

CONGRATULATIONS ON YOUR BOATING CHOICE! MASTERCRAFT is the recognized world leader for inboard boats today and has been for forty (40) years. The quality, innovation, selection and value of MasterCraft boats are unmatched in the industry.

Please take a few minutes to read this Owner's Manual completely in addition to carefully reviewing any additional information provided in the accompanying packet. These publications will help to answer most of the remaining questions you may have regarding your new boat. If you have any questions after reading these items, please feel free to speak with your dealer. MasterCraft wants you to feel comfortable with your boat (and trailer, where applicable) from the very beginning of your experience as an owner of our products.



WELCOME ABOARD

All information in this Manual is based on the latest product information available at the time of printing. Because of our policy of continuous product improvement, we reserve the right to make changes at any time, without notice, in specifications and models, and also to discontinue models. We also reserve the right to change specifications, parts or accessories at any time without incurring any obligation to equip the same on models manufactured before the date of the change.

Due to changes in specifications, models, parts and/or accessories that may occur after publication of this Owner's Manual, the Owner's Manual may not cover every circumstance that may arise in owning and operating your boat. Also, the illustrations used in this Manual are intended only as representative reference views and may not depict actual model component parts. Information regarding certain on-board components furnished by suppliers other than MasterCraft, including the engine and power train components, is provided separately by the manufacturers of those components. This information is available through your dealer. A reasonable effort has been made by MasterCraft and its suppliers to provide the applicable information required to ensure a long-lasting and enjoyable boating experience.



THROUGHOUT THIS MANUAL THE TERMS “DANGER,” “Warning” and “Caution” appear, alerting the boat owner and/or operator to dangerous or potentially dangerous situations that may arise. Those terms have the following respective meanings whenever they appear herein:



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

DANGERS, WARNINGS & CAUTIONS



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

Failure to adhere to and comply with the safety dangers, warnings and cautions that appear in this manual can lead to serious illness, injury or even death and/or damage to your boat or the property of others. Beyond these warnings, boaters have a personal responsibility to

utilize a common sense approach to the boating experience, including keeping individuals off or near the swim platform and the stern area of the boat during the engine operation. Personal flotation devices (“PFDs”) save lives and ensure positive experiences. **MasterCraft offers many proactive approaches to the boating experience, but the consumer is ultimately responsible for the positive and safe involvement in boating.**

Be sure to review the *Boating Safety* section of this manual, which immediately follows this section. Because of the importance of these dangers, warnings and cautions, they are reprinted here, along with the pages on which you will find them. Please note that the safety information statements presented below are categorized for information purposes only, and are not presented in any particular order of importance. Each of the statements referenced below and in the other sections of this manual provide you with important safety-related information and must be read and followed to avoid injury or damage, as applicable. We strongly encourage you to cross-reference and read the dangers, warnings and cautions within the context in which they are presented by reading and reviewing those sections.



Failure to comply with safety-related information and instructions may result in serious injury or death to you and/or others. Always use common sense when operating the boat or participating in any activities associated with the boat, including, but not limited to, periods of time when the boat engine is shut down and the boat is not in operation. (Page 1-3)

Gasoline is highly flammable and its vapors may ignite, resulting in fire or explosion. Be sure to keep all sparks and flames away from the area while inspecting the boat’s fuel system. (Page 15-3)

Gasoline is explosive. If a gasoline odor is present or gasoline is visually observed in the bilge area during inspection, **DO NOT START YOUR ENGINE!** Remove the ignition key from the ignition switch and call an authorized MasterCraft dealer for service. (Page 15-8)

Gasoline is extremely flammable and highly explosive under certain conditions. Always stop the engine and never smoke or allow open flames or sparks within fifty (50) feet of the fueling area when fueling. (Page 6-3)



Take care not to spill gasoline. If gasoline is spilled accidentally, wipe up all traces of it with dry rags immediately and dispose of properly on shore. (Page 6-3)

To prevent a possible explosion, operate the blower for at least four (4) minutes before starting the engine and always when at idle or slow-running speed. Explosive gasoline and/or battery fumes may be present in the engine compartment. Failure to do so may result in serious injury or death! (Page 9-1)

To prevent a possible explosion, operate the blower for at least four (4) minutes before starting the engine and always when at idle or slow-running speed. Explosive gasoline and/or battery fumes may be present in the engine compartment. Failure to operate the blower as instructed may cause improper ventilation of the boat engine and bilge areas, and fuel vapors can accumulate in this area, causing a fire or explosion which may result in death or serious injury! (Page 5-8)

Carbon monoxide is a colorless, tasteless, odorless and poisonous gas that accumulates rapidly and can cause serious injury or death. Exposure to carbon monoxide can be fatal in a matter of minutes. Exposure to even low concentrations of carbon monoxide must not be ignored because the effects of exposure to carbon monoxide can build up and be just as lethal as high concentrations. Carbon monoxide from exhaust pipes of inboard or outboard engines may build up inside and outside the boat in areas near exhaust vents. **STAY AWAY** from these exhaust vent areas, which are located at the stern of the boat, and **DO NOT** swim or engage in any watersports or other activities in or near

the stern area of the boat, including, without limitation, the swim platform and the rear sun deck, when the engine is in operation. Under no circumstances should the owner and/or operator allow persons to hold onto the swim platform while the engine is operating and the boat is in motion. These activities (sometimes known as “teak surfing” or “platform dragging,” where the participant holds onto the swim platform and is pulled through the water, and/or “body surfs” immediately behind the boat) are extremely dangerous, highly likely to result in death or serious bodily injury, and are a misuse of this product. (Page 2-1)

The safety switch lanyard must be attached to the operator whenever the engine is running. Failure to do so may result in death or serious injury! (Page 5-7)

Never override or modify the engine safety shut-off switch in any way. (Page 1-3)

Before starting the engine, open the engine compartment and check for gasoline fumes, fuel and oil leaks or the presence of fuel or oil in the bilge. (Page 9-1)

Do not tow more than two (2) persons at one time on a tow tower. The tow tower approved for use on your boat should be used only for water skis, wakeboards or recreational towables, and not for parasailing, kite flying or towing other boats. Do not add any attachments that are not approved for use on your MasterCraft boat. Do not climb on, sit on, stand on, jump off of or dive off of the tower. Never allow passengers to sit behind the tow rope attachment point. Never allow loose tow rope ends to dangle. Always be certain that all bolts are in place and tight before and during use. When the tower is up, watch for low obstacles such as tree limbs, bridges or power lines. (Page 1-4)

Information regarding the maximum number of people and/or additional weight to the boat is included in the Guide to Individual Models section of this Manual. It is the boat operator’s responsibility to ensure that the boat is never overloaded. Too much additional weight may cause the boat to overturn or sink, which can result in serious bodily injury or death. (Page 10-1)

Boat operators should never attempt to duplicate operational skills of professional drivers. When such maneuvers fail, it can result in serious injury or death. (Page 10-1)

WARNING

DO NOT launch or operate the boat if any problem is found during the Safety Check. A problem could lead to an accident during the outing, resulting in death or serious injury. Any and all problems should receive attention immediately. See your authorized MasterCraft service department for assistance. (Page 7-1)

Battery electrolyte fluid is dangerous. It contains sulfuric acid, which is poisonous, corrosive and caustic. If electrolyte fluid is spilled or placed on any part of the human body, immediately flush the area with large amounts of clean water and immediately seek medical attention. (Page 15-1)

When charging, batteries generate small amounts of dangerous hydrogen gas. This gas is highly explosive. Keep all sparks, flames and smoking well away from the area. Failure to follow instructions when charging a battery may cause an electrical charge or even an explosion of the battery, which could result in death or serious injury. (Page 15-2 and 15-4)

The engine box serves as a machinery guard. The engine must be OFF whenever the box is open. Clothing or body parts can get caught in moving parts, causing death or serious injury. Keep away from moving parts! (Page 15-2, 15-3 and 15-4)



Adding additional ballast to your MasterCraft boat is not recommended, and can result in impaired visibility, diminished handling characteristics and instability when operating your boat, and may result in potential structural and/or engine damage to your boat, which damage will not be covered by your warranty. (Page 10-1)

Use of improper parts may cause component or engine failure. Such failure may result in death or serious injury! (Page 12-1)

Towers on boats are intended for use for water skis, wakeboards or recreational towables only. Use of the tower to tow other boats, kites or for any other purpose may result in serious injury or death, and may damage the boat, which will not be covered by warranty. (Page 1-3)

All boats have weight limits. Failure to adhere to the posted limits can cause operational instability and/or the boat to sink. This may result in serious injury or death, as well as significant damage to the boat, which will not be covered by warranty. (Page 2-1)

CAUTION

Be sure all fasteners used are approved and rated for marine use. Most fasteners used on MasterCraft boats are stainless steel or specially coated to resist corrosion. (Page 12-1)

All replaced fuel components must meet United States Coast Guard ("USCG") and American Boat & Yacht Council, Inc. ("ABYC") standards, and must be Underwriter's Laboratory ("UL")-approved. Inferior quality components pose a serious safety threat to you and others, and the use of inferior components may result in serious injury or death. Resulting damage may void the warranty. (Page 15-8)

Do not continue to run the engine if the oil pressure is low. If you do, the engine may become so hot that it, or surrounding components, could catch fire. You or others could be burned and the boat seriously damaged. Check your oil level and add an appropriate amount of approved motor oil before operating again or have your boat serviced by your local authorized MasterCraft ser-

vice department. Note that damage to your engine from inappropriate oil levels can be costly to repair. Such damage is not covered by your warranty. (Page 5-7)

While operating attitude adjustment plates use caution. Improper use of plates can cause accidents, which may result in serious injury or death. These cautions apply to the MariStar 280STS, X-80 and 280 SST models only.

While the boat is underway do not move one plate up or down significantly as this may cause listing.

While at higher speeds do not over-trim, as this will cause the bow to lower quickly, resulting in a reduction of speed and may cause the boat to veer.

When in following seas or when running an inlet, the plates should be fully retracted. This will allow for optimal performance. (Page 5-11)

Some engine parts become very hot during operation. This inspection must be completed while the engine is cool to prevent burns to your skin. Perform this task before starting the boat. (Page 15-2)

Some engine parts become very hot during operation. This maintenance must be completed while the engine is cool to prevent burns to your skin. Perform this task before starting the boat. (Page 15-5, 15-6)

CAUTION

To ensure proper break-in and lubrication, boat owners should not remove the factory break-in oil until after the initial ten (10) hours of operation. At that time, an oil change should be performed by an authorized MasterCraft service technician at an authorized MasterCraft dealer. (Page 8-1)

DO NOT use the ski pylon for lifting. It is NOT designed as a central lifting point. Also, DO NOT use the stern ski tow as a lifting ring. The deck will be damaged. See the Storage Cradle sub-section of this section of the Manual. Also never lift a boat with water in the bilge or containing a water-filled device such as a ballast system or sack. The extra stress will put an excessive load on the hull and lifting equipment that may seriously damage the boat. Such damage may not be covered by the warranty. (Page 11-1)



Continued operation after the warning light has illuminated may cause severe engine damage. This will void your warranty. (Page 9-2)

Because of the complexity of preparing a boat for proper winter storage, as well as the possibility of extreme damage to the engine if a preparation error was made during winterization, MasterCraft recommends scheduling an appointment with an authorized MasterCraft dealer's service department to permit a technician to perform all winterization procedures. (Page 16-1)

Add-on equipment may adversely affect the alternator output or overload the electrical system. Such damage may not be covered by the warranty. (Page 15-1)

Failure to follow the engine oil recommendations listed in the engine manual can cause additional engine wear and increase the possibility of engine component failure. Damage to the engine due to incorrect oil usage can be costly to repair, and is not covered by the warranty! (Page 8-2)

Do not operate the starter motor continuously for more than fifteen (15) seconds without at least two (2) minutes for a "cool-down" period. Failure to do so may cause the starter to overheat, resulting in damage. Failure to release the ignition key after the engine has started may cause damage to the starter motor and drive. (Page 9-1)

Damage to the engine by use of low-quality gasoline or gasoline with an octane rating below the minimum level listed will void the warranty on the boat. (Page 6-3)

Fuels that are blended to contain methanol or wood alcohol should not be used. These fuels can corrode metal parts in the fuel system and engine. Fuels that contain methanol will damage the engine. Damage caused by the use of unapproved fuels is not covered by warranty. (Page 6-3)

Extended storage with fuel in the system can affect the fuel's stability and may require system inspection and fuel filter replacement when the unit is placed back into service. (Page 6-3)



Lifting slings must never contact shafts, struts or hardware protruding from the hull. Damage may result that would void the warranty. (Page 11-1)

When the boat is out of the water, it is important to support the hull correctly to avoid any hull damage. Such damage may void the warranty. (Page 11-1)

Crossing cables or jumper cables may result in damage to the electrical components due to incorrect battery connections. Such damages may not be covered by your warranty. (Page 15-4)

Attention must be paid to any leakage occurring in the propeller shaft log area. Water intrusion into the trans-

mission, which can happen if excessive leakage is occurring may cause serious damage. Such damage may not be covered by the warranty. (Page 15-2)

Allowing the fuel level in the fuel tank to fall below one-quarter of a tank full may affect the reliability of the fuel pump or result in damage to the fuel pump, which is not covered under warranty. (Page 6-3)

When boating, avoid using the windshield as an aid for balance or getting out of a seat. This causes undue stress to the window frame and could damage it, which may not be covered under warranty. (Page 7-1)

Engines should always be operated within engine manufacturer guidelines. Failure to do so may cause significant damage to the engine and drive train and is not covered under warranty! (Page 10-3)

Continuing to operate the boat while the temperature is above normal operating parameters may cause serious damage to your engine. Damage to your engine resulting from operating the engine in an overheated condition can be costly to repair. Such damage is not covered by your warranty! (Page 5-6)

Failure to follow the break-in procedure exactly as stated will void the engine warranty! (Page 8-1)

TABLE OF CONTENTS

| | |
|--|------|
| Welcome Aboard | i |
| Dangers, Warnings & Cautions | ii |
| Boating Safety | 1-1 |
| Common Sense Approach..... | 2-1 |
| Rules of the Open Water | 3-1 |
| Guide to Individual Models | 4-1 |
| Instrument Gauges and Switches..... | 5-1 |
| Using Care While Fueling..... | 6-1 |
| Safety Checks and Services..... | 7-1 |
| New Boat Break-In | 8-1 |
| Starting and Basic Operations..... | 9-1 |
| Operational Hints..... | 10-1 |
| Lifting the Boat..... | 11-1 |
| Corrosion | 12-1 |
| Cleaning the Boat | 13-1 |
| Scheduled Maintenance Checks & Services..... | 14-1 |
| Scheduled Maintenance | 15-1 |
| Battery Connections and Hold-Downs..... | 15-1 |
| Cable Kinks, Wear and Interference..... | 15-2 |
| Propeller Shaft Log..... | 15-2 |
| Fuel System Leaks..... | 15-3 |
| Exhaust System Leaks | 15-3 |
| Fully Charged Battery..... | 15-4 |
| Quarterly Maintenance | 15-5 |
| Engine Starter Gear and Shaft Lubrication..... | 15-5 |
| Annual Maintenance..... | 15-5 |
| Check Engine Mounts | 15-6 |
| Check Propeller Shaft Coupling Alignment..... | 15-6 |
| Inspect Exhaust Flaps | 15-6 |
| Lubricate Steering System | 15-6 |
| Lubricate Shift and Throttle System | 15-7 |
| Ballast Pump Impeller..... | 15-7 |
| Inspect Complete Fuel System for Leakage..... | 15-8 |
| Storage/Winterization | 16-1 |
| General Preparation | 16-1 |
| Fuel System Treatment | 17-1 |
| General Power Package Preparation | 16-2 |
| Other Winterization Preparation | 16-2 |
| Ballast System Preparations | 16-2 |
| Reactivating After Storage..... | 16-2 |
| Propeller Maintenance..... | 17-1 |
| Guide to Troubleshooting | 18-1 |
| Limited Warranty Statement..... | 19-1 |
| Warranty Transfer | 20-1 |
| Genuine MasterCraft Parts..... | 21-1 |
| Service Log..... | 22-1 |



YOUR SAFETY, AS WELL AS THE SAFETY OF OTHERS WITH AND around you, is a direct result of how you operate and maintain your boat. You—and anyone who will be operating this boat—should read and seek to fully comprehend this Manual. Make sure that you understand all of the controls and operating instructions before attempting to operate the boat. **Improper operation is extremely dangerous!**

The basic safety rules are outlined in this section of the Manual. Additional precautions throughout the Manual are noted by the following symbols:



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

BOATING SAFETY



DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

The precautions listed in this Manual and on the boat are not all-inclusive. If a procedure, method, tool or part is not specifically recommended by MasterCraft, using it may place you and others in an unsafe situation. In addition, you may render your warranty void. Remember: Always use common sense when operating, servicing or repairing the boat!

Observing the safety recommendations found in this Manual is critical to keeping your boating experience as safe as possible during routine operation. Your failure to do so may result in severe personal injury or death to you and/or others. Use caution and common sense when operating your boat. Do not ever take unnecessary chances!

General Precautions

Be certain that all operators of your boat are aware of the safety information within this Manual and that they use it to conform to boat safety principles.

Boating safety starts with a thorough understanding of boat operations. In addition to careful review of this Owner's Manual, you should also be aware that many sources of helpful information are available. MasterCraft urges you to pursue additional training prior to the independent operation of your boat. However, training at any time from recognized boating and/or safety organizations is beneficial.

The following is a listing of a few agencies and organizations that offer safety training and/or information:

American Red Cross, National HQ
8111 Gatehouse Road, 6th Floor
Falls Church VA 22042
(202) 737-8300
www.redcross.org

U.S. A. Water Ski Association
1251 Holy Cow Road
Polk City FL 33868
(863) 324-4341
www.usawaterski.org

Boat Owners Association of the United States
880 South Pickett Street
Alexandria VA 22304
(703) 823-9550
www.boatus.com

National Safe Boating Council
2550 M Street NW, Suite 425
Washington DC 20037
(202) 296-4588
www.safeboatingcouncil.org

U.S. Coast Guard Auxiliary
2100 Second Street SW
Washington DC 20593-001
(202) 267-1001
www.uscg.mil

Safety Equipment

Federal law requires certain safety equipment to be on-board your boat at all times. Responsible boaters carry additional equipment in case of emergency. It is your responsibility to check with the local boating authorities for any additional requirements and/or equipment over and above the federal requirements.



Required Equipment

Your MasterCraft boat has been equipped at the factory with the federally-required safety equipment for inland waters (Class I, 16-foot-to-26-foot watercraft, and Class II, 26-foot-to-40-foot watercraft). This equipment includes:

- ABYC-approved (American Boat & Yacht Club) marine mufflers with water injection;
- USCG-approved (United States Coast Guard) marine flame arrestor;
- USCG-approved engine box ventilation with sparkles power blower;
- ABYC-approved electric horn sound-warning device;
- USCG-approved inland lighting.

Additionally, you should always check that you have a fire extinguisher on board, which is mandatory equipment. If you desire to do so, you may purchase an approved fire extinguisher from MasterCraft for your boat. If you choose to purchase a fire extinguisher from an outside source, verify that it meets or exceeds the federal performance mandate.

Federal law also requires at least one Type I, II or III Personal Flotation Device ("PFD"), for each person on-board or being towed on water skis, wakeboards or other recreational equipment. In addition, one throwable Type IV PFD must also be on board. As the owner, obtaining the appropriate PFDs is your responsibility. Your MasterCraft dealer can, and will be happy to assist you with your purchase of appropriate PFDs.

Note: *Requirements for coastal waters and inland waters differ. Check with the local authorities for more information.*

Recommended Equipment

The responsible boat owner will avoid potential problems on an outing by having additional equipment on board. Normally, the decision regarding the appropriate equipment to take on individual outings is dependent upon the body of water and the length of the trip. We suggest the following equipment as a minimum (your MasterCraft dealer can also assist you with additional recommendations):

- An anchor with at least 75 feet of line;
- A manual bailing device for removing water;
- A combination oar/boat hook;
- A day-and-night visual distress signal;
- A first aid kit and manual;
- An airway breathing tube;
- A waterproof flashlight;
- A non-electric horn or whistle;
- A set of local navigational charts;
- Mooring lines and fenders;
- Extra engine oil;
- A tool kit; and
- A portable, battery-operated AM/FM radio or weather radio/scanner.

Safety Afloat

The cause of many boating accidents is often the operator's failure to follow basic safety rules or written precautions. Many accidents can be avoided if the operator is

completely familiar with the boat, its operation and can recognize potentially hazardous situations before an accident occurs.



Failure to comply with safety-related information and instructions may result in serious injury or death to you and/or others. Always use common sense when operating the boat or participating in any activities associated with the boat, including, but not limited to, periods of time when the boat engine is shut down and the boat is not in operation.

- Improper operation of the boat is extremely dangerous! Operators must read and understand all operating manuals supplied with the boat, before operation.
- On-board equipment must always conform to the governing federal, state and local regulations.
- Always attach the engine safety shut-off lanyard to a part of your clothing (such as a belt loop) when operating the boat.



Never override or modify the engine safety shut-off switch in any way.

- Never operate the boat while under the influence of alcohol or drugs.
- Never stand or allow passengers to stand in the boat or sit on the motor box or tower (where equipped) while underway. You or others may be thrown about within or from the boat, which could result in serious injury or death.
- Prior to starting the engine, you must open the engine box and check the engine compartment and bilge for gasoline and oil vapors. You must also operate the blower for at least four (4) minutes. Failure to do so may result in fire and/or an explosion.
- Never remove or modify any components of the fuel system. Removal or modification of any component of the fuel system may cause a hazardous situation and may void the warranty. The modern MasterCraft fuel delivery lines are pressurized and attempting to loosen or remove them may result in the uncontrolled release of fuel, which can be environmentally hazardous, and may potentially cause injury.
- Never allow any type of spark or open flame on board. It may result in fire or explosion.

Skiing and Wakeboarding Safety

Skiers and wakeboarders are obligated to be as aware of the fundamental safety rules as operators. If you are new to water sports, you should seek certified training before starting. You may find it especially helpful to join a local water sports club and the U.S.W.S.A., when possible.

- Always remember that the majority of water-skiing and wakeboarding injuries are the result of impacts with other objects, so always look where you are going and be aware of what is going on around you.
- Never put your arm, head or any other part of your body through the handle/bridle of the ski or wakeboarding line, nor wrap the line around any part of the body at any time.
- Never ski or wakeboard at night.
- Never ski or wakeboard directly in front of other boats.
- Folding a tower requires at least two (2) people.



Towers on boats are intended for use for water skis, wakeboards or recreational towables only. Use of the tower to tow other boats, kites or for any other purpose may result in serious injury or death, and may damage the boat, which will not be covered by warranty.



Do not tow more than two (2) persons at one time on a tow tower. The tow tower approved for use on your boat should be used only for water skis, wakeboards or recreational towables, and not for parasailing, kite flying or towing other boats. Do not add any attachments that are not approved for use on your MasterCraft boat. Do not climb on, sit on, stand on, jump off of or dive off of the tower. Never allow passengers to sit behind the tow rope attachment point. Never allow loose tow rope ends to dangle. Always be certain that all bolts are in place and tight before and during use. When the tower is up, watch for low obstacles such as tree limbs, bridges or power lines.

- Never jump from a boat that is moving at any speed, nor enter or exit the water when the engine is running (ON).
- Make sure that everyone knows and uses approved skiing/wakeboarding hand signals and adheres to common skiing, wakeboarding and boating courtesy.
- Never ride on the ski platform or hold on to the ski platform while in the water during engine operation, including at idle. **Carbon monoxide fumes are expelled from the lower transom areas of your boat and can cause death or serious illness.**
- **The above mandates are not all-inclusive.** It is the boater's responsibility to operate the boat in a safe fashion and become familiar with any and all rules and regulations governing boat operation.

Warning Plates and Labels

Read and note ALL warning plates and labels from bow to stern, including those that are installed inside the engine compartment, lockers and under seating. **YOU MUST READ AND ADHERE TO ALL CAUTIONS AND WARNINGS IN AND ON YOUR BOAT!**

THIS OWNER'S MANUAL HAS BEEN DEVELOPED TO HELP ensure an enjoyable experience as you boat, wakeboard and ski with your MasterCraft boat. As stated earlier, this information is not all-inclusive. There are many factors to consider and additional information that you need to research before undertaking any boating activity.

In addition to reading this Owner's Manual and other related material, and familiarizing yourself with the proper operation of your MasterCraft boat, you should also always use common sense when boating. For example, when anchoring your boat, you **MUST** turn OFF the engine. In most models, exhaust fumes containing carbon monoxide are emitted from the exhaust flap area of the transom immediately below the swim platform. No one should ever be on the swim platform or transom while the engine is operating.

COMMON SENSE APPROACH

MasterCraft strongly encourages individuals to wear Personal Flotation Devices (PFDs). In many states, it is a legal requirement for children to wear them. Non-swimmers and swimmers of limited ability of any age should never be without one.

Your MasterCraft boat can be the source of countless hours of family fun, as well as building friendships. But it works only if YOU use your head before, during and after your boating activity.

As you anticipate many good times ahead with your MasterCraft boat, be sure that, first and foremost, you are well-prepared to be a responsible operator.



Carbon monoxide is a colorless, tasteless, odorless and poisonous gas that accumulates rapidly and can cause serious injury or death. Exposure to carbon monoxide can be fatal in a matter of minutes. Exposure to even low concentrations of carbon monoxide must not be ignored because the effects of exposure to carbon monoxide can build up and be just as lethal as high concentrations. Carbon monoxide from exhaust pipes of

inboard or outboard engines may build up inside and outside the boat in areas near exhaust vents. STAY AWAY from these exhaust vent areas, which are located at the stern of the boat, and DO NOT swim or engage in any watersports or other activities in or near the stern area of the boat, including, without limitation, the swim platform and the rear sun deck, when the engine is in operation. Under no circumstances should the owner and/or operator allow persons to hold onto the swim platform while the engine is operating and the boat is in motion. These activities (sometimes known as "teak surfing" or "platform dragging," where the participant holds onto the swim platform and is pulled through the water, and/or "body surfs" immediately behind the boat) are extremely dangerous, highly likely to result in death or serious bodily injury, and are a misuse of this product.

Overloading a boat may cause it to become unstable and may potentially result in the boat's flotation system becoming overwhelmed. Too much weight can sink any boat! Within this Manual and on a label mounted in each boat is the indication of the weight limits for that specific model. Bear in mind that total weight limits include water ballast, gear brought onto the boat, additional options and all people.



All boats have weight limits. Failure to adhere to the posted limits can cause operational instability and/or the boat to sink. This may result in serious injury or death, as well as significant damage to the boat, which will not be covered by warranty.



JUST AS THERE ARE RULES THAT APPLY WHEN DRIVING A vehicle on the street, there are waterway rules that apply when you are driving a boat on the water. These rules are used internationally, and they are enforced by the United States Coast Guard and local agencies. You should be aware of these rules and follow them whenever you encounter another vessel on the water.

In various geographic locations, certain rules prevail that may be unique to the locale. Each state also has laws and boating limitations that may be applicable only within their boundaries. It is the operator's responsibility to seek out this information and become familiar with all safety-related information, laws and rules governing boating operation.

The rules presented in this Manual are condensed and have been provided for convenience only. Consult your



The vessel that does not have the right-of-way has the duty to take positive and timely action to stay out of the way of the stand-on vessel. Normally, the give-way vessel should not cross in front of the stand-on vessel. Slow down or change direction briefly and pass behind the other vessel. You should always move in such a way that the stand-on operator can see what you are doing.

RULES OF THE OPEN WATER

local U.S. Coast Guard Auxiliary (USCGA), Department of Motor Vehicles (DMV) or Department of Natural Resources (DNR) for a complete set of rules governing the waters in which you will be using your boat. If you plan to travel—even for a short trip—you would be well-served to contact the regional USCGA, DMV or DNR in the area where you will be boating. Often, basic information is available through websites sponsored and prepared by these organizations and governing bodies.

Steering and Sailing Rules/ Sound Signals

Any time two (2) vessels on the water meet one another, one vessel has the right-of-way. It is called the **stand-on vessel**. The vessel that does not have the right-of-way is called the **give-way** or **burdened vessel**.

These rules determine which vessel has the right-of-way, and accordingly, what each vessel should do.

The vessel with the right-of-way has the duty to continue its course and speed, except to avoid an immediate collision. When you maintain your direction and speed, the other vessel will be able to determine how best to avoid you.

The General Prudential Rule

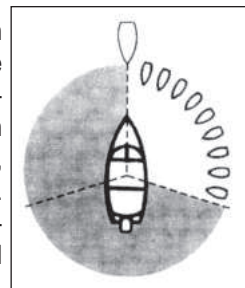
This rule is called Rule 2 in the International Rules and says, "In obeying and construing these rules due regard shall be had to all dangers of navigation and collision, and to any special circumstances, which may render a departure from the above rules necessary in order to avoid immediate danger."

Rules When Encountering Vessels

There are three (3) main situations in which you may encounter other vessels, and you must avoid a collision. These are:

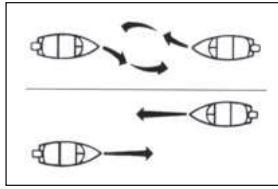
- **Meeting** (*you are approaching another vessel head-on*).
- **Crossing** (*you are traveling across the other vessel's path*).
- **Overtaking** (*you are passing or being passed by another vessel*).

Using the adjacent image in which you are the boat in the center, you should give right-of-way to all vessels shown in the white area. In this instance, you are the give-way vessel. Both you and the meeting vessel must alter course to avoid each other.



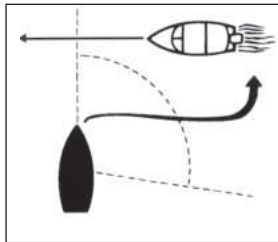
Meeting

If you are meeting another vessel head-on, and you are close enough to run the risk of collision, neither of you has the right-of-way. Both of you should alter course to avoid an accident. You should keep the other vessel on your port (left) side. (This rule doesn't apply if both of you can clear each other by continuing your set course and speed.)



Crossing

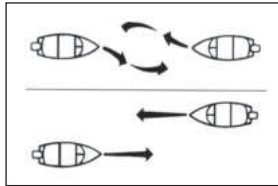
When two (2) power-driven vessels are crossing each other's path close enough to run the risk of collision, the vessel that views the crossing vessel to the starboard (right) side must give way.



If the other vessel is to the port (left) side, and provided the other vessel gives you the right-of-way, maintain your course and direction.

Overtaking

If you are passing another vessel, you are the give-way vessel. This means that the other vessel is expected to maintain its course and speed. You must stay out of its way as you clear it, altering course and speed as necessary.



Conversely, if you are being passed by another vessel, you should maintain your speed and direction so that the vessel can be steered around you.

Other Special Situations

There are additional rules to remember when operating your boat around other vessels, such as:

- When navigating in narrow channels, you should keep to the right when it is safe and practical to do so.
- When preparing to go around a bend that may obstruct your view of other water vessels, you should sound a prolonged blast on the horn or with a whistle for four (4) to six (6) seconds. Even if no reply

is heard, you should still proceed around the bend with caution.

Sailing Vessel Right-of-Way

Sailing vessels should normally be given the right-of-way. The exceptions to this are:

- When the sailing vessel is overtaking the power-driven vessel, the power-driven vessel has the right-of-way.
- Sailing vessels should keep clear of any fishing vessel.
- In a narrow channel, a sailing vessel should not hamper the safe passage of a power-driven vessel that can navigate only in such a channel.



Fishing Vessel Right-of-Way

Under international rules, all vessels that are fishing with nets, lines or trawls are considered to be fishing vessels; however, boats with trolling lines are not considered fishing vessels.

Fishing vessels have the right-of-way, regardless of position, but these vessels cannot impede the passage of other vessels in narrow channels.

Reading Buoys and Other Markings

The waters of the United States are marked for safe navigation by the lateral system of buoyage. The markers and buoys you encounter will have an arrangement of shapes, colors, numbers and lights to show which side of the buoy a boater should pass when navigating in a particular direction.

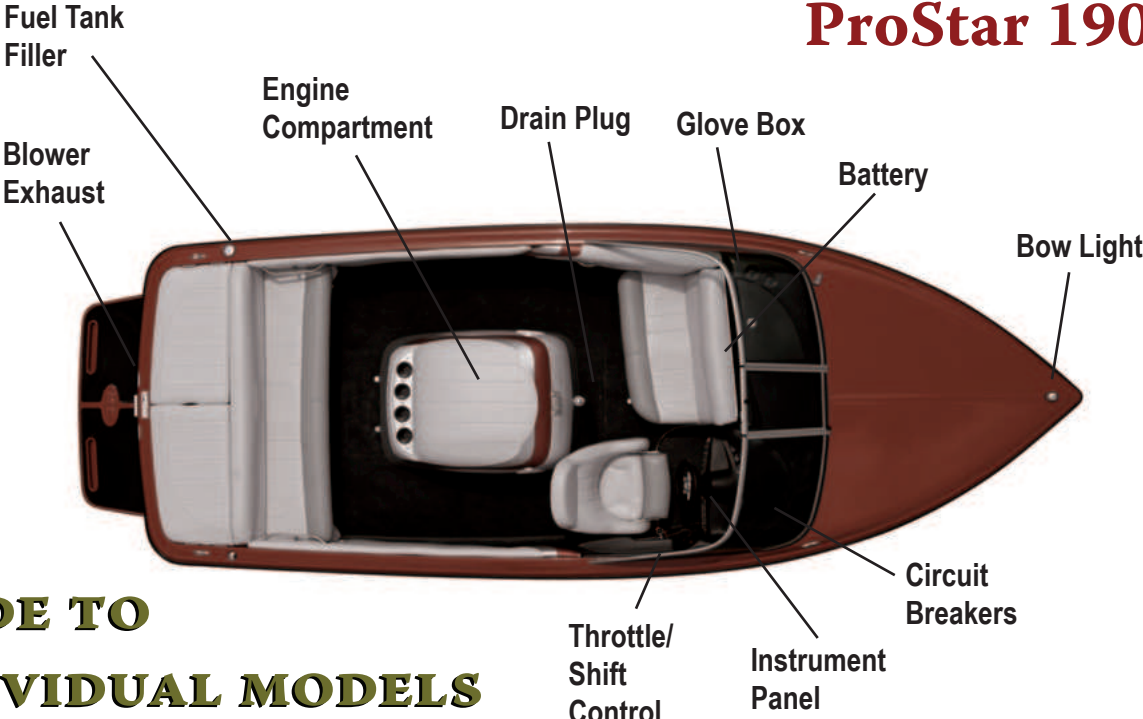
The markings on these buoys are oriented from the perspective of being entered from a seaward direction while the boater is going toward the port. Red buoys are passed on the starboard (right) side when proceeding from open water into port, and green buoys are passed on the port (left) side. When navigating out of port, your position to the buoys should be reversed: red buoys to port (left) and green buoys to starboard (right).

Many bodies of water are entirely within the boundaries of a single state. The Uniform State Waterway Marking Systems have been devised for these waters. This system uses buoys and signs with distinctive shapes and colors to show regulatory or advisory information. These markers are white with black letters and orange borders. The information signifies speed zones, restricted areas, danger areas and general information.

Remember: Markings may vary by geographic location. Always consult appropriate boating authorities before boating in unfamiliar waters.

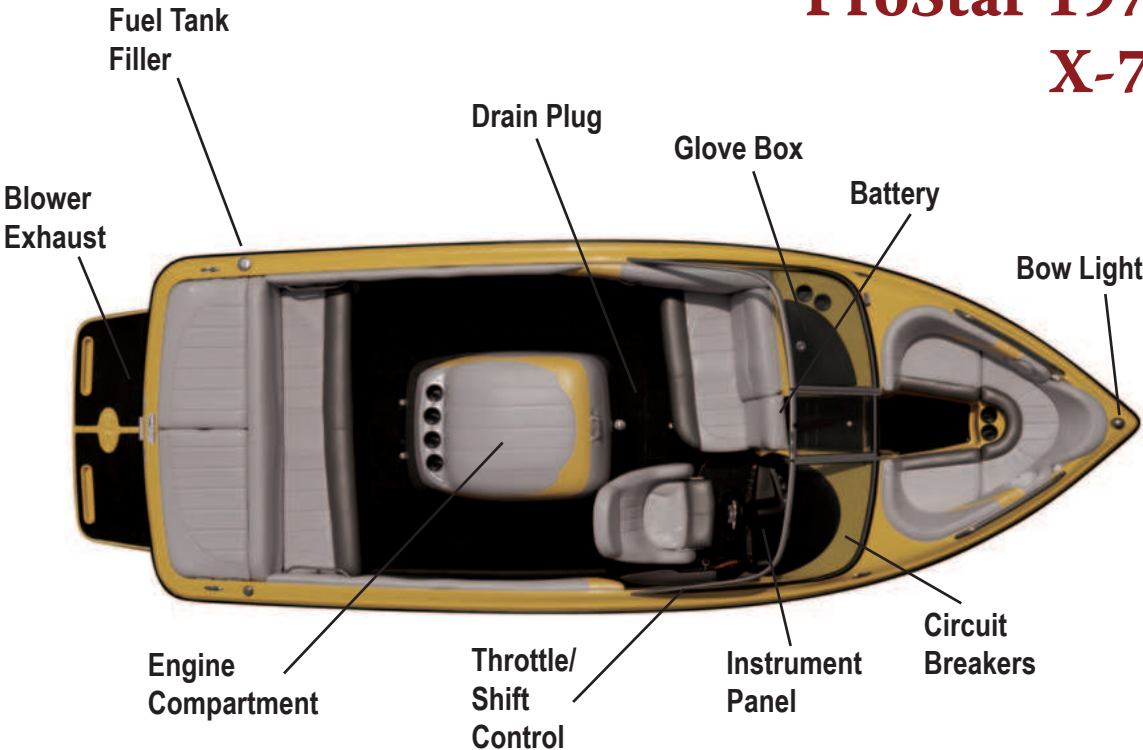


ProStar 190

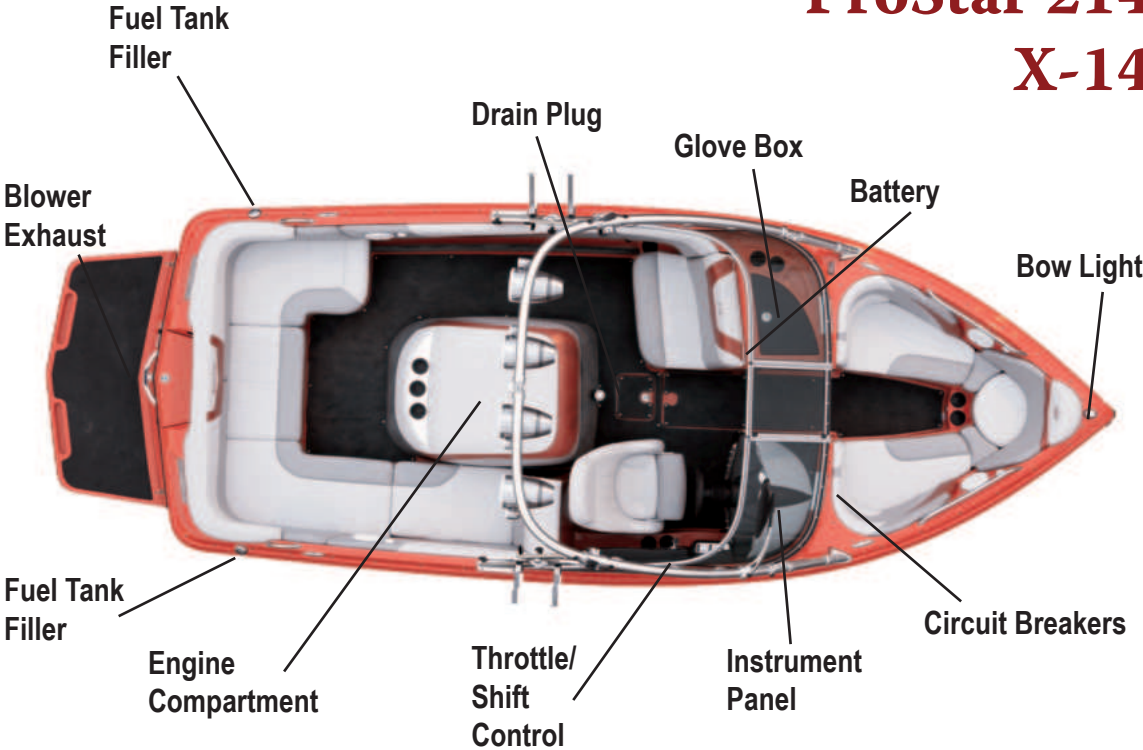


GUIDE TO INDIVIDUAL MODELS

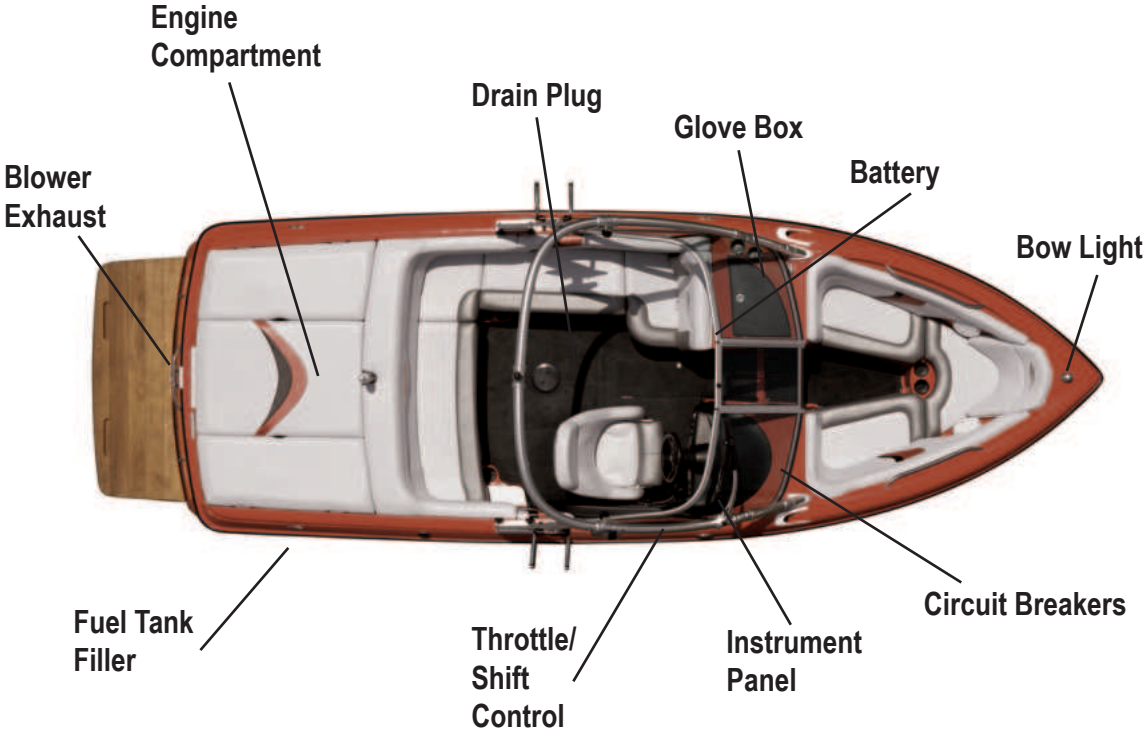
ProStar 197 X-7



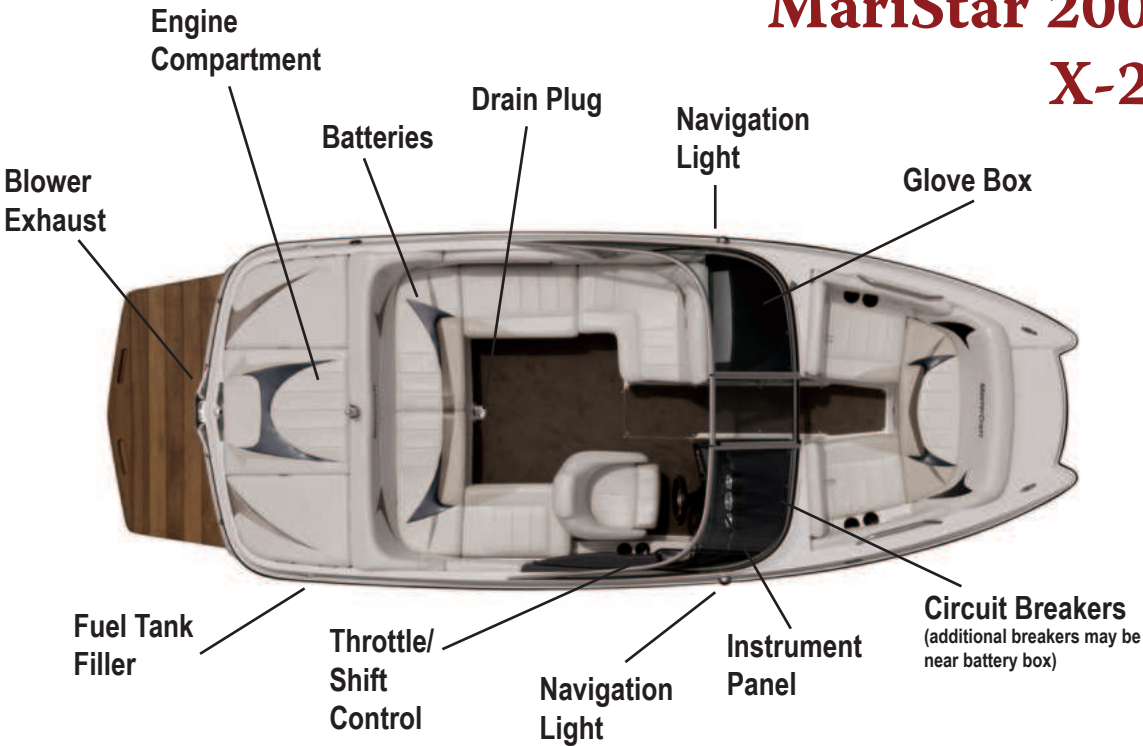
ProStar 214 X-14



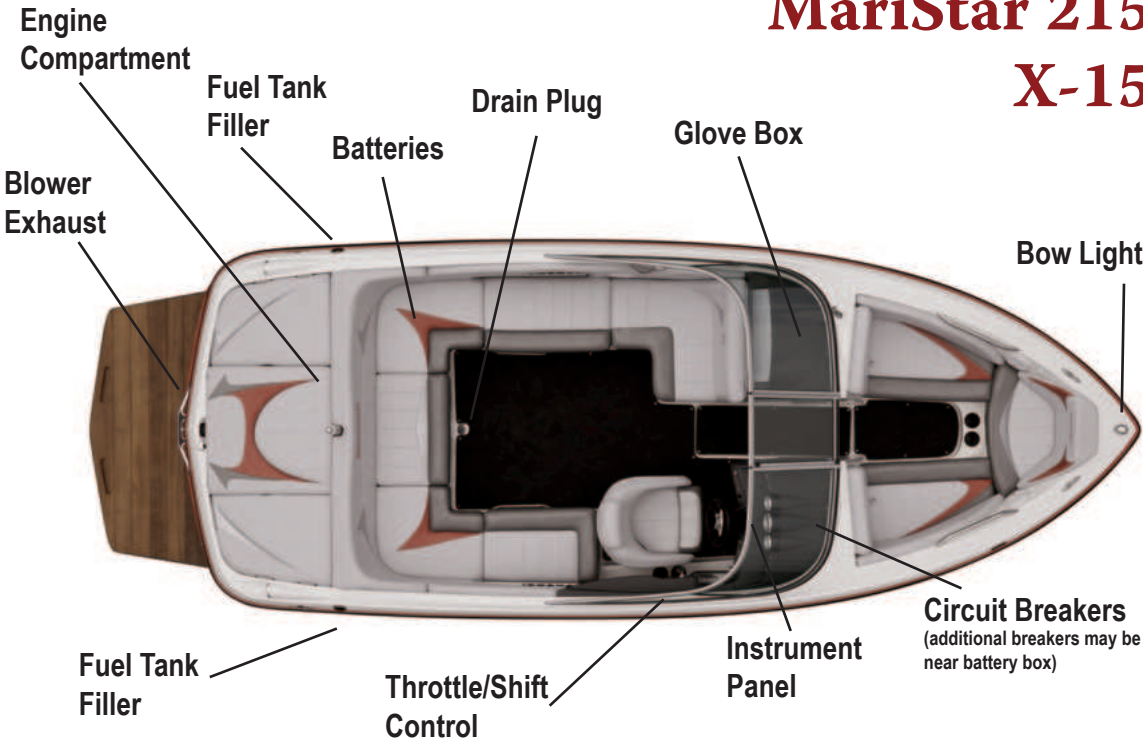
X-1



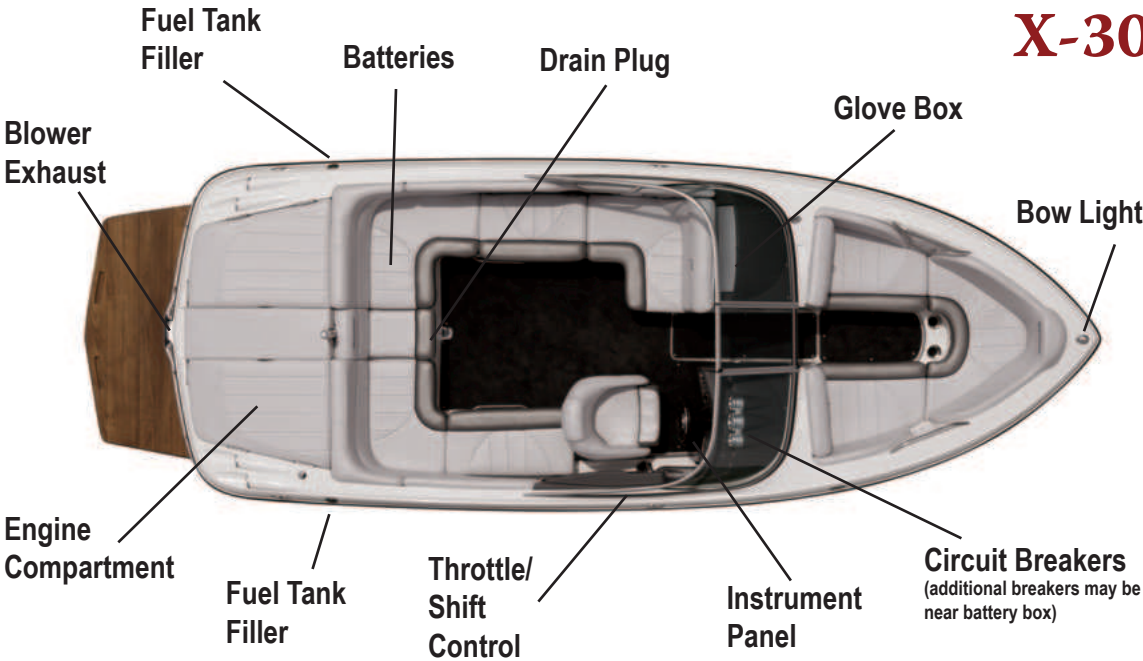
MariStar 200 X-2



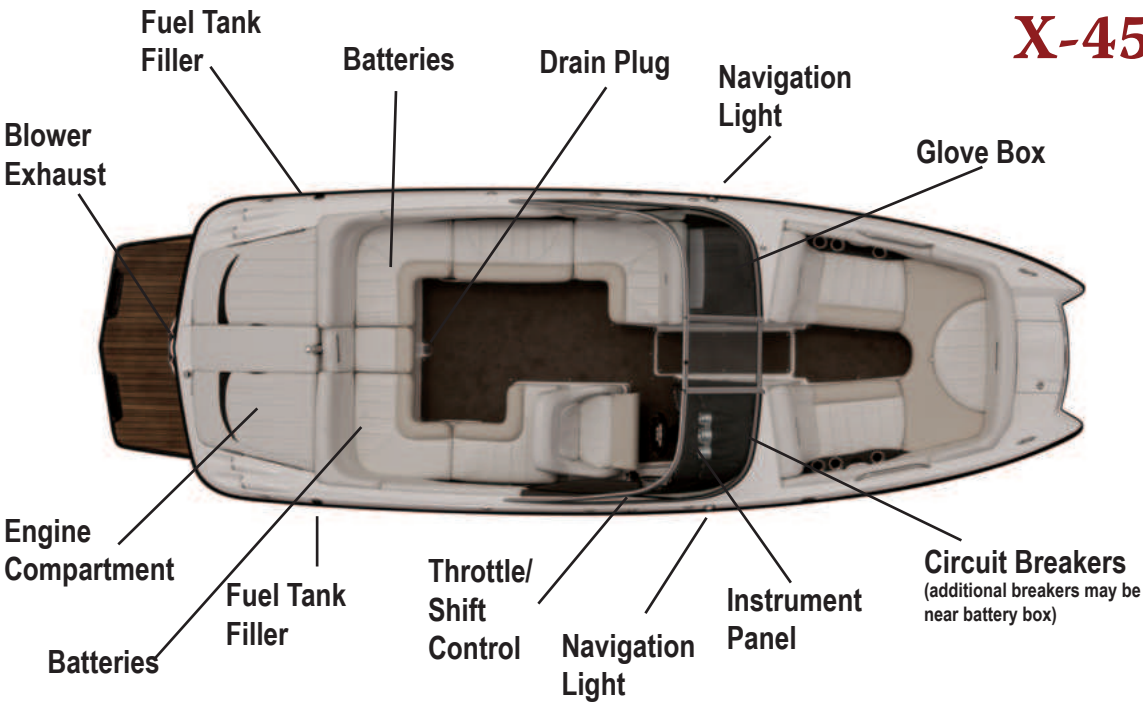
MariStar 215 X-15



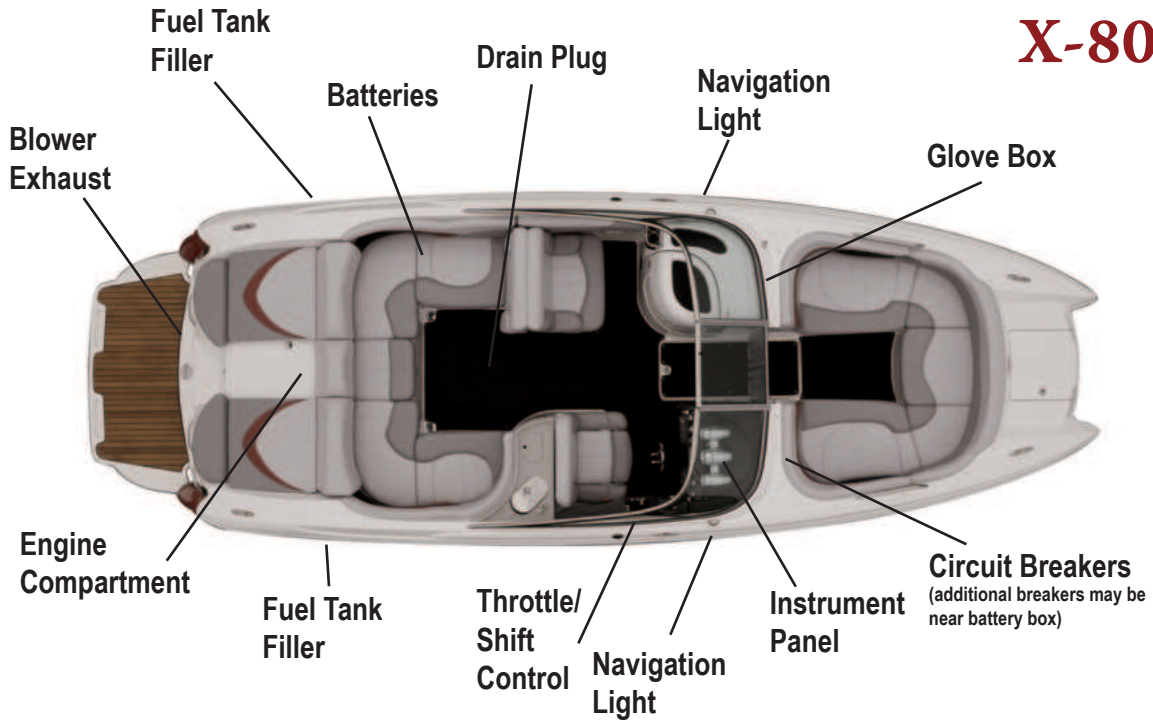
MariStar 230 X-30



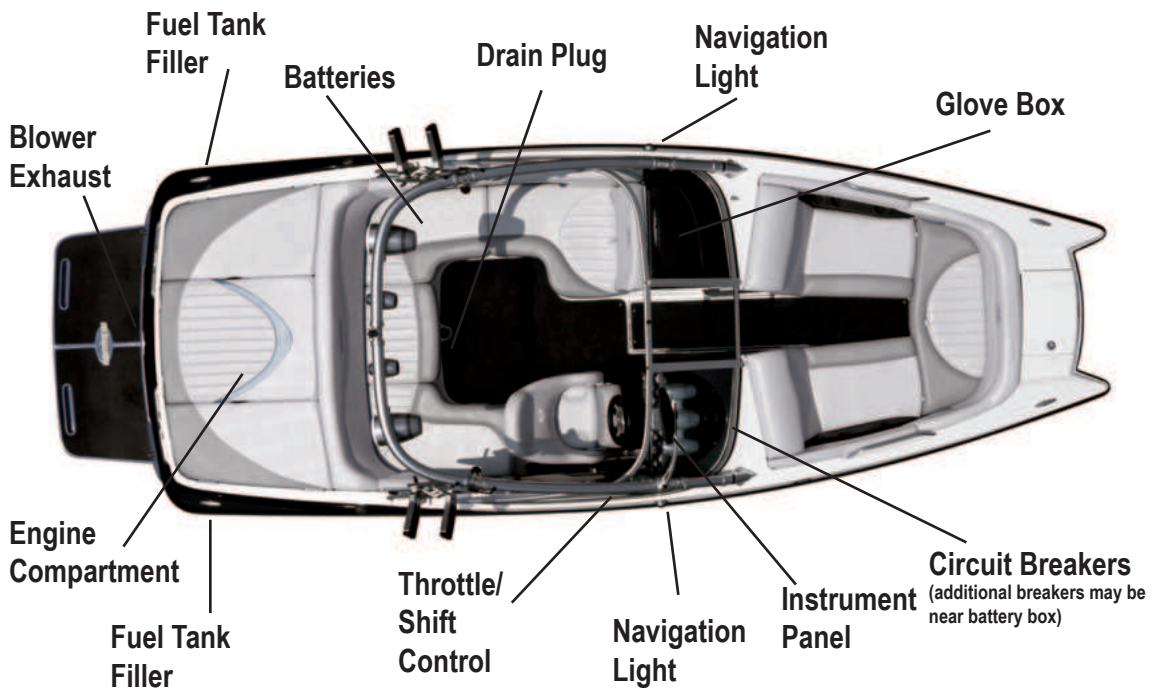
MariStar 245 X-45



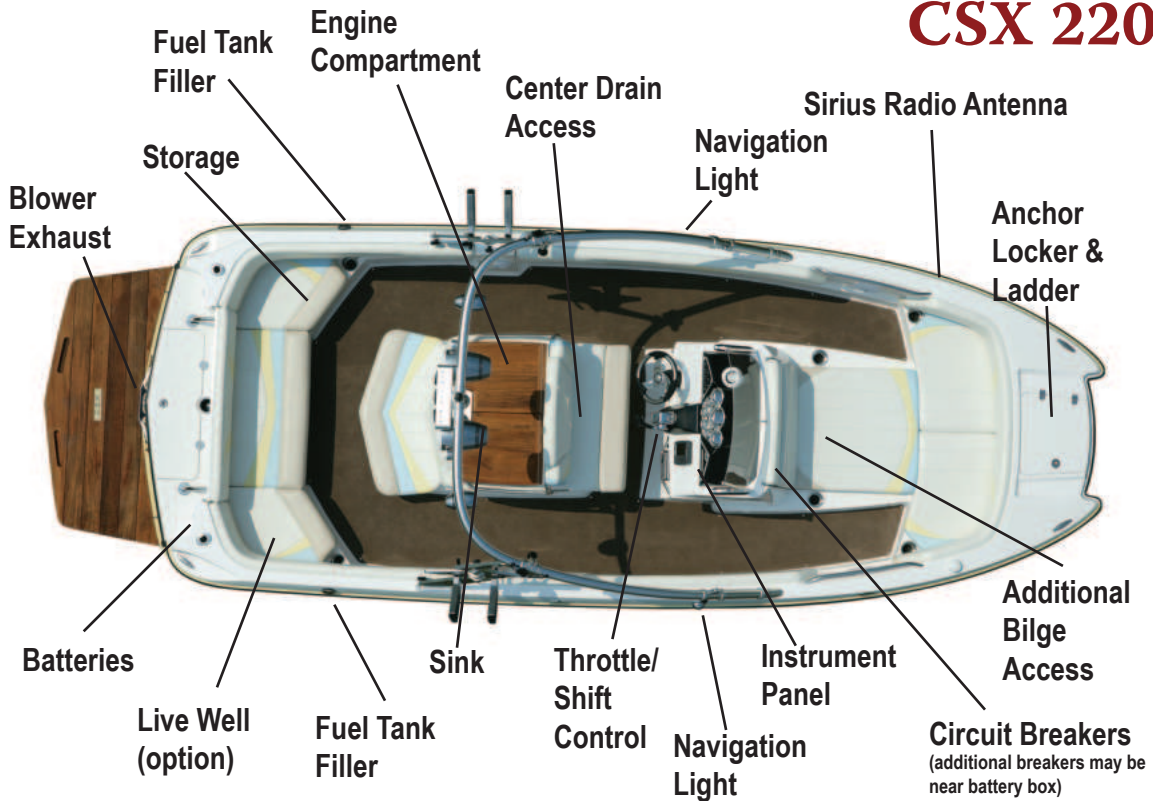
MariStar 280 X-80



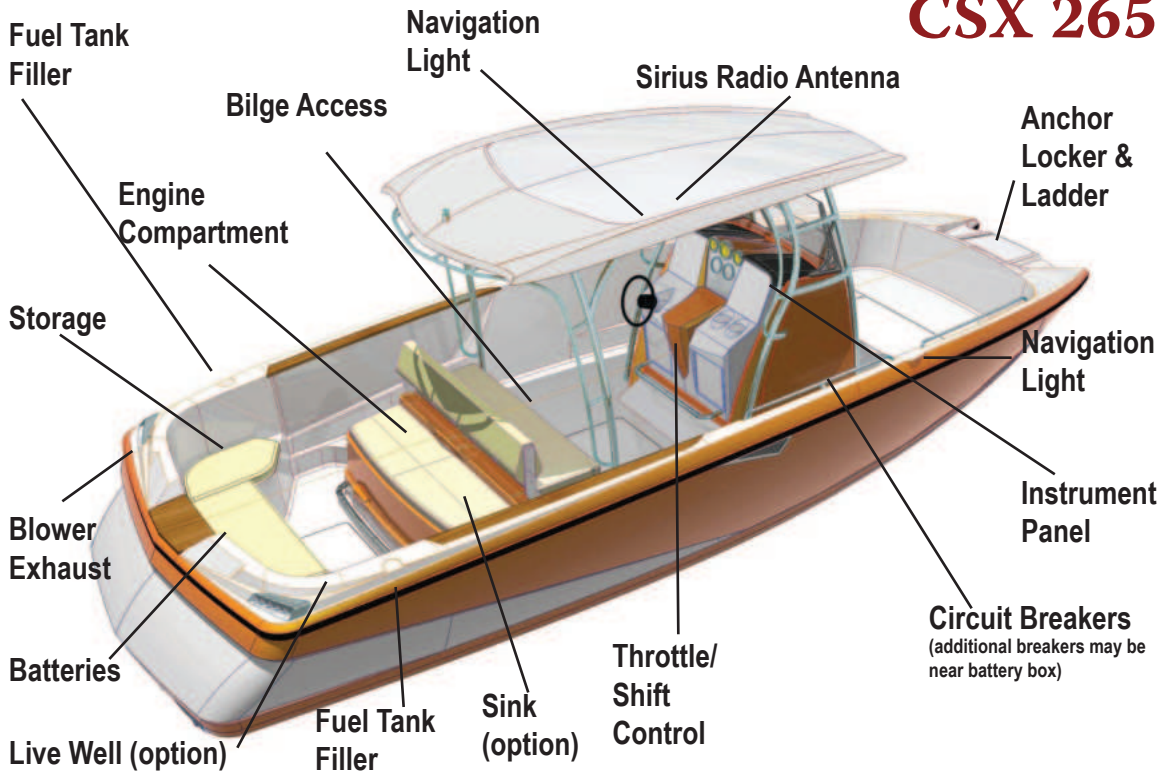
X-Star



CSX 220



CSX 265



Instrument Panels

ProStar 190, ProStar 197, X-1, X-7, ProStar 214, X-14

Top row of gauges from left:

Oil pressure gauge
Engine temperature gauge
Speedometer
Multi-function/tachometer
Speedometer or Perfect Pass
Voltmeter
Fuel gauge

Lower left panel:

Horn
Seat Heat switch
Heater switch
Courtesy lights switch

Lower right panel:

Speedo adjustment switch
Clock adjustment switch
Nav/anchor lights switch
Bilge pump switch
Blower switch
Ignition key slot

X-Star, MariStar 280, X-80

Top row of gauges from left:

Tachometer
Speedometer
Video display gauge

Middle left panel:

Oil pressure gauge
Engine temperature gauge

Middle right panel:

Voltmeter
Fuel gauge

Lower left panel:

Horn
Courtesy lights switch
Shower switch
Heater switch
Ballast port switch
Ballast KGB switch
Ballast starboard switch

Lower right panel:

Tower light switch
Blower switch
Bilge pump switch
Nav/anchor lights switch
Ignition switch

MariStar 200, MariStar 215, MariStar 230, MariStar 245, X-2, X-15, X-30, X-45

Top row of gauges from left:

Oil pressure gauge
Engine temperature gauge
Video display gauge
Speedometer
Perfect Pass (option)
Fuel gauge
Voltmeter

Lower left panel:

Horn
Seat Heat switch
Heater switch
Wash down switch
Courtesy lights switch
12-volt receptacle

Lower right panel:

Speedo adjustment switch
Display selector switch
Speedo adjustment switch
Nav/anchor lights switch
Forward bilge switch
Aft bilge switch
Blower switch
Ignition key slot

CSX 265

Gauge panel upper:

Port engine tachometer
Video display gauge
Starboard engine tachometer

Gauge panel lower:

Port engine multiple gauge: gas (upper left); voltmeter (upper right); engine temperature (lower left); oil pressure (lower right).
Starboard engine multiple gauge: gas (upper left); voltmeter (upper right); engine temperature (lower left); oil pressure (lower right).

Switch panel, upper row:

Navigation/anchor light switch
Courtesy light switch
Tower light switch, forward
Tower light switch, aft

Switch panel, lower row:

Three (3) bilge switches
Blower switch
Engine hatch switch

CSX 220

Upper panel:

Tachometer
Speedometer
Perfect Pass (option)
Display selector (multi-purpose gauge)
Starboard switch: speedometer calibration
Engine temperature gauge
Oil temperature gauge
Voltmeter
Fuel gauge

Port side switches, top row from left:

Navigation/anchor light switch
Forward/aft tower light switch
Courtesy light switch

Port side switches, bottom row from left:

Forward bilge auto/manual switch
Aft bilge auto/manual switch
Freshwater switch
Up/down motor box hatch actuator switch
On/off bilge blower switch

Center switches:

Port ballast system fill/empty switch
KGB ballast system fill/empty switch
Starboard ballast system fill/empty switch

Starboard side console:

Glovebox
Garmin GPS/chartplotter/sounder (optional)
Clarion stereo AM/FM radio and CD player (optional)
12-volt courtesy outlet
MP3/iPod input

Below steering helm:

Emergency engine safety switch
Ignition switch

Measurements

ProStar 190

| | |
|---------------------------|------------------------|
| Length of Boat | 19'8" |
| Width Amidship | 91" |
| Boat Weight | 2,620 lbs. |
| Length of Boat w/Platform | 21'6" |
| Towing Length | 22" |
| Towing Width | 100" |
| Fuel Capacity | 28 gallons |
| Total Weight Capacity | 7 people or 1,087 lbs. |

ProStar 197, X-7

| | |
|---------------------------|------------------------|
| Length of Boat | 19'8" |
| Width Amidship | 91" |
| Boat Weight | 2,800-3,070 lbs. |
| Length of Boat w/Platform | 21'6" |
| Towing Length | 22" |
| Towing Width | 100" |
| Fuel Capacity | 28 gallons |
| Total Weight Capacity | 7 people or 1,087 lbs. |

ProStar 214, X-14

| | |
|---------------------------|-------------------------|
| Length of Boat | 21'4" |
| Width Amidship | 96" |
| Boat Weight | 3,100-3,300 lbs. |
| Length of Boat w/Platform | 23'8" |
| Towing Length | 24'4" |
| Towing Width | 100" |
| Fuel Capacity | 40 gallons |
| Total Weight Capacity | 11 people or 1,525 lbs. |

X-1

| | |
|---------------------------|-------------------------|
| Length of Boat | 20'7" |
| Width Amidship | 90" |
| Boat Weight | 3,200 lbs. |
| Length of Boat w/Platform | 22'6" |
| Towing Length | 22'3" |
| Towing Width | 96" |
| Fuel Capacity | 33 gallons |
| Total Weight Capacity | 11 people or 1,705 lbs. |

MariStar 200, X-2

| | |
|---------------------------|-------------------------|
| Length of Boat | 20' |
| Width Amidship | 96" |
| Boat Weight | 3,350-3,500 lbs. |
| Length of Boat w/Platform | 22'1" |
| Towing Length | 22'9" |
| Towing Width | 100" |
| Fuel Capacity | 45 gallons |
| Total Weight Capacity | 11 people or 1,609 lbs. |

MariStar 215, X-15

| | |
|---------------------------|-------------------------|
| Length of Boat | 21'8" |
| Width Amidship | 100" |
| Boat Weight | 3,425-3,575 lbs. |
| Length of Boat w/Platform | 23'9" |
| Towing Length | 24'1" |
| Fuel Capacity | 45 gallons |
| Total Weight Capacity | 14 people or 2,325 lbs. |

MariStar 245, X-45

| | |
|---------------------------|-------------------------|
| Length of Boat | 24'2" |
| Width Amidship | 102" |
| Boat Weight | 4,730-4,950 lbs. |
| Length of Boat w/Platform | 26'4" |
| Towing Length | 26'1" |
| Towing Width | 100" |
| Fuel Capacity | 90 gallons |
| Total Weight Capacity | 18 people or 2,928 lbs. |

MariStar 280, X-80, 280 STS

| | |
|---------------------------|-------------------------------------|
| Length of Boat | 28'3" |
| Width Amidship | 114" |
| Boat Weight | 62000 lbs./6,420 lbs. |
| Length of Boat w/Platform | 28'3" |
| Towing Width | 114" |
| Fuel Capacity | 100 gallons |
| Total Weight Capacity | Yacht certified; no capacity rating |

X-Star

| | |
|---------------------------|-------------------------|
| Length of Boat | 24'9" |
| Width Amidship | 100" |
| Boat Weight | 4,250 lbs. |
| Length of Boat w/Platform | 24'6" |
| Towing Length | 24' |
| Towing Width | 100" |
| Fuel Capacity | 57 gallons |
| Total Weight Capacity | 12 people or 1,770 lbs. |

CSX 220

| | |
|---------------------------|-------------------------|
| Length of Boat | 21'5" |
| Width Amidship | 102" |
| Boat Weight | 4,300 lbs. |
| Length of Boat w/Platform | 23'7" |
| Fuel Capacity | 46 gallons |
| Total Weight Capacity | 12 people or 1,595 lbs. |

CSX 265

| | |
|---------------------------|-------------------------------------|
| Length of Boat | 26'5" |
| Width Amidship | 114" |
| Boat Weight | TBD |
| Length of Boat w/Platform | 29'2" |
| Fuel Capacity | 125 gallons |
| Total Weight Capacity | Yacht certified; no capacity rating |

PROPER CONTROL OF MASTERCRAFT BOATS EXTENDS BEYOND the steering wheel. Each boat is equipped with several gauges that provide information to guide the boat's operator in maintaining control of the boat. There are also a variety of switches and buttons within the boat that control various functions from comfort and enjoyment to safety-related features. It is important for the boat owner and/or operator to become familiar with all gauges and switches in the boat, their functionality, and how to respond to alarms and warnings that the instrument panel may provide.

In the side panel, you will find a listing of the locations of gauges and switches for the various model instrument panels. Operators should match up these listings with the actual panel. Prior to boating, owners and operators should also review and understand the following section

INSTRUMENT GAUGES & SWITCHES

regarding the boat's electrical components and operations through the battery or batteries, as well as the circuit breaker system. A thorough understanding of these systems is critical to avoiding potential issues that may arise during an outing.

The following is an explanation of the functionality of the gauges and switches that are listed for the various models.



Ignition Key Slot

MasterCraft boats come equipped with an ignition key, which must be inserted in the ignition key slot and used to activate the boat's electrical system. This, in turn, will allow the boat to be started and operated.



The key will be in one of four (4) positions:

- Off
- Accessory (including running the stereo without the engine running)
- ON (engine is running)
- Start (turn the key to engage the engine starter, then release to allow the key to automatically return to the ON position)

Never leave the ignition switch in the ON position without the engine running, as this will cause the battery to discharge.

Note: *The MariStar 280STS is equipped with two (2) ignitions, one (1) for each engine, allowing the engines to operate independently of each other. Be sure to turn **both** ignitions OFF when the engine is not in use.*

Video Display Gauge

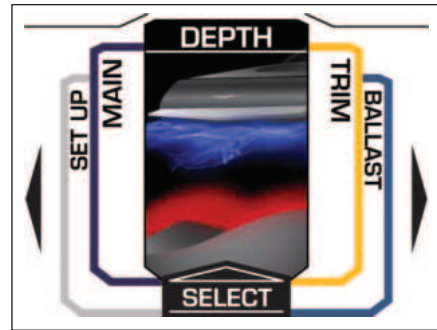
Many MasterCraft boats feature a color display gauge. The video display gauge is capable of displaying engine, boat, and Perfect Pass speed control information.



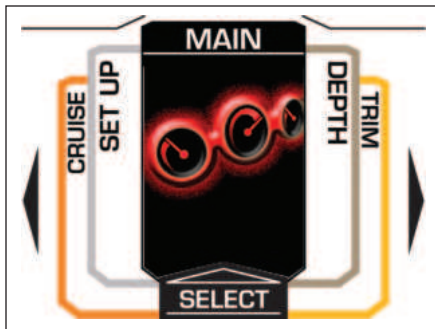
Information is divided into manageable pages or screens and organized into a straightforward menu structure for presentation to the driver. Display controls, conveniently located along the bottom of the gauge, allow rapid navigation of the menu structure to display any desired information.



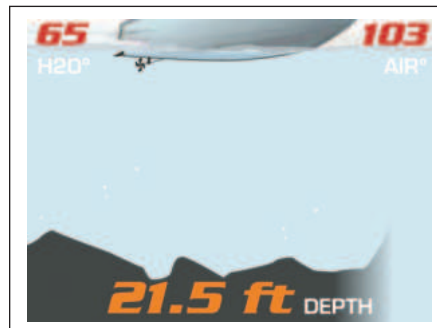
Display navigation buttons



Menu Display Screen



Menu Display Screen

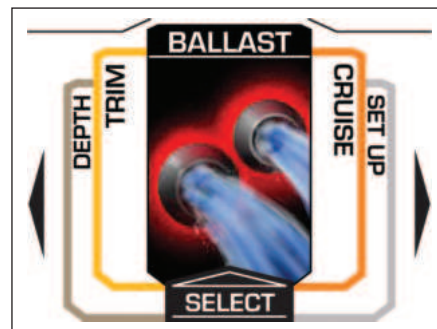


Selecting the **BALLAST** tab goes to the screen illustrated below. It allows the driver to see the status of all the ballast tanks installed in the boat. This tab is a plug and play tab so uninstalled ballast tanks do not appear on the screen.

Display navigation is intuitive. Pressing the **Menu** button brings up a display of the available information organized and illustrated as file tabs with each tab representing a screen of information. Repeatedly pressing the **MENU** button shuffles the tabs to bring a new tab to the top of the stack. Pressing the **SELECT** button initiates the screen represented by the tab on the top of the stack.

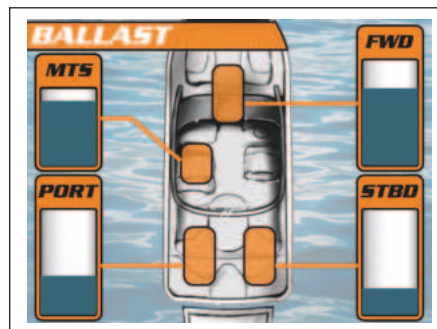
The system anticipates the need to display information and automatically brings up certain screens when they are necessary. For example, the system automatically displays a related screen when it senses any of the following events:

- Adjusting the trim brings up the Trim screen
- Adjusting the ballast brings up the Ballast screen
- Pushing the Perfect Pass button brings up the Perfect Pass screen
- Any alarm condition brings up a warning screen

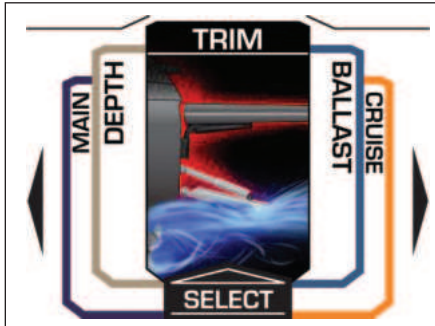


Menu Display Screen

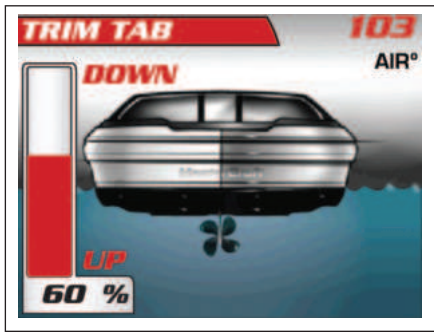
Selecting the **DEPTH** tab goes to the screen illustrated following. This screen digitally displays depth, water temperature, air temperature, and illustrates the depth trend. The system also has a user adjustable depth alarm that can be adjusted from the **SETUP** tab.



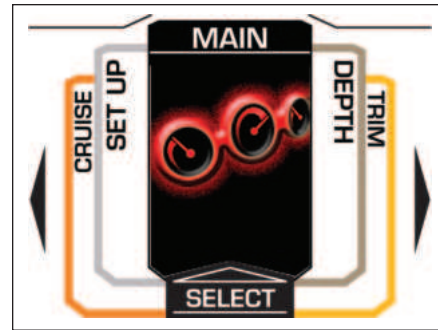
Selecting the **TRIM** tab goes to one of the screens illustrated below. These screens display the position of the installed single-trim tab or dual-trim tabs.



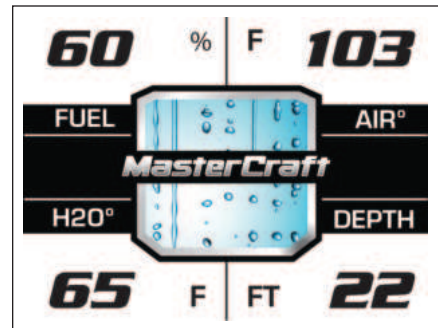
Menu Display Screen



Selecting the **MAIN** tab goes to the screen illustrated in the next column. Any information available to the instrumentation system may be selected by the driver to be displayed in this screen. This screen is organized into four (4) quadrants with the user-selected information digitally displayed in each quadrant.



Menu Display Screen



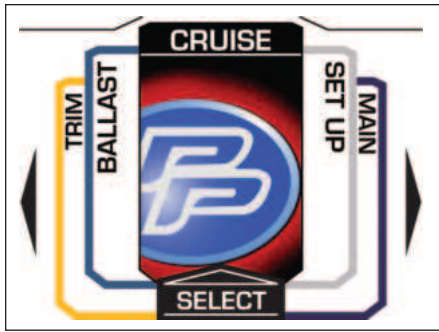
To change the information displayed simply:

- Press the **UP** or **DOWN** arrows to highlight the quadrant that you wish to change
- Press **SELECT** to access the pull down menu
- Using the **UP** or **DOWN** arrows highlight the desired information.
- Press **SELECT** again to store the change

MasterCraft boats equipped with the video display gauge feature integrated Perfect Pass Wakeboard Pro speed control software.



The Perfect Pass application can be entered by selecting the **CRUISE** tab on the **MENU** screen or pressing the remote Perfect Pass button. **Perfect Pass is turned on and off by pressing the remote perfect pass button.** Please refer to the Perfect Pass manual for detailed operating instructions.

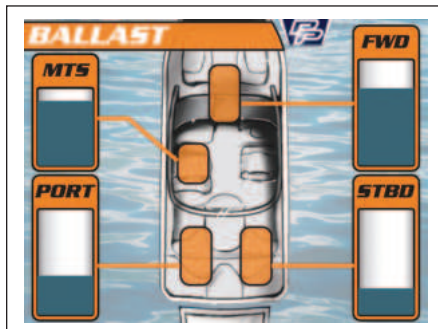


Menu Display Screen

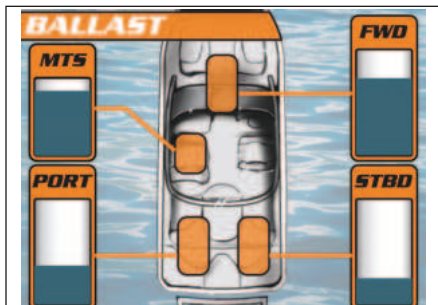


Remote Perfect Pass Button

All screens display a Perfect Pass icon when the Perfect Pass system is turned on.

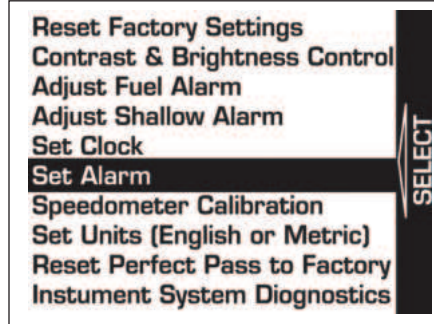
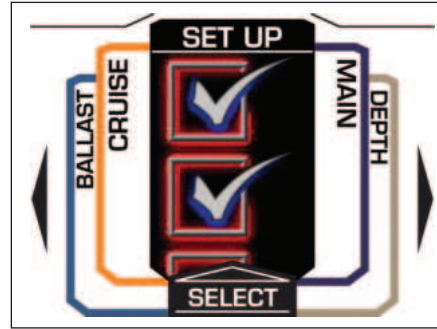


Ballast Screen PP On



Ballast Screen PP Off

Selecting the **SET UP** tab goes to the pick list illustrated below. It contains all the system controls of the video display gauge. This tab permits control of alarms, speedometer calibration, brightness and contrast adjustment to name a few. Using the **UP** and **DOWN** arrows highlight the desired item and press **SELECT**. Make the desired changes and press **MENU** to save and exit.



All system Warning Messages are displayed on the video display gauge. They will stay on for a minimum of 10 seconds but, can be acknowledged and hidden by pressing the **MENU** button. Once acknowledged after 10 seconds the alarm will go away for 5 minutes. If the alarm is still active it will return after the 5 minutes.



Multi-Function Gauge

(ProStar 190, ProStar 197, X-7, X-1 models only)

This gauge provides several functions of interest and support to the boater. As a **tachometer**, it indicates the engine speed in crankshaft revolutions per minute (RPM).

As you toggle to the **hourmeter**, it registers the accumulated engine operating time. Use the hourmeter to keep accurate logs for scheduled maintenance. (See also the *Maintenance Section* and *Service Log*.) Replacing the computer (known as the MMDC) will erase the registered hours. The hourmeter counts hours only when the engine is above 300 rpm.



The option exists to change the display to metric from the hours screen. This is done by holding down the gauge selection display button for three (3) seconds. When prompted, select English or metric display. Wait an additional three (3) seconds and the display will return to normal operation.

Toggle to the **air temperature gauge** (optional) to get an approximate reading of the ambient air temperature above the water's surface.

Toggle to the **clock** for the convenience of determining the time. It can be adjusted by depressing the gauge selection display button when the clock is displayed. After three (3) seconds the colon will stop flashing. The hours are adjusted by pressing the button down, while minutes are adjusted by pressing up. After three (3) additional seconds the clock will return to normal operation.

Alarms of the Multi-Function Gauge

In addition to the displays noted above, the multi-function gauge also displays several alarms. The following messages will be displayed if an alarm occurs:

VOLT = Voltage falls below 11.5 volts. This message indicates that the battery has discharged to an extent that may jeopardize engine cranking and starting if action is not taken. Start the engine to at least idle, and allow the battery to re-charge.

OIL = Oil pressure is below 4 p.s.i. when the RPM is below 1000 RPM or the oil pressure is below 10 p.s.i. and above 1000 RPM. This message will occur only

when the engine is running. Stop the engine and check the oil level as soon as this can be safely done.

TEMP = High engine temperature alarm. This message will occur only when the engine is running. If the engine does not automatically reduce speed to the "limp home" level, manually reduce speed and return to the dock as soon as this can be safely done. It may be necessary to shut down the engine and seek a tow to the dock.

TRAN = Transmission alarm. This message will occur only when the engine is running. Stop the engine and check the transmission oil level as soon as this can be safely done.

While air temperature readings are an optional addition to the gauge, the **lake temperature** reading is standard on the gauge. This comes from the paddle wheel located under the boat. If the sensor becomes open or shorts out in the line to the battery, it will read 32 degrees F. If the sensor is shorted to the ground wire, it will read 150 degrees F. The SELF TEST feature of the multi-function gauge is located on the lake temperature gauge. With the lake temperature displayed, hold down the gauge selection display button for three (3) seconds or until the self test has started. During the self-test, all the segments on the display will light up. Also during the self test, the gauges will re-set, go to mid-scale and then to full-scale. After two (2) sweeps the system will return to normal.

Speedometer

The speedometer indicates the forward speed of the boat in miles per hour (unless the boat is equipped with a speedometer that measures kilometers per hour, which is available in the optional European package.)



To calibrate the speedometer, you need an accurately measured course of 850 feet and a certified stopwatch, which is accurate to within one-hundredths (.01) of a second. (This can be done with GPS, when equipped.) To calibrate to A.W.S.A. official tournament rules:

- Approach the course at 36 miles per hour (MPH) as indicated on the speedometer. Hold the speed steady and have an observer check the course time with a stopwatch.



- If the course time is between 15.88 and 16.28 seconds, no adjustments are necessary.
- If the course time is not within that tolerance range, press up or down on the calibration rocker switch to adjust the speedometer's speed interpretation.

Tachometer

On boats not equipped with a multi-function gauge, a separate tachometer gauge is found. The tachometer indicates the engine speed in crankshaft revolutions per minute (RPM).



Perfect Pass or MC Cruise

Boats equipped with cruise control systems provide short manuals that describe how to operate and maintain the cruise control system. Refer to the appropriate manual prior to operation of the system.



Fuel Gauge

Fuel gauge readings are only approximate. This gauge is activated with the ignition switch. The rocking motion of the boat during normal operation will cause the fuel gauge to fluctuate. For a more accurate reading, make sure that the boat is level and with little or no motion present.



MasterCraft recommends that operators do not run the boat below a quarter of a tank, except as necessary to return to shore, and not until the boat has been operated enough times to develop an understanding of how the fuel gauge readings relate to the visual inspection of fuel left in the tank. Extending fuel usage beyond the known capability of the boat may cause the boat to run out of fuel and may leave you stranded off-shore.

Although it may be possible to see fuel in the bottom of the fuel tank, you still may not be able to operate the

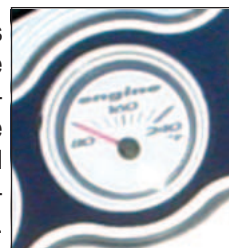
boat. The fuel pick-up system was designed to avoid introducing the small amount of water and debris that unavoidably accumulate in the bottom of the tank. Rather than relying on visual inspection, you should pay attention to the fuel gauge.

Further, it is not recommended to allow the fuel to fall below one-quarter of a tank full at any time as it may result in damage to the fueling system. (see the Fueling section of this Manual.)

Temperature Gauge

The temperature gauge indicates the water temperature inside the engine's cooling system as measured in degrees Fahrenheit. The normal operating temperature will range from 140 degrees Fahrenheit to 190 degrees Fahrenheit. Engines with electronic fuel injection also have a control circuit inside the engine control module that will cause the engine to run at reduced speeds if the module senses that the engine is running too hot. If you notice that your speed has reduced during normal operation, but you have not manually slowed the throttle, monitor your temperature gauge.

If the gauge indicates excessive temperatures during operation, slow down immediately and turn off the engine. This indicates an engine problem that needs to be checked by the dealer!

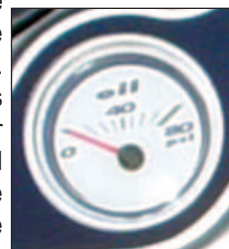


CAUTION

Continuing to operate the boat while the temperature is above normal operating parameters may cause serious damage to your engine. Damage to your engine resulting from operating the engine in an overheated condition can be costly to repair. Such damage is not covered by your warranty!

Engine Oil Pressure Gauge

The engine oil pressure gauge indicates the pressure of the lubricating oil inside the engine. The average pressure ranges are between six (6) pounds per square inch (PSI) at 1000 RPM to 40 PSI or more at cruise range speeds. A reading of pressure below 5 PSI at 1000 RPM may be caused by a low oil level or other potentially serious



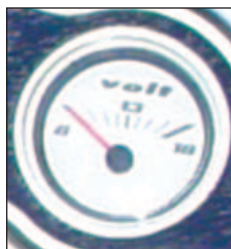
problems that result in low oil pressure. ***If you experience low oil pressure, stop your engine immediately and check your oil level before operating again.***



Do not continue to run the engine if the oil pressure is low. If you do, the engine may become so hot that it, or surrounding components, could catch fire. You or others could be burned and the boat seriously damaged. Check your oil level and add an appropriate amount of approved motor oil before operating again or have your boat serviced by your local authorized MasterCraft service department. Note that damage to your engine from inappropriate oil levels can be costly to repair. Such damage is not covered by your warranty.

Voltmeter

The voltmeter registers the electrical activity necessary to operate your boat. If the battery (or batteries, in boat models requiring two [2]) is low or non-functional, or if various electrical items on the boat, such as stereo equipment, are draining the battery(ies) and impacting the boat's ability to function properly, the voltmeter will likely be the first gauge to indicate that you have an electrical problem. The voltmeter cannot tell you which battery is draining on boats with two (2) batteries, but rather functions as a general alarm to alert boaters regarding potential issues. On boats equipped with two (2) batteries, the alarm indicates severe drain on the engine starting battery. To determine which battery is the engine starting battery, read the markings on the battery cables.



Low Voltage Battery Alarm

In the event that the stereo has been functioning when the boat is not ON and running, the voltage drain on the battery (or batteries) may result in difficulties with re-starting the boat. It may also cause intermittent erroneous or fluctuating gauge readings. When the voltage level reaches 11.5 volts or below, the system will shut off the stereo and sound the alarm for a period of two (2) minutes to give boaters sufficient time to adjust. Generally, the appropriate action is to leave the stereo OFF, as well as disengaging any other peripheral electrical components, and keying ON the engine. Running the engine at a moderate rate for several minutes without the ad-

ditional drain of stereo and unnecessary electrical equipment will allow the alternator to recharge the battery or batteries, unless the battery(ies) have been used to the extent of their life span.

Other Alarms

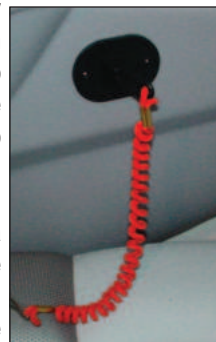
Sensors check the oil pressure, engine and transmission temperatures. If the system detects readings outside the acceptable range, the system shuts off the stereo and sounds the alarm for a period of one (1) minute. This signals the need to return to shore as soon as possible and seek assistance from your authorized MasterCraft dealer's service department to diagnose and, if necessary, repair the problem.

Emergency Engine Safety Switch

The emergency engine safety switch, called the lanyard, is an ignition cut-off switch designed to stop the engine in the event the operator is thrown or moves too far away from the helm.

The lanyard is equipped with a hook on one end that should be attached to your clothing or PFD, and the opposite end has a slide that fits over the ignition switch.

Be sure that the slide is firmly attached to the ignition switch before starting.



The ignition switch is located near the throttle control box, the armrest or on the instrument panel. If the slide is left off or is loose, the engine will crank but will not start. **Operators should NEVER attempt to override this safety system!**

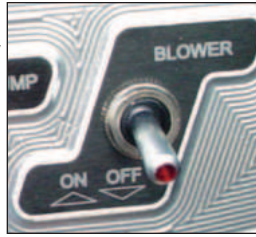


The safety switch lanyard must be attached to the operator whenever the engine is running. Failure to do so may result in death or serious injury!

Blower Switch

A two-position rocker switch activates the engine box ventilation blower. Push the top half of the switch to turn the blower ON.

Note: The blower must operate for a minimum of four (4) minutes before starting the engine at any time. The blower must also be operated during idle and slow-speed running, but is not necessary during cruising speed.



To prevent a possible explosion, operate the blower for at least four (4) minutes before starting the engine and always when at idle or slow-running speed. Explosive gasoline and/or battery fumes may be present in the engine compartment. Failure to operate the blower as instructed may cause improper ventilation of the boat engine and bilge areas, and fuel vapors can accumulate in this area, causing a fire or explosion which may result in death or serious injury!

Horn

The horn is sounded by way of a button on the instrument panel. Pressing the button emits a loud and recognizable noise.



Manual and Automatic Bilge Pump Switch

The bilge pumps on all V-drive models will be in the automatic mode when the ignition key is turned ON. Some models may have two (2) switches, one for the forward bilge and one for the aft. In these instances, the switches will be marked. The manual and automatic bilge discharge system is never completely off. When in the automatic (default) position, a sensor alerts the system to discharge water from the bilge area. Boat operators are advised to leave the switch in the automatic position, unless there appears to be excess water in the bilge. In that event, the bilge pump can be manually activated by turning the bilge pump switch to the manual ON position. Return the switch to the automatic position when finished emptying the bilge. Leaving the switch in



manual mode can result in damage to the pump and may not be covered by warranty!

Ballast Empty/Fill Switches

On boat models equipped with a ballast system, a separate three-position switch will allow for the filling or emptying of the ballast tanks and/or bags. **Be aware that the engine must operate at 1500 RPM during the fill and empty processes.** Check engine specifications for related engine idle speed, which may be too low for the empty/fill operation to be properly accomplished; it is likely that the boat will need to be in motion during the filling and emptying of the ballast system. Failure to increase engine RPM to the required level may result in malfunction or permanent damage to the ballast pumps that force the water through the system. Such damage is not covered under your warranty. The ballast controls vary in location by model, and the operator should determine exact location prior to use. The three-position switches are clearly marked; FILL, OFF (in center), and EMPTY.



Accessory Switches

Instrument panels may be equipped with Accessory Switches. In some instances, the indicator may be labeled with the name of the accessory, such as "Heater." Accessory switches are two-position switches. Turning the switch upwards will turn a connected accessory ON, while turning it down will turn the accessory OFF.



Instrument Panel Gauge Backlighting Switch

A three-position switch allows the operator to change the instrument panel backlighting for the gauges. Pressing the top of the switch will cause the lights to brighten, the center position is OFF, and pressing down will dim the lights.



Courtesy Lights Switch

This switch is a two-position switch that activates the courtesy lights within the boat. Turning the switch upwards will turn the lights ON, and turning it downwards will turn the lights OFF.



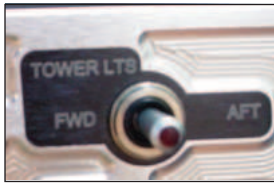
Navigation/Anchor Lights Switch

A three-position switch serves to activate exterior lighting. Turning the switch in the up position will activate bow and stern lights, the middle position is OFF, and the down position is for stern-only lighting.



Tower Lights Switch

The location of the tower lights switch (where equipped) vary by model and should be located by the operator. In some instances, there may be two (2) switches. In all instances, the lights operate by using two-position switches, one position for ON and the other for OFF.



Aft Lights Switch

Where equipped, an aft light switch allows the operator to turn on lights located in the rear of the boat. The two-position switch is pressed up for ON and down for OFF.



12-Volt Receptacle

MasterCraft boats have one (1) or more 12-volt receptacles. Examine your boat to determine whether there are additional outlets. Prior to plugging any accessory into a 12-volt receptacle, ensure that the device is designed for use when connected to a 12-



volt receptacle and will not be damaged by the connection to the receptacle.

Speedometer Adjustment Switch and Clock Adjustment Switch

Some models may be equipped with a three-position speedometer calibration adjustment switch. Its operation is explained elsewhere in this section. Where equipped, the models with a clock adjustment switch have a three-position switch which is pressed upward or downward to add or subtract time to the clock. The middle position is OFF.



Display Selector Switch

On the models equipped with the Multi-Function gauge, this switch allows the operator to toggle between functions.

Seat Heat Switches

A two-position switch allows heat to be turned ON for the driver's seat. In some models, an optional observer seat heat switch is available and will be found on the deck below the observer seat cushion.



Heater Switch

Among the accessory options available for your boat is a heater function. The heater's three-position switch is turned up for ON LOW, or turned down for ON HIGH. The center position is OFF. Warmed air from an electrically powered heater box will be blown from vents within the boat deck.



Wash Down Switch

A ten-gallon tank option within available models can provide a fresh-water wash of the boat interior. The two-position switch is pressed up for ON and down for OFF.



Engine Hatch Switch

Where equipped, an engine hatch cover switch allows the cover to open and close electronically. The two-position switch is pressed up for ON and down for OFF.



AM/FM Stereo, CD Player, Remote Control, iPod and MP3 Player Connections

Boats may be equipped with a range of entertainment opportunities from radios and CD players to connections for personal devices. Most radio and CD players will be located within the glovebox of the boat, but may also be in the console. Remotes may be in the armrest or on the transom.



The iPod interface option features a cable located inside the glovebox that allows the unit to simply be plugged in and run off the boat's electrical system. An optional plug-in location for MP3 players is available. Be aware that all such devices are a drain on the boat's battery and electrical system. Care should be taken to avoid excessive usage of such devices and by responding to any alarms that sound so that the boat's battery(ies) does not become fully discharged.

Another option is a wireless stereo remote that will float if accidentally dropped overboard. The remote can also double as a key fob for a limited number of keys.

The stereo and components come with a separate manual explaining operation of the devices. Please review and become familiar with the equipment.

Shower and/or Slick Boot Switch

A single three-position switch mounted in an aft position storage area controls the optional shower and optional Slick Boot functions. The switch is marked for each. Turn the switch toward the Shower marking to



turn ON the shower. Return to center for OFF. Turn to the other direction to turn ON the Slick Boot. Return to center for OFF. These instructions work whether the boat is equipped with one (1) or both of the options, but will not be found in boats that are not equipped with either option.

Attitude Adjustment or Trim Tab Switch

MasterCraft utilizes Lenco attitude adjustment plate kits on several models. Dual plate kits are available on the MariStar 280, X-80 and 280 STS models; a single plate kit is used on the MariStar 245 and X-45, as well as the MariStar 230 and X-30 (2006 models).



On the dual attitude adjustment plate system, the plates operate independently of each other to provide optimal performance by redirecting water flow near the transom of the boat. These plates have been designed to improve the overall attitude of a boat. If used properly, the plates will improve the ride, reduce drag, increase speed and improve the ride and fuel efficiency of the boat.

The operation of the attitude adjustment plates is basic. The plane or planes will be mounted with the actuator(s) on the transom of the boat. When the plate(s) is/are lowered, the water flow is redirected, creating an upward force at the stern of the boat. When the stern rises, the bow will lower.

Since these actuators are electromechanical, they provide an immediate response at the touch of the switch. The switch is based on the position of the bow. On the dual attitude adjustment plate system, the left side of the switch controls the starboard plate and the right side of

the switch controls the port plate. On the single plate system, there is only one switch control.

The system is set up this way to minimize the guesswork while underway. To lower the starboard bow, press the right (starboard) switch where it reads DOWN. To lower the port bow, press the left (port) switch where it reads DOWN. On the single plate system, press DOWN.

Since our models have different weights, lengths, speed and performance, it will take some practice for the operator to understand how your boat reacts with the attitude adjustment plates installed. The plates will allow your boat to get on plane faster and continue planing at lower speeds. This will improve visibility and the overall safety of your boat. **When making adjustments with the attitude adjustment plates, use short momentary taps of the switch.** Continued practice will help you become familiar with how the plates perform.

Special Conditions

Head Sea: Lower both plates slightly by pressing BOW DOWN on both sides of a dual system, BOW DOWN on a single system. This will bring the bow down while maintaining speed. This also allows the hull of the boat to absorb the impact of the waves. This adjustment will result in a more efficient and smoother ride.

Following Sea: Make sure the plates are fully retracted by pressing BOW UP on both sides of a dual system, and BOW UP on a single system. This will bring the plate(s) up to a fully retracted position, decreasing lift in the stern and will allow the bow to rise. If the plate(s) is/are deployed, the bow may dig.

Windy Chop: To raise the windward side of the boat on dual systems, press BOW UP on that side. If this is not sufficient press BOW DOWN on the leeward side of the boat. Do not over-trim when attempting this. This will allow the windward side of the boat to rise and will minimize spray.

Shallow Water/Hole Shot: Lower both plates completely on a dual system by pressing BOW DOWN on both sides (the single plate on a single system). This provides lift in the stern of the boat and will keep the bow down. As you throttle up and speed increases, raise the tab(s) by pressing BOW UP on both sides of a dual system, and BOW UP on the single system.

Uneven Load: When equipped with a dual system, if one side of the boat is higher than the other while running, press BOW DOWN on the switch on that side. This will lower the tab on the listing side (low side) to bring the boat level.

Porpoising: To stop porpoising, press BOW DOWN on both sides of a dual plate system, BOW DOWN on a single system. The plate(s) needs only to be deployed slightly to correct this adverse situation.



While operating attitude adjustment plates use caution. Improper use of plates can cause accidents, which may result in serious injury or death. These cautions apply to the MariStar 280STS, X-80 and 280 SST models only.

While the boat is underway do not move one plate up or down significantly as this may cause listing.

While at higher speeds do not over-trim, as this will cause the bow to lower quickly, resulting in a reduction of speed and may cause the boat to veer.

When in following seas or when running an inlet, the plates should be fully retracted. This will allow for optimal performance.

ELECTRO-MECHANICAL ACTUATORS PROVIDE AN INSTANT RESPONSE. WHEN MAKING ADJUSTMENTS, USE SHORT MOMENTARY TAPS OF THE SWITCH.

Sink Switch

On the face plate panel adjacent to the sink is a two-position switch. Turning the switch ON allows water to run through the faucet into the sink. The water comes from a ten-gallon freshwater tank that requires manual refilling when the water has run out. Be sure to turn OFF the switch after running water, and especially when the freshwater tank has run dry.

Refrigerator Switch

On the same face plate panel is a two-position switch that will run the refrigerator when turned ON. The refrigerator runs off the boat's electrical and battery system. Therefore, care should be given to ensure that the system is not drained to such an extent that the voltmeter alarm sounds.

Engine Synchronizing Switch (280 STS and SST only)

This two-position switch allows the engines to operate in synchronization. **Do not engage the switch unless the engines are running!**



Step 1: Press up on the Synch switch to turn the synchronization function ON.

Step 2: Push the **port throttle** to wide-open throttle.

Note: In the MariStar 280, the boat is equipped with a four-lever control. The lever closest to the driver is the port engine shifter, which allows the boat to move forward when shifted forward, and backward when shifted aft. The next lever is the starboard engine shifter and performs the same function. If both engines are running and the boat is moving, the shifters should be shifted together and in the same direction. Doing otherwise can damage the system.

The next middle lever is the port engine throttle, which allows the boat to feed fuel into the engine and operate in motion. Pushing forward on it will signal the system that fuel should be sent to the port engine. The engines can be run at different levels of throttle **BUT NOT WHEN UTILIZING THE SYNCH FUNCTION!**

Step 3: Using the **starboard throttle**, run the boat up to the desired speed.

Note: The system is RPM-based, NOT speed (or miles per hour)-based.

Step 4: Press up on the Cruise switch adjacent to the Synch switch. This engages the MC Cruise function.

Note: DO NOT use the Cruise function without turning on the Synch function as directed. Doing so will cause erratic operation.

Step 5: Now push the starboard throttle to wide-open throttle also. The boat will run at the RPM level at which it was running when the Cruise was engaged. If further adjustment is required or desired, adjust by pressing up or down on the +/- switch adjacent to the Cruise switch.

Note: If the system is turned off (pressing

down on the Cruise or Synch switches), the operator MUST pull the throttles below the cruise RPM to regain control of the system. During operation, the starboard throttle must be beyond the set point of the cruise for the function to work properly. A light in the switch will blink if more throttle is required.

The port engine will have an RPM blip after the Synch switch is activated and the throttle is moved to wide-open throttle. If the engine actually accelerates to wide-open throttle, then the Synch function did not take control of the port engine. In this instance, reduce the speed and return to Step 1.

Shift/Throttle Control

With the exception of the MariStar 280 STS and SST, a one-hand, single-lever control operates as both a gear shifter and a throttle. The lever automatically locks in the neutral position (straight up and down) for safety. The lever can be moved



from neutral only by raising the lifter under the ball knob. Shifting is accomplished by moving the lever forward or backward. Center (straight up) is neutral. Moving the lever forward engages the running gear; moving it back from center puts the drive train into reverse.

Never attempt to shift without the engine running!

In the MariStar 280 STS and SST, the boat is equipped with a four-lever control. The lever closest to the driver is the port engine shifter, which allows the boat to move forward when shifted forward, and backward when shifted



aft. The next lever is the starboard engine shifter and performs the same function. If both engines are running and the boat is moving, the shifters should be shifted together and in the same direction. Doing otherwise can damage the system.

The next middle lever is the port engine throttle, which allows the boat to feed fuel into the engine and operate in motion. Pushing forward on it will signal the system that fuel should be sent to the port engine. The engines can be run at different levels of throttle.

This system allows greater maneuverability in docking, as well as when the boat is in operation. **However, it requires more practice and skill in order to avoid potential damage to the boat.**

Variations in Gauges and Switches

Please note that not every gauge or switch explained in this Manual found on every model. Some equipment is optional and not every option is available on all models of MasterCraft boats.



Also, MasterCraft utilizes a variety of gauge and switch styles. These differences are not in functionality. If a boat is equipped with a gauge or switch that is labeled as described above, it will operate in the same fashion as the description even if its appearance is different.



Different voltmeter gauges

If the owner and/or operators are uncertain about a gauge's or switch's purpose, do not operate the boat until consulting with an authorized MasterCraft dealer. Some gauges monitor information that is critical to safe and long-term usage of the boat. Some switches can affect maneuverability, as well as operations that impact long-term use of the boat.



Different navigation and anchor lights switches



MASTERCRAFT BOATS ARE EQUIPPED WITH A HIGHLY innovative fuel system. This system is designed to provide you with years of trouble-free service. Some of the latest innovations related to fuel handling safety are also incorporated into the fuel delivery system.

The system uses a fuel pump mounted in a capsule that is installed directly in the fuel tank. A similar system has been used in automotive vehicles for many years and has demonstrated reliable service. The pump system in your boat was specifically designed for the marine environment and contains a number of added safety components that are unique to the marine environment. Because of the special nature of the design, there are no user-serviceable parts. Any parts in need of service or maintenance will need to be addressed by an authorized MasterCraft dealer. The technical team there is equipped with the special tools necessary to disassemble and service the fuel capsule and associated parts.

USING CARE WHEN FUELING

The fuel line that travels in the boat's bilge area from the tank to the engine is a special multi-layer armored line that is covered with a special material known as a fire sleeve. The fire sleeve affords protection to the fuel line in the unlikely event of a boat fire.

The sleeve is colored orange in order to afford easy identification of the fuel line. MasterCraft recommends daily inspection of the bilge for foreign materials and the possibility of gas or oil leakage detection. As part of your daily inspection, include a visual check of the orange



fire-sleeved fuel line. If you see damage to the sleeve or line or in any way suspect damage or fuel leakage, **DO NOT START YOUR BOAT!** Immediately call an authorized MasterCraft servicing dealer and let him or her assess the situation.

Indmar Engines

The following information applies to boats equipped with Indmar engines:

What Type of Gasoline To Use

All standard Indmar EFI engines run on unleaded fuel of 89 octane or higher. Indmar recommends purchasing fuel from a supplier that advertises that their fuel meets "TOP TIER" specifications. This fuel has additives and detergents that will reduce the build-up of deposits in the engine.

The intention of the TOP TIER detergent gasoline standards is to create a winning situation for gasoline retailers, engine manufacturers and boat operators. Currently, many gasoline retailers provide fuels with lower-quality additive packages that can build up deposits on fuel injectors and intake valves. Others can build up deposits in combustion chambers and may lead to intake valves sticking. These lower levels of additives can have a negative impact on engine performance and vehicle responsiveness.

For a current list of gasoline retailers supplying TOP TIER gasoline, go to www.toptiergas.com and click on RETAILERS.

When the Boat Is Not Used for a While

Indmar recommends the regular use of Sta-Bil® fuel stabilizer for boat users whose outings consume less than a tank of fuel every two (2) weeks. Today's fuels are more susceptible to degradation, and the use of a quality stabilizer will help ensure fewer problems for the occasional boater.

If the boat has not been used for more than thirty (30) days and fuel remains in the tank (even stabilized fuel), the engine may run poorly until the "old" fuel is used up. The manufacturer will not pay for repairs to components that are inoperable or damaged from old and/or poor quality fuel, as this is not covered under the engine warranty.

Using Oxygenated Fuels or Fuels with Alcohol

MBTE (methyl butyl tertiary ether) is an oxygenate and octane enhancer. This compound may be blended with fuel. Fuel that is no more than 15% MBTE is acceptable for use in the Indmar engine.

Ethyl alcohol, ethanol or grain alcohol is acceptable as long as it is a blend and the blended fuel contains no more than 10% ethanol.

Fuels in Other Countries

If the Indmar-equipped boat is operated outside the USA or Canada, unleaded fuels may be difficult to obtain. Leaded fuels are not recommended as engine components will last longer using unleaded fuel.

Crusader Engines

The following information applies to boats equipped with Crusader Engines:

The ignition timing set by the factory requires the use of a high-quality, lead-free regular gasoline with the following octane specification:

Pump Octane Number (R+M/2) (PUMP) – 87

NOTICE: Most Crusader fuel-injected engines are calibrated to operate on 87 octane fuel, and maximum performance is obtained when using this fuel. Some applications may require a higher octane fuel.

If a slight pinging is heard during acceleration and the proper octane fuel is being used, it is considered normal. If a constant, heavy knock occurs, the engine should be evaluated by an authorized MasterCraft service technician.

Gasoline Containing Alcohol

Ethanol blended fuel rated E10 or less is acceptable to use. Fuels rated higher than E10 SHOULD NOT BE USED. Ethanol fuels rated higher than E10 could potentially damage the engine and/or present an unsafe boating condition. Damage to the engine resulting from the use of ethanol fuel rated higher than E10 IS NOT covered by the warranty.

Do not use any gasoline that contains METHANOL. This fuel is very corrosive and will create unsafe operating conditions. Serious damage will result from

the continued use of fuel containing METHANOL. Any resulting engine damage will not be covered by the warranty.

If ethanol-blended fuel rated E10 or less is used, or if the presence of alcohol is uncertain, more frequent inspections and service of the complete fuel system are required. Any sign of fuel leakage or deterioration must be repaired immediately before further engine operation.



It is important to note that ethanol-blended fuel will act as a solvent and will attract and hold moisture. **Without proper fuel stabilization and fuel filtration, ethanol blended fuel may cause the following:**

- Excessive moisture (water) may cause lean operation to include hard starting and operating difficulties such as: vapor lock, low speed stalling, and shortened fuel shelf life.
- Acting as a solvent, ethanol blended fuel may cause gum, sediment, sludge, and other particles to be loosened and carried through the fuel system to the engine.

Fuel system or engine damage caused by contamination from water, foreign particles, sludge, or gums entering or forming in the fuel system is not covered by the Crusader Limited Warranty.

NOTICE: Some gasolines contain an octane-enhancing additive called methylcyclopentadienyl manganese tricarbonyl (MMT). These should not be used. These fuels may reduce spark plug life, and engine performance may be affected.

Fuel Stabilizer Recommendations for Ethanol Blend Fuel

The use of a commercially available fuel stabilizer, such as STAL-BIL®, is recommended when storing ethanol-blended fuel for more than two (2) weeks.

Volkswagen Diesel-Powered Engines

See the fuel restrictions and information provided in the Volkswagen engine manual.



General Information

The following Dangers and Cautions apply to ALL engines and fueling systems, regardless of manufacturer:

CAUTION

Fuels that are blended to contain methanol or wood alcohol should not be used. These fuels can corrode metal parts in the fuel system and engine. Fuels that contain methanol will damage the engine. Damage caused by the use of unapproved fuels is not covered by warranty.

CAUTION

Extended storage with fuel in the system can affect the fuel's stability and may require system inspection and fuel filter replacement when the unit is placed back into service.

CAUTION

Damage to the engine by use of low-quality gasoline or gasoline with an octane rating below the minimum level listed will void the warranty on the boat.

⚠ DANGER

Gasoline is extremely flammable and highly explosive under certain conditions. Always stop the engine and never smoke or allow open flames or sparks within fifty (50) feet of the fueling area when fueling.

⚠ DANGER

Take care not to spill gasoline. If gasoline is spilled accidentally, wipe up all traces of it with dry rags immediately and dispose of properly on shore.

CAUTION

Allowing the fuel level in the fuel tank to fall below one-quarter of a tank full may affect the reliability of the fuel pump or result in damage to the fuel pump, which is not covered under warranty.

THE FOLLOWING CHECKS AND SERVICES ARE ESSENTIAL TO safe boating and must be performed. Get in the habit of performing these checks in the same order each outing so that it becomes routine.



DO NOT launch or operate the boat if any problem is found during the Safety Check. A problem could lead to an accident during the outing, resulting in death or serious injury. Any and all problems should receive attention immediately. See your authorized MasterCraft service department for assistance.

SAFETY CHECKS AND SERVICES

Before Each Operation

These tasks are best accomplished before the boat is launched.

- Follow all engine and drive train pre-operation maintenance and safety checks as outlined in the engine owner's manual provided.
- Check the weather report, wind and water conditions.
- Check for recommended on-board tools and parts.



- Check that all drain plugs are installed properly, including bilge and rear drain.
- Check the propeller and shaft for damage.
- Check that there is an adequate supply of fuel.
- Check that the steering system operates properly.
- Check that required safety equipment is on board.
- Check that the windshield and extrusions do not show any damage.



When boating, avoid using the windshield as an aid for balance or getting out of a seat. This causes undue stress to the window frame and could damage it, which may not be covered under warranty.

- Check that the fire extinguisher is fully charged.
- Check that no fuel, oil or water is leaking or has leaked into the bilge compartment.
- Check all hoses and connections for leakage or damage.
- Check that all required Scheduled Maintenance Checks and Services (see following sections) were performed.

During Operation

- Check gauges frequently for operating conditions.
- Pay attention that controls operate smoothly.
- Note any excessive vibration.

After Operation

- Check for fluid leaks.
- In boats equipped with a ballast system, drain water from the ballast system before placing the boat on the trailer. If the boat has ballast-pumping assistance to remove water from the ballast system, note that the engine must be running at least 1500 RPM during the pumping process (for both fill and empty operations). This will necessitate draining water prior to ceasing operation of the boat and loading on the trailer. More information regarding ballast systems appears in various sections of this Manual.
- Check the fins (where equipped), propeller, rudder and shaft for damage after removing the boat from the water.

THE FIRST FIFTY (50) HOURS OF OPERATION ARE THE MOST important to your boat. Proper break-in will ensure maximum performance and the longest possible power-train life. The break-in period allows moving parts within the engine and transmission to wear-in properly. All MasterCraft boats are lake-tested on the water before leaving the factory, but the break-in must continue for the first fifty (50) hours of your ownership.

CAUTION

To ensure proper break-in and lubrication, boat owners should not remove the factory break-in oil until after the initial ten (10) hours of operation. At that time, an oil change should be performed by an authorized MasterCraft service technician at an authorized MasterCraft dealer.

NEW BOAT BREAK-IN

CAUTION

Failure to follow the break-in procedure exactly as stated will void the engine warranty!

NOTE: Before operating the boat for the first time you must read the engine manufacturer's manual completely in addition to this Manual!

Please follow the break-in procedure carefully. Close attention to the following is very important:

- **Maintain the proper oil level.** Until the piston rings, cylinder and other working internal parts are thoroughly seated, oil consumption can be high and must be carefully watched. (This continues to be important after break-in, as well).
- **Pay close attention to the gauges.** It is important to stop the engine immediately if the gauges indicate a problem. Low oil pressure and overheating are serious issues and require immediate attention.
- **Abnormal vibration or noises.** These symptoms can precede trouble and should not be ignored. Occasionally, hardware may work loose, mountings may

need to be tightened or the driveline may require attention.

- **Fuel, oil or water leaks.** Leaks can pose a serious safety threat. If one occurs, it is most likely to do so after a few hours of operation.
- **Vary the engine speed.** Never run the engine for more than three (3) minutes at any constant RPM during the break-in period. Doing this will assist in the proper break-in of rings and bearings.
- **Plane the boat quickly.** Operating the boat at low speeds places an excessive load on the engine. Plane quickly, then back down to a slower speed.

First Hours of Operation

Each engine manufacturer has detailed and specific requirements for proper engine break-in. That information is found in the engine manual supplied, and must be followed exactly as indicated. Failure to do so could cause engine damage and/or failure that is not covered under warranty.



After Break-In

Once the break-in period is over, the boat may be operated continuously at any speed, but not beyond the maximum indicated in the engine manual.

The engines are equipped with rev-limiters which will cause a fluttering sound when reached. If the boat has the correct propeller set-up, operators should never

reach the limiter, but if that happens, it is a signal that you should reduce the throttle and check with an authorized MasterCraft dealer to determine the cause.



Always remember that during normal operation you should allow the engine to warm up gradually. Be sure the engine is warm before accelerating. Pay careful attention to the gauges. Also, check the oil level frequently during the first fifty (50) hours of operation since the piston rings and cylinders require that much time to seat properly.

See the *Scheduled Maintenance Checks and Services* section for more details.

CAUTION

Failure to follow the engine oil recommendations listed in the engine manual can cause additional engine wear and increase the possibility of engine component failure. Damage to the engine due to incorrect oil usage can be costly to repair, and is not covered by the warranty!

NOTE: If you are operating this boat for the first time, you must follow the engine and drive train break-in procedures as described in the previous section and engine manual. Failure to follow these procedures may result in serious damage and may void any warranties!

Before Starting

Familiarize yourself with the controls and indicators used on your MasterCraft boat. Perform all Safety Checks and Services as described earlier. Also perform all Scheduled Maintenance Checks and Services.

Step 1: Lift the engine cover and inspect the bilge and engine compartment for any fluid/vapor leakage. MasterCraft recommends lifting the engine compartment cover for inspection before each use. Check the hull drain plugs. Make sure they are installed and secure.

STARTING AND BASIC OPERATION

Step 2: Operate the bilge blower for at least four (4) minutes. Leave the bilge blower ON through the starting process and until the boat has planed.



To prevent a possible explosion, operate the blower for at least four (4) minutes before starting the engine and always when at idle or slow-running speed. Explosive gasoline and/or battery fumes may be present in the engine compartment. Failure to do so may result in serious injury or death!



Before starting the engine, open the engine compartment and check for gasoline fumes, fuel and oil leaks or the presence of fuel or oil in the bilge.

NOTE: Always start the engine with the control lever in the neutral position or with the shift disengaged. Your boat is equipped with a neutral-start safety switch that will not allow the engine to be started when in gear.

Starting the Engine

Step 1: Attach the emergency engine safety switch tether (lanyard) to an article of your clothing and to the switch.

Step 2: For normal starting, leave the throttle lever in neutral. The electronic controls will meter the correct fuel and air automatically.

Step 3: Turn the key switch to the start position and hold until the engine starts. Release the key as soon as the engine starts.

CAUTION

Do not operate the starter motor continuously for more than fifteen (15) seconds without at least two (2) minutes for a “cool-down” period. Failure to do so may cause the starter to overheat, resulting in damage. Failure to release the ignition key after the engine has started may cause damage to the starter motor and drive.

Note: While the engine is warming up, check to see that all lights and gauges operate properly. Check that the steering system operates freely. There should be no apparent leaks under pressure. Re-engage the control lever after warm-up by returning the lever to neutral and pushing the throttle button back into the engage position.





Shifting Gears

When shifting gears, always move the control lever smoothly and quickly into gear. Do not hesitate. Slow gear engagement could damage the shifting mechanism in the transmission. Always allow the engine speed to fall to low idle (600-800 RPM) before shifting gears.

Forward: Raise the lifter ball under the lever knob and then push the control lever forward into the first forty-five (45) degrees of travel. Throttle movement will begin after forty-five (45) degrees.

Reverse: Raise the lifter ball under the lever knob and briskly pull the control lever back into the forty-five (45) degrees of travel. Throttle movement will begin after forty-five (45) degrees.

Once the shift has been completed, continue to move the control lever slowly in the desired direction to increase speed.

NOTE: When shifting from forward to reverse or reverse to forward, be sure to stop the control lever in the neutral position and allow the engine to fall between 600-800 RPM before completing the shift.

Underway

If the oil pressure gauge indicates low or no oil pressure, immediately stop the boat as outlined below and check the oil level. If the temperature gauge indicates overheating, immediately stop the boat as outlined below and check the raw water impeller for blockage. **DO NOT** operate the boat until the cause for the warning has been found and corrected.

CAUTION

Continued operation after the warning light has illuminated may cause severe engine damage. This will void your warranty.

Stopping

Step 1: Slowly bring the control lever to the neutral position. If the boat has been driven for a long period of time or at high speed, allow the engine a 2-3 minute cool-down period at low idle (600-800 RPM).

Step 2: Turn the ignition key to the OFF position to stop the engine.

Step 3: If any problems were encountered during operation, have the boat inspected by an authorized MasterCraft dealer. Request any necessary repairs before resuming operation of the boat.



OPERATIONAL HINTS

MASTERCRAFT URGES ALL WHO WILL BE OPERATING THE boat to seek certified instruction from the local boating authorities. This section is designed to present the most basic operational principles. It is NOT intended to cover all conditions encountered during operation. Therefore, the principles presented in this Manual are limited to the facts related directly to the operation of the boat, while the responsibility for the proper application of these principles belongs with the boat owner and/or operator.



Adding additional ballast to your MasterCraft boat is not recommended, and can result in impaired visibility, diminished handling characteristics and instability when operating your boat, and may result in potential structural and/or engine damage to your boat, which damage will not be covered by your warranty.

Loading

Never overload the boat. The maximum weight capacity as listed on the certification plate includes all items

added to the boat (including persons and gear). Proper distribution of weight is critical to boat performance. Allocate the load as evenly as possible.

The maximum weight capacity includes filled, factory-installed ballast tanks and/or ballast bags, added by the customer.

Note that adding ballast bags reduces the number of people and the amount of gear that can be added. Failure to adhere to the total maximum capacity may result in too much strain on the drive train or may sink the boat. This is not covered under warranty!



Information regarding the maximum number of people and/or additional weight to the boat is included in the *Guide to Individual Models* section of this Manual. It is the boat operator's responsibility to ensure that the boat is never overloaded. Too much additional weight may cause the boat to overturn or sink, which can result in serious bodily injury or death.

Emergencies

Know how to use and spot distress signals, and to offer assistance if possible. Remember, you may need assistance some day.

Courtesy

Always respect the rights of others on the water. Keep wide when passing, slow down in crowded areas, be alert and be aware of your wake and wash.

First Time Operation

When taking to the water for the first time, you must keep in mind a few general guidelines:

- **Practice makes perfect!** Start in calm water with no wind or current and plenty of room until you get the feel for the boat and its controls.
- **Proceed slowly!** Give yourself time to think, react and maneuver.
- **Recognize outside forces!** Check the wind direction and velocity, as well as water currents and waves.
- **Have a crew on hand!** Have friends or family ready with fenders, lines and a boat hook to assist you when docking, as well as launching and loading.
- **Remember that a boat is not an automobile!** Boats cannot be maneuvered and stopped like a car. Boats steer from the stern (rear) and have no brakes.

Basic Maneuvering

Steering response is dependent upon three (3) factors: rudder position, motion and throttle. While high speed maneuvering is relatively easy and takes little practice, slow speed maneuvering is far more difficult and requires time and practice to master.

With both steering and propulsion at the rear of the boat, the initiation of a turn pushes the stern of the boat away from the direction of the turn. The stern follows a larger turning circle than the bow. This is especially important to remember when making maneuvers within close quarters.

While the effects of unequal propeller thrust (torque steering), wind, and current may not always be present, a practiced driver will use them to his advantage.

Unequal thrust is a phenomenon shared by all single-engine, propeller-driven boats. With the rudder in the straight-ahead position, a counterclockwise rotation propeller tends to cause the boat to drive to port when going forward, and to starboard when going backward.

At high speed, there is compensation for this effect, and it is virtually non-existent. But, at slow speed—and especially during backing—the effect can be very pronounced. This is the main reason that most experienced drivers approach with the dock to the starboard of the boat.

Stopping—or checking headway—is a technique that must be mastered. With no brakes, reverse must be used to stop the boat. The momentum of the boat will vary according to the load. Make it a practice to slow to no-wake speed before shifting into reverse.

When practicing maneuvering techniques, always do so in open water that is free of traffic. Adequate practice may make the difference between a pleasurable boating experience or a potentially damaging (at the very least, embarrassing) one.

High Speed Operation

MasterCraft boats are designed to be a high-performance boat. Professional drivers with advanced operating skills perform high-speed maneuvers and turns on-a-dime. DO NOT attempt to duplicate or simulate these feats. Paid, professional drivers log thousands of hours on the water and carefully choreograph every move. Plans are made in advance in the event the routine must be aborted. Maneuvers of this nature could cause serious injury or

death, as well as damage to your MasterCraft boat that will not be covered under warranty.



Boat operators should never attempt to duplicate operational skills of professional drivers. When such maneuvers fail, it can result in serious injury or death.

For the best engine performance and longevity, the wide-open-throttle (WOT) engine operation must be near the top of, but within, the specified WOT operating range. To adjust the WOT operating range, select a propeller with the proper diameter and pitch. The propeller supplied on the boat was chosen for best all-around performance under average operating conditions.

Load, weather, altitude and boat condition all affect WOT engine operation. If the boat is used for several different applications such as wakeboarding, barefooting and cruising, it may be necessary to have two (2) or more propellers of differing size and pitch to allow the engine to operate in the WOT range for each application.



Propping the boat should be done after the boat is loaded in the manner in which it would normally be loaded for each application. For example, in propping the boat for wakeboarding, fill the ballast tanks and add the people and gear that normally would be expected in the boat. Take the boat out and after warm-up, run it at wide-open-throttle and note the maximum RPM. EFI engines are equipped with RPM limiters to prevent over-revving. Take note if the RPM limiter is activated.

If the WOT RPM is higher than the maximum RPM in your engine's WOT operating range, the boat is under-propped. Installing a higher-pitched propeller will reduce

the WOT RPMs. An engine that is over-revving may quickly experience catastrophic damage, which will not be covered under warranty.

If the WOT RPM is lower than the minimum RPM in your engine's WOT operating range, the boat is over-propped. Installing a lower-pitched propeller will increase WOT RPMs.

An engine that is under-revving is "lugging." This places a tremendous load on the pistons, crankshaft and bearings and can cause detonation, piston seizure and other engine damage, which will not be covered under warranty.

CAUTION

Engines should always be operated within engine manufacturer guidelines. Failure to do so may cause significant damage to the engine and drive train and is not covered under warranty!



Elevation and weather also have a very noticeable effect on the wide-open-throttle power of an engine. Since oxygen gets thinner as elevation increases, the engine begins to starve for air. Humidity, barometric pressure and temperature have a noticeable effect on the density of air since heat and humidity thin the air.

This phenomenon can become particularly apparent when an engine is propped for use on a cool, dry day in spring and then is operated on a hot, humid day in summer, and does not have the same performance. Although some performance can be regained by dropping to a lower-pitch propeller, the basic condition still exists. The propeller is too large in diameter for the reduced power output. An experienced marine dealer can determine how much diameter to remove from a lower-pitch propeller for specific high-elevation locations.

MasterCraft's engine manufacturers suggest that consumers consult with the dealer from whom the boat was purchased regarding the best propeller for the application in which the boat will primarily be run. However, be aware that changing the propeller may void the warranty. Again, working with an authorized MasterCraft dealer is your best bet to ensure excellent performance.

Unusual Operating Conditions

If the body of water is unknown, talk to the local boaters about the type of obstacles that may be encountered beneath the water's surface. Rocks, tree stumps and sandbars are all dangerous and damaging. Be especially wary of rivers and man-made lakes. Rapidly changing conditions can cause daily changes in underwater hazards.

Stay well clear of floating debris. What looks to be a small branch in the water may well turn out to be an entire tree.

When traveling through weedy areas, keep an eye on the engine temperature gauge. Weeds caught up and blocking the water flow through the raw water intake or transmission cooler will cause trouble. Also, after leaving the weedy area, shift to neutral for a few seconds and then to reverse for a few seconds to unwind any weeds that may have wrapped around the propeller.

Docking and Tie-Up

Approach the dock slowly, with the starboard side of the boat if possible. The natural tendency to torque steer with the rotation of the propeller at slow speeds makes docking easier on that side. Also, use wind and current to your advantage when docking.

Before tying up the boat, be sure to use enough dock bumpers to protect the boat from damage. If possible, tie-up with the bow toward the waves. Use good quality double-braided nylon line. Tie-up only to the lifting or tie-down eyes. Never use the handrails or ski pylon.

If the boat is to be moored for a long period of time, use chafing protectors to protect the gel coat finish. Leave a little slack in the lines, allowing for some wave movement or tidal action where applicable.

If the boat is to be kept in or near water for the season, consider the purchase of a boat lift. These lifts prevent the build-up of marine growth on the hull as well as protecting the boat from damage typical of on-water storage, such as blistering. Make sure the boat lift supports the hull correctly. See the next section, *Lifting the Boat*.

WHEN THE BOAT IS HOISTED FROM THE WATER, USE THE lifting eyes or a sling for easy, damage-free lifting (when utilized properly).

CAUTION

DO NOT use the ski pylon for lifting. It is **NOT** designed as a central lifting point. Also, **DO NOT** use the stern ski tow as a lifting ring. The deck will be damaged. See the Storage Cradle sub-section of this section of the Manual. Also, never lift a boat with water in the bilge or containing a water-filled device such as a ballast system or sack. The extra stress will put an excessive load on the hull and lifting equipment that may seriously damage the boat. Such damage may not be covered by the warranty.

LIFTING THE BOAT

Using Lifting Eyes

An overhead hoist with a minimum two-ton capacity should be used to lift your boat. Cables should be rated for at least 3,500 pounds each. When lifting, keep the bow slightly higher than the stern to prevent any possibility of water running into the engine exhaust manifold.



Using Lifting Slings

An overhead hoist with a minimum two-ton capacity should be used. Slings must be six (6) inches wide by twenty (20) feet long and a minimum of 3,500 pounds capacity each. Use a wide-enough spreader bar on each sling to prevent damaging side pressure to the deck or gunwale molding.

CAUTION

Lifting slings must never contact shafts, struts or hardware protruding from the hull. Damage may result that would void the warranty.

CAUTION

When the boat is out of the water, it is important to support the hull correctly to avoid any hull damage. Such damage may void the warranty.

Storage Cradle

If a storage cradle is used, the hull must be properly supported to prevent load damage. This can occur with as little as fifteen (15) pounds per square inch of pressure. **DO NOT** support the boat by resting the hull on the keel (the central fore-and-aft structural member in the bottom of the boat's hull, extending from the bow to the stern). Vertical supports must extend from the chine (the angular intersection of the bottom and sides of the boat) to the keel with no gaps between the hull and cradle supports. A total support area of at least two-hundred-fifty (250) square inches of boats under twenty-five (25) feet and five-hundred (500) square inches for boats over twenty-five (25) feet is required for proper support. Protect all items extending from the hull (i.e., the rudder, propeller, fins, etc.) to prevent them from resting on the cradle or the ground. **DO NOT** apply any load stress to the propeller, shaft, rudder, swim platform, water intake grate or other protruding items.

NOTE: DAMAGE DUE TO CORROSION IS NOT COVERED UNDER WARRANTY!

Galvanic Corrosion

Galvanic corrosion (electrolysis) to the boat is the decomposition of metal due to the effects of electrolytic action. When two (2) dissimilar metals are immersed in a conductive fluid (e.g., salt water), an electric current is produced, much like the action of a battery. As the current flows, it takes with it tiny bits of the softer metal. If left unchecked, severe damage may occur over time.

If the boat is operated in salt, polluted or brackish waters, even temporarily, the boat should be equipped with a transom-mounted zinc anode to prevent damage to those metal parts coming in contact with the water.

CORROSION DAMAGE

The zinc is, by design, self-sacrificing. It is slowly eroded away by electrolytic action and requires periodic inspection for deterioration.

If the zinc shows extreme erosion, it must be replaced to continue protection, or damage to other metal parts may result.

MasterCraft Saltwater Series boats come equipped with the zinc anode. For fresh water boats that may be operated in polluted or brackish water, an authorized MasterCraft dealer can provide guidance in securing and installing a zinc anode for protection.

Salt Water Corrosion

The boat has been designed for operation in fresh water unless it is a model in the MasterCraft Saltwater Series. If operating a fresh-water model temporarily in salt, polluted or brackish water, flush the boat with fresh water as soon as possible afterward. The entire engine cooling system should be flushed with fresh water for at least ten (10) minutes after each use in such waters.

Boats operated continuously in salt water should be equipped with the closed cooling system to preserve engine life.

Marine Growth

If accelerated marine growth is a problem in the area in which the boat will generally be operated, an anti-fouling bottom paint may be necessary to slow growth while protecting the gel coat.

Before selecting a bottom paint, talk with other boaters and an authorized MasterCraft dealer's service department to determine the product that works best in the area. Many local variables may also affect the selection of paint. Be sure to follow the paint manufacturer's directions exactly.



Be sure all fasteners used are approved and rated for marine use. Most fasteners used on MasterCraft boats are stainless steel or specially coated to resist corrosion.



Use of improper parts may cause component or engine failure. Such failure may result in death or serious injury!

Stainless Steel and Chrome

Stainless steel and chrome-plated parts are not totally resistant to corrosion. Occasional cleaning and polishing with a marine chrome-and-stainless polish will maintain and extend the life of these parts. In salt water areas, rinse all hardware with fresh water and apply a light coating of protective oil to enhance the appearance after each use.



PERIODIC CLEANING IS THE BEST WAY TO KEEP YOUR BOAT looking like new. Regular washing and waxing keep dirt and build-up from deteriorating the finish. Keeping your boat in a showroom-new condition results in personal satisfaction and higher resale value.

The boat is made of fiberglass-reinforced plastic resin material that is easy to clean and care for. Several layers of resin material are chemically bonded together to form the hull. The smooth outside surface of the hull is a layer of gel coat resin. While the gel coat is solid color, the thickness of the layer is only a few millimeters thick—like paint on a car but much tougher, and chemically bonded.

Beneath the gel coat surface is a series of layers of chemical resin, fiberglass mat and woven roving. It is these layers that give the boat its strength and maintain



washing to prevent mildew accumulations when the boat is covered. Spray the cushions with a mildew repellent and prop them up in the boat when it is covered to take advantage of air circulation.

MasterCraft vinyls are made to withstand the effects of sun, heat, acid rain and soiling, under normal conditions, but this does not preclude the cleaning requirements. Please consult the following cleaning recommendations before cleaning your upholstery.

Certain household cleaners, powdered abrasives, steel wool, and industrial cleaners may cause damage and discoloration, and are not recommended for use. Dry cleaning fluids and lacquer solvents should not be used as they will remove the printed pattern and gloss. Waxes are not recommended, as many contain dyes and solvents that can permanently damage the vinyl's protective coating.

In some instances, consumers have reported the appearance of a pink stain on vinyl that is resistant to various cleaning methods. Although there can be other causes for pink staining in vinyls, most pink stains are caused by dyes produced by micro-organisms. These dyes are metabolic products of the micro-organisms, otherwise known as a form of fungi.

It is virtually impossible for consumers to avoid these micro-organisms as they exist in the atmosphere, which are more prevalent in high-humidity areas. Rain cleanses the air, with the result being that the micro-organisms are deposited on items such as marine vinyl.

While the vinyl is treated to resist the growth of micro-organisms (meaning the vinyl is not a food source), the

CLEANING THE BOAT

the hull shape. The boat bottom also uses special core-mat material for its strength-to-weight and superior marine performance.

Hull

When washing the boat, be sure to use a mild detergent, such as Dawn or Ivory dish soap, or similar commercially-produced detergent, and warm water solution. **DO NOT** use abrasive cleaners, solvents, ammonia or chlorine, as these will damage the gel coat surface. Under extreme conditions, special cleaners may be used to remove marine growth from the hull. (See an authorized MasterCraft service department for further instructions.)

Upholstery

While the vinyl is made to withstand the elements, it is important to care for vinyl by keeping it clean at all times. Many substances may stain the vinyl if left untreated over a period of time. Remember to remove any contaminant and clean vinyl immediately.

Regular washing with mild detergent (see attached information) and warm water or vinyl cleaners is sufficient to keep the cushion and vinyl coverings in good condition. Do not soak the cushion, and dry thoroughly after

stain results from failure to properly clean and maintain the vinyl. This means that after use, the upholstery must be cleaned with a soft brush and warm soapy water, followed by a thorough rinse with clean water.

This situation is worsened if the boat is stored without proper ventilation or if the boat cover is put on while the vinyl is still wet, creating a situation in which all forms of fungi (mold and mildew) thrive.

Failure to follow these instructions in the proper care of upholstery may cause your warranty to be voided!

The cleaning table presented in this section is offered only as a suggestion and as an aid in attempting to deal with stains. We do not guarantee that the cleaning methods will work. **Stains from any external source are unlikely to be covered by warranty.**



Carpet

Occasionally washing with mild detergent and warm water or household carpet cleaners will help keep the carpet clean. Thoroughly hose the detergent out of the carpet and into the bilge. (This is a good time to clean the bilge also.) Allow the boat to remain uncovered to air dry for several days to prevent any mildew or odor caused by moisture.

Teak Wood

Regular cleaning and oiling of teak wood will maintain its original appearance. Use a teak cleaner that can penetrate the pores of the wood and cleanse them of dirt and stains. Avoid caustic teak cleaners since they can damage the wood. Immediately after cleaning, an oil sealer should be applied with a soft cloth. (Follow the

directions for application and maintenance that appear on the cleaner and sealer can or bottle.)

Windshield

In cleaning tempered glass windshields, the normal glass cleaners (from spray bottles or aerosol cans) work best. While the glass is very strong, it can be scratched if anything abrasive is used. Harsh chemicals or solvents should be avoided because they may affect the vinyl gaskets or powder-coated finish on the extrusions.

More care should be taken when cleaning the clear Eisenglass curtains, which are an option on some boat models. Eisenglass curtains are usually made with clear vinyl sheeting, which is much softer and more prone to scratching and hazing than the windshield glass is, only soft cloths and mild detergents should be used.

Canvas Covers

The material used in constructing Bimini tops and boat covers is made from 100 percent solution-dyed polyester fiber with a urethane coating to provide excellent water repellency and mildew resistance. This design allows the material to be easily maintained. By following a few simple care and cleaning steps, the fabric will continue to look good and maintain its fine qualities for seasons to come.

Important Background Information

Because the fabrics are woven, they are breathable. It's also important to know that these fabrics are treated with a fluorocarbon finish, which enhances water repellency. This finish requires replenishment after vigorous cleaning.

Polyester fabric will not support the growth of mildew. Mold and mildew need something on which to grow and polyester fabric is not a desirable substance for such growth. Dirt or dust on the fabric, however, is a perfect source for mildew growth, which makes regular cleaning of the fabric important.

There is no set time for when the fabric should be cleaned, and the local environment has a great deal to do with determining cleaning frequency. Cleaning is required less frequently in a dry environment than in a humid one where heavy foliage exists.

The material has an applied finish that deters mold and mildew growth, but it does not make it mold-proof. Keeping the fabric free of dirt and foreign substances is important in deterring mold growth.

Cleaning

One of the best ways to keep the material looking fresh and new, and to delay the need for deep or vigorous cleaning, is to hose off fabrics with clear water on at least a monthly basis with clean water. This practice will help prevent dirt from becoming deeply imbedded in the fabric, and it will eliminate the need for more frequent and more vigorous cleanings.

In most environments, a thorough cleaning will be needed approximately every two (2) years.

The fabric can be cleaned while still in the boat. When cleaning, it is important to observe the following:

- Always use a natural soap—never detergent.
- Water should be cold to lukewarm, but never more than 100 degrees.
- Air dry only. Never apply heat to the fabric.

Begin by brushing off loose dirt, and then hose down the material. Prepare a cleaning mixture of water and a mild, natural soap that is free of detergents. Use a soft-bristle brush to clean, allowing the soap to soak in. Rinse thoroughly and allow the fabric to thoroughly air dry.

If stubborn stains persist, you can use a diluted chlorine bleach/soap mixture for spot cleaning of mildew, roof run-off and other similar stains. Please keep in mind that chlorine bleach will not change the color of the fabric, but chlorine bleach will eventually break down the fiber of any fabric. Therefore, this cleaning method should be used as infrequently as possible.

The cleaning mixture should be mixed as follows:

- Four ounces (one-half cup) of chlorine bleach.
- Two ounces (one-fourth cup) of natural soap.
- One gallon of water.

Clean with a soft-bristle brush and allow the mixture to soak no longer than twenty (20) minutes. Rinse thoroughly and allow to completely air dry. Repeat if necessary.

If the top or boat cover is suitable in size for a washing machine, these steps should be followed:

Use only natural soaps—no detergent.

Wash and rinse in cold water.

Air dry. (Never put the fabric in a dryer.)

As part of the finishing process, the material has been treated with a fluorocarbon finish, which enhances water repellency. This finish is designed to last for several

years, but it must be replenished after a thorough cleaning. Based on test results, the manufacturer recommends 303 High Tech Fabric Guard™ as the preferred re-treatment product.

After cleaning and air drying, apply 303 in a thin, even coat. When it has dried, apply a second thin, even coat. These two (2) light coatings are more effective in restoring fabric water resistance than a single heavy coating. Keep in mind that 303 High Tech Fabric Guard™ will work only as well as it is applied. This means that the fabric must be free of dirt and detergents or the Fabric Guard will wash away with the dirt particles.

Fabrics should be retreated after thorough cleaning or after five (5) years of use.

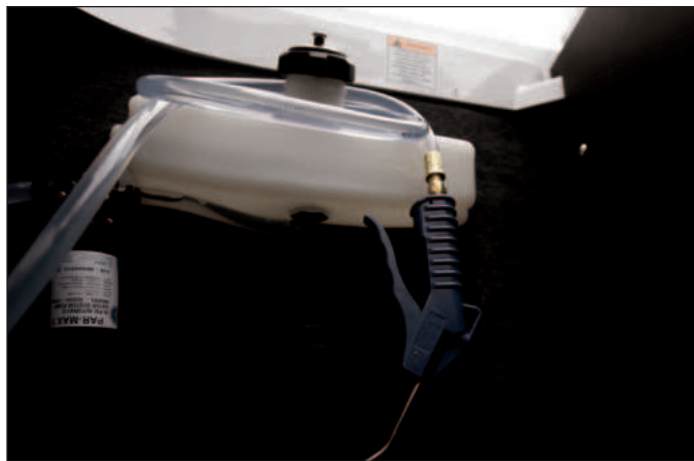
Enclosed Head

An option on some models is the enclosed, portable head. This convenience should be emptied on-shore within an acceptable holding tank, septic system or sewer. It should never be emptied within the boating body of water or on-shore, except in an approved receptacle!

After thoroughly cleaning with a mild detergent, add a neutralizing chemical made especially for portable heads, such as that found in RV centers. The chemical will help deal with potential odors that might otherwise be foul. Even with the use of this neutralizing chemical, the head should be cleaned after each outing.

Slick Boot

The optional Slick Boot should periodically be dismantled, cleaned and the wand thoroughly rinsed. The Slick Boot material can sometimes become gelled, particularly in colder weather.





Acceptable Upholstery Cleaners

MasterCraft Vinyl Dressing
 Vinyl Finish Vinyl Cleaner
 Dish Soap (such as Dawn or Ivory)
 303 High Tech Fabric Guard™

Unacceptable Upholstery Cleaners

409 (it states not for use on vinyl!)
 Fantastik
 Murphy's Soap
 Simple Green
 DC Plus
 Armorall
 Top Kote Sealant
 Son of a Gun
 Orange 88 Degreaser
 Roll Off
 Bleach/Baking Soda
 Turtle Wax/Tar Remover
 APCO
 Tannery
 Harbor Master
Any product not listed above in the list of Acceptable Upholstery Cleaners!

Do not use any silicone-based protectants because they will extract the plasticizers, leaving the vinyl hard and brittle. (Eventually cracking will occur.)

Certain household cleaners, powdered abrasives, steel wool, and solvent cleaners can cause damage and discoloration and are not recommended. Dry cleaning fluids and lacquer solvents should not be used as they will remove printed pattern and gloss. Bleach will deteriorate the thread.

| Common Stains | Steps | 1 | 2 | 3 |
|------------------------|-------|---|---|---|
| Chewing Gum | | D | A | |
| Motor Oil | | B | | |
| Spray Paint | | B | | |
| Mildew or Wet Leaves* | | C | B | A |
| Yellow Mustard | | A | B | C |
| Oil-Base Paint | | D | B | |
| Suntan Lotion* | | A | B | |
| Tar/Asphalt | | D | B | |
| Lipstick | | A | B | |
| Latex Paint | | A | B | |
| Crayon | | D | B | |
| Ketchup | | A | B | |
| Grease | | D | B | |
| Ballpoint Ink* | | E | B | A |
| Household Soil | | A | B | |
| Permanent Marker* | | E | B | C |
| Coffee, Tea, Chocolate | | B | | |

DO NOT USE 409 CLEANER OR SILICONE-BASED PRODUCTS!!!

A = Medium-soft brush; warm soapy water/rinse/dry.
 B = Vinyl finish cleaner.
 C = One (1) tablespoon ammonia, one-fourth (1/4) cup of hydrogen peroxide, three-fourths (3/4) cup of water/rinse/dry.
 D = Wipe or scrape off excess (chill gum with ice).
 E = Denatured alcohol/rinse/dry.
 *Sun tan lotion, shoe polish, wet leaves and some other products contain dyes that stain permanently.

Vinyl upholstery should be covered when not in use, to protect from further sun exposure or natural acts of tree debris, air pollutants and acid rain.

For storage, vinyl should be cleaned, protected, covered and stored in a dry, well-ventilated area.



PROPER CARE, MAINTENANCE AND ADJUSTMENT WILL contribute to the peak performance of the MasterCraft boat, while also extending the overall service life and the resale value.

The pages that follow provide instructions on how to accomplish the required checks, inspections and services listed. An authorized MasterCraft service department is the best source for proper maintenance.

Note: The engine and drive train require scheduled maintenance checks and services. Read and understand the engine owner's manual that has been provided, and follow the maintenance schedule to ensure proper operation and quality service over the life of the boat and drive train. Failure to follow the maintenance requirements and instructions listed

SCHEDULED MAINTENANCE CHECKS AND SERVICES

in this and all other manuals may result in damage to the equipment, which is not covered by warranty! Safety issues are also directly impacted by proper maintenance!

The following definitions apply to maintenance:

Check—Verify the operational readiness by physical measurement, i.e., measuring the oil level with the dipstick gauge or alignment with a feeler gauge.

Inspect—Determine the operational readiness by examination, i.e., by sight, sound or feel.

Change—Tasks required periodically to keep the boat in proper operating condition, i.e., drain, replenish or service.

New Boat Break-In

Note: MasterCraft recommends the following functions be performed by authorized MasterCraft technicians at an authorized MasterCraft dealer.

- Lubricate the engine starter drive gear and shaft. (See *Quarterly Maintenance* also.)
- Check the alignment of the propeller shaft. (See *Annual Maintenance* also.)
- Have an authorized MasterCraft service department change the fuel filter after the first fifty (50) hours of operation, and then again at one hundred (100) hours. The fuel filter should be changed annually even if less than one hundred (100) hours are run during the previous season.

Before Each Use

Before the engine has been started:

- Inspect the intake water strainer for blockage. If there is blockage, also check the transmission cooler (where equipped).
- Check the cooling system level (fresh water cooling-equipped boats only). See the engine owner's manual for details.
- Inspect the battery connections and hold-downs.
- Inspect the drive train for loose or missing hardware.
- Inspect the throttle and shift cables for kinks, wear and interference with other components.
- Inspect the propeller shaft log for excessive water entry.
- Inspect the fuel system lines and connections for leaks.
- Inspect the exhaust system for leaks.

As you start the engine:

- Check that the voltmeter registers a fully charged battery.

Quarterly (Every Fifty [50] Hours)

Note: MasterCraft recommends that the following functions be performed by an authorized MasterCraft technicians at an authorized MasterCraft dealer.

Before the engine has been started or after it has cooled:

- Lubricate the engine starter gear and shaft.
- Check the safety equipment.

Annually (Every One Hundred [100] Hours)

Note: MasterCraft recommends that the following be performed by authorized MasterCraft technicians at an authorized MasterCraft dealer.

Before the engine has been started or after it has cooled:

- Replace the fuel filter (to be performed by an authorized MasterCraft technician only).
- Check the propeller shaft coupler alignment.
- Lubricate the steering system.
- Lubricate the throttle and shift cables.
- Check the engine mounts.
- Inspect the complete fuel system for leakage.

Details follow in the next few sections.

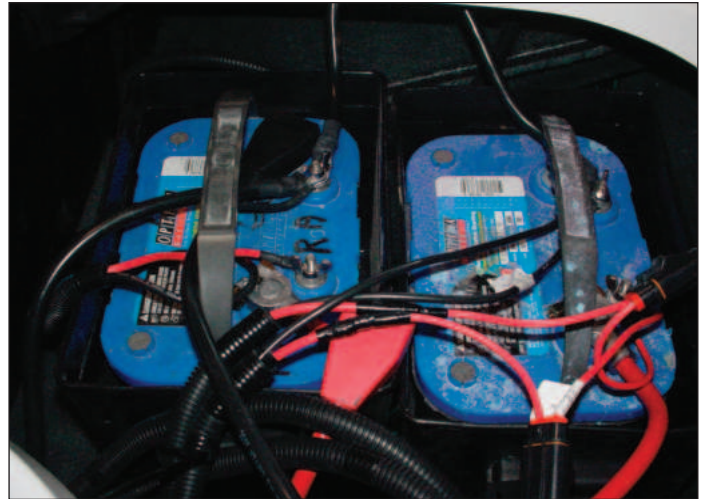
MasterCraft recommends that these functions be performed by authorized MasterCraft technicians at an authorized MasterCraft dealer!

Before Each Use

Inspect the Battery Connections and Hold-Downs

Because poor connections or hold-downs may result in erroneous voltmeter readings, MasterCraft recommends doing this before starting the boat.

Step 1: Ensure the engine is OFF and the engine safety starting switch disconnected. **Be certain that the throttle/shift control lever is in neutral.** Locate the battery. Batteries are placed in a variety of locations, depending on the model. Check under the observer seat or behind the rear seat.



the terminals with a water-and-baking-soda solution and rinse with fresh water.

- Check the battery box that normally holds the battery in place to determine whether there is evidence of battery fluid inside it. Battery fluids are corrosion and can cause permanent damage to the battery box. If fluid is evident, wash out the box with the water-and-baking-soda solution as is used in cleaning the terminals. Rinse with fresh water and dry with a cloth.
- Reconnect the positive terminal first, then the negative. Tighten the terminals. Coat both terminals completely with a thin covering of marine grease. Be sure that the rubber boot covers the positive terminal completely.

Note: Your boat's engine is designed to work with the standard electronics installed in your boat. Adding other electrical components or accessories can change the way the fuel injection controls the engine or the overall electrical system functions. Before adding electrical equipment, consult an authorized MasterCraft dealer's service department. Otherwise, the engine may not perform properly.

SCHEDULED MAINTENANCE

Step 2: Check that the battery post connections are clean and tight. If not:

- Loosen and remove the negative terminal connection first. Be careful not to touch the positive terminal with the wrench.
- Loosen and remove the positive terminal connection.
- Remove the battery hold-downs and remove the battery from the boat.
- Clean corrosion from the battery posts with a battery terminal cleaner.
- Clean the battery with a water-and-baking-soda solution. Use care to avoid allowing the solution to enter the battery vents. Rinse the battery with fresh water.



Battery electrolyte fluid is dangerous. It contains sulfuric acid, which is poisonous, corrosive and caustic. If electrolyte fluid is spilled or placed on any part of the human body, immediately flush the area with large amounts of clean water and immediately seek medical attention.

- Use a battery terminal cleaning brush to remove corrosion from the inside of the battery terminals. Clean



Add-on equipment may adversely affect the alternator output or overload the electrical system. Such damage may not be covered by the warranty.

If a replacement battery is required, be certain to select a marine battery with at least seven-hundred-fifty (750) cold-cranking-amps at zero degrees (0°) Fahrenheit. Before disconnecting the battery, make sure the ignition key and all accessories are in the OFF position. Also remember to re-attach the cables in the proper order, with the negative cable connected to the negative [-] post and the positive cable connected to the positive [+] post.

WARNING

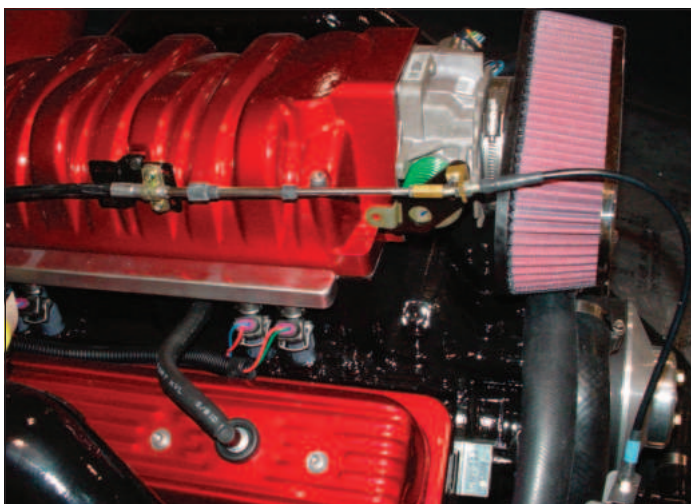
When charging, batteries generate small amounts of dangerous hydrogen gas. This gas is highly explosive. Keep all sparks, flames and smoking well away from the area. Failure to follow instructions when charging a battery may cause an electrical charge or even an explosion of the battery, which could result in death or serious injury.

MasterCraft recommends the use of a spiral cell type battery, such as the Optima brand. These batteries exceed other batteries in holding and extending a charge.

Inspect the Throttle and Shift Cables for Kinks, Wear and Interference (RTP-1 and Twin MCX Installations Only)

CAUTION

Some engine parts become very hot during operation. This inspection must be completed while the engine is cool to prevent burns to your skin. Perform this task before starting the boat.



Step 1: Ensure the engine is OFF and the engine safety starting switch disconnected. **Be certain that the throttle/shift control lever is in neutral.**

Step 2: Open the engine compartment and locate the throttle and shift cables. Follow each cable back under the floorboards and feel for any kinks and wear on the outer jacket. Any sign of cable damage is cause for replacement. See your authorized MasterCraft dealer's service department.

Inspect the Propeller Shaft Log for Water Entry

After approximately three (3) to five (5) minutes of boat operation in the water, shut off the engine and open the engine compartment. Be careful to avoid burns from contact with hot engine parts. The boat is equipped with a dripless shaft log and if it is showing any signs of dripping, the boat must be taken to an authorized MasterCraft dealer's service department for correction.



WARNING

The engine box serves as a machinery guard. The engine must be OFF whenever the box is open. Clothing or body parts can get caught in moving parts, causing death or serious injury. Keep away from moving parts!

CAUTION

Attention must be paid to any leakage occurring in the propeller shaft log area. Water intrusion into the transmission, which can happen if excessive leakage is occurring may cause serious damage. Such damage may not be covered by the warranty.

Inspect the Fuel System for Leaks

This function should be performed prior to starting the engine; and then again after about three (3)-to-five (5) minutes to determine whether any leaks are apparent.

Step 1: First ensure that the engine is OFF and that the engine safety starting switch is disconnected. **Be certain that the throttle/shift control lever is in neutral.** The engine must be cool.



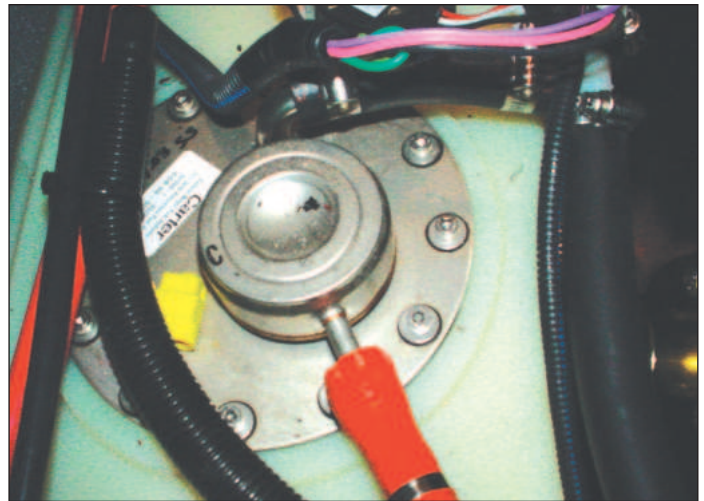
Gasoline is highly flammable and its vapors may ignite, resulting in fire or explosion. Be sure to keep all sparks and flames away from the area while inspecting the boat's fuel system.

Step 2: Open the engine compartment and visually check as much of the fuel system from the tank to the engine as you can see. If the odor of gasoline is strong or if you see visual evidence of fuel outside the system, cease all operations and take the boat immediately to an authorized MasterCraft dealer's service department to determine the source of the leak. The leak must be repaired before the engine is restarted. Because the lines on late model MasterCraft boats are pressurized, they can be disconnected and/or removed **ONLY** by using specialized tools that are not available to the public.



The engine box serves as a machinery guard. The engine must be OFF whenever the box is open. Clothing for body parts can get caught in moving parts, causing death or serious injury. Keep away from moving parts!

Step 3: After three (3) to five (5) minutes of operation, shut down the engine again and ensure that the engine safety starting switch is disconnected. **Be certain that the throttle/shift control lever is in neutral.** Again, inspect the fuel system as well as possible. If the odor of gasoline is strong or if you see visual evidence of fuel outside the system, cease all operations and take the boat immediately to an authorized MasterCraft dealer's service department to determine the source of the leak. The leak must be repaired before the engine is restarted. Because the lines on late model MasterCraft boats are pressurized, they can be disconnected and/or removed **ONLY** by using specialized tools that are not available to the public.



This is important! Fuel leakage can lead to a build-up of potentially explosive fumes within the engine compartment. DO NOT IGNORE OR OVERLOOK THIS INSPECTION AND REPAIR AS NECESSARY!

Inspect the Exhaust System for Leaks

This function should be performed prior to starting the engine; and then again after about three (3) to five (5) minutes to determine whether any leaks are apparent.

Step 1: First ensure that the engine is OFF and that the engine safety starting switch is disconnected. **Be certain that the throttle/shift control lever is in neutral.** The engine must be cool.



WARNING

The engine box serves as a machinery guard. The engine must be OFF whenever the box is open. Clothing or body parts can get caught in moving parts, causing death or serious injury. Keep away from moving parts.

Step 2: Open the engine compartment and visually check the exhaust system from the engine to the transom for any obvious damage to exhaust lines or the muffler.

Step 3: If leakage is apparent, tighten the hose clamps, being careful to avoid crimping the hose. If the leak is significant, or is occurring at a location other than the joints (such as a split in a hose), see your authorized MasterCraft dealer's service department for parts and service. This is important! **Exhaust fumes can cause illness or impairment, including carbon monoxide poisoning. Equally important to consider, leakage can lead to a build-up of potentially explosive fumes within the engine compartment. DO NOT IGNORE OR OVERLOOK THIS INSPECTION! REPAIR AS NECESSARY!**

Check That the Battery Is Fully Charged

As the boat is started, check all gauges, but pay particular attention to the voltmeter.

While starting the engine, check that the voltmeter reads between 12.4 and 14.5 volts. An erratic reading may be a sign of low voltage. The voltmeter is the best indication of the state of your battery. However, it is not fool-proof. While the reading may indicate that the battery is producing current, if during a previous operation you had reason to suspect a problem with your battery, check with an authorized MasterCraft dealer's service department.



Current models are equipped with a low-voltage battery alarm. In the event that the stereo has been functioning when the boat engine is OFF, the voltage drain on the battery may result in difficulties re-starting the boat. To avoid

this situation, when the voltage level falls to 11.5 volts, the system will shut off the stereo system and sound an alarm for a period of two (2) minutes to allow the operator time to turn the ignition key ON and start the engine. Doing so will allow the engine's alternator to recharge the battery.

Charge dead batteries with a battery charger before attempting to start the engine. (Some MasterCraft models offer an optional battery charger; but never jump-start the battery.) **Jump-starting from another boat or battery is dangerous!** Charging a dead battery from an engine will put undue stress on the alternator, which may cause it to fail.

WARNING

When charging, batteries generate small amounts of dangerous hydrogen gas. This gas is highly explosive. Keep all sparks, flames and smoking well away from the area. Failure to follow instructions when charging a battery may cause an electrical charge or even an explosion of the battery, which could cause death or serious injury.

CAUTION

Crossing cables or jumper cables may result in damage to the electrical components due to incorrect battery connections. Such damages may not be covered by your warranty.

Quarterly (Every Fifty [50] Hours)

MasterCraft recommends that your quarterly—or fifty (50) hour—maintenance requirements be performed by an authorized MasterCraft dealer. The staff there has the proper equipment and technical training to best meet your service needs.

Lubricate the Engine Starter Gear and Shaft



Some engine parts become very hot during operation. This maintenance must be completed while the engine is cool to prevent burns to your skin. Perform this task before starting the boat.

Step 1: Ensure that the engine is OFF and that the engine safety starting switch is disconnected. **Be certain that the throttle/shift control lever is in neutral.** The engine must be cool.

Step 2: Disconnect the positive (+) battery terminal.

Step 3: Open the engine cover and locate the starter on the lower starboard side of the engine.

Step 4: Disconnect the starter and carefully remove it.



Step 5: Lubricate the starter bendix with a light coating of waterproof grease or white lithium grease.

Step 6: Return the starter to the engine and reconnect. After closing the engine compartment, reconnect the positive (+) battery terminal.

MasterCraft recommends that your quarterly—or fifty (50) hour—maintenance requirements be performed by an authorized MasterCraft dealer. The staff there has the proper equipment and technical training to best meet your service needs.

ANNUALLY (Every One Hundred [100] Hours)

MasterCraft recommends that your annual—or one hundred (100) hour—maintenance requirements be performed by an authorized MasterCraft dealer. The staff there has the proper equipment and technical training to best meet your service needs.

Annual Maintenance

Some boat owners choose to personally execute some maintenance procedures on their boats. MasterCraft has provided information on several procedures. For safety reasons, a few must be performed by authorized MasterCraft service technicians only, such as anything involving checks and repairs on the fuel line, which is under pressure.

These matters must be addressed on a regular basis, at one hundred (100) hours or annually, whichever comes first, and these procedures are in addition to seasonal preparation and winterization (see Storage and Winterization section for additional details). All of these issues are extremely important to continued boating pleasure, long life for the boat, and the critical matter of safety.

Even if the annual maintenance work is completed by an authorized MasterCraft service technician, boat owners and operators should still review this section and

ensure that they have some understanding of what is necessary to keep the boat in top condition.

MasterCraft recommends that your annual—or one hundred (100) hour—maintenance requirements be performed by an authorized MasterCraft dealer. The staff there has the proper equipment and technical training to best meet your service needs.

Check the Engine Mounts



Some engine parts become very hot during operation. This inspection must be completed while the engine is cool to prevent burns to your skin. Perform this task before starting the boat.

Step 1: Ensure that the engine is OFF and disconnect the engine safety starting switch. Be sure that the throttle/shift control lever is in neutral. The engine must be cool.

Step 2: Open the engine box and locate the four (4) motor mounts.

Step 3: Check the tightness of the mounting hardware and the adjustable lock-nuts. Tighten any loose hardware securely.



Check the Propeller Shaft Coupling Alignment

Later-model MasterCraft boats are equipped with a drip-less propeller shaft log. If it is showing signs of drips, it must be corrected by an authorized MasterCraft dealer's service technician.

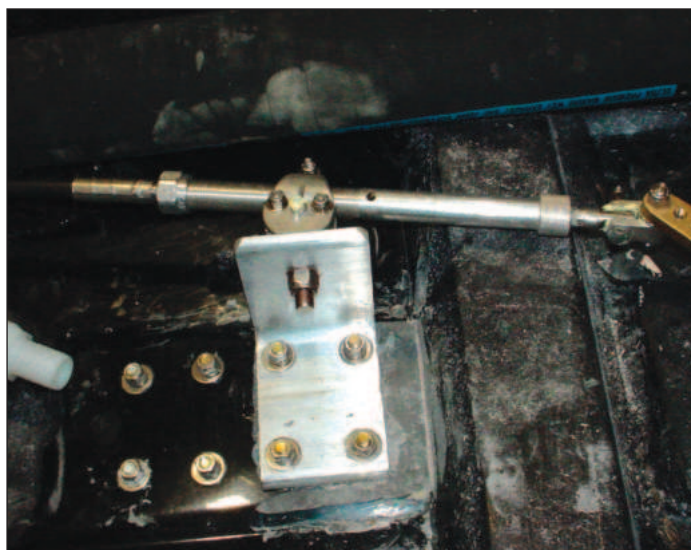
Inspect the Exhaust Flaps for Damage

Step 1: Ensure that the engine is OFF and disconnect the engine safety starting switch. **Be sure that the throttle/shift control lever is in neutral.**

Step 2: Inspect the exhaust flap hinge for signs of deterioration. Replace the flap if necessary.

Lubricate the Steering System

Because this process should be completed while all movable components of the drive train are NOT in motion, MasterCraft recommends this be done while the boat is out of the water.



Step 1: Ensure the engine is OFF and disconnect the engine safety starting switch. **Be sure that the throttle/shift control lever is in neutral.** The engine must be cool.

Step 2: Remove the access panel in the rear trunk compartment in direct drive boats. In V-drive models the steering is located in the engine compartment, beneath the engine.



Step 3: Turn the steering wheel so that the maximum amount of steering cable is seen.

Step 4: Use solvent to clean old lubricant from the cable end, pivot and rudder shaft.

Step 5: Spread a generous amount of white lithium grease over the cable end. Work the steering wheel back and forth and re-apply grease if necessary.

Step 6: Using the flexible end of a grease gun, give two (2) full shots of white lithium grease to the two (2) grease fittings: one on the rudder shaft, and one on the pivot. Clean up any old grease purged from the areas.

Step 7: Rotate the steering wheel back and forth several times to work the lubricant in.

Step 8: Re-install the access panel.

Lubricate the Shift and Throttle System

Because this process should be completed while all movable components of the drive train are NOT in motion, MasterCraft recommends this be done while the boat is out of the water.

Step 1: Ensure that the engine is OFF and disconnect the engine safety starting switch. **Be sure that the throttle/shift control lever is in neutral.** The engine must be cool.

Step 2: Open the engine box and locate the shift and throttle cable ends.

Step 3: Shift to full-throttle-forward.

Step 4: Lubricate the cable ends and connections with a coating of waterproof marine multi-purpose grease.

Step 5: Lubricate the pivots and linkages with a light grease.

Step 6: Shift the control lever from full-throttle-forward to full-throttle-reverse several times to work the lubricant in.

Check the Ballast Pump Impeller

This applies only to boats equipped with some type of ballast system. The number of ballast pumps varies from system to system. Authorized MasterCraft dealers can provide guidance to locate any and all pumps.



Step 1: Remove two (2) of the cover screws and retain the screws for the reinstallation process. Swing the cover out of the way to allow access to the impeller location.

Step 2: Using needle-nose pliers, pull the old impeller out of the casing.

Step 3: Install a new impeller. (It is intentionally larger than the case. While gently squeezing it in, ensure that the paddle wheels angle in the same direction—counter-clockwise—all the way around.)

Step 4: Slide the plate back into place. No silicone is necessary. Due to the built-in gasket, tightening the screws should prevent leakage.

Inspect the Complete Fuel System for Leakage

Although the boat engine is similar to an automobile engine, the engine compartment differs substantially. The underside of an automobile engine compartment is totally open to the atmosphere. This allows complete air circulation and ventilation. A boat engine is housed in a closed compartment, the underside of which is the bottom (hull) of the boat.

The enclosed engine compartment limits the ventilation of gasoline and oil fumes. Because confined gasoline vapors mixed with a little air can form an explosive atmosphere, it is important to be especially vigilant in performing the following two (2) operations:

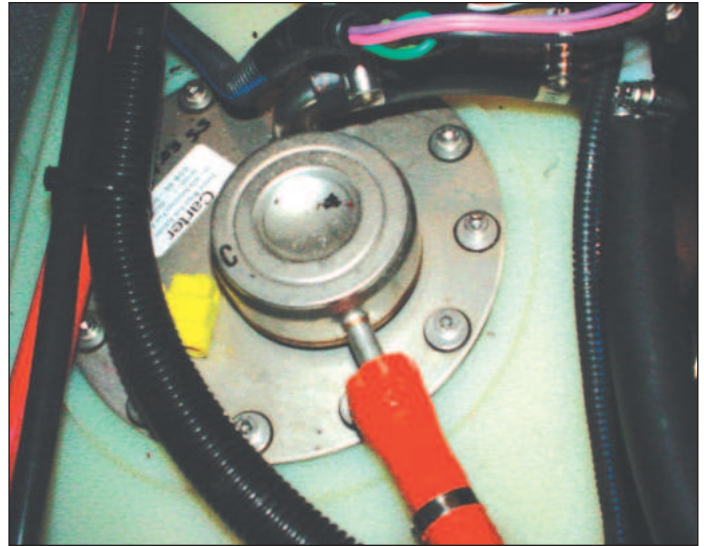
Step 1: Run the bilge blower for at least four (4) minutes to ventilate the bilge area each time before starting the engine.

Step 2: Inspect the boat bilge area under the engine for the evidence of oil and gasoline—or any gasoline odor. This inspection should take place the first time the boat is started each day. Raise the engine cover and visually look at the bilge area under the engine.



Gasoline is explosive. If a gasoline odor is present or gasoline is visually observed in the bilge area during inspection, DO NOT START YOUR ENGINE! Remove the ignition key from the ignition switch and call an authorized MasterCraft dealer for service.

Note: If there is evidence of loose fuel fittings, deteriorated lines or other problems associated with the fuel system, call an authorized MasterCraft dealer. Fuel system service on later-model MasterCraft boats require special service tools and special training. Due to the potential for serious consequences when errors occur in servicing the fuel system, MasterCraft strongly encourages all boat owners to seek professional assistance from an authorized MasterCraft dealer's service department whenever any service or perceived problems occur within the fuel system.



All replaced fuel components must meet United States Coast Guard (“USCG”) and American Boat & Yacht Council, Inc. (“ABYC”) standards, and must be Underwriter’s Laboratory (“UL”)-approved. Inferior quality components pose a serious safety threat to you and others, and the use of inferior components may result in serious injury or death. Resulting damage may void the warranty.

THE STORAGE OR WINTER LAY-UP REQUIRES SPECIAL preparation to prevent damage to the boat. Since winter storage is an annual event, it presents an excellent opportunity to perform the annual maintenance at this time, depending upon the amount of usage. Check with an authorized MasterCraft dealer's service department regarding the boat's needs to determine if this is the appropriate time for annual service.

Without proper preparation, storage for long periods of time may cause internal parts of the engine and transmission to rust due to lack of lubrication. Also, if the boat has been stored in below-freezing temperatures with water inside the bilge or engine cooling system (including the heater or shower), this condition may result in major damage from freezing, which would not be covered under the warranty.

STORAGE AND WINTERIZATION

Refer to the engine owner's manual regarding oil changes. The boat should have an oil change performed immediately prior to storage to prevent potential damage to the engine.

The following procedures will help avoid most potential types of damage during storage for a period not to exceed five (5) months!

CAUTION

Because of the complexity of preparing a boat for proper winter storage, as well as the possibility of extreme damage to the engine if a preparation error was made during winterization, MasterCraft recommends scheduling an appointment with an authorized MasterCraft dealer's service department to permit a technician to perform all winterization procedures.

To properly winterize the engine, you **MUST** be able to bring the engine up to operating temperature. To accomplish this, the boat must be in the water or attached to a water supply using a hose and suitable adapter that will allow an uninterrupted supply of water to the engine.

General Preparation

Before starting you will need the following supplies:

- Sta-Bil® Gasoline Stabilizer
- Fuel filter
- Low tack tape

Fuel System Treatment

Step 1: If the boat will be placed in storage with fuel (no alcohol in the mix) in the tank, fill the tank with fresh fuel and a sufficient amount of Sta-Bil gasoline stabilizer to treat the entire tank. Follow instructions on the container. **Also review the engine manual instructions regarding storage and winterization procedures!**

Step 2: If the boat will be placed in storage with fuel that contains alcohol, the fuel tank should be drained as completely as possible, the fuel disposed of properly, and Sta-Bil gasoline stabilizer added to any fuel remaining in the tank. Follow the directions on the container.

Step 3: Start the engine and operate at idle until the engine reaches normal operating temperature. (If using a hose and adapter, adjust the faucet to avoid over-cooling the engine at low RPM.) Run the engine for at least fifteen (15) minutes and ensure that the fuel stabilizer enters the engine's fuel system.

Step 4: Perform the annual maintenance as described in this Manual.



General Power Package Preparation

Step 1: Clean dirt, grime and grease from painted surfaces of the engine and drive train.

Step 2: Lubricate the throttle and shift linkages and cables with multi-purpose grease.

Step 3: Disconnect the battery cables from the battery and charge the battery fully. If you remove the battery from the boat, store it in a cool and dry place. **Never store batteries close to heat, spark or flame-producing devices.**

Step 4: Leave the engine box cover propped open about two inches (2") to ventilate the engine compartment.

Other Winterization Preparations

Step 1: Remove the bilge drain plug immediately after taking the boat out of the water. After a general bow-to-stern washing, raise the bow of the boat higher than the stern to allow as much water as possible to drain from the bilge, while performing other storage preparations.

Step 2: Thoroughly clean the hull, deck and interior of the boat as soon as it is removed from the water. Cleaning at this time is easier because any marine growth is still wet. Be sure to allow a few days of air drying to prevent mildew that results from trapped moisture. (See the *Cleaning* section of this Manual.)

Step 3: Apply a coat of wax to the entire surface of the boat. We suggest MasterCraft Premium Marine Wax for excellent coverage.

Step 4: If the boat is equipped with a heater, shower or ballast bags/tanks, be sure to disconnect the hoses and drain any remaining water in the lines to avoid freezing. Even small amounts of water in any of these areas can cause significant damage upon freezing and such damage is not covered under the warranty!

Note: Be sure that hoses will not become entangled in the engine V-belt when the engine turns over or the hose and/or the belt will be damaged.

Step 5: Use duct tape to seal the exhaust flaps to prevent dirt and nesting rodents from entering.

Step 6: Cover the boat with a boat cover or tarp.

Note: If the boat is to be stored outside and subject to accumulations of snow, water and ice, a support should be made for the boat cover so that it will not sag, rip or tear, thereby allowing water to enter the boat. Two-inch diameter PVC plumbing pipe is ideal for this purpose. It is readily available at local hardware stores, and it is easy to work with. Also, its rounded shape will prevent damage to the canvas.

Ballast System Preparations

Step 1: Attach a hose to the starboard side ballast hose that comes out of the deck at the rear seat.

Step 2: Place the other end into a gallon of non-toxic, RV-type anti-freeze.

Step 3: Turn the pump on to empty and pump anti-freeze into the system until anti-freeze comes out of the thru-hull on the side.

Step 4: Turn the pump on to fill and pump anti-freeze back into the jug.



Re-Activating the Boat After Storage

Step 1: Remove the duct tape from the exhaust flaps.

Step 2: Charge the battery and install it in the boat, following all safety precautions associated with changing batteries.

Step 3: Re-install the drain plugs or petcocks on each side of the engine block. EFI engines have a knock sensor located in one or both of the drain holes. **This/these unit(s) must be re-installed in the drain hole(s).** Carefully install this unit without any additional thread sealant. Be careful to avoid over-tightening this unit. Torque specifications for installation of the knock sensor is 14-16-ft-lbs.

Step 4: Re-attach the large diameter hose to the water circulation pump.

Step 5: Re-install the transmission cooler hose connection.

Step 6: Install the raw water impeller and reconnect the hoses to the raw water pump. Use a new gasket, even if the one removed at winterization time appeared in good condition.

Step 7: Install new spark plugs.

Step 8: If applicable, reconnect the hoses to your heater or shower.

Step 9: Check the engine compartment and bilge for signs of nesting animals. Clean as necessary.

Step 10: Check the condition of the distributor cap and rotor (where applicable). Replace if either shows signs of wear, damage or corrosion.

Step 11: Check the entire engine system for fluid, oil and coolant levels. Add as necessary.

Step 12: Check the entire engine for cracks or leaks caused by freeze damage.

Step 13: Check all hose clamps for tightness. Install the bilge drain plug and the rear drain plug in boats equipped with certain types of ballast systems.

Step 14: Grease the propeller shaft taper and install the propeller.

Step 15: Perform the daily maintenance as noted previously in this Owner's Manual. If it was not done prior to storage, perform the annual maintenance as well.

Step 16: If the boat is equipped with the optional fresh water cooling system and was drained for storage, fill the system with fresh coolant solution per instructions.



Step 17: Check the alignment between the output flange on the transmission and the propeller shaft flange. If the maximum feeler gauge that can clip between the flange faces at any point is 0.003", the unit is properly aligned. If a thicker gauge can be inserted at any point, the engine must be re-adjusted until proper alignment is obtained. This should be performed by an authorized MasterCraft dealer's service department.

Step 18: For all models, with the boat in the water, cycle the key ON and then OFF two (2) or three (3) times, allowing ten (10) seconds between key cycles, before cranking the engine. This allows the fuel pump to prime the fuel lines; then start the engine. In the event the engine does not respond, allow a two-minute cool-down period for every thirty (30) seconds of cranking. When the engine fires, keep a close watch over the gauge readings and check for leakage and abnormal noises. Keep speeds low for the first fifteen (15) minutes to allow the engine to reach normal operating temperatures.

Step 19: In ProStar 197s equipped with ballast bags, when reconnecting the hook-ups, be sure to squeeze the prongs to help slide the connector back on. Dish soap or some similar product will help slide the connects back together. Note that the red ring goes over the raised ring to ensure a working connection.

PROPELLER DAMAGE IS CAUSED BY STRIKING SOLID OBJECTS. If the propeller is not rotating at the time it strikes a solid object, the damage is usually confined to just one blade and may be difficult to see. If the propeller is rotating when it strikes an object, usually the resulting damage can easily be seen on all blades.

Checking/Repairing Propellers

Step 1: Ensure the engine is OFF and the engine safety starting switch is disconnected.

Step 2: Clamp a small rule scale to the shaft strut, parallel to the shaft so that the end of the scale is 3/32-inches from the leading edge of a propeller blade.

Step 3: Rotate the propeller slowly. There should be no more than 3/32-inch variance between the blades. If the propeller is damaged, see an authorized MasterCraft dealer.

Changing Propellers

Step 1: Ensure the engine is OFF and the engine safety starting switch is disconnected.

Step 2: Remove and discard the cotter pin.

Step 3: Remove the propeller nut.

Step 4: Tap the center hub of the propeller with a rubber mallet to release the propeller. Inspect the shaft and propeller splines for damage.

Step 5: Thoroughly clean and apply a light coat of waterproof marine multi-purpose grease to the splined area of the shaft and propeller.

Step 6: Align the splines and carefully install the propeller onto the shaft. **DO NOT FORCE THE PROPELLER INTO PLACE.**

Step 7: Install the propeller nut and torque to 50-ft-lbs.

Step 8: Install a new cotter pin and bend the ends around the shaft to lock the propeller on the shaft.

PROPELLER MAINTENANCE



THE FOLLOWING CHARTS WILL ASSIST YOU IN FINDING AND correcting minor mechanical and electrical problems with your MasterCraft boat. Engine manuals include troubleshooting suggestions regarding drive train issues.

To correct a problem, first determine what the symptom is. Start with the first cause and eliminate the possibility of each until the problem is corrected. Due to the specialized skill and tools needed to correct major issues, that information has not been discussed below. If a problem is not addressed herein, please contact an authorized MasterCraft dealer's service department.

When experiencing a problem, before shutting down the boat, check the surroundings. If a sudden stop would place other boaters in jeopardy, continue on until it is safe to slow or stop to analyze the situation. Always be aware of the surroundings and how actions may impact other boaters!

| Problem | Possible Causes | Solution |
|-----------------------------|---|---|
| Throttle/shifting problems. | Corroded cables. Defective throttle return spring. Low transmission oil level. Sticking transmission shift detent ball. Kink in cable(s). | Clean and lubricate the cables. Replace the throttle return spring. Replenish transmission fluid. Clean and lubricate the detent ball. Have authorized MasterCraft technician replace the cable(s). |

GUIDE TO TROUBLESHOOTING

| | | |
|--|---|---|
| Steering problems. | Corroded cable. Rudder worn. | Clean and lubricate the cable. See an authorized MasterCraft dealer's service department. |
| Excessive vibration. | Bent strut. Fouled propeller. Damaged propeller. Misaligned propeller shaft coupling. Bent propeller shaft. | Replace the strut. Remove objects from the propeller shaft and rudder. Replace the propeller. Seek proper alignment. See an authorized MasterCraft dealer's service department. |
| Electrical problems. | Open circuit breaker or blown fuse. Loose wiring connections or corrosion. Defective sending unit. Shorted wiring harness. Defective switch or gauge. | Re-set the circuit breaker or replace the fuse. Clean and tighten wiring connections. Replace the sending unit. Have the wiring harness repaired. See authorized MasterCraft dealer's service department. |
| No speedometer reading. | Defective speedometer. Defective speedometer paddle wheel. | Have the speedometer checked or replaced. Have paddle wheel checked or replaced. |
| Incorrect speedometer reading. | Improper calibration. | Follow calibration instructions in <i>Instrument and Gauges</i> section of this Manual. |
| Gauges do not work or the accessory does not work. | Breaker has tripped. Fuse has blown. Low battery. Insufficient battery supply. | Re-set the breaker. Replace the fuse. Check the battery voltage for a loose ground. Replace battery with one that has at least 750CCAs. |

1. **Limited Warranty and Term.** MasterCraft Boat Company, LLC. ("MasterCraft") warrants to the original retail purchaser that the following components of each new boat shall be free from material defects in materials and workmanship to the extent set forth below, under normal use and when operated and maintained in accordance with MasterCraft's instructions, for the period indicated:

- 1.1 **Deck, Hull, Liner and Stringers.** From the date of the original retail purchase, the deck, hull, liner and stringer system (collectively, "Structural Components") is warranted for as long as the original purchaser owns the boat.

- 1.2 **Gel Coat.** On condition that the consumer has provided maintenance and care as described in

conditions and customer maintenance/care are factors that have a significant effect on the condition and durability of the gel coat.

- 1.3 **Other Component Parts (Excluding Engine and Transmission).** MasterCraft provides the following warranty for other component parts of your MasterCraft boat:

- (a) Instrumentation is warranted for five (5) years, except depth finders and Perfect Pass;
- (b) marine carpeting for five (5) years;
- (c) upholstery vinyl for five (5) years;
- (d) and fuel pump assembly for two (2) years provided the customer follows maintenance and care requirements.

All other components (excluding engine and transmission), including upholstery stitching, are warranted for a period of one (1) year. All warranties are from the date of the original retail purchase of the boat or the initial use of the boat, whichever first occurs.

- 1.4 **Trailer and Trailer Component Parts.** The brake calipers are warranted for a period of two (2) years; all other components are warranted for a period of one (1) year from the date of the original retail purchase of the boat or the initial use of the boat, whichever first occurs. See the Trailer Owner's Manual for more details.

2. **Engine and Transmission.** The engines used in MasterCraft boats are supplied by Indmar Products Company, Inc., in Millington, Tennessee ("Indmar"); Crusader, Inc., in Little Mountain, South Carolina ("Crusader"); or Volkswagen Marine Engines in Tampa, Florida ("Volkswagen Marine"). These companies provide a separate warranty of three (3) years from the date of the original retail purchase of the boat or the initial use of the boat, whichever first occurs, for the engine and transmission. A statement of the Indmar Power Train Warranty, the Crusader Warranty, or the Volkswagen Marine Warranty is provided separately to the original retail purchaser. MasterCraft provides no independent warranty with regard to the engine and transmission; however, the owner may contact MasterCraft at the address or telephone number listed in [Section 7](#) of this Manual to obtain contact information for making claims or inquiries under the applicable engine manufacturer's warranty. Contact information for Crusader or Volkswagen Marine are

LIMITED WARRANTY STATEMENT

the *Corrosion* and *Cleaning the Boat* sections of the MasterCraft Owner's Manual, the gel coat, which is applied to all MasterCraft boats at the factory, will be warranted for a period of one (1) year from the date of the original retail purchase of the boat or the initial use of the boat, whichever first occurs, for stress crazing of the gel coat. However, no warranty is provided, and MasterCraft expressly disclaims any warranty for, scratching, discoloration or fading of the gel coat because environmental operating



provided in the warranty statement provided at time of purchase to the original retail purchaser.

3. **Warranty Conditions, Limitations and Exclusions.**

MasterCraft boats are manufactured by trained craftspersons from high-quality materials and components. However, conditions outside MasterCraft's control require specific limitations on, and exclusions from, coverage under this Limited Warranty. The Limited Warranty on the Structural Components set forth in Section 1 of this Manual does not cover or include any other components fastened or applied to the hull or deck. This Limited Warranty constitutes the final, complete and exclusive statement of warranty terms, and no other person or entity is authorized to make any other warranties or representations on behalf of MasterCraft. Furthermore, the Limited Warranty set forth in Section 1 (including all subsections) hereof does not cover the following:

- (a) damage caused by misuse, negligence, accident; collision or impact with any object;
- (b) damage caused by any improper alteration or modification to the boat or any of its component parts or accessories, including damage resulting from alteration, modification, repair or replacement in such a way as to increase the cubic-inch capacity or horsepower output of the engine and boat as originally manufactured;
- (c) damage caused by the use of improper or contaminated fuel or fluids;
- (d) damage caused by the use of customer-applied chemicals or accidental spills;
- (e) damage caused by failure to maintain the boat in accordance with the maintenance provisions in the Owner's Manual or improper maintenance of the boat;
- (f) damage resulting from the use of the boat for any racing, speed, commercial competition or performance demonstration;
- (g) damage resulting from use of the boat for rental, commercial or industrial purposes;
- (h) damage to hardware and other components fastened or adhered to the hull, deck or liner;
- (i) damage caused by fire, theft, freezing, vandalism, explosion, lightning, wind, hail storms, flooding or other natural disaster;
- (j) damage to any component parts and accessories not manufactured by MasterCraft, including but not limited to, the engine, drivetrain,

transmission, propeller, shift and throttle control levers and cables, pumps, blowers, windshields, canvas, upholstery, tower and accessories, instrumentation and steering systems; however, such items may be warranted by the individual manufacturer, and if possible, MasterCraft will provide the owner with a copy of the manufacturer's warranty:



- (k) damage caused by use of any non-MasterCraft trailer;
- (l) damage caused by improper support of the boat on davits, hoist system or boat lift of any kind;
- (m) damage to paints, varnishes, gel coat surfaces and colors, chrome-plated or anodized finishes, floor and floor covers and any other surface coatings, as well as damage due to in-water storage without proper barrier coat and bottom paints (NOTE: Although MasterCraft uses the highest-grade gel coat materials, a condition may develop where the bottom of the boat may show signs of discoloration and/or blisters if the boat is left in the water for long periods of time; therefore, a proper barrier coat and bottom paint should be used whenever it is anticipated that the boat will be left in the water for an extended period of time);
- (n) damage to the trailer and its parts or components due to abrasions, rock chips, rust, improper care of maintenance, or use in salt or brackish water; however, the finishes of galvanized trailers, which are designed for use in salt or brackish water, are warranted to be free from damage resulting from use in salt or brackish water for one (1) year from the date of

- the original retail purchase or the initial use of the trailer, whichever first occurs;
- (o) damage caused by dealer-installed options or accessories;
 - (p) damage caused by consumer-installed options or accessories;
 - and/or
 - (q) all warranty coverage will expire after ninety (90) days on boats used for commercial purposes.



4. **Disclaimer and Limitation of Implied Warranties.** THE EXPRESS LIMITED WARRANTY SET FORTH HEREIN IN IS LIEU OF ALL OTHER WARRANTIES AND REPRESENTATIONS, EXPRESS OR IMPLIED, AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, MASTERCRAFT DISCLAIMS, AND THE OWNER HEREBY EXPRESSLY WAIVES, ANY AND ALL OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND OR NATURE, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, OTHER THAN THOSE WARRANTIES WHICH ARE IMPLIED BY, AND ARE INCAPABLE OF EXCLUSION, RESTRICTION OR MODIFICATION UNDER APPLICABLE LAW. THE TERM OF ANY IMPLIED WARRANTIES THAT CANNOT BE DISCLAIMED UNDER APPLICABLE LAW, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL BE LIMITED TO THE DURATION OF THE FOREGOING EXPRESS WARRANTY PERIODS APPLICABLE TO THE RESPECTIVE COMPO-

NENTS. SOME STATES DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES AND/OR DO NOT ALLOW LIMITATIONS ON THE AMOUNT OF TIME AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

5. **Limitation of Liability.**

- 5.1 **Liability Limitation: Exclusion of Consequential Damages.** This Limited Warranty is for the benefit of the owner and MasterCraft, and shall not create or evidence any right in any third party. THE REPAIR OR REPLACEMENT OF DEFECTIVE COMPONENT PARTS AS PROVIDED UNDER THIS LIMITED WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT SHALL MASTERCRAFT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, INDIRECT, PUNITIVE OR EXEMPLARY DAMAGES OR LOST PROFITS WHATSOEVER ARISING OUT OF THE USE OR INABILITY TO USE THE BOAT OR ANY COMPONENT PART THEREOF, OR FOR ANY BREACH OF THIS LIMITED WARRANTY OR OTHERWISE, EVEN IF MASTERCRAFT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR SUCH DAMAGES COULD REASONABLY HAVE BEEN FORESEEN BY MASTERCRAFT. However, some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.
- 5.2 **Purchase Price Limitation.** In any event, MasterCraft's entire liability under any provision of this Limited Warranty shall be limited to the repair or replacement of the boat, trailer or component part, or the refund of the purchase price paid by the consumer for the boat, trailer or component part found to be defective within the applicable warranty period. This shall constitute MasterCraft's sole liability and obligation in the event of any claim arising out of its performance or non-performance of any provision of this Limited Warranty. Because some states

and jurisdictions do not allow the exclusion or limitation of liability, the above limitations may not apply to you.

6. Transfer of Limited Warranty. Upon the first sale, conveyance or other transfer of the boat or trailer by the original retail purchaser, any remaining unexpired Limited Warranty coverage shall be transferred to the second owner and shall remain in effect for the remainder of the applicable warranty period(s) set forth in Sections 1.1, 1.2, 1.3 and 1.4 above (which warranty periods begin to run from the date of the original retail purchase of the boat or trailer, or the first use of the boat or trailer, whichever first occurs, as applicable), upon delivery of the warranty transfer card and payment of the applicable warranty transfer fee to MasterCraft. With respect to the Lifetime Limited Warranty (granted only to the original retail purchaser) on the Structural Components set forth in Section 1.1 above, if the sale, conveyance or other transfer of the boat by the original retail purchaser to another person or entity occurs within three (3) years of the date of the original retail purchase of the boat by the original retail purchaser, then the Limited Warranty on the Structural Components shall be transferred to the second owner and shall continue in effect for a period of ten (10) years from the date of the original retail purchase of the boat by the original retail purchaser. If the sale, transfer or conveyance of the boat by the original retail purchaser occurs more than three (3) years after the date of the original retail purchase of the boat, then the Limited Warranty on Structural Components (as well as all other warranties) shall be void as of the date of transfer and shall not be transferable to the second owner.

Only one (1) transfer under the provisions of this Section 6 (from the original retail purchaser to the second owner), within the applicable time period, may be made. In the event of a sale or transfer of the boat or trailer by a second owner to a subsequent purchaser, all coverage under this Limited Warranty shall immediately be terminated and the Limited Warranty shall become null and void. No transfer of this Limited Warranty will operate to extend the warranty periods set forth in Section 1 above. In order to effectuate the transfer of the Limited Warranty, the original retail purchaser and the new owner must properly fill out the warranty transfer card found in the back of the Owner's Manual and deliver the com-

pleted card, together with a check made payable to "MasterCraft Boat Company, LLC." in the amount of the warranty transfer fee, via U.S. Mail, postage prepaid, to MasterCraft at the address shown on the warranty transfer card. The card and check for the warranty transfer must be post-marked within the time period specified above in this Section 6 in order for the warranty transfer from the original retail



purchaser to the second owner to be effective.

7. Warranty Claims. In order to maintain warranty service under this Limited Warranty, the owner must return the defective boat or component part to an authorized MasterCraft service department, or to MasterCraft's factory at the below address, within the applicable warranty period. For questions regarding warranty service or to obtain information regarding warranty service or to obtain information regarding the nearest authorized MasterCraft service department, please contact MasterCraft at the following address or telephone number:

MasterCraft Boat Company, LLC
Attention: Warranty/Customer Service Department
100 Cherokee Cove Drive
Vonore, Tennessee 37885
1-423-884-2221

Subject to the terms of this Limited Warranty, any covered boat or component part with a material defect in materials or workmanship that is returned to an authorized MasterCraft service department or MasterCraft's factory during the appropriate warranty period will be repaired or replaced, at Mas-

terCraft's sole option, without charge to the owner for parts and labor. This provision is subject to the following terms and conditions:

- (a) MasterCraft shall be obligated only to repair or replace those items that prove defective, in MasterCraft's sole discretion, upon examination by MasterCraft's authorized service department or MasterCraft's own personnel, as applicable;
 - (b) MasterCraft warrants its repairs or replacements only for the remainder of the applicable warranty period;
 - (c) MasterCraft shall, in its sole discretion, fulfill its obligation to repair or replace any defective item at its factory or authorized service department;
 - (d) The owner shall be responsible for all costs associated with the transportation of the boat, towing bills, trailer or component part(s) to the authorized MasterCraft service department and for any return transportation.
8. No Modification of Warranty. No oral or written information, advice or communication of any nature by or from MasterCraft or its representatives, employees, dealers, agents, distributors or suppliers shall create a warranty or in any manner increase or modify the scope of this Limited Warranty.



FOR THE FIRST PURCHASE OF A SPECIFIC MASTERCRAFT BOAT, the original owner will receive a warranty registration card to complete and turn in. You should be aware that under federal law, completion of the warranty card is a requirement and should be completed as follows:

1. Dealer must complete the warranty registration at date of sale.
2. Dealer must secure buyer's signature!
3. Dealer provides a copy to the buyer, retains a copy for dealership files and forwards the remaining copy to MasterCraft.
4. Information must be mailed to the manufacturer within three (3) days of the sale.

If the MasterCraft boat is subsequently sold, MasterCraft offers a transferable warranty to the second owner. In accordance with the MasterCraft Limited Warranty, the remaining warranty against structural defects in the hull and deck will be transferred to the new owner when the following has been accomplished and verified within fourteen (14) days of the sale date:

- Receipt of the completed form below.
- Copy of the sales invoice.
- Payment of \$450.

WARRANTY TRANSFER

Upon verification, the remaining warranty will transfer, retroactive to the sale date.

**Forward form and payment to:
MasterCraft Boat Company, LLC
100 Cherokee Cove Drive
Vonore TN 37885**

Warranty Registration Transfer (forward this copy to MasterCraft)

Boat Serial Number _____
Model No. _____
Engine Make _____
Serial No. _____
Trans. Type _____
Serial No. _____

Please Print

Previous Owner _____
New Owner's Name _____
Street Address _____
City _____
State _____ **Zip Code** _____
Home Phone (_____) _____
Business Phone (_____) _____
Date of Purchase _____
Second Owner's Signature _____

MUST BE SIGNED!

Be sure to enclose payment and a copy of the purchase receipt within fourteen (14) days of the sale date.

RECOGNIZING THE PRIDE THAT MASTERCRAFT OWNERS take in their boats, MasterCraft worked diligently to develop our own line of products designed specifically to ensure a boat that will retain its appeal for years to come. As you maintain your boat over the coming years, use Genuine MasterCraft parts (GMP) to keep the pride!

MasterCraft Marine Motor Oil

The life of your marine engine is dependent upon proper lubrication, regardless of its make. That is why we've developed MasterCraft Marine Motor Oil. This premium marine motor oil was formulated specifically for MasterCraft's use in high-performance marine engines. The Marine Motor Oil provides high viscosity and film strength for engine protection in high-load applications.

GENUINE MASTERCRAFT PARTS

MasterCraft Marine Motor Oil is designed to protect against corrosion, wear, oxidation, varnish and sludge deposits. When used as directed, this oil assures compliance with MasterCraft warranty requirements. MasterCraft Marine Motor Oil is an exclusive product available only through authorized MasterCraft dealerships!

MasterCraft Premium All-Purpose Cleaner

Most MasterCraft boat owners pay attention to the details, especially when it comes to the maintenance and life of the boat interior. We give you information in this Manual on how to extend the life of the boat's interior. We especially caution you to avoid certain household cleaners, powdered abrasives, steel wool and industrial cleaners that may cause damage and discoloration. Dry cleaning fluids and lacquer solvents should not be used as they will remove the printed pattern and gloss of the boat's interior.

No cleaner can remove every mark or stain, but we provide a table in this Manual that informs you what cleaning agents to use and how to treat many stains. With this product, MasterCraft Premium All-Purpose Cleaner, you can clean with confidence!

A powerful cleaner that cuts through grease, dirt and grime, MasterCraft Premium All-Purpose Cleaner is an exclusive product available only through authorized MasterCraft dealerships!

MasterCraft Vinyl Dressing

After boat owners get the interior surfaces clean, they like to have a product that will help keep everything looking ship-shape. Waxes are not recommended for interior surfaces because many contain dyes or solvents that can permanently damage the protective coating of the interior. That's why we developed MasterCraft Vinyl Dressing to guard against excessive damage from ultraviolet rays, environmental conditions and everyday use, while adding years of life and beauty.

This product penetrates, protects and beautifies, but it contains no fluorocarbons. MasterCraft Vinyl Dressing provides a protective shield that gives a long-lasting appeal for plastic, plexiglass, vinyl, rubber, acrylics, Formica, wood and leather—so it can be used on more than just the boat!

For best results, consumers should leave the Vinyl Dressing on surfaces for several hours or overnight before removing any excess. This product is available only through authorized MasterCraft dealerships.

MasterCraft Spray Wax

If you take great pride in the appearance of your boat, by using MasterCraft Spray Wax you help ensure a long-lasting and attractive shine for the deck and hull. This pre-softened formula combines carnauba wax with efficient cleaning agents that remove oxidation, engine exhaust spill-off and other contaminants. MasterCraft Spray Wax provides a deep gloss with long-lasting protection from UV rays, salt air and harsh weather conditions. It's great for fiberglass, gel coat, aluminum, chrome and painted surfaces.

This product protects and inhibits color fading and cleans effectively without harmful abrasives, leaving a beautiful glossy shine. It protects against harsh weather conditions, too. Using this GMP product will assist boat owners in following the requirements outlined in this Manual for providing protection over the life of the boat.

MasterCraft Spray Wax is an exclusive product available only through authorized MasterCraft dealerships!

Service Log

| As Needed | Date | Date | Date | Date |
|-------------------------------------|------|------|------|------|
| Replace raw water impeller | | | | |
| Add/change oil and filter | | | | |
| Replace battery | | | | |
| | | | | |
| Every 50 Hours | Date | Date | Date | Date |
| Lubricate starter gear & shaft | | | | |
| Change engine oil & filter | | | | |
| Check all safety equipment | | | | |
| | | | | |
| Every 100 Hours | Date | Date | Date | Date |
| Clean flame arrestor | | | | |
| Replace water impeller | | | | |
| Engine tune-up | | | | |
| Change transmission fluid | | | | |
| Check engine mounts | | | | |
| Check prop shaft coupling alignment | | | | |
| Inspect exhaust flaps | | | | |
| Lubricate steering system | | | | |
| Lubricate shift & throttle system | | | | |
| Check/replace ballast pump impeller | | | | |
| Inspect complete fuel system | | | | |
| Change fuel filter | | | | |

Service Log

| As Needed | Date | Date | Date | Date |
|-------------------------------------|------|------|------|------|
| Replace raw water impeller | | | | |
| Add/change oil and filter | | | | |
| Replace battery | | | | |
| | | | | |
| Every 50 Hours | Date | Date | Date | Date |
| Lubricate starter gear & shaft | | | | |
| Change engine oil & filter | | | | |
| Check all safety equipment | | | | |
| | | | | |
| Every 100 Hours | Date | Date | Date | Date |
| Clean flame arrestor | | | | |
| Replace water impeller | | | | |
| Engine tune-up | | | | |
| Change transmission fluid | | | | |
| Check engine mounts | | | | |
| Check prop shaft coupling alignment | | | | |
| Inspect exhaust flaps | | | | |
| Lubricate steering system | | | | |
| Lubricate shift & throttle system | | | | |
| Check/replace ballast pump impeller | | | | |
| Inspect complete fuel system | | | | |
| Change fuel filter | | | | |

World Headquarters
MasterCraft Boat Company
100 Cherokee Cove Drive
Vonore TN 37885 U.S.A.
423•884•2221
423•884•2295 fax
www.mastercraft.com



2008 MasterCraft Owner's Manual



ProStar
MariStar
X-Series