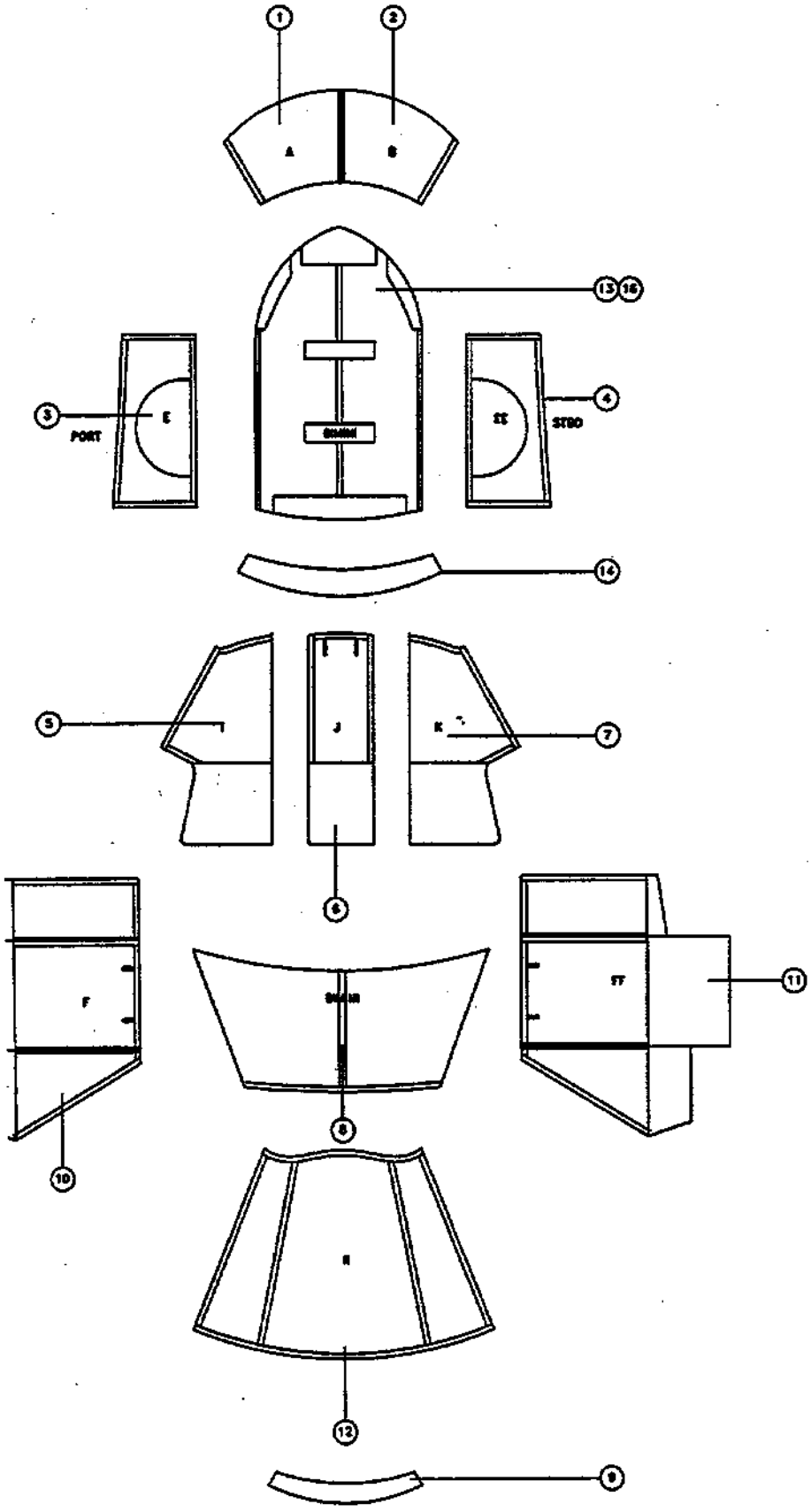
OPTION CNVS=090



REV.E
01

OPTION CNVS=115

Bridge Canvas/Upholstery (Continued)



Bridge Canvas/Upholstery (Continued)

ITEM	QTY	DESCRIPTION
1	1	CNVS:FWD CURT #A 3597
2	1	CNVS:FWD CURT #B 3597
3	1	CNVS:SIDE CURT #E 3597
4	1	CNVS:SIDE CURT #EE 3597
5	1	CNVS:AFT CURT #I 3597
6	1	CNVS:AFT CURT #J 3597
7	1	CNVS:AFT CURT #K 3597
8	1	CNVS:CAMP BIMINI 3597
9	1	CNVS:CAMP BOOT 3597
10	1	CNVS:SIDE CURT #F 3597
11	1	CNVS:SIDE CURT #FF 3597
12	1	CNVS:CAMP AFT CURT #II 3597
13	1	CNVS:BRIDGE BMNI
14	1	CNVS:BOOT
15	1	CNVS:BRIDGE COVER
16	1	CNVS:BIMINI TOP
17	1	SEAT:CVR ASY AFT
18	1	SEAT CVR:SET MID BRIDGE
19	1	SEAT CVR:ASY BRDG ST FWD35
20	1	CNVS:BMNI BOW SET AFT3597
21	1	CNVS:BMNI BOW SET FWD3597

NOTE: For parts information and availability, contact your authorized Carver dealer. To locate an authorized Carver dealer near you, write the Carver Boat Corporation at: Attn: Service Department, 790 Markham Drive, Pulaski, WI 54162-1010. Or call (414) 822-3214.

WARRANTY/PARTS INFORMATION

BILL OF MATERIALS

ANY PARTS BEGINNING WITH A LETTER OR HAVE A CATEGORY PRIOR TO "50" ARE MANUFAC TURED PARTS AND THEREFORE MAY NOT HAVE ALL PARTS LISTED WHICH MAKE UP THE ASSEMBLY INDICATED.

CATEGORY NO.	PART DESCRIPTION
50	ENGINES & V-DRIVES
51	INBOARD ENGINE EQUIPMENT
52	PROPELLERS
53	STEERING CABLES
54	STEERING HELMS & KITS
55	CONTROL CABLES
56	CONTROLS & KITS
57	INSTRUMENTS & INSTRUMENT ACCESSORIES
58	FRESH WATER COOLING
59	ENGINE EQUIPMENT; BATTERIES
60	FUEL SYSTEM & TANKS
61, 62	GALLEY, HEAD & SHOWER EQUIPMENT & TANKS
63	PRESSURE WATER SYSTEM
64	NAVIGATION & INTERIOR LIGHTING
65	BILGE PUMPS, BLOWERS & VENTILATORS
66	DECK HARDWARE; ARCH
67	RAILS, TAFFRAIL KITS & LADDERS
68	WIRE HARNESSES, DOCKSIDE KITS & PANELS
69	ELECTRICAL EQUIPMENT, GENERATOR, WINDLASS
70	WINDOWS,DOORS,WINDSHIELD SETS,HATCHES & SCREENS
71	HARDWARE, LOGO
72	PILOT SEAT HARDWARE, TABLE LEGS & FOOTRESTS
73	ACCESSORIES;HATCH,HORN,SCREENS,STEREO,TV, VACUUM
74	FITTINGS; PIPE & TUBE
75	CLAMPS, HOSES & TUBING
77	WOOD SCREWS & SHEET METAL SCREWS
78	LAG & MACHINE SCREWS, BOLTS, NUTS & WASHERS
79	NAILS, STAPLES & RIVETS
80	BLINDS,CANVAS,CARPET,CURTAINS&UPHOLSTERY MATERIAL
81	FINISHING MATERIAL & ADHESIVES;LOGOS, PAINT, PLAQUES, STRIPE
82	FIBERGLASS MATERIALS, GEL & PUTTY
83	EXTRUSIONS
84	LUMBER, PLYWOOD, HARDBOARD & BALSA
85	PLASTICS, PLASTIC LAMINATES, DOORS, LIDS & COVERS
89	ELECTRICAL
90	AIR-CONDITIONING & ACCESSORIES
91	FOAM
94	WOODSET

WARRANTY/PARTS INFORMATION

CARVER LIMITED WARRANTY DOCUMENT

Index

P

R

S

T

U

V

W