
# Owner's Manual

# WELCOME

Congratulations on becoming the new owner of a Lightning performance boat. Lightning Boatworks welcomes you into an ever-expanding family of boating enthusiasts.

Take the time to carefully review the information in your Owner's Packet and really get to know your boat. Everyone that operates the boat should read this manual.

The Owner's Packet contains important operating and safety information, as well as reminders about your responsibilities as a boat owner/operator.

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

*Thank You For Selecting A Lightning!*

Information in this publication is based upon the latest product specifications available at printing. Lightning Boatworks LLC reserves the right to make changes at any time, without notice, in the colors, equipment, specifications, materials and prices of all models, or to discontinue models. Should changes in production models be made, Lightning Boatworks LLC is not obligated to make similar changes or modifications to models sold prior to the date of such changes.

# INTRODUCTION

## HULL IDENTIFICATION NUMBER (HIN)

The “Hull Identification Number” located on the starboard side at the rear corner, is the most important identifying factor and must be included in all correspondence and orders. Failure to include it creates delays. Also of vital importance are the engine serial numbers and part numbers or part pictures when writing about or ordering parts. Refer to the Engine Operator’s Manual for locations of engine serial numbers and record them for future reference.

## MANUFACTURER’S CERTIFICATION

As a boat manufacturer, we build our products to guidelines established under the Federal Boat Safety Act of 1971. The Act is promulgated by the United States Coast Guard who has authority to enforce these laws on boat manufacturers that sell products in the United States. Lightning Boatworks ensures that all of its products comply with these laws.

The National Marine Manufacturers Association (NMMA) provides a third-party certification. The NMMA is an organization that represents the marine industry and assists manufacturers, boat dealers, marinas, repair yards and component suppliers in areas of legislation, environmental concerns, marine business growth, and state and federal government agency interaction. The third-party certification uses the well-known Standards and Recommended Practices of the ABYC, American Boat and Yacht Council.

## SERVICE, PARTS AND REPAIR FOR YOUR BOAT

When your boat needs service, parts or repair, take it to an authorized marine dealer. To find repair and parts facilities for the equipment installed on your boat, refer to the manual for that component.

If an issue is not handled to your satisfaction:

1. Discuss any warranty-related issues directly with the service manager of the dealership or your sales person. Give the dealer an opportunity to help the service department resolve the matter for you.
2. If an issue arises that has not been resolved to your satisfaction by your dealer, contact Lightning Boatworks LLC at lightningboatworks@aol.com.

## ABOUT YOUR EXPRESS LIMITED WARRANTY

Lightning Boatworks offers an Express Limited Warranty on each new purchase through an authorized dealer. A copy of the Express Limited Warranty was included in your owner's packet.

Under the Limited Warranty, Lightning Boatworks covers structural fiberglass deck or hull defects which occur within ten (10) years of the date of delivery and parts found to be defective in factory material or workmanship within one (1) year of the date of delivery.

- Read the warranty page for details about your warranty

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

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

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

The unexpired term of the Limited Warranty may be transferred to a new owner upon the new owner's written request to MCI Composite Innovations LLC, 450 Brown Ave., Columbus, GA 31906, accompanied by the payment to Lightning Boatworks LLC of two hundred dollars ($200).

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

# SECTION 1 - SAFETY

**SAFE boating means:**

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

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

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

In addition:

- Maintain your boat and its safety and other systems as recommended in this manual.
- Have the boat inspected by a qualified mechanic or dealer at least annually.
- Ensure the Coast Guard required safety equipment is on board and functions properly.
- Operating a performance boat such as a Lightning requires different skills than operating other boats. Make sure you have the necessary skills, and if you are unsure, ask your dealer for a demonstration, or seek further instruction until you can properly operate your Lightning boat with confidence.

# SECTION 1 - SAFETY

## SAFETY LABELS

Safety precautions are given throughout this manual and labels are mounted at key locations throughout the boat. This safety information advises the owner/operator and passengers of safety precautions to follow when operating and/or servicing equipment.

- Do not remove or obstruct any safety label

## LEGALLY MANDATED MINIMUN REQUIRED EQUIPMENT

The following equipment is the minimum required by the U.S. Coast Guard for a boat less than 26' (7.9 meters) in length.

- **Personal Flotation Devices (PFDs)**: One Coast Guard approved Type I, II or II device is mandatory for each person aboard. One throwable Type IV device is also required to be on board. A Type V device is acceptable is worn for approved use. Always wear a PFD when boating.
- **Fire Extinguisher – Portable**: The U.S. Coast Guard requires **one (1) Type B1** fire extinguisher be on board. The American Boat and Yacht Council (ABYC) recommends that you have **two (2) Type ABC** fire extinguishers on board. One is to be located at the helm station and the other in the cabin, near the cockpit door.
- **Whistle, Horn**: You must have on board some means of making a loud sound signal, for example, whistle or horn.
- **Visual Distress Signals**: If you operate your boat in coastal waters or on the Great Lakes, you must have visual distress signals for day and night use on board. At least three (3) U.S. Coast Guard approved pyrotechnic devise, marked with date showing service life, must be carried, be readily accessible, in serviceable condition, and not expired. Store pyrotechnic signals in a well-marked waterproof container in a dry location.

  **Additional equipment may be required by your state. Consult your state boating law enforcement agency for information.**

# SECTION 1 - SAFETY

## LIFESAVING EQUIPMENT

**WARNING**

Have all passengers and the operator wear a Personal Flotation Device (PFD) at all times when boating.

When someone is overboard, it can be too late to have them put on a PFD.

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

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

The law requires that PFDs must be readily accessible, it not worn. “Readily accessible” means removed from storage bags and unbuckled. But, children and non-swimmers must wear PFDs at all times when aboard. It is common sense to have everyone on board wearing PFDs. A throwable device must also be right at hand and ready to toss.

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

**Children and non-swimmers must wear PFDs at all times when aboard.**

- All passengers and crew should wear them.
- A loose PFD is often useless in an emergency.
- The operator is responsible for instructing everyone aboard on the location and use of PFDs.
- Size PFDs for the wearer. Children require special attention in the use of PFDs.
- Test PFD buoyancy at least once a year.

# SECTION 1 - SAFETY

## ADDITIONAL RECOMMENDED EQUIPMENT FOR SAFE OPERATION

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

- First aid kit
- Visual distress signals for day and night use (required in some areas; consult local regulations)
- Charts of your intended cruising area
- Compass
- GPS
- Marine VHF radio with weather channels
- Emergency position-indicating radio beacon (EPIRB)
- Manual bilge pump
- Anchor, chain and line (The anchor must be properly sized for your boat. Ask your dealer or marine supply store for recommendations.)
- Mooring lines
- Fenders
- Boat hook
- Waterproof flashlight(s)
- Extra batteries for flashlights and portable electronics devices
- High power spotlight, if you intend to boat at night
- Spare keys
- Instruction manuals for engine and accessories
- Lubricating oil
- Tool kit
    - Pliers (regular, vise-grip, and tongue & groove)
    - Wrenches (box, open-end, allen, adjustable)
    - Socket set (metric or U.S. standard as appropriate)
    - Electrical tape and duct tape
    - Hammer
    - Utility Knife
    - Spare parts kit (spark plugs, fuses, hose clamps, and ask your dealer to recommend other parts)
    - Extra propeller

# SECTION 1 - SAFETY

## IMPAIRED OPERATION

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

## LOAD CAPACITY

The certification plate located on the dash indicates maximum weight and number of persons your boat can handle under calm sea conditions. Use common sense and sound judgement when placing equipment and/or passengers in your boat. The number of people on board must be reduced if you go out in poor weather and rough water.

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

## POWER CAPACITY

Your boat's engine and accessories were selected to provide optimum performance and service. Installing a different engine or other accessories may cause unwanted handling characteristics. Should you choose to install a different engine, or to add accessories that will affect the boat's running trim, have an experienced marine technician perform a safety inspection and handling test **before** operating your boat again. Certain modifications to your boat **will** result in cancellation of your warranty protection. **Always** check with your dealer before making any modifications to your boat.

## STABILITY

Your boat was manufactured to specific stability and flotation standards for the capacity shown on the certification plate. Any increase from the recommended load capacities will put your boat in jeopardy of capsizing, swamping and/or sinking.

# SECTION 1 - SAFETY

**STABILITY (Cont)**

In addition:

- Stability may be substantially reduced if equipment is added above the deck.
- Stability is substantially reduced by loose fluids or weight within the hull. Keep bilge area as dry as possible.

**MAINTAIN CONTROL**

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

Observe the safety rules listed below:

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

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

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

The wind speed and wave height specified as the upper limit for your category of boat does not mean that you or your passengers can survive if your boat is exposed to these conditions. It is only the most experienced operators and crew that may be able to operate a boat safely under these conditions. You must always be aware of weather conditions and head for port or protected waters in sufficient time to avoid being caught in high winds and rough water. Do not take chances!

**STABILITY (Cont)**

Getting caught in severe weather is hazardous. Bad weather and/or rough sea or water conditions can cause an unsafe situation. Consult local weather information or listen to the NOAA weather reports for the latest weather conditions or any impending deterioration of the weather before setting out and while underway. The following are a few basic weather-related rules:

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

# SECTION 1 - SAFETY

## GENERAL CONSIDERATION

- Know how your boat handles under different conditions. Recognize your limitations and the boat's limitations. Modify speed in keeping with weather, sea, and traffic conditions.
- Instruct passengers on the fundamentals of operating your boat in case you are unable to do so.
- You are responsible for passengers' actions. If they place themselves or the boat in danger, immediately correct them.

## WEATHER

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

A. Ocean
Wind speed: above 40 knots (46 mph)
Wave height: above 4 meters (13 feet)
Boat may be used for extended ocean voyages

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

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

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

Your Lightning boat is design **Category C**.

# SECTION 1 - SAFETY

## CHART YOUR COURSE

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

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

**WARNING**:

- Hitting an object in or under the water or boating in dangerous currents can cause serious injury or death to boat occupants.
- You must know where the hazards are and avoid them.
- In uncharted waters, boat very slowly and post a lookout.

**WARNING**:

- Shut engine off if an object is struck or if you run aground.
- Check for hull leaks and propulsion system damage, before restarting engine.
- Use hand pump if bilge pumps don't remove water.
- Boat very slowly, if you must proceed with a damaged propulsion system.

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

## WATER SPORTS

**DANGER**:

- Your boat's propeller can kill or injure persons in the water.
- Always stay away from areas designated for swimming or diving. Unless you are towing a skier, stay away from water ski areas. Recognize markers used for such areas.
- When engine is running, close and lock transom door and do not permit anyone to use boarding ladder and swim platform.

# SECTION 1 - SAFETY

## SWIMMING

- Do not permit anyone to swim from a moving boat, or a boat with an engine running.
- Many localities prohibit swimming from boats except in designated areas.
- Make sure boat's engine is turned off and the stern drive, if equipped, is fully down before allowing people to swim anywhere near your boat. Shut the engine OFF and remove the key from the ignition switch so that nobody will accidentally start the engine while swimmers are nearby.
- Turn off engine when taking swimmers or skiers aboard or when they are entering the water. Never permit use of the transom swim platform while engine is running.
- Slow down and look for swimmers or skiers when cruising in an area where there might be persons in the water.

## SKIING

**WARNING**:

- Skiers must wear an approved personal flotation device (PFD)
- Anyone who water skis must know how to swim.
- Never drive the boat directly behind a water skier. At 22 knots (25 mph), it takes only 5 seconds to overtake a fallen skier who was 60 meters (200 feet) in front.
- Keep a downed skier in sight and on the operator's side of the boat when approaching the skier. Never back up to anyone in the water.
- Learn the signals to communicate with a skier. The skier is to control the boat through hand signals.

**WARNING**:

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

# SECTION 1 - SAFETY

## SKIING SIGNALS

**Turn the Boat** – Hold one arm up above your head and making circle means the skier or boat operator to turn the boat around. Or arm raised, circle with index finger extended.

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

**Back to Dock** – Pat top of head

**Cut Motor** – Draw finger across throat

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

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

**Speed Ok** – Raise arm and form a circle with thumb and index finger

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

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

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

**Pick Up** – Holding a ski above your head means you want to be picked up.

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

## IN GENERAL

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

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

# SECTION 1 - SAFETY

## EMERGENCY SITUATIONS

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

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

### NOTICE

- ASSISTING OTHER BOATERS: All boaters have an obligation to help other boaters who are in distress, as long as rendering assistance does not endanger you, your passengers, or your boat.

## MEDICAL EMERGENCY

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

## WATER RESCUE

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

### *Returning to the Victim*

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

# SECTION 1 - SAFETY

***Making Contact***

- Slow the boat and circle toward the victim.
- Try to approach heading into the wind or into the wave.
- Keep the victim on the right (starboard) side so the boat operator has the victim constantly in sight.
- When almost alongside, turn off the engine in gear to prevent propeller "windmilling."

***Getting Back Aboard***

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

**FIRE**

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

- Throw burning materials overboard, if possible.
- If the fire is accessible, empty the contents of fire extinguishers at the base of the flames.
- Signal for help.
- Grab distress signals and survival gear. Put on PFDs. Prepare to abandon ship.

# SECTION 1 - SAFETY

## FLOODING, SWAMPING AND CAPSIZING

In the event of flooding, swamping or capsizing:

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

## COLLISIONS AND LEAKING

In the event of collisions and leaking:

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

# SECTION 1 - SAFETY

## GROUNDING

In the event of running aground:

- Check for leaks. If water is coming in, stop the intake of water before attempting to get the boat free.
- Inspect for damage to the hull, propulsion and steering systems.
- Determine if the tide, wind and current will drive the board harder aground or will help to free it.
- Determine the water depth all around the boat, and the type of bottom (sand, mud, rocks, etc.). If it can be done without exposing persons to a risk or injury, the boat should be moved away from hard obstructions, and toward open water with soft ground.
- Do not attempt to have our boat towed by other than a trained and competent service, such as the Coast Guard or a salvage company. Recreational craft are not designed to tow other recreational craft.

## PROPULSION, CONTROL, OR STEERING FAILURE

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

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

## SAFETY HOLTLINES

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

## SAFETY HOTLINES (Cont)

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

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

It is recommended that these and other important numbers be stored in our cell phone for quick reference.

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

## WASTE DISPOSAL

- Many areas prohibit overboard sewer discharge. Close and disable flow-through waste systems to prevent discharge in such areas.
- Bag all refuse until it can be disposed of ashore. Regulations prohibits disposal of plastic anywhere in the marine environment and restrict other garbage disposal within specified distances from shore.

**NOTICE**

- It is illegal for any vessel to dump plastic trash anywhere in the ocean or navigable waters of the United States.

## WAKE / WASH

**WARNING**:

- SPEED HAZARD – Watch your wake. It might capsize a small craft. You are responsible for damage caused by your wake.

**CAUTION**:

- Reduce speed in congested waterway. Be alert of No Wake Markers.

# SECTION 2 – GENERAL BOAT ARRANGEMENT

## DOCKING / LIFTING / TRAILERING

**CAUTION**:

- Do Not use cleats for lifting.

CLEATS: Cleats must not be used for lifting the boat; they are intended for docking or mooring use only.

BOW AND STERN EYES: The bow eye must be used to haul the boat onto a trailer. The stern eyes must be used as tie down points for trailering the boat. The bow and stern eyes may be used for short-term lifting of the boat such as for service. Long-term lifting with the bow and stern eyes may cause stress on the fiberglass and gel coat.

For long term storage, use flat, wide belt-type slings and spreaders long enough to keep pressure from gunwales. Do not place slings where they may lift on underwater fittings.

## PASSENGER LOCATIONS

**WARNING**:

- Boat motion can be erratic.
- You can fall overboard or be injured by hitting something in or on the boats
- All persons must be in cockpit area or cabin and be prepared for sudden boat movement.
- Use front or bow deck area only during anchoring, mooring or emergencies.

**WARNING**:

- Wet decks are slippery.
- You can be seriously injured if you slip and fall.
- Wear slip resistant footwear secured to your feet and hold on to rails or boat structure.

1. When the boat is moving, all passengers must be on the seating provided or, if standing, holding on firmly.

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

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

3. Engines must be turned off if the boat is near swimmers or persons are on the swim platform or the swim ladder.

**BASIC BOAT DIMENSIONS AND CLEARANCES (United States Standard S.A.E.)**

200 Strike Specifications

| | |
|---|---|
| Overall Length ……... | 20’4” |
| Overall Length w/Engine ……. | 21’11” |
| Overall Length w/Swim Platform …… | 21’11” |
| Beam (width) …… | 7’10” |
| Draft (Engine down) ……. | 34” |
| Draft (in trailering position) …….. | 19” |
| Dry Weight ……. | 2,900 # |
| Fuel Capacity ……. | 50 gal |

Height Dimensions

| | |
|---|---|
| From Keel w/o Windshield ……... | 56 ½” |
| From Waterline w/o Windshield …….. | 36 ½” |

**Specification measurements are approximate and subject to variance.**

# SECTION 2 – GENERAL BOAT ARRANGEMENT

## DESCRIPTION OF MAJOR CONTROLS

### GEAR SHIFT AND THROTTLE CONTROL

The shift/throttle control unit for the engine is activated by a single handle.

### POWER TRIM UNIT AND GAUGE

When the engine is trimmed DOWN, the bow of your boat is being forced down. If the trim is in the full DOWN position when accelerating from idle to plane, the boat will plane faster with less bow rise. Once on plane, the engine can be trimmed UP slightly. This will raise the bow of the boat slightly and increase speed. You will need to try small differences to determine the trim position you prefer under various conditions.

If you raise the engine up too far while on plane, you could cause a loss of speed and power due to a condition called propeller "ventilation." If this happens, there will be a sudden increase in engine RPM and loss of speed. Do not let this condition exist. Immediately reduce your engine RPM and trim the outdrive DOWN slightly until engine slows down and you regain forward speed.

The trim gauge indicates the position of the engine relative to the transom.

### TRIM TABS

The trim tabs are different from the engine trim control. The trim tabs are two flat plates, hinged below the water line on the transom at the rear and are raised and lowered by using the rocker switches located at the helm station.

The trim tabs are used to adjust the sideways listing of the boat due to uneven loading, a strong cross wind or propeller torque. The twisting effect of propeller torque is especially pronounced when running the engine at high horsepower output.

To correct the listing, adjust the trim tabs to level the boat. When the boat is level, right to left, the steering effort will be the same for right and left turns.

Lower the trim tab on the listing (lower) side by pushing the top half of the rocker switch in one-half second bursts until the boat is righted.

Using both switches to lower both tabs on a side-to-side balanced boat will lower the bow, when on plane, if the rear of the boat is highly loaded. Again, use only short bursts of the rocker switches to adjust the trim.

When running at cruising speed, the trim tabs should be fully up, unless the rear is heavily loaded.

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

| RUNNING ATTITUDE | LIST | PUSH |
|---|---|---|
| Bow UP | ------- | Top of Both Switches |
| Bow UP | Port | Top of Starboard Switch |
| Bow UP | Starboard | Top of Port Switch |
| Bow DOWN | Port | Bottom of Starboard Switch |
| Bow DOWN | Starboard | Bottom of Port Switch |

**IGNITION SHUTDOWN SWITCH**

The purpose of the ignition shutdown switch is to shut down the engine if the operator unintentionally leaves the helm station. Situations in which this could occur are rough water, bad weather and other adverse boating conditions. In these situations, the safety of the boat and its passengers is enhanced by using the ignition shutdown switch, since the boat will stop when the operator can no longer control the boat.

However, unexpected engine shutdown may result in unintentional harm. For example, a passenger may lose balance and fall, or control could be lost during docking. No specific guidelines can be given for switch use. The ultimate decision of when to use an ignition shutdown switch rests with the operator or owner and Federal boating regulations.

When the switch is used, the operator must securely clip the lanyard to their belt or clothing so that if the operator falls overboard or into the boat, the switch is activated and the engine shuts down.

To reset ignition shutdown switch after it has been activated, simply reinstalled the switch clip above the shut-off switch and flip the switch to the “UP” position.

# SECTION 2 – GENERAL BOAT ARRANGEMENT

## ENGINE ALARM SYSTEM

The Engine Operator's Manual will tell you if your engine is equipped with an audible alarm and how to use it.

The alarm indicates a problem with engine water temperature and oil pressure.

## IMPORTANT GAUGES

## TACHOMETER AND HOUR METER

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

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

These gauges function on your boat the same way they do on your car or truck. You must continually check these gauges visually to make certain there are no engine system problems even if your boat engine has an alarm system.

## NAVIGATION AND ANCHOR LIGHTS

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

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

Read the "Federal Requirements and Safety Tips for Recreational Boats" provided in your Owner's Manual Packet.

# SECTION 3 – USING YOUR BOAT

## PRE-LAUNCH, LAUNCH AND POST-LAUNCH CHECKLIST

Listed below are the critical items you must check and do each time you use your boat. It does not list all of the necessary maintenance and service items required to keep our boat running properly.

### BEFORE LAUNCH

- ☐ Drain plug installed
- ☐ Enough fuel for trip
- ☐ Float plan given to friend or relative
- ☐ Navigation charts for trip
- ☐ Weather forecast - safe

### IN THE WATER, BEFORE BOARDING PASSENGERS OR STARTING ENGINE

- ☐ Engine down
- ☐ Equipment stored and balanced
- ☐ No gas smell in engine compartment
- ☐ Engine oil and fluid levels - OK
- ☐ Battery switch ON
- ☐ No fluid in bilge
- ☐ Bilge pump working
- ☐ Radio & navigation equipment functioning

### PASSENGERS

- ☐ Wearing PFDs
- ☐ Seated properly
- ☐ Given safety instructions

### UNDERWAY

- ☐ Gradual acceleration, deceleration & turning
- ☐ Aware of surroundings at all times
- ☐ Monitor weather
- ☐ Use navigational aids in water and on shore
- ☐ Keep passengers safe
- ☐ Do not operate impaired
- ☐ Check fuel consumption regularly
- ☐ Check all gauges frequently

### END OF TRIP

- ☐ Equipment dry and stored
- ☐ Electronic equipment & switches off
- ☐ Battery switch off
- ☐ Engine in trailering position
- ☐ Notify person who had float plan
- ☐ Boat covered properly for trailering, docking or mooring
- ☐ Drain plug removed (if boat is not kept in water)
- ☐ Hull and propeller inspected for damage

# SECTION 3 – USING YOUR BOAT

## TRAILER LAUNCHING AND LOADING

**WARNING**:

- An improper trailer can cause structural damage to the hull.
- A damaged hull can be unsafe; it could cause the boat to sink
- Use a trailer that can properly support the boat's weight and shape. Get professional help in picking the right trailer for your boat

Your trailer must be capable of carrying the boat's weight as well as supporting the boat near the keel, front (bow) and rear (stern) areas. Using a trailer not designed to support the boat properly, can cause structural damage to the hull. A damaged hull can be unsafe.

**PROPER TOWING OF A BOAT AND TRAILER REQUIRES SPECIAL SKILLS. MAKE CERTAIN YOU PRACTICE HOW TO MANEUVER A BOAT AND TRAILER AN DGET TRAINING BEFORE TOWING, LAUNCHING AND LOADING YOUR BOAT.**

## FUELING THE BOAT

**NOTICE:**

- GASOLINE RECOMMENDATIONS – Minimum octane rating of 87 AKI.
- Refer to the engine owner's manual for additional information

**DANGER:**

- Gasoline vapors can explode from statice electricity if fueling is not done properly.

**WARNING**:

- Leaking fuel is a fire and explosion hazard. Inspect system regularly. Examine fuel tanks for leaks or corrosion at least annually.

The fuel fill cap is located on the PORT(left) side of the boat. Do not mistake the water tank fill and waste pump out caps for the gasoline fill cap (if boat is equipped with them).

Refer to your engine manual for the proper grade of gasoline.

# SECTION 3 – USING YOUR BOAT

## BEFORE FUELING

- Fuel during daylight hours.
- Tie boat to the dock.
- Shut off engine.
- All passengers must leave the boat until it is refueled and engine is safely started.
- There must be no smoking or any flames within 20 feet of the boat, before, during and for at least 5 minutes after fueling is completed.
- Open fuel fill cap and insert hose nozzle into the fuel fill opening. Fuel fill hose nozzle must contact the fuel fill opening BEFORE adding fuel to prevent discharge of static electricity.

## FILLING THE TANK

- Check the fill plate label to ensure that fuel is placed ONLY in the fuel tank. The fuel fill plates are located on the port side of your boat.
- Keep nozzle in contact with fuel fill opening at all times during fueling.
- Listen as tank fills and stop adding fuel before it spills from the vent. Fuel must have room for expansion.
- Look for leaking fuel new fuel fill and near tank.

## AFTER FILLING

- DO NOT wash spilled fuel overboard. Wipe up any spill with rags or paper towels and dispose of them properly on shore.
- Assist passengers back into the boat.

# SECTION 3 – USING YOUR BOAT

## BOARDING

**WARNING**:

- Wet decks are slippery.
- You can be seriously injured if you slip and fall.
- Wear slip-resistant footwear secured to your feet and hold onto rails or boat structure.

- DO NOT overload the boat

- Board one person at a time and give assistance as needed

- Transfer gear and equipment by handing it from a person on the dock to a person on board. You can lose your balance and be injured if you attempt to board while carrying equipment or gear.

- Distribute the weight of equipment and passengers as evenly as possible to keep the boat balanced.

- Stow gear and equipment so it is accessible, but everything is to be stored in places so as to prevent it from flying about if the boat encounters rough water or weather.

## PERSONAL FLOTATION DEVICES (PFDs)

- Operator must instruct all passengers on location and use of PFD
- Children and all non-swimmers, adults as well as children, must wear properly-sized PFDs at all times when aboard. Check applicable state regulations for PFD were requirements.

- ALL passengers should wear PFDs. By the time someone falls overboard, it can be to late for them to put on a PFD and fasten it properly. This is especially true in colder waters, below 70˚F, where survival time, before hypothermia sets in, is measured in minutes.

- If there are passengers not wearing PFDs, the PFDs must be readily accessible. “Readily accessible” means out of the storage bag and unbuckled.

- All throwable flotation devices (cushions, rings, etc.) must be right at hand.

# SECTION 3 – USING YOUR BOAT

## PASSENGER INSTRUCTION AND LOCATION

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

## STARTING THE ENGINE

The engine operation and maintenance manual furnished with your boat describes pre-start and starting procedures. We urge you to thoroughly read and understand your engine manual.

- IF YOU SMELL GASOLINE, get everyone off the boat, do not operate any electrical switches or light any matches, lighters, etc. Get trained help to find and fix the problem, before starting the engine or operating any switches on the boat.
- If you DO NOT smell gasoline:

    1. Check all fluid levels and any other necessary checks.

    2. Check that water level in bilge is minimal. Verify the bilge pump is operating by turning the bilge pump switch to MANUAL and listening for the pump running and check to see the bilge water is being pumped overboard.

    3. Check fuel level. Be sure you have enough fuel for your trip. Remember the "1/3 Rule": Use no more than 1/3 of your fuel for outbound trip; use 1/3 of the fuel for return trip; keep 1/3 for reserve in case of emergency.

# SECTION 4 – BILGE & UNDERWATER GEAR

## BILGE

### FUEL & OIL SPILLAGE

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

Fill fuel tank less than rated capacity. Allow for fuel expansion.

### DRAIN PLUG

The bottom of the engine compartment is called the 'bilge'. It is the lowest and inner part of the hull. Water and other liquids will collect here.

After removing your boat from the water, unthread the drain plug to drain the bilge.

**DANGER:**

- Install and tighten drain plug before launching the boat.
- Boat will sink if drain plug is not in place and tight.

### BILGE PUMPS

**WARNING**:

- Sinking Hazard – Ensure the bilge pumps are operating properly.

**CAUTION**:

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

A bilge pump and float switch are located in the bottom of the bilge. The bilge pump is manually activated from the switch panel located on the helm.

# SECTION 4 – BILGE & UNDERWATER GEAR

Except for checking the operation of the bilge pump using the ON position, leave the switch in the OFF (AUTO) position. In the OFF (AUTO) position, when the bilge liquid is deep enough to activate the float switch, the bilge pump turns on and pumps out the bilge liquid until the float switch drops and shuts off the pump.

**If the liquid level in the bilge is higher than normal and the bilge pump empties the bilge when you use the ON switch, the float switch is not operating properly. Have it checked immediately. If the ON switch does not operate the pump, DO NOT use the boat until the problem is corrected.**

## MAINTENANCE

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

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

## ENGINES

## MAINTENANCE AND SERVICE

**Engine failure away from shore can be dangerous**. You must follow the recommended maintenance schedule to best ensure trouble-free operation of your engine.

## VIBRATION AND CAUSES

Some vibration is to be expected in your boat because of the action of the engines and the propeller. But excessive vibration indicates conditions which must be promptly corrected to avoid damage. The following are some conditions which may cause vibrations.

- Weeds, ropes, fishing lines, nets or your own trailing lines can become wrapped around the propeller and/or shaft, causing vibration and loss of speed. Always stop the boat, make sure it is clear to the rear and then reverse the propeller after

going through a weedy area to unwrap and clear away any weeds which may have accumulated. If this doesn't clear the entanglement and you can't anchor or moor the boat in shallow water to get to the engine shaft or propeller in the water, the boat will have to be taken out of the water.

- A badly damaged or distorted propeller or shaft is an obvious cause of vibration. Run at slow speed to shore. REPLACE IMMEDIATELY.

**IMPACT TO ENGINE**

The engine can be damaged by impact, wither while trailering or boating. To minimize the possibility of impact damage while trailering, keep the engine raised to the trailering position.

If you strike a submerged object, STOP THE ENGINE as soon as possible and examine the unit for damage. Even if no damage is visible, there could be internal problems or difficulty maneuvering. If you must use the boat after impact, run at the lowest speed possible.

**PROPELLER REMOVAL AND INSTALLATION**

**WARNING**:

- If engine is started during propeller maintenance, serious personal injury can occur.
- Shut off engine, remove key, shift into neutral, and put tape over ignition switch key slot.

a. Shut off engine, remove key, shift into neutral and put tape over ignition switch key slot.

b. Straighten the bent tabs on the propeller nut retainer.

c. Place a block of wood between the gear case and propeller to stop propeller from rotating and remove propeller nut.

d. Coat the propeller shaft with an anti-seize lubricant.

# SECTION 5 – FUEL SYSTEM

## FUEL PRECAUTION

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

## STATIC ELECTRICITY AND THE FUEL SYSTEM

There is a danger that static electricity can ignite gasoline vapors that have not been ventilated outside an enclosed area. Use extreme caution when fueling your boat from a source outside the regular venues.

Your boat has safety features that can be circumvented by not adhering to standard fueling practices.

Your boat's bonding system is designed to dissipate the build-up of static electricity.

Your boat must be in contact with the water or a land-based grounding system. Here are some helpful suggestions to keep you safe from static electricity while refueling your boat.

- NEVER fuel your boat in unsafe conditions such as: suspended on a sling or in a situation that increase the likelihood of static discharge.
- NEVER use homemade containers to fill your fuel tank.
- Fuel carried onboard, outside of a fixed fuel system should be stored in an approved container or in a portable tank, such as provided for outboard engines, and be stowed safely outside of the engine or living compartments.
- Shutdown the engine, motors, and fans prior to taking on fuel. Any ignition sources should be extinguished before filling the fuel tank.
- Close all ports, window, doors and hatches to prevent gas fumes from accumulating in the cabin.
- Fueling should never be done at night except in well-lighted areas.
- Always keep the fuel nozzle in contact with the fuel fill plate or the edge of the fuel tank opening throughout the filing process.

# SECTION 5 – FUEL SYSTEM

- Allow areas where gasoline vapors could collect to be ventilated before starting the engine.
- Wipe any spillage completely and dispose of rags or waste on shore.
- Secure the fill cap tightly.
- Fuel tank should never be filled to capacity. Allow for fuel expansion.
- Portable tanks should only be filled while on the ground; never onboard the boat.

## GENERAL

- Check fill plate label to ensure fuel is place only in fuel tank.
- Avoid spills
- Know your fuel capacity and consumption. Record the amount of fuel used since your last fill up, and compute the engine's hourly fuel usage. As a fuel gauge backup check, deduct the average hourly fuel usage from the fuel tank capacity.
- Observe the "Rule of Thirds": one-third fuel for trip out, one-third fuel for return and one-third for reserve.
- Allow an additional 15 percent (15%) fuel reserve when operating in rough seas.

## BEFORE AND DURING FUELING - CHECKLIST

- ☐ Fire Extinguisher – close at hand
- ☐ Mooring – boat tied securely to fueling pier
- ☐ Crew – at least one knowledgeable person present
- ☐ Passengers – unnecessary people off the boat
- ☐ Engine - stopped

# SECTION 6 – ELECTRICAL SYSTEMS

## ELECTRICAL SYSTEMS

### DIRECT CURRENT (DC)

The 12 volt direct current (DC) electrical system (similar to that in your car or truck) derives its power from the battery. An engine-driven alternator keeps the battery in a charged condition. The battery voltage is indicated by the voltmeter on the helm panel. The negative terminal of the battery is attached to the grounding studs of the engine.

Ask your dealer for a careful analysis of DC power needs on your boat. It may be necessary to add batteries or auxiliary charging methods to supply adequate power for any additional accessories you wish to add.

### BATTERIES

**DANGER:**

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

The battery installed in our boat has been selected for its ability to furnish starting power based on engine starting requirements, as well as its ability to power the DC accessories attached to the electrical system. Your Engine Operator's Manual indicates the recommended battery for the engine installed in your boat.

**CAUTION**:

- To prevent arcing or damage to the alternator, always disconnect battery cables before doing any work on the engine's electrical system.

To remove the battery cables:

1. Turn off all items drawing power from the battery.
2. Remove the negative cable first, then the positive cable. To replace the cables, first replace the positive cable, then the negative.

# SECTION 6 – ELECTRICAL SYSTEMS

## BATTERY MAINTENANCE

- Check the fluid level in the cells approximately every 4 weeks and weekly in summer and hot zones.
- The fluid level must be between the lower and upper markings.
- Replenish only with distilled water. Do not use metal funnels.
- Coat battery terminal clamps with silicone grease. Keep batteries clean & dry.

Battery life is shortened if it is drained to zero charge before recharging. It is recommended that a battery not be discharged more than 50 percent. If the battery does become run down, recharge it as soon as possible.

Running the engine to recharge the battery may not be effective. The alternator only creates charging power at higher engine speeds, so simply idling or trolling will not generate enough power to recharge the battery.

If you need to charge a battery, only use a batter charger designed to charge automotive/marine batteries. Use charger only when batteries are disconnected from the boat's electrical circuit. Follow the charger instructions.

If your boat will not be used for several weeks or more, remove the batteries from the boat and connect them to a charger.

## BREAKERS AND/OR FUSES

**WARNING**:

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

If you need to replace a fuse or breaker, use only the same amperage and type as the original, and one that is rated for marine use. It is recommended that you carry spare fuses.

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

If a breaker or fuse is replaced with a breaker or fuse of higher amperage, it will not provide adequate protection against an electrical malfunction and will create a fire hazard.

The fuses are color coded according to the amperage and the reading is also marked on each fuse.

**FUSE PANEL**

Your boat has an illuminated waterproof electronic switch pad to control lights, bilge pump and other accessories. The switch pad is connected to the fuse panel located under the dash. The fuse panel uses automotive type fuses to protect these accessories.

REPLACE ONLY WITH A FUSE OF THE SAME AMPERAGE AND TYPE. The amperage is marked on the side of the fuse.

**ELECTROLYTIC CORROSION & ZINC ANODES**

Electrolytic corrosion of metals on power boats can result in rapid and serious deterioration of metal parts. You must set a regular schedule and look for the possibility of electrolytic corrosion (the deterioration of metals due to dissimilar characteristics when placed in salt water). It is your responsibility to check for and replace parts damaged due to electrolytic corrosion.

To minimize electrolytic corrosion of the metals on your boat, zinc anode plates are provided on your engine to protect the underwater hardware. Zinc, being much less “noble” than the copper-based alloys and aluminum used in underwater fittings, will deteriorate first and protect the other metals.

# SECTION 7 – OPTIONS & ACCESSORIES

## CANVAS

Bimini Top or sunshade must not be used when the vessel speed exceeds 40 MPH. Damage to boat or bimini may occur.

Removing or installing canvas on the water can be difficult since rough water or wakes can cause you or your passengers to lose their balance while attempting canvas removal or installation.

For safety and ease of installation and removal of canvas, use at least two people.

**DANGER:**

- If the cockpit is totally enclosed with canvas covers and curtains while engine is running or boat is moving, carbon monoxide will build up and cuase death or permanent injury.
- Do not use the rear (aft) curtains or camper top while engine is running or boat is moving.

## TRAILERING WITH CANVAS

To trailer your boat with the cockpit cover installed, you must install a mooring cover over the cockpit cover with tie down straps tightened.

## HORN / ELECTRIC HORN

The horn is operated by a switch on the dash and is protected by a fuse under the dash. This is no maintenance required on the horn itself, although it is advisable to avoid spraying water directly into the horn. Check periodically to ensure that horn is still operational.

## SWIM PLATFORM W/LADDER (Optional)

Your boat may have a swim platform installed with a ladder. With this option, entering the boat from the water is more convenient, but there are safety rules that must be followed.

**SWIM PLATFORM W/LADDER (Cont)**

- Never sit on the swim platform when boat is moving.
- Before using or extending the ladder, make sure engine is off and prop is stopped
- It may be difficult to extend the ladder while in the water so it is important to leave the ladder down if swimmers are in the water.
- Always make sure ladder is secure before starting engine

**DANGER:**

- Make sure engine is off and propeller is stopped before using boarding ladder.

# SECTION 8 – REQUIRED INSPECTION, SERVICE & MAINTENANCE

**INSPECTION, SERVICE AND MAINTENANCE PROTOCOL**

**BILGE AREA**

Once or twice a year, pump the bilge area dry and remove all loose dirt. Be sure that all the limber holes are open. Limber holes are the openings in the stringers that allow water to flow from the outboard areas of the bilge to the bilge sump.

Check the bilge pump float switch by moving it manually. The bilge pump should start when the float switch is raised and should stop when lowered. If it does not, have it replaced before using your boat. The float switch should also move freely without sticking, if it does not, have it serviced or replaced before boating.

**ENGINE**

Engine failure or malfunction, when away from shore, can be dangerous. Make certain you do the following each time you use the boat:

- Wipe off the engine to remove accumulated dust, grease and oil
- Check all exposed nuts, bolts and screws for tightness
- Inspect the belts for wear. If they do not require replacement, check and adjust the belt tension according to the engine manufacturer's recommendation.
- Inspect engine wiring, and clean and tighten the terminals on the engine electrical system.
- Clean and lubricate the battery cables.
- Add distilled water to the battery cells as needed
- Refer your Engine Operator's Manual for additional engine maintenance requirements.

# SECTION 8 – REQUIRED INSPECTION, SERVICE & MAINTENANCE

## FUEL SYSTEM

- Inspect the entire fuel system for evidence of leakage, including the fuel tank fill lines and vents. Any stain around a joint could be an indication of a leak.
- Test all fittings with a wrench to be sure they are not loose, but do not forcefully overtighten the fittings.
- Clean fuel filters and vent screens.

**WARNING:**

- Work on electrical wiring can create shock hazards or sparks.
- Always shut off battery switch, breakers and/or pull fuses before checking, electrical wiring or connectors.

## WIRING SYSTEM

- Check all wiring for proper support
- Check all wiring insulation for signs for fraying or chafing.
- Check all terminals for corrosion – corroded terminals and connectors should be replaced or thoroughly cleaned.
- Tighten all terminals securely and spray them with light marine preservative oil.

## FITTINGS, HOSES AND CLAMPS

- Inspect the entire bilge area for evidence of damage or deterioration. Evidence of deterioration will first appear around hull fittings, hoses and clamps.
- Straighten kinked hoses.
- Replace any hose that does not feel pliable.

# SECTION 8 – REQUIRED INSPECTION, SERVICE & MAINTENANCE

**FITTINGS, HOSES AND CLAMPS (Cont)**

- Check all hose clamps for tightness and corrosion. Corroded clamps must be replaced.
- Check the nuts, bolts and screws that retain equipment, hoses, etc. in the bilge for tightness and corrosion. Corroded fasteners must be replaced.

**TOPSIDE AND SUPPLIES**

Once a year, you should undertake a thorough review of the topside equipment, as well as of the critical safety supplies on your boat.

- Check cleats, rings, rails, etc. for loose or corroded fasteners, breaks, sharp edges, or other conditions that could lead to malfunction or unsafe use. Repair or replace as necessary.
- Inspect PFDs (life jackets) for tears and deterioration.
- Make certain you have enough PFDs on board for the maximum number of persons you can carry.
- Check your first aid kit, making certain it is complete and that the items in it have not passed an expiration date.
- Check the signaling equipment and emergency flares. Make sure all items are within their expiration date.
- Inspect the anchor, mooring and towing lines. Repair or replace as required.
- Check fire extinguishers for full charge.

# SECTION 8 – REQUIRED INSPECTION, SERVICE & MAINTENANCE

## WINTERIZATION CHECKLIST FOR BOATS STORED ON LAND

| | | |
|---|---|---|
| ☐ | Boat Storage | Store boat in a bow high attitude |
| ☐ | " | Remove hull drain plug |
| ☐ | " | Pour one (1) pint 50% water/antifreeze mixture in each bilge pump sump. |
| ☐ | Engine ** | Flush engine with fresh water<br>** Refer to your engine operator's manual for detailed information on preparing the engines for storage and winterization |
| ☐ | Battery(ies) | Remove from boat. Remove the negative (-) cable 1st, then the positive (+) cable |
| ☐ | " | Remove grease and dirt from top surface |
| ☐ | " | Grease terminal bolts. |
| ☐ | " | Store on wooden pallet or thick plastic in a cool dry place. Do not store on concrete. |
| ☐ | " | Keep under a trickle charge |
| ☐ | " | When placing battery back into service, remove excess grease from terminals, recharge as necessary and reinstall in boat |
| ☐ | Fuel Systems | Fill fuel tank with gasoline & the recommended amount of stabilizer & conditioner such as "Stabil®" |
| ☐ | " | Run engine(s) for ten minutes to ensure all gas in the carburetor & fuel lines are treated |

# SECTION 8 – REQUIRED INSPECTION, SERVICE & MAINTENANCE

## AFTER STORAGE PREPARATION

### FUEL SYSTEM

Check the entire fuel system for loose connections, worn hoses, leaks, etc. and repair. This is a primary safety precaution.

Check fuel lines for damage and make sure they do not come in contact with any moving parts.

### BATTERY(IES)

Before installing the batteries, clean the terminal posts with a wire brush or steel wool and then attach the cables. After the cable clamps are tightened, smear the post and clamps with Vaseline or grease to exclude air and acid. Do not apply grease before attaching and tightening the terminal clamps. Examine all wiring.

### MISCELLANEOUS

- Check all thru-hull fittings for unobstructed water passage. Be alert for any deteriorated hoses and/or fittings below the water line which might fail in service and allow water.
- Test the navigation lights
- Check all wiring for loose connections
- Check all switches and equipment for proper operation
- Anchor lines and gear should be inspected and replaced if necessary
- Make sure the hull drain plug is in place and tight
- Clean bilge thoroughly if it was not done at lay-up.
- Check all engine fluid levels.
- Check fuel lines for damage and/or leaks. Make sure that they do not come into contact with moving parts

# SECTION 8 – REQUIRED INSPECTION, SERVICE & MAINTENANCE

**QUICK REFERENCE CHECKLIST**

## PREPARING TO DEPART AND AFTER LAUNCHING

**GENERAL**

1. Lines, Fenders, & Anchor…… Ready for use
2. Passengers/Crew…… Instructed in duties for getting underway & fitted for a correct size PFD

**ENGINE**

1. Battery Switches ……..In the ON position
2. Engine Alarm …… Test. Should sound after a few seconds
3. Gear Shift & Throttle Controls ……In NEUTRAL and IDLE positions

**STARTING THE ENGINE**

(Refer to your Engine Owner's Manual for startup procedures for your specific engine)

1. Gear Shift & Throttle Controls…… Shift in NEUTRAL
2. Ignition…… Turn ignition keys on the helm clockwise until the engine starts, then release.

## DEPARTING

**GENERAL**

1. Passengers/Crew…… Safely seated with PFDs on or immediately accessible
2. Lines, Fenders, & Anchor……..... Stowed

**BOAT SYSTEMS**

1. Trim Tabs…….…… Bring boat to 'on plane' - Adjust as necessary
2. Navigation Lights…… On at night or in reduced visibility

**ENGINE**

1. Tachometer …….. Engine operating in safe RPM range
2. Engine Gauges…… Continually monitor
3. Engine Operation……..Check idle & shift. Listen for abnormal noises & visually check the engine compartment

# SECTION 8 – REQUIRED INSPECTION, SERVICE & MAINTENANCE

**QUICK REFERENCE CHECKLIST**

## RETURNING TO PORT

**GENERAL**

1. Passengers/Crew……. Instructed in duties for line handling
2. Lines and Fenders…… Ready for use

**BOAT SYSTEMS**

1. Navigation Lights…….. Turned OFF when secured
2. Anchor Light…….. ON if necessary

**ENGINE**

1. Gearshift & Throttle Controls…….. Bring to NEUTRAL and IDLE positions
2. Ignition…… Once motor is cooled down, turn ignition keys counter clockwise to stop the engine
3. Engine Operation…… Check idle and shift. Listen for abnormal noises

## SECURING THE BOAT

**GENERAL**

1. Lines and Fenders…… Fenders in place, lines tied securely to dock

**BOAT SYSTEMS**

1. Helm Switch Panel……. All switches in the OFF position
2. Gearshift & Throttle Controls…….. In the NEUTRAL and IDLE positions

**ENGINE**

1. Ignition…… Switch is in the OFF position & ignition keys are removed
2. Battery Switches…… In the OFF position

# SECTION 8 – REQUIRED INSPECTION, SERVICE & MAINTENANCE

**IF THE ENGINE DOES NOT START**

**NO STARTER MOTOR RESPONSE**

1. Check battery switch is in the ON position
2. Check the main circuit breaker
3. Check gearshift/throttle control levers in the NEUTRAL positions
4. Check battery condition for sufficient charge
5. Check battery cable connections tight and free from corrosion
6. Check starter motor and solenoid connections
7. Check ignition switch connections
8. Consult the engine manual that is located in the owner's packet

**STARTER MOTOR RESPONDS, BUT NO IGNITION**

1. Check the fuel tank is not empty
2. Check that ignition shutdown switch lanyard is installed
3. Check electrical connections on engine wiring harness and ignition wiring
4. Check fuel filters and filter/water separators clean
5. Consult the engine manual that is located in the owner's packet

# SECTION 9 – CARE & REFINISHING

Your new boat has been designed to provide you with years of enjoyment and satisfaction. In order to maintain the factory new appearance of your boat, we recommend the use of products designed specifically for pleasure boats. Following proper fiberglass maintenance guidelines will help maintain your boat's performance, value, and enjoyment.

## PAINT CLEANING AGENTS & OTHER SUBSTANCES

**WARNING**:
EXPLOSION / FIRE HAZARD

- Care and refinishing materials may contain ingredients that are flammable or explosive. Do not use such materials in the bilge.
- Shut off electrical power and ventilate when using such materials anywhere on the boat or in the cabin

Do not use products containing chlorine, phosphates, perfumes and non-degradable ingredients. Consult your marine dealer regarding environmental regulations before painting the hull. Fumes can last for hours, and chemical ingredients can harm people, property and the environment. Common household cleaning agents may cause hazardous reactions. Read and understand directions on all paint, cleaning and polishing materials before using.

## FIBERGLASS & GELCOAT

The fiberglass hull, deck and some interior parts consist of a molded shell and exterior gelcoat. The gelcoat is the outer surface, often colored, that presents the shiny smooth appearance associated with fiberglass products. This gelcoat surface is painted or taped in some areas for styling purposes.

Wash the gelcoat and fiberglass regularly with clean, fresh water. Wax gelcoated surfaces to maintain the luster. In northern climates, a waxing at the start and end of the boating season may suffice. In southern climates, an application of wax every three months will be required for adequate protection.

## STAINS & SCRATCHES

**WARNING**:

- Gelcoat surfaces are slippery when wet
- Always wear non-slip footwear securely fastened to your feet and hold on to rails or the boat structure

# SECTION 9 – CARE & REFINISHING

**WARNING**:

- Waxed surfaces are slippery
- Do not wax areas that are usually walked on

Although gelcoat and painted surfaces are resistant to deep stains, a need for cleaning will occasionally arise. But, the use of some common cleaning agents will permanently discolor or otherwise damage the finish on your boat.

- Do not use abrasive porcelain-cleaning powders. These are too abrasive and contain chlorine and ammonia, either of which will permanently discolor gelcoat and paint.
- Never use nail polish remover (acetone) or any ketone solvents
- Use diluted household detergents to remove surface soil and stains. Before using a given brand, check to make sure it contains no chlorine or ammonia.
- Isopropyl alcohol can be used to removed difficult stains. But it must be promptly washed off with a mild detergent and water.
- Minor scratches and deeper stains that do not penetrate the gelcoat may be removed by light sanding and buffing.

**PERMANENTLY MOORED OR DOCKED BOATS**

If permanently moored in salt water or fresh water, your boat will collect marine growth on its bottom. This will detract from the boat's beauty and greatly affect its performance. There are two methods of preventing this:

- Periodically haul the boat out of the water and scrub the bottom with a bristle brush and a solution of soap and water
- Paint the hull below the waterline with a good grade of antifouling paint. **DO NOT** paint the engine drive surfaces.

NOTE: There are EPA regulations regarding bottom paint application. Consult your dealer for proper application methods.

# SECTION 9 – CARE & REFINISHING

## TOPSIDE AREAS

## STAINLESS STEEL AND ALLOY FITTINGS

Stainless steel and alloy fittings should be cleaned with soap and water or household glass cleaner. Remove rust spots as soon as possible with a brass, silver or chrome cleaner. Irreversible pitting will develop under rust that remains for any period of time. Never use an abrasive like sandpaper or steel wool on stainless. These may actually cause rust. To help protect the stainless, we recommend the use of a good car wax.

## SALT CRYSTALS

When instruments are exposed to a saltwater environment, salt crystals may form on the bezel and the plastic covers. Thes salt crystals should be removed with a soft, damp cloth; never use abrasives or rough, dirty cloths to wipe parts. Mild household detergents or plastic cleaners can be used to keep the instruments bright and clean. **Refer to the Owner's Manual Packet for instructions and warranty information**.

## ACRYLIC PLASTIC SHEETING (Plastic Glass)

To clean acrylic, first flood it with water to wash off as much dirt as possible. Nest, use your bare hand, with plenty of water, to feel and dislodge any caked dirt or mud. A soft, grit-free cloth may then be used with a nonabrasive soap or detergent. A soft sponge, kept clean for this purpose, is excellent. Blot dry with a clean damp chamois.

Grease and oil may be removed from acrylic with kerosene, hexane, white (not aviation or ethyl) gasoline or aliphatice naphtha (no aromatic content).

**Do not use solvents such as acetone, silicone spray, benzine, carbon tetrachloride, fire extinguisher fluid, dry cleaning fluid or lacquer thinner on acrylic, since they attack the surface.**

Remove fine scratches with fine automotive acrylic rubbing and polishing compounds.

# SECTION 9 – CARE & REFINISHING

**CANVAS AND CLEAR VINYL**

Do not fold or store any of the canvas pieces while wet. All canvass should be rolled or folded when dry and stored in a clean, dry place. For clear vinyl pieces, the recommended methods for storage are rolling or laying down flat. The clear vinyl should never be folded or creased as cracking will result. To protect the clear vinyl from rubbing against itself while rolled or stored flat, place a piece of very soft, nonabrasive cloth between the pieces. If the surface of the clear vinyl becomes scratched, the canvas manufacturer as provided a canvas care sheet located in hour Owner's Manual Packet. When storing the rear (aft) curtain, fold the canvas over the clear vinyl window (do not fold clear vinyl), then roll or store flat. REFER TO CANVAS CARE INSTRUCTIONS IN THE OWNER'S MANUAL PACKET.

The fabric should be cleaned regularly before substances such as dirt, pollen, etc. are allowed to accumulate on and become embedded in the fabric. The fabric can be cleaned without being removed from the installation. Simply brush off any loose dirt, particles, etc.; hose down and clean with a mild solution of a natural soap in lukewarm water (no more than 100˚F, 38˚C); rinse thoroughly to remove soap. DO NOT USE DETERGENTS. Allow to completely dry.

Wash and clean vinyl windows with a warm soap solution. Use a soft cloth or sponge and do not scratch the surface.

If you have a stubborn cleaning cases, call your dealer for proper procedures. Do not try your own cleaning procedures as they may permanently damage the canvas.

After each use, especially in salt water areas, rinse the canvas completely with fresh cold water. Then let the canvas dry completely before stowing.

DO NOT at anytime dry any canvas part in a conventional dryer, because shrinking may occur.

All metal components of the canvas should be rinsed with fresh cold water and exposed components wiped dry to maintain appearance and working order.

# SECTION 9 – CARE & REFINISHING

## EXTERIOR UPHOLSTERY FABRIC

Exterior fabrics should be cleaned with a sponge or very soft scrub brush and a mild soap and warm water solution. After scrubbing, rinse with plenty of cold, clean water and allow the fabric to air dry in a well-ventilated place, preferably away from direct sunlight.

Mildew can occur if your boat does not have adequate ventilation. Heat alone will not prevent mildew; you must also provide for fresh air circulation.

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

## INTERIOR UPHOLSTERY FABRIC

CIeaning and maintenance information, provided by the material manufacturer, is in your Owner's Manual Packet.

REFER TO THE OWNER'S MANUAL PACKET FOR INSTRUCTIONS AND OTHER CLEANING INFORMATION.

**NOTICE**:

- Always clean spots, stains, etc., immediately
- Test an unseen area of fabric before cleaning stain, to insure that cleaning material will not cause damage.