

OWNER'S MANUAL

TOYOTA MARINE *Sports*



TOYOTA *Eagle*

## RECORD IMPORTANT INFORMATION!

In addition to this manual, your Epic Ski Boat may be supplied with component manufacturer information such as instructions, warranties or other important information. Read these materials carefully since improper operation and maintenance can void the warranty and jeopardize personal safety. Fill in the information below and keep a copy of it in a safe place.

### Hull

HIN \_\_\_\_\_

Date Purchased \_\_\_\_\_

Dealer/Phone \_\_\_\_\_

Ignition Key Number \_\_\_\_\_

Registration Number/State \_\_\_\_\_

### Engine

Model # \_\_\_\_\_

Serial # \_\_\_\_\_

### Transmission

Model # \_\_\_\_\_

Serial # \_\_\_\_\_

### Trailer

Model # \_\_\_\_\_

Serial # \_\_\_\_\_

### Accessory

Model # \_\_\_\_\_

Serial # \_\_\_\_\_

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## FOREWORD

Toyota Marine Sports is proud of the advanced engineering and quality construction of each boat we build.

This Owner's Manual explains the features of your new Epic 21 Closed Bow, Epic 22 Open Bow, Epic S22 V-Drive and Epic X22 Wakeboard (with added supplement) Series Ski Boat. It also serves as a guide to safe operating procedures, general boating regulations and proper maintenance techniques. **Please read it and follow the instructions carefully, before operating your craft, so that you may enjoy many years of safe boating.**

If this is your first time owning or operating an inboard ski boat, we recommend that you ask your dealer for instructions or enroll in a local boater safety course prior to taking to the water.

When it comes to service and parts, remember that your Authorized Toyota Marine Dealer knows your boat best, has certified technicians on staff, genuine parts and accessories in stock and most of all is interested in your complete satisfaction.

**Please keep this manual in your boat** for quick reference and remember to pass it along should you decide to sell the craft. The next owner will need this information also.

All information and specifications in this manual are current at the time of printing. However, because of the Toyota policy of continual product improvement, we reserve the right to make product and design changes at any time without notice. Also please note that this manual applies to all equipment, including options available on the Epic series. Therefore, **you may find explanations for equipment not installed on your boat.**



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### SECTION 1 – BASIC COMPONENT AND EQUIPMENT OPERATION

The boat's equipment and basic operations are divided into the 7 sub-groups listed below. Use of the equipment is explained including any points you should pay particular attention to.

- 1A Instruments and Controls
- 1B Fueling Procedures
- 1C Lifting the Boat
- 1D Safety Checks
- 1E Start/Run/Stop
- 1F Break-In and 15 Hour Transmission Service
- 1G Operating Suggestions

### SECTION 2 – BOATING RULES

This section touches on basic seamanship and boating rules. This information is provided as a reference and does not take the place of an approved boating safety course or reference book.

### SECTION 3 – GENERAL SAFETY / SKIING / WAKEBOARDING

This section covers the basics of water skiing/wakeboarding safety, safety equipment and

towline safety and procedures. Again it is meant as an overview only and Toyota recommends you contact local water sports clubs and organizations for in-depth instruction.

### SECTION 4 – BOAT CONSTRUCTION AND CARE

Serial number location, cleaning and maintenance of the hull and interior and corrosion/ hull protection information are provided in this section. Winterization, storage and re-launch are also included here.

### SECTION 5 – SERVICE AND MAINTENANCE

This section explains the importance of regular maintenance. Regular and periodic inspection and maintenance of your Toyota Marine Sports boat will help to keep your craft in its best condition.

### SECTION 6 – TRAILERING AND LAUNCHING

Proper techniques for trailering, trailer safety, launching and retrieving your boat are covered in this section.

## SECTION 7 – TROUBLESHOOTING

Product problems and their solutions are presented in this section.

## SECTION 8 – OPTIONS

This section contains information on various options which may be installed on your boat.

## SECTION 9 – BOAT AND ENGINE SPECIFICATIONS

This section covers the specifications of the boat, engine and trailer.

## SECTION 10 – TOYOTA MARINE SPORTS NEW BOAT AND TRAILER LIMITED WARRANTY

All aspects of your Toyota Marine Sports warranty are covered here. This includes the Warranty Statement, Dealer Service, Warranty Repairs, Registration and Owner's Responsibilities.

## SECTION 11 – INDEX OF SUBJECTS

The section provides a listing of major items, by page number, so that you can rapidly find the item and page you are searching for.

## WARRANTY & CONSTRUCTION

Toyota Marine Sports provides a Warranty Statement in Section 10 describing terms and conditions under which defects in your boat will be repaired. Familiarize yourself with the warranty and follow instructions regarding proper operation and maintenance. Failure to follow instructions can void the warranty.

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## SAFETY WARNINGS

Danger, Warning, Caution and Notice symbols point out important safety and operational instructions, which if not followed could endanger life and or damage equipment. Read and follow all instructions in this manual before attempting to operate this boat, trailer or any equipment or accessories.

 The safety alert symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED.

### **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, serious injury or damage to your boat, trailer or equipment.

### **CAUTION**

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury, or damage to your boat, trailer or equipment.

## NOTICE

Use of the word "NOTICE" will alert you to key information or instructions.

## MEDICAL EMERGENCY

In an emergency, you may be far from professional medical assistance. Be prepared. Take a first aid course, and carry a first aid kit. Be aware of any special conditions that may affect anyone on board.

## REPORTING ACCIDENTS

The U.S. Coast Guard requires the owner or operator of a boat involved in an accident to report the incident to the proper marine law enforcement agency for the State in which the accident occurred. Immediate notification to the nearest State boating authority is required if a person dies or disappears as a result of a recreational boating accident. If a person dies or injuries requiring more than first aid are involved, a formal report must be filed within 48 hours of the accident. A formal report must be filed within 10 days exceeding \$500 in property damage or complete loss of boat.

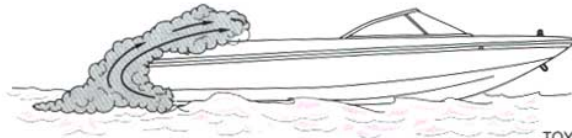


## ! WARNING

Carbon monoxide (CO) gas is an odorless, colorless gas which is lethal in high concentrations. Common sources of CO in a marine environment are: exhaust from engines and generators, ranges, space and water heaters, and any other device used to burn carbon based materials. Also, boathouses, sea walls, and other boats in close proximity can contribute to CO levels. If any of the following symptoms are experienced by anyone onboard, IMMEDIATELY move the person to fresh air and get medical help:

- flushed appearance
- throbbing temples
- inattentiveness
- ringing in the ears
- headaches
- drowsiness
- nausea
- dizziness
- fatigue
- vomiting
- collapse
- convulsions

Operating at slow speed or while dead in the water can allow CO to enter the passenger compartment.



TOYM101-18

Do not mistake for sea sickness!

**ENSURE ADEQUATE VENTILATION FOR CORRECT AIR MOVEMENT THROUGH BOAT!**

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**EPIC 21, 22  
& S22**

**! WARNING**

LEAKING FUEL CAN CAUSE FIRE AND EXPLOSION.

INSPECT FUEL SYSTEM FOR LEAKS AND CORROSION AT LEAST ANNUALLY.

**! DANGER**

AVOID SERIOUS INJURY OR DEATH FROM FALLS.

BOW MAY BE SLIPPERY.

DO NOT OCCUPY BOW WHEN BOAT IS IN MOTION.

(EPIC 21 ONLY)

**! WARNING**

AVOID SERIOUS INJURY OR DEATH FROM FIRE AND EXPLOSION.

DO NOT USE GASOLINE CONTAINING ALCOHOL.

ALCOHOL BLENDED FUELS MAY CAUSE LEAKS FROM DETERIORATION OF FUEL SYSTEM COMPONENTS.

CHECK FUEL SYSTEM FOR LEAKS AT LEAST ANNUALLY.

**! CAUTION**

AVOID INJURY FROM SPLASHING FUEL.

FUEL WILL DISCHARGE OUT THIS PORT WHEN TANK IS FULL.

**! WARNING**

AVOID SERIOUS INJURY OR DEATH.

THIS WATER SKI Pylon SHOULD BE USED FOR TOWABLE WATER SPORTS DEVICES AND EXTENSIONS UP TO SEVEN FEET ONLY.

DO NOT USE THIS Pylon WITH OTHER TOWABLE OBJECTS OR FOR TOWING BOATS.

DO NOT USE ATTACHMENTS WHICH EXTEND THE Pylon HIGHER THAN SEVEN FEET.

DO NOT USE SIDE EXTENSIONS, SUCH AS A BAREFOOT BOOM.

DO NOT SIT BEHIND THE TOW Pylon WHEN IN USE.

IMPROPER USE MAY OVERSTRESS THE Pylon, DANGEROUSLY UNBALANCE THE BOAT, OR ALLOW THE TOWROPE TO CONTACT A PASSENGER.

SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION.

**! WARNING**

VAPORS CAN CAUSE FIRE AND EXPLOSION.

DO NOT STORE FUEL OR FLAMMABLE LIQUIDS IN THIS COMPARTMENT.

**! WARNING**

AVOID SERIOUS INJURY OR DEATH.

DO NOT EXCEED 800 POUNDS WHEN TOWING.

DO NOT TOW MORE THAN TWO WATER SKIERS FROM THIS TOW EYE.

DO NOT USE THIS TOW EYE FOR A LIFTING RING.

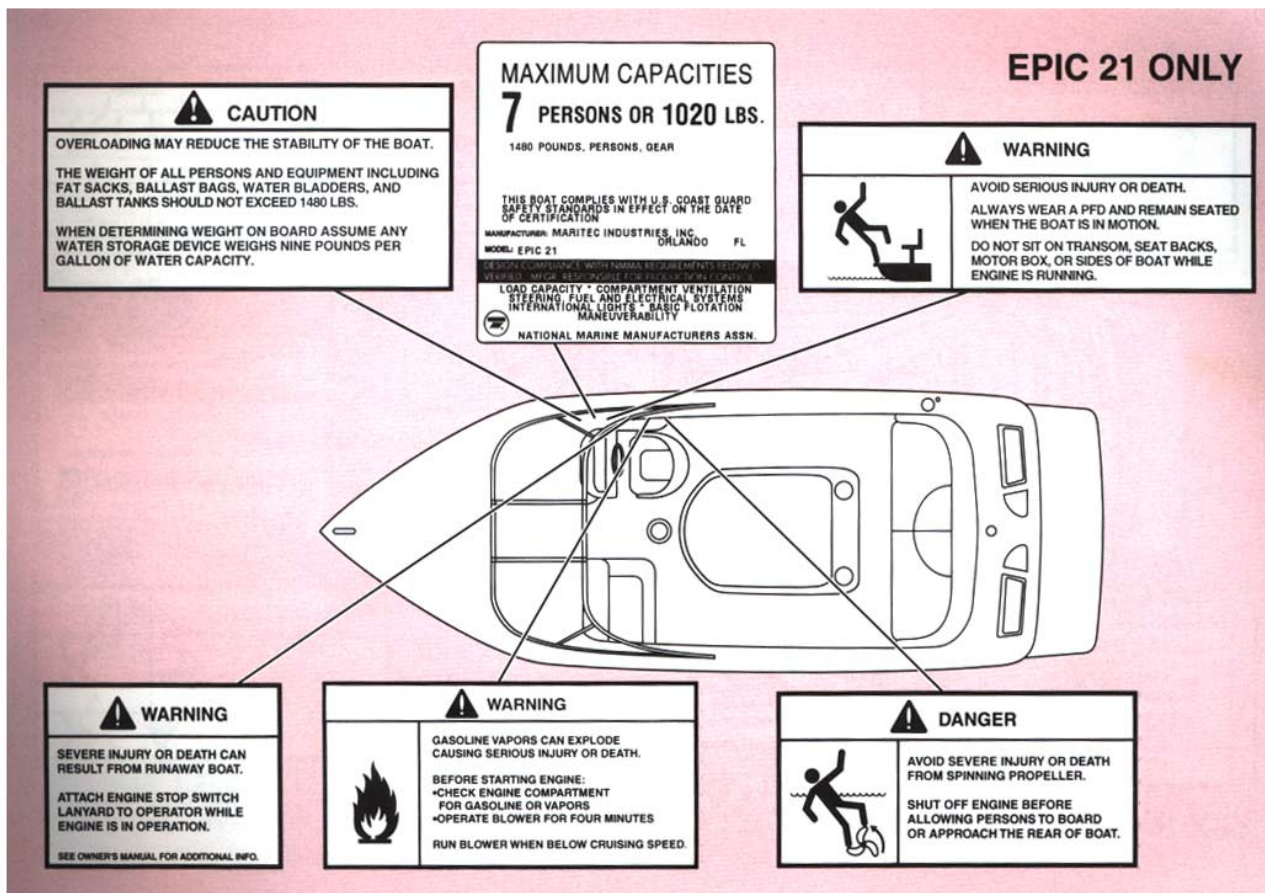
**! DANGER**

AVOID SEVERE INJURY OR DEATH FROM SPINNING PROPELLER.

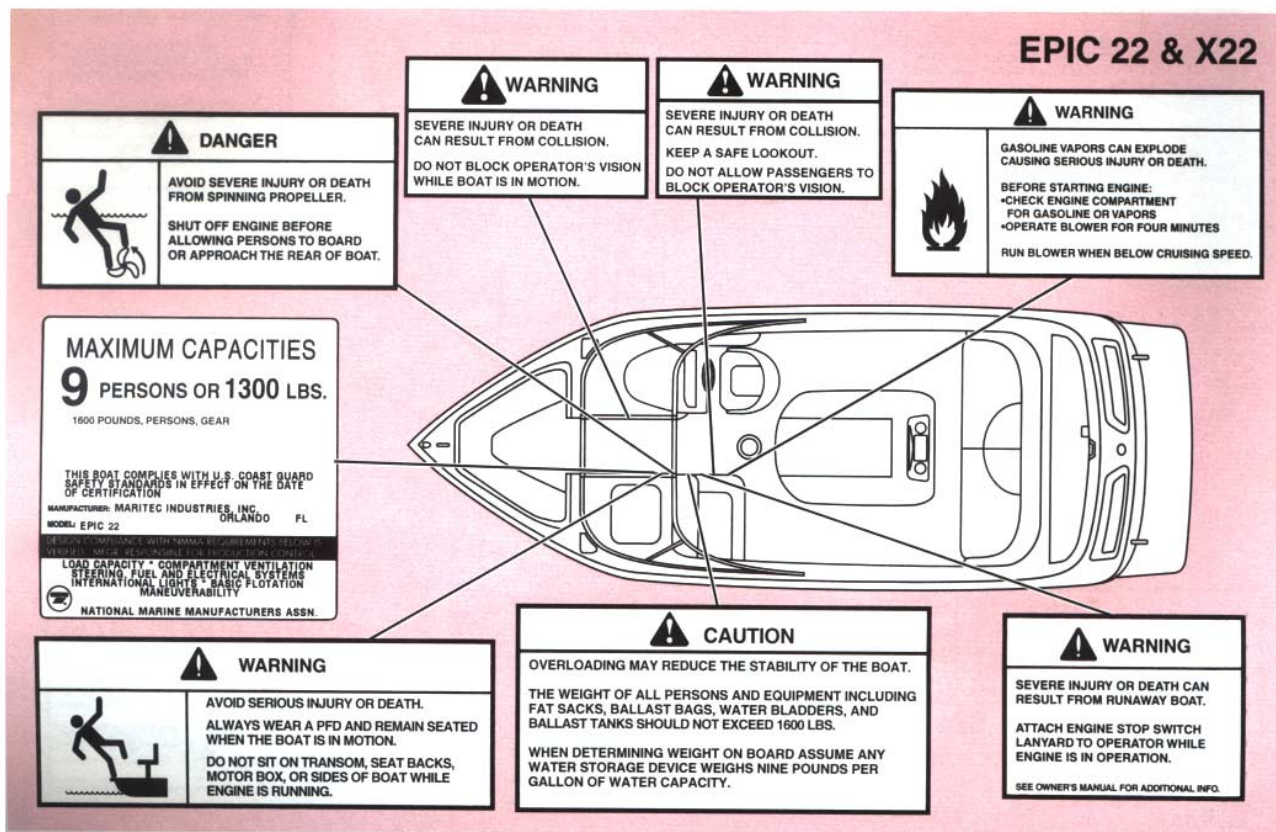
SHUT OFF ENGINE BEFORE ALLOWING PERSONS TO BOARD OR APPROACH THE REAR OF BOAT.

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EPIC S-22 & SX

**⚠ DANGER**

AVOID SEVERE INJURY OR DEATH FROM SPINNING PROPELLER.

SHUT OFF ENGINE BEFORE ALLOWING PERSONS TO BOARD OR APPROACH THE REAR OF BOAT.

**MAXIMUM CAPACITIES**

**10 PERSONS OR 1440 LBS.**

1700 POUNDS, PERSONS, GEAR

THIS BOAT COMPLIES WITH U.S. COAST GUARD SAFETY STANDARDS IN EFFECT ON THE DATE OF CERTIFICATION

MANUFACTURED: Toyota Marine Sports    ORLANDO    FL

MODEL: EPIC S-22

LOAD CAPACITY \* COMPARTMENT VENTILATION  
STEERING, FUEL AND ELECTRICAL SYSTEMS  
INTERNATIONAL LIGHTS \* BASIC FLOTATION  
MANEUVERABILITY

NATIONAL MARINE MANUFACTURERS ASSN.

**⚠ WARNING**

SEVERE INJURY OR DEATH CAN RESULT FROM COLLISION. DO NOT BLOCK OPERATOR'S VISION WHILE BOAT IS IN MOTION.

**⚠ WARNING**

SEVERE INJURY OR DEATH CAN RESULT FROM COLLISION. KEEP A SAFE LOOKOUT. DO NOT ALLOW PASSENGERS TO BLOCK OPERATOR'S VISION.

**⚠ WARNING**

GASOLINE VAPORS CAN EXPLODE CAUSING SERIOUS INJURY OR DEATH.

BEFORE STARTING ENGINE:  
•CHECK ENGINE COMPARTMENT FOR GASOLINE OR VAPORS  
•OPERATE BLOWER FOR FOUR MINUTES  
RUN BLOWER WHEN BELOW CRUISING SPEED.

**⚠ CAUTION**

OVERLOADING MAY REDUCE THE STABILITY OF THE BOAT.

THE WEIGHT OF ALL PERSONS AND EQUIPMENT INCLUDING FAT SACKS, BALLAST BAGS, WATER BLADDERS, AND BALLAST TANKS SHOULD NOT EXCEED 1700 LBS.

WHEN DETERMINING WEIGHT ON BOARD ASSUME ANY WATER STORAGE DEVICE WEIGHS NINE POUNDS PER GALLON OF WATER CAPACITY.

**⚠ WARNING**

SEVERE INJURY OR DEATH CAN RESULT FROM RUNAWAY BOAT.

ATTACH ENGINE STOP SWITCH LANYARD TO OPERATOR WHILE ENGINE IS IN OPERATION.

SEE OWNER'S MANUAL FOR ADDITIONAL INFO.

**⚠ WARNING**

AVOID SERIOUS INJURY OR DEATH. ALWAYS WEAR A PFD AND REMAIN SEATED WHEN THE BOAT IS IN MOTION. DO NOT SIT ON TRANSOM, SEAT BACKS, MOTOR BOX, OR SIDES OF BOAT WHILE ENGINE IS RUNNING.

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## Section 1

# BASIC COMPONENT AND EQUIPMENT OPERATION

## INSTRUMENTS AND CONTROLS

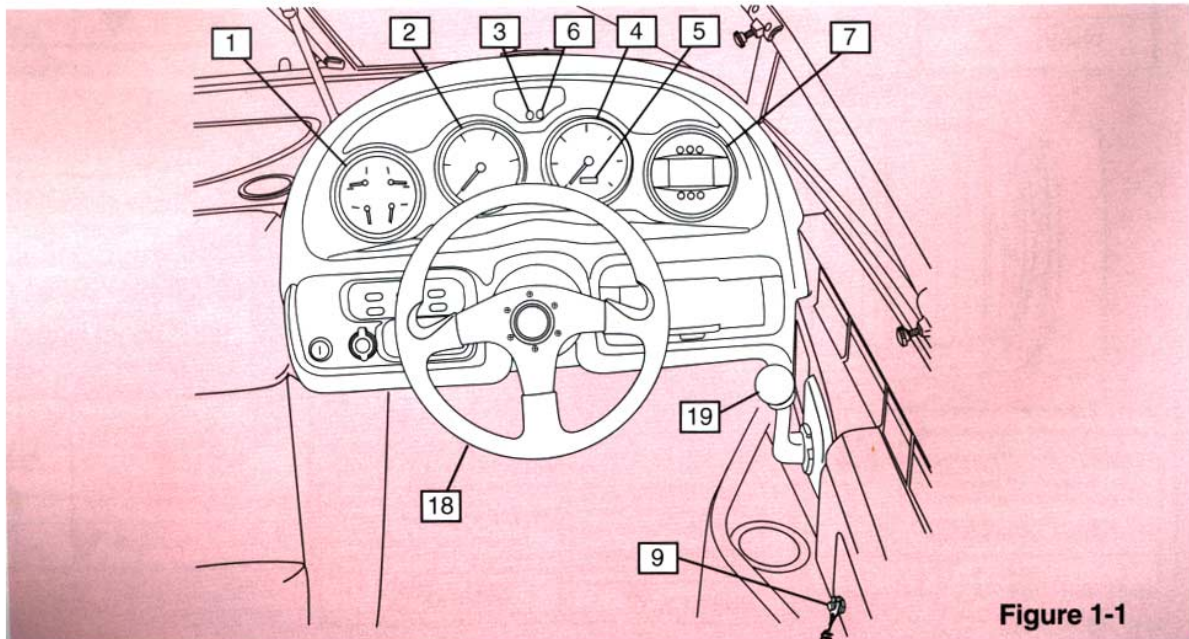
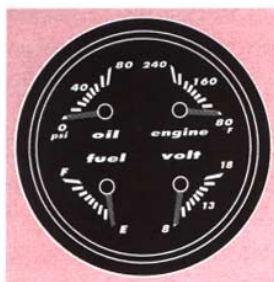


Figure 1-1



**Multi-Function Gauge** – A single instrument (item 1, Figure 1-1) containing Engine Temperature, Engine Oil Pressure, Voltmeter and Fuel gauges.



**Engine Temperature** – The engine temperature gauge indicates the cooling water temperature inside the the engine as measured in degrees Fahrenheit. The normal operating temperature will range from 140°F to 200°F. If the gauge indicates excessive temperatures during operation, slow down immediately and, if necessary, turn the ignition OFF. If the problem persists, see your Toyota Marine Sports Dealer.

**Engine Oil Pressure** – The engine oil pressure gauge indicates the pressure of the lubricating oil inside the engine. The average pressure ranges are between 20 pounds-per-square-inch (PSI) at 1000 RPM and 80 PSI at cruise range speeds. A reading of pressures below 20 PSI at 1000 RPM may be caused by a low oil level or other potentially

serious engine problems. If you experience low oil pressure, stop the engine immediately and check the oil level. If the problem persists, see your Toyota Marine Sports Dealer.

**Voltmeter** – This gauge indicates the electrical system operating current in DC volts. Normal operating voltage is between 12.8 and 14.8 volts with the engine running.

**Fuel Gauge** – The fuel gauge indicates the approximate amount of fuel in the fuel tank as measured in eighths of a tank. Readings cannot be considered absolute or infallible, however, and should be compared to the hours of operation multiplied by the known fuel consumption (gallons-per-hour or GPH).

**SHOULD YOU EXPERIENCE HIGH WATER TEMPERATURES OR LOW OIL PRESSURE, AN ALARM WILL SOUND IN ADDITION TO THE GAUGE READINGS.**



## SECTION 1

**Speedometer** - The speedometer (item 2, Figure 1-1) indicates the forward speed of the boat in miles per hour. Tournament use requires dual speedometers in case of failure during a skiing run (see Speedometer Calibration).

**Tachometer** - The tachometer (item 4, Figure 1-1) indicates the engine speed in revolutions per minute (RPM). Since the transmission is a 1.26:1 gear ratio, propeller shaft RPM is slower than engine RPM.

**Hourmeter** - The engine hourmeter (located in the tachometer) (item 5, Figure 1-1) shows accumulated engine operating time and is activated when the engine is running.

**Check Engine Light** - The check engine light (item 3, Figure 1-1) is located at the upper section of the dash panel. This gauge operates from an on-board computer that monitors the operation of your ignition and engine control systems.

**Check V-Drive Light** - The check V-Drive light (item 6, Figure 1-1) is located at the upper section of the dash panel. If your boat is equipped with a V-Drive, this light indicates high V-Drive temperature.

The check engine and V-Drive lights should come on and the alarm will chime when the key is in the

RUN position and the engine is not running. This is a check to show you that they are working. If they do not come on at all, have them repaired by your Toyota Marine Sports Dealer as soon as possible.

If either light stays on - or comes on while you are operating the boat - the computer is indicating that there is a problem and will sound an alarm. You should take the boat to your Toyota Marine Sports Dealer for immediate service.

**Digital Display Unit** - The Digital Display Unit (DDU) (item 7, Figure 1-1) is a versatile multi-function gauge powered by a small computer. A series of sensors feed analog signals to the Marine Data Computer (MDC) where they are converted to digital data and displayed on the LCD screen. The system is easy to use, highly accurate and can be quickly expanded with navigation and auto throttle options.

### WARNING

**Do NOT jump start the boat. Do not remove or install the boat battery with the battery switch in the ON position. Failure to follow this precaution will cause damage to the MDC not covered by your warranty.**



The DDU can display the following information:

Engine Mode Functions - Battery Voltage, Engine Temperature, Oil Pressure, Remaining Fuel, Speed at RPM, Engine Operating Hours and Fuel Hours Remaining.

Tachometer/Speedometer Mode Functions - RPM (large)/Speed (small), Speed (large)/RPM (small), Speed (Port & Starboard) (except on S22) and Speed Calibrate.

Alarm Mode Functions - Battery Voltage, Engine Temperature, Oil Pressure and Remaining Fuel.

Time/Date Mode Functions - Standard Time, 24 Hour Time, Date MM/DD/YY, Elapsed Time HH:MM:SS and Units/ Engine.

Depth Gauge Mode Functions - Continuous Depth, Shallow Water Warning, Deep Water Warning and Air & Water Temperatures.

Optional Mode Functions - GPS (With GPS Input) and Auto Throttle with AccuSki™ system installed.

## Controls

The DDU contains six buttons for operation. The function of some buttons is dependent on mode selected.

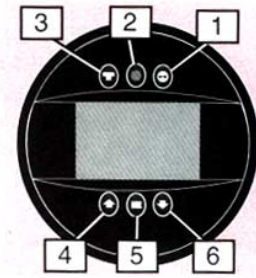


Figure 1-2

1. The “**H**” button is used to return to the home screen for the selected mode set.
2. The **Red Dot** button is used to arm the AccuSki auto throttle, if installed.
3. The “**T**” button is used to toggle between screens (main or sub screens).
4. The **Up Arrow** button is used to scroll up or increase the value.
5. The “**E**” or enter button is used to make a selection.
6. The **Down Arrow** button is used to scroll down or decrease the value.

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## SECTION 1

### Using The DDU

To use the DDU, the boat must be in the water with the engine running for all the functions to operate properly. After starting the engine, the LCD will display the Toyota Marine Sports logo followed by the boat model, and finally Main menu #1. There are three Main menus, each covering different function modes. To cycle through the Main menus, push the “**T**” button once for Main menu #2, push again for Main menu #3, and push again to return to Main menu #1.

After the desired main menu is selected, use the **Up or Down Arrow** keys to scroll to the desired mode (sub screen) and then push the “**E**” button to enter the mode. After entering a mode, you can return to the selected main menu at any time by pushing the “**H**” button. If no selection is made after 10 seconds, the display will automatically return to the selected main menu.

#### Main Menu #1

Modes (sub screens)

Contrast

Engine

Tach/Speed

AccuSki (if equipped)

**Contrast** – Adjusts the black level of the LCD display for the ambient lighting conditions. Use the **Up or Down Arrow** keys to increase or decrease the contrast.

**Engine** – Displays battery voltage, engine temperature, engine oil pressure and remaining fuel. Push the “**T**” button once to get the MAX screen showing engine RPM and boat speed for port and starboard speedometers. Push the “**T**” button again to get the HOURS screen showing accumulative engine operating hours and approximate fuel hours remaining.

**Tach/Speed** – Displays engine RPM in large digits and boat speed in small digits. Pressing the “**T**” button in this mode will invert the display showing boat speed in large digits. Push the **Red Dot** button once to enter the port and starboard speedometer calibration mode. To calibrate the speedometers, you must have a radar gun, recently calibrated analog speedometer or course time data. Drive the boat at a steady constant speed (30 MPH recommended), use the arrow buttons to select the port or starboard speedometer and push the “**E**” button once; the selected line will blink. Adjust the display speed reading with the **Up or Down Arrow** buttons until it matches the reference speed. Push the “**E**” button once to lock in the setting.

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**AccuSki** - If your boat is equipped with the optional AccuSki auto throttle, this mode is used for setup and calibration. Please refer to the User's Manual for operational information.

#### Main Menu #2

Modes (sub screens)

Alarm  
Time/Date  
Stopwatch  
Setup

**Alarm** – The system is pre-programmed with the same operating parameters for battery voltage, engine temperature, engine oil pressure and fuel capacity. If any of the monitored functions fall outside the programmed limits, a buzzer will sound twice and the screen will flash with a message briefly describing the problem

**Time/Date** – To adjust the time or date use the **Up or Down Arrow** buttons to select the desired line and push the "E" button once. Use the "T" button to scroll to the desired value: Hours, Minutes,

Seconds, AM/PM, Month, Day, Year. Use the **Up or Down Arrow** buttons to adjust the value.

**Stopwatch** – To use the stopwatch, use the **Up or Down Arrow** button to select START and push the "E" button once to start. To reset the stopwatch, use the **Up or Down Arrow** button to select RESET and push the "E" button once to reset.

**Setup** – This screen, which is password protected, is provided for use by factory-trained mechanics only. Do not attempt to enter the setup screen.

#### Main Menu #3

Modes (sub screens)

GPS  
Depth  
Temp

**GPS** – If your boat is equipped with the optional GPS system, this mode can display Latitude, Longitude, Bearing and Distance traveled information by using the "T" button. Please refer to the GPS User's Manual for operational information.

## 1-5

### SECTION 1

**Depth** – This mode can display continuous depth or can be set for SHALLOW and/or DEEP water depth alarms. Use the "T" button to toggle between continuous depth and depth alarms. To set depth alarms, use the **Up or Down Arrow** buttons to select shallow or deep and push the "E" button; the line will blink. Use the **Up or Down Arrow** buttons to adjust the setting and press the "E" button to lock it in.

**Temp** – Use this mode to check the ambient air and water temperature.

*If your boat is equipped with the optional AccuSki auto throttle and/or GPS navigation, please refer to the User's Manual for operational information.*

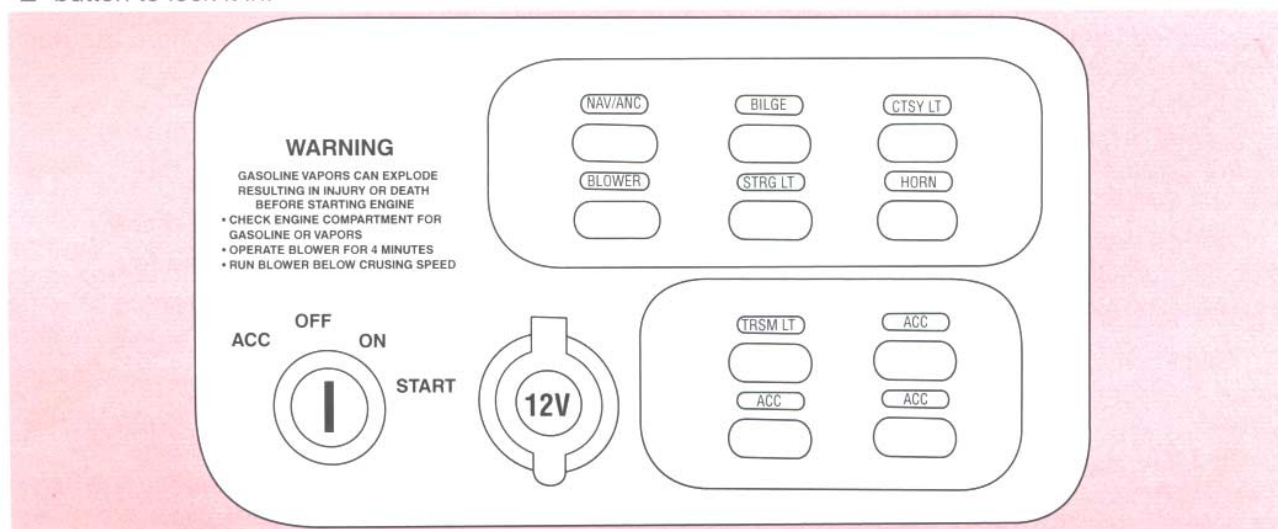


Figure 1-3



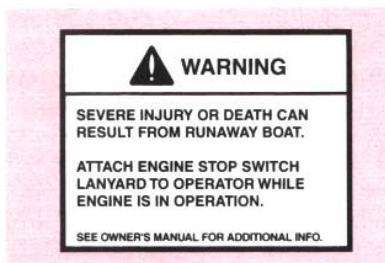
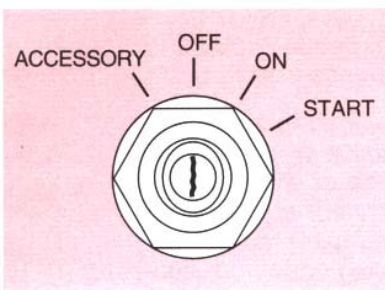
### Ignition Switch

- The ignition switch (item 8, Figure 1-2) has four positions:

Never leave the switch in the ACCESSORY or ON position without the engine running; this will help prevent battery discharge.

### Emergency Engine Safety Switch

- The emergency engine safety switch (item 9, Figure 1-2) is an ignition cut-off switch designed to stop the engine in the event of an operator being thrown from the helm seat or moving too far from the helm.



The emergency engine safety switch is equipped with a hook, on one end, for attachment to the operator's clothing, and the opposite end has a slide that fits over the switch. Be sure that the slide is firmly attached to the swing before starting. The switch is located on the panel immediately aft of the throttle control. If the slide is left off or loose, the engine will not start.

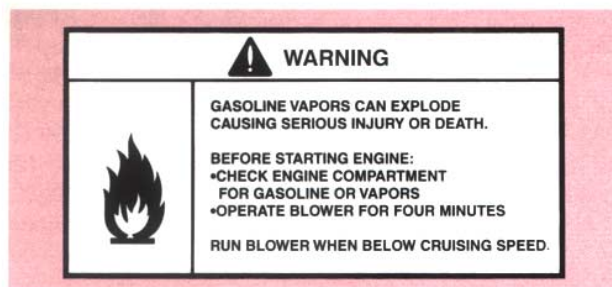
**Horn** - This button (item 10, Figure 1-2) activates the electric horn. Push and hold to sound the horn.

**Instrument and Navigational Light Switch** - A three-position switch (item 11, Figure 1-2) serves as the instrumentation/navigational lighting switch. Push once to activate the bow (red/green light) and all around white light for night running. Push again to operate only the white all around anchored light for anchoring at night. Push again to turn lights OFF.

**Blower Switch** - A two-position switch (item 12, Figure 1-2) activates the engine compartment ventilation blower. Push the switch to turn the blower ON; push again to turn OFF. Run blower at all times below cruising speed.

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## SECTION 1



**Transom Light Switch** - A two-position switch (item 15, Figure 1-2) activates the transom light. Push once to turn transom light ON. Push again to turn OFF.

**Courtesy Light Switch** - A two-position switch (item 13, Figure 1-2) activates courtesy lighting. Push once to turn storage and cockpit lighting ON. Push again to turn OFF.

**Bilge Pump Switch** - A three-position switch (item 14, Figure 1-2) activates the bilge pump. Push the switch once to turn the bilge pump to the manual BILGE ON position. Push the switch again to activate the bilge pump for automatic (AUTO) action while the boat is underway. Push again to turn OFF.

**System Circuit Breakers** - Each boat electrical system is protected from shorting and overload by

resettable circuit breakers located beneath the passenger console. If a problem develops with one of the circuits, switch OFF the circuit and wait about one minute. Then push the appropriate breaker button (Figure 1-3) fully and switch ON the circuit. If the circuit breaker continues to trip, there is a problem somewhere that must be attended to immediately. See your Toyota Marine Sports Dealer.

**Accessory Switches** - Three, two-position switches are provided for options and accessories.

**12V Accessory Outlets** - Cigarette style 12V outlets (item 17, Figure 2-1) are provided for cellular phones, computers, etc.

**Battery Disconnect Switch** - This switch disconnects battery power from the entire boat. It should be in the OFF position whenever the boat is not in use. On mid-engine models, it is located under the engine cover on the port side (Figure 1-3).

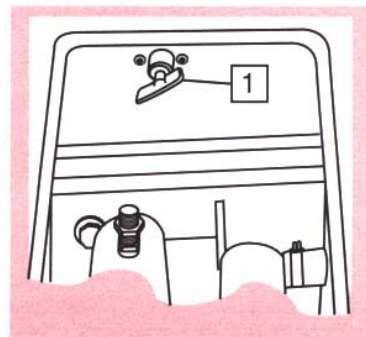
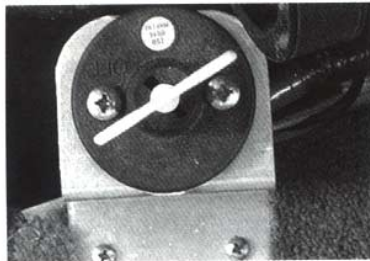


Figure 1-4





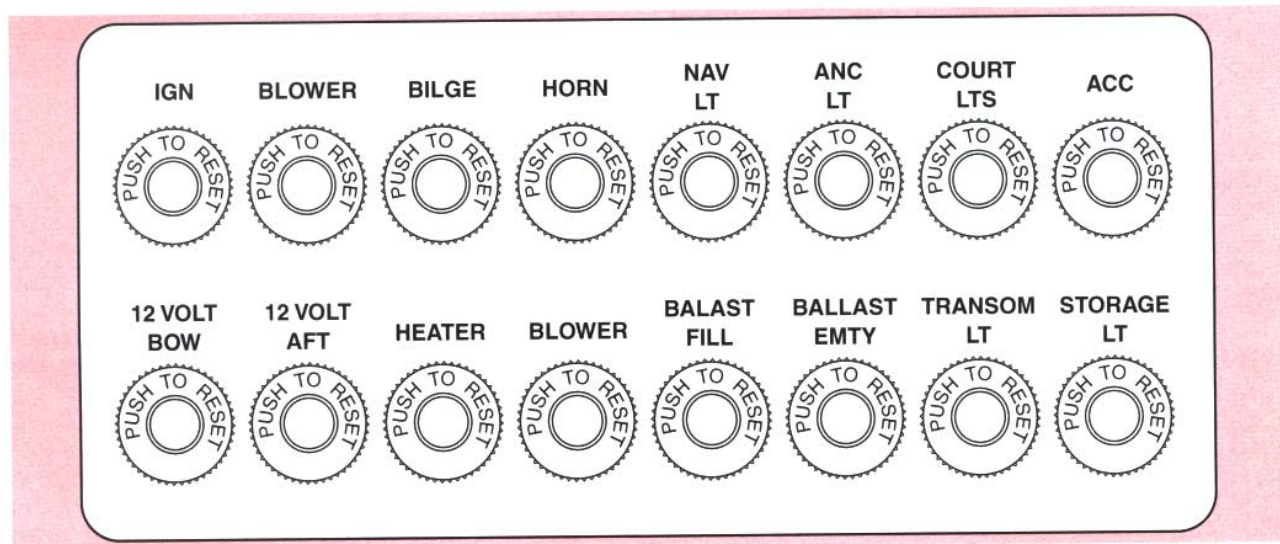
On V-Drive models, it is located beneath the aft, center passenger seat (item 1, Figure 1-4).

### **⚠ DANGER ⚠**

**Never reach for the battery switch if the engine is running.**

### **⚠ WARNING**

**Never raise the engine cover while the engine is running.**



1-9

## **SECTION 1**

**Steering Wheel** - The tilt wheel steering system (item 18, Figure 1-1) is a mechanical, rotary steering system connected to the rudder by a cable.

The steering wheel tilt mechanism is operated by pulling forward on the release lever at the base of the steering column, and then raising or lowering the wheel as necessary. Once the desired angle has been achieved, release the lever to lock the wheel in position.

### **⚠ WARNING**

**Make sure steering system is in working order each time before launching the boat. If the boat is already in the water, verify proper steering operation at low speed. Turn the steering wheel to full stop in both directions to verify rudder movement. There must be no binding in the steering wheel movement. If binding is detected, see your Toyota Marine Sports Dealer.**

### **⚠ WARNING**

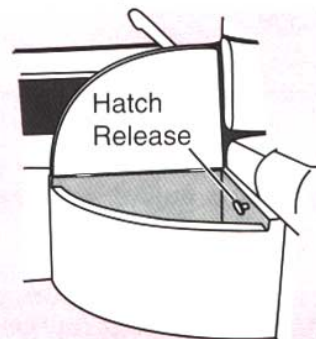
**Boat steering is not self-centering. Steering is affected by engine and propeller torque, wave and current action, and the speed of the hull through water. Constant attention and control of the direction of the boat is required for safe operation.**

**Shift/Throttle Lever** - A one-hand, single-lever control with neutral lock out (item 19, Figure 1-1), operates as both a gearshift and throttle. The lever automatically locks in the neutral position (straight up and down) for safety. The lever can only be moved from neutral by raising the lifter under the ball knob.

Shifting is accomplished by moving the lever into the first 45° of travel. Push the lever for forward and pull it back for reverse.

By advancing the lever beyond 45° you move from shifting range to throttle range. Never attempt to shift without the engine running.

**Hatch Release (V-Drive Model)** - The engine compartment access hatch has a release handle located in the aft, starboard storage compartment. Pull the release handle to open the hatch.



1-10



## FUELING PROCEDURES

The ignition timing as set by the factory requires the use of an unleaded fuel with an Anti-Knock Index Number (AKI)/Pump Octane Number range between 89 octane and 93 octane (92 Recommended).

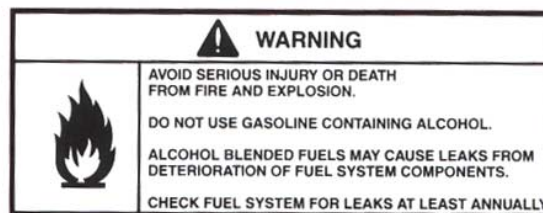
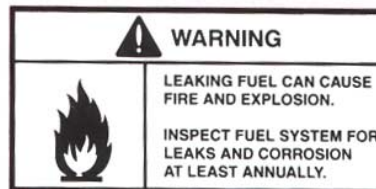


### NOTICE

**Use of low-quality gasoline or gasoline with an octane rating below the minimum level listed will damage the engine and void the warranty.**

Use of alcohol-modified fuels in your Epic boat can cause the following side effects:

- **Moisture** - Alcohol-blended fuels absorb and keep moisture. Moisture inside the fuel tank can cause many engine problems.



- **Performance** - Alcohol-blended fuels cause the engine to operate on a leaner fuel/air ratio and may cause hard starting, stalling and vapor lock. Engine damage may result.
- **Deterioration** - Alcohol quickly deteriorates rubber and plastic components in the fuel system, causing more frequent failure of parts. This increases the potential for fire and explosion due to leakage.

1-11



## SECTION 1

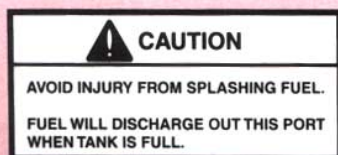
### NOTICE

**Fuel additives and treatments, other than conditioners for moisture absorption and winter storage, are not recommended for use in Toyota Marine's VT300i engine.**

### WARNING

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

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



- **Always tighten the cap completely after refueling.**
- **Always inspect bilge for gasoline leaks after fueling.**
- **Raise engine cover and look and smell for gas after fueling. If liquid gasoline is found, fix the source of the leak and clean up the spilled fuel before continuing with engine start. No liquid gasoline or gasoline vapors may be present in the engine compartment when starting the engine.**
- **Always run the blower motor after fueling.**

### WARNING

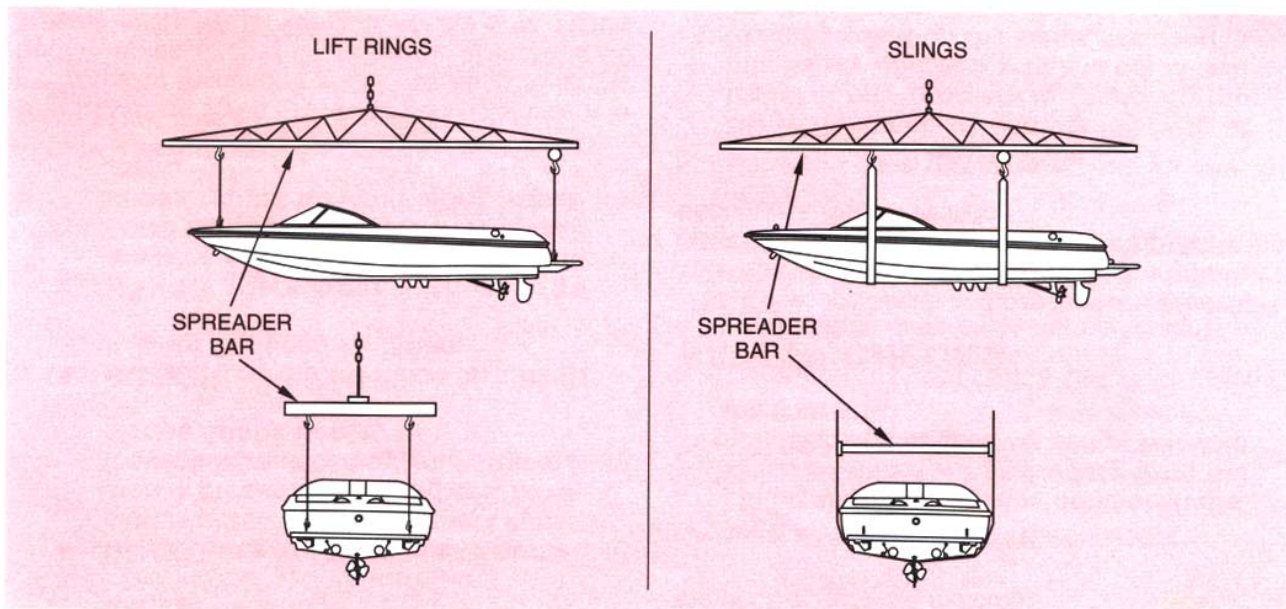
**DO NOT top off the fuel tank as spillage may occur. There may be a valve in the line from the gas pump that allows fuel vapor but not liquid fuel to return to the pump. This may cause fuel to back up in the line, causing spillage, if the boat fuel tank is topped off.**

1-12



## LIFTING THE BOAT

When the boat is hoisted from the water, use the lifting eyes or a sling for easy, damage-free lifting.



1-13



### SECTION 1

#### ⚠ CAUTION

- **DO NOT use the transom mounted tow eye for lifting.**
- **DO NOT use the lifting eyes if corrosion is present. If you suspect corrosion is present on a lifting eye, have it checked/replaced by your Toyota Marine Sports Dealer.**
- **DO NOT use the ski pylon for lifting. It is not designed for lifting.**
- **NEVER lift a boat with a large amount of water in the bilge. The extra stress will put unnecessary stress on the hull and lifting equipment.**

**Use of Lifting Eyes** - An overhead hoist with a 2-ton capacity (minimum) should be used to lift the boat. Cables should be rated for at least 3500 pounds each. When lifting, keep the bow slightly higher than the stern to prevent the possibility of water running into the engine exhaust manifolds.

**Use of Slings** - An overhead hoist with 2-ton capacity (minimum) should be used. Slings must

be 6 inches wide by 20 feet long and a minimum rated capacity of 3500 pounds each. Use an 8-ft spreader bar on each sling to prevent damage to the deck or gunwale molding.

#### ⚠ CAUTION

**Lifting slings must never contact shafts, struts or hardware protruding from the hull. Damage caused by slings will void the warranty.**

## SAFETY CHECKS

The following checks and services are essential to safe boating and must be performed. Perform the checks in the same order each time so that it becomes a regular routine.

#### ⚠ WARNING

**DO NOT launch or operate the boat or trailer if any problem is found during this Safety Check. A problem could lead to an accident on the water, resulting in severe injury or death. Any and all problems should receive attention immediately, prior to launching. See your Toyota Marine Sports Dealer if necessary.**



- ✓ Check trailer lug nuts and tire pressures.\*
- ✓ Check the weather, wind and water conditions.\*
- ✓ Check for recommended on-board tools and parts.\*
- ✓ Check that the bilge drain plug is installed properly.\*
- ✓ Check the propeller and shaft for damage.\*
- ✓ Check the cooling water intake pick-up for blockage.\*
- ✓ Check engine oil level.
- ✓ Check that battery switch is in on position.
- ✓ Check that emergency engine safety switch is in place.
- ✓ Check that there is an adequate supply of fuel.
- ✓ Check that the steering system (including the rudder) moves freely.
- ✓ Check for horn operation.
- ✓ Check that the required safety equipment is on-board.
- ✓ 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 and damage.
- ✓ Check that all required Scheduled Checks and Services were performed.
- ✓ Check engine drain plugs are not leaking.
- ✓ Check that the mandatory personal flotation device for each passenger is on-board.
- ✓ Check that a throwable personal flotation device is onboard.
- ✓ Check that the boat is not overloaded.

\* These tasks are best accomplished while boat is out of water.

1-15



## SECTION 1

- ✓ Check that the bilge pump is in automatic. If water discharges frequently or continuously, return to shore and investigate the source of leaking water.
- ✓ Check that all passengers are seated properly.
- ✓ Run blower for 4 minutes prior to starting.

### At Start-Up of Engine

- ✓ Connect emergency engine safety switch to clothing before starting.
- ✓ Check gauges for signs of abnormal behavior readings.
- ✓ Check that controls operate smoothly.
- ✓ Check for excessive vibration.

### After Operation

- ✓ Fill the fuel tank to prevent moisture resulting from condensation.
- ✓ Check for fuel, oil and water leaks.
- ✓ Turn the battery switch to the OFF position.
- ✓ Check the propeller and shaft for damage.

## START/RUN/STOP

### NOTICE

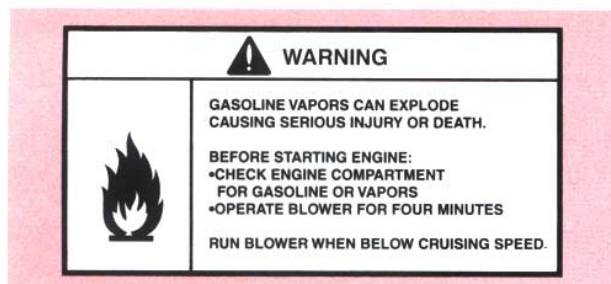
- **Before operating the boat for the first time, you must read this manual completely.**
- **If you are operating this boat for the first time, you must follow the New Boat Break-In procedures as described later in this section. Failure to follow these procedures could result in serious engine and/or transmission damage and will void your warranty!**

### Before Starting

Familiarize yourself with the controls and indicators used on your Toyota Marine Sports boat. Perform all Safety Checks and Services, as described in this section. Perform all Scheduled Maintenance Checks and Services as described.

1. 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.

1-16

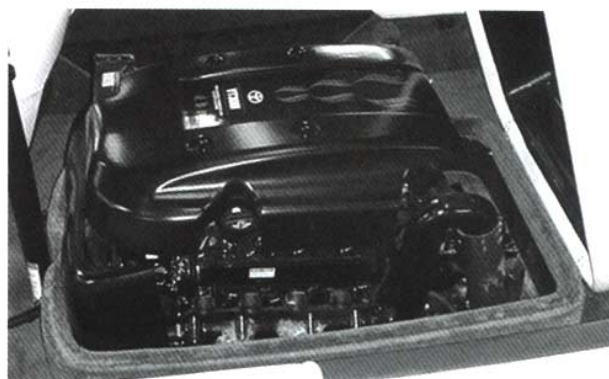


### **WARNING**

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

### **CAUTION**

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



### **NOTICE**

Always start the engine with the control lever in the neutral position. The boat is equipped with a neutral-start safety switch that will not allow the engine to be started in gear.

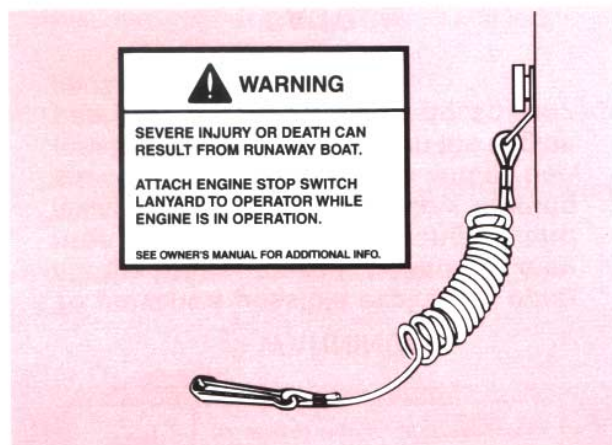
1-17



## **SECTION 1**

### **Engine Start**

1. Securely attach emergency engine safety switch between an article of your clothing (e.g., pant belt loop or personal flotation device) and the switch.



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

### **CAUTION**

Do not operate the starter motor continuously for more than 15 seconds without at least a two-minute "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 damage the starter motor and drive.

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

### **NOTICE**

While the engine is warming-up, check to see that the steering and all lights and gauges operate properly. Check for leaks under pressure by setting the bilge pump to the automatic position. If water discharges frequently or continuously, investigate the source of the leak after shutting the engine off.



## Shifting Into Gears

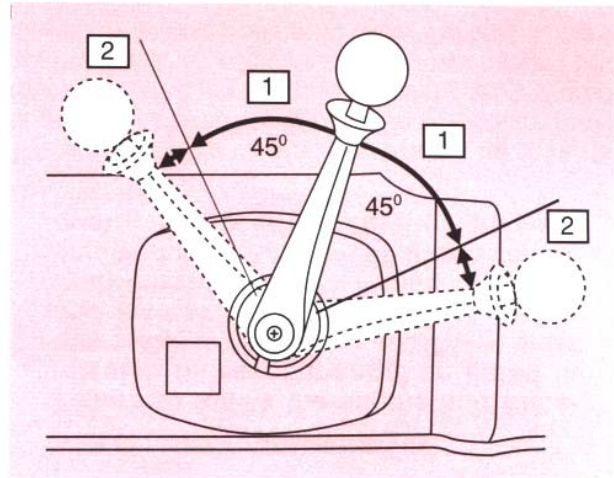
### ⚠ CAUTION

When shifting, 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 idle before shifting, or gear damage may result.

**Forward** — Raise the lifter ball under the lever knob and push the control lever forward to make the boat go forward. Increasing forward rotation of the control lever will cause increasing forward boat speed.

**Reverse** — Raise the lifter ball under the lever knob and pull the control lever back to make the boat go in reverse. Increasing backward rotation of the control lever will cause increasing reverse boat speed.

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



### Underway

If the engine alarm sounds check the oil pressure gauge for low or no oil pressure and the temperature gauge for higher than normal temperature.

- If there is low or no oil pressure registering on the gauge, stop engine and check the engine oil level.

1-19



## SECTION 1

- If the temperature gauge indicates overheating, check the water pick-up for blockage.

### ⚠ CAUTION

**DO NOT** operate the boat until the cause for the warning alarm has been found and corrected. Continued operation after the warning alarm has sounded may cause severe engine damage. This will void your warranty.

### ⚠ NOTICE

It is good practice to leave the bilge pump in the automatic position. If water discharges frequently or continuously, investigate the source of the leak after shutting the engine off.

### Stopping

1. Slowly bring the shift lever to the idle position. If the boat has been driven for a long period of time at high speed, allow the engine a 2-3 minute cool-down period at low idle.
2. Turn the ignition OFF.

3. If any problems were encountered, have the boat inspected by your Toyota Marine Sports Dealer and request any necessary repairs before your next outing.

## BREAK-IN

### ⚠ NOTICE

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

### ⚠ WARNING

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

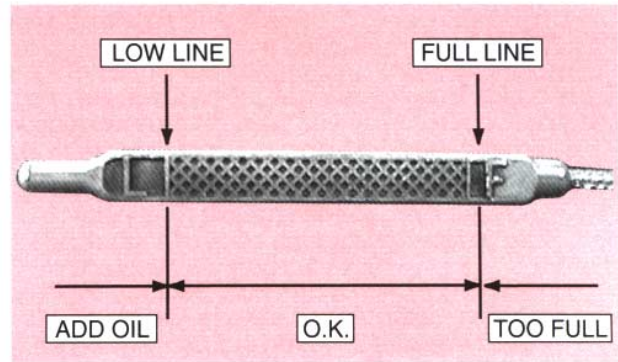
The first 15 hours of operation are the most important to your boat. Proper break-in will ensure maximum performance and the longest possible component life. The break-in period allows moving part to wear-in to one another to allow the final fitting of



parts. All Toyota Marine Sports boats are operated for a short period of time on the water before leaving the factory, but the break-in must continue for the first 15 hours of operation.

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

- The break-in oil used is **5W30**. However, your technician should use a synthetic **5W30** oil in all future oil changes. Due to the conditions under which boats operate, synthetic oil has proven to be a better application. Also, should the need arise to top off engine oil before the first oil change, synthetic oil is the recommended lubricant.
- Maintain the proper oil levels.
- 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 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 tightening or the drive train 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.
- Do not run the engine in any single rpm range for a very long period of time during break in.

### After Break-In

Once the break-in period is over, the boat may be operated continuously at any speed, but not beyond the maximum of 6000 RPM.

1-21

## SECTION 1

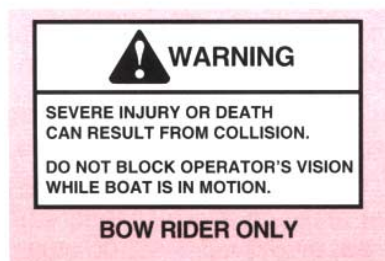
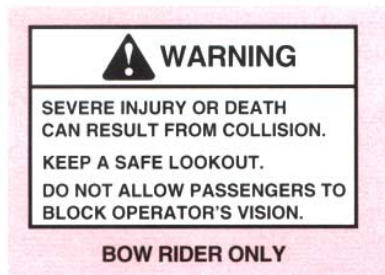
Always remember that during normal operation you should allow the engine to warm up gradually. Be sure the engine is warm before accelerating. Pay careful attention to the gauges and engine safety warning horn.

## OPERATING SUGGESTIONS

### General

Toyota Marine Sports urges you — and all others who will be operating the boat — to seek certified instruction from the local safe boating authorities. See General Precautions in Section 2 — Boating Rules.

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 to you.

### Loading

#### ⚠ DANGER ⚠

**Do not allow anyone to ride on parts of the boat that were not designed for such use. Sitting up on seat backs, bow riding, gunwale riding, transom platform riding, or lounging on aft sundeck while under way is especially hazardous and will cause personal injury or death.**

#### ⚠ WARNING

**Load the boat properly!**

- Do not load the bow to cause the boat to "plow" in the water and affect control.
- Do not load the stern to cause the boat to raise and limit visibility.
- Do not overload the boat or exceed the maximum weight capacity as listed on the certification plate.

**NEVER OVERLOAD YOUR BOAT.** The maximum weight capacity as listed on the certification plate. This maximum weight includes all items added to the boat (persons and gear). Also, proper distribution of weight is critical to boat performance. Allocate the load as evenly as possible.

1-22





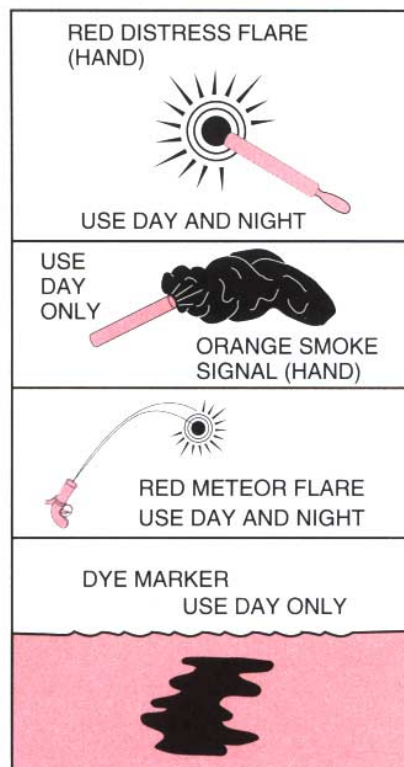
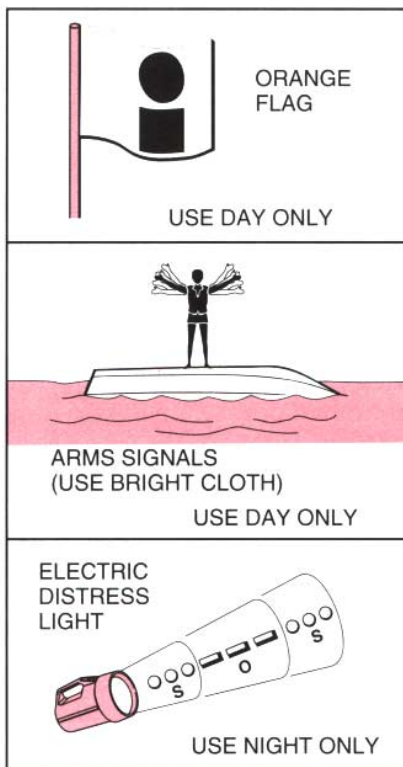
## Emergencies

Know how to use and spot distress signals — and 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.

## VISUAL DISTRESS SIGNALS



1-23



## SECTION 1

### First Time Operation

When taking to the water for the first time, observe the following guidelines!

### ⚠ WARNING

**Avoid serious injury or death. Always wear a PFD and remain seated when the boat is in motion. Do not sit on transom, seat backs, engine box, or sides of boat while engine is running.**

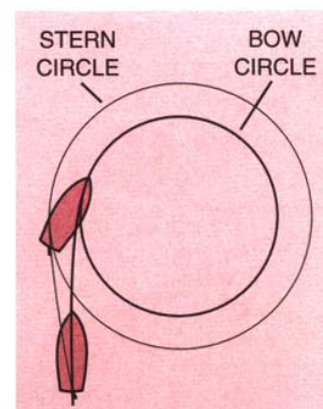
- Practice makes perfect! Start in calm water with no wind or current and plenty of room until you get the feel of the boat and its controls.
- DO NOT practice close to bridges, docks, pilings, moored boats, swim areas or rocky areas.
- Proceed slowly! Give yourself time to think, react and maneuver.
- Recognize outside forces! Check 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.

- 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 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 more 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 close quarters maneuvers.



1-24

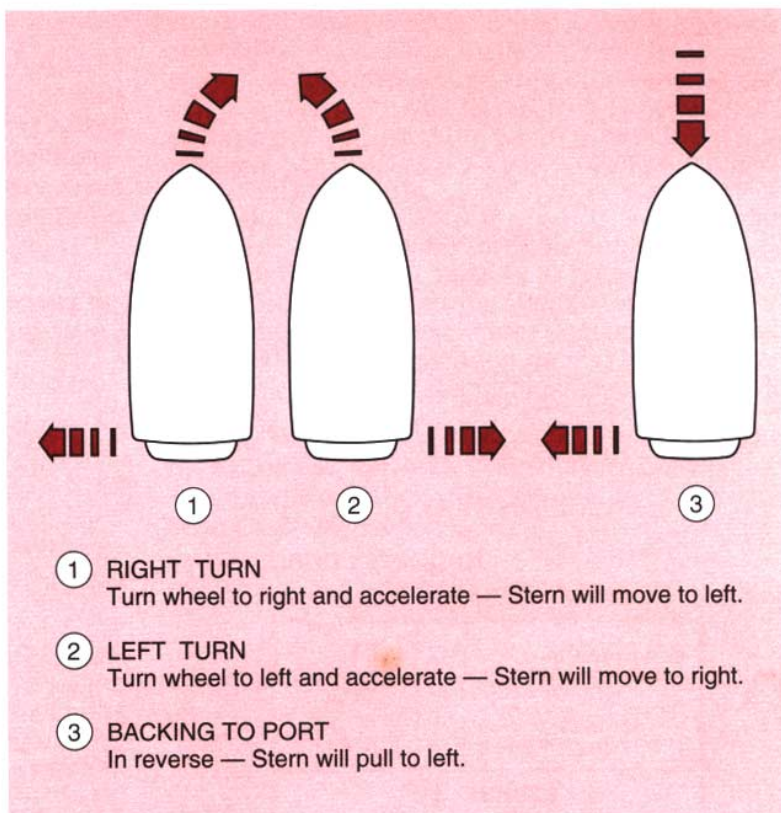


Always maintain a proper lookout. Avoid collisions with swimmers other boats and objects.

The effects of unequal propeller thrust (torque steering), wind, and current must also be kept in mind. While wind and current may not always be present, an experienced driver will use them to his advantage.

Unequal thrust is a phenomenon shared by all single-engine, propeller-driven boats. A clockwise rotation propeller tends to cause the boat to drift to starboard when going forward, and to port when going backwards, with the rudder in the straight-ahead position.

At high speed, there is compensation for this effect and it is virtually nonexistent. But, at slow speed (especially during backing) the effect can be very powerful. This is



1-25

## SECTION 1

the main reason an experienced driver will approach with the dock to the port side of the boat.

Stopping (checking headway) is a technique that must be mastered. With no brakes, reverse thrust 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.

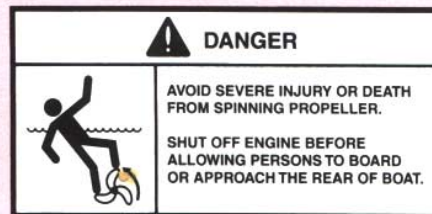
When practicing maneuvering techniques, always do so in open water that is free of traffic. Adequate practice may make the difference between a pleasurable experience or a damaging one.

### Reckless Boat Operation

#### WARNING

**DO NOT operate the boat the boat in such a way that you are jumping waves or slamming the bow.**

Do not operate the boat in a reckless manner. To operate the boat in this fashion could lead to injury of the operator/and or passengers. Reckless operation could also cause damage to the boat. Avoid rough water, large waves or other boat wakes. Slow down while crossing large waves or boat wakes.



### High Speed Operation

#### WARNING

**DO NOT operate the boat in "power slides".**

Your Toyota Marine Sports boat was designed to be a high performance ski boat. You may have seen professional drivers with advanced operating skills perform high-speed maneuvers and on-a-dime turns. 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 Toyota Marine Sports boat that will not be covered under warranty.

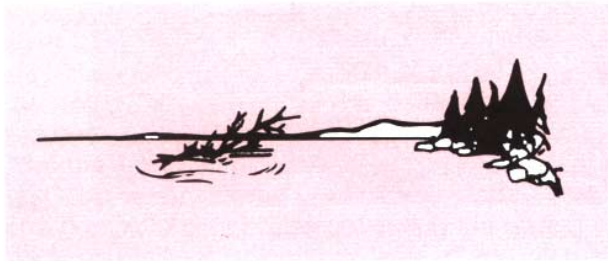
1-26



## Unusual Operating Conditions

If the body of water is unknown, talk to the local boaters about the type of obstacles you may encounter beneath the water's surface. Rocks, tree stumps, sandbars and wing dams 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 water

intake will cause trouble. Boats that are operated in polluted/dirty waters should have the water strainer inspected and cleaned on a more regular basis. For water strainer cleaning information, see Service and Maintenance. 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 and rudder.

## Docking and Tie-Up

Approach docks slowly, with the port side of the boat if possible. The natural tendency of the propeller to torque steer with the rotation of a right hand 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 towards 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.

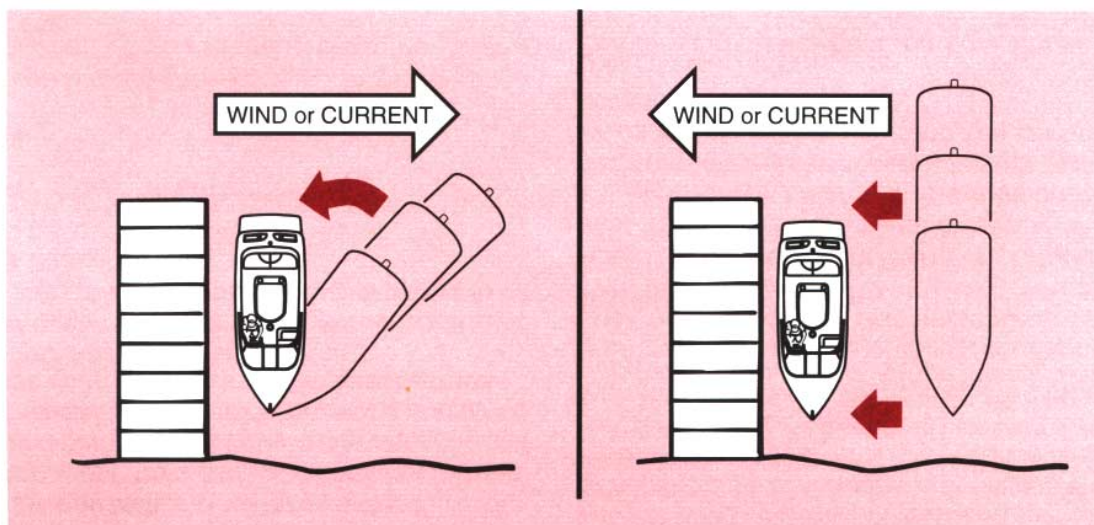
1-27



## SECTION 1

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

If the boat will be kept in or near the 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 from damage typical of on-water storage, such as blistering. Make sure the boat lift supports the hull correctly. Your Toyota Marine Sports Dealer can help you.



1-28



## BOATING RULES

Just as there are rules that apply when driving a vehicle on the street, there are waterway rules which apply when you are driving a boat. These rules are used internationally, and will be enforced by the United States Coast Guard and/or state and local police agencies. You should be aware of these rules and follow them whenever you boat.

In various geographic locations, certain rules will prevail that may be unique to that locale, but all are basically the same as the International Rules of the Road.

The rules presented in this manual are condensed and have been provided as a convenience only. Consult your local US Coast Guard Auxiliary (USCGA) or Department of Motor Vehicles (DMV) 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 or DMV in the area where you will be boating.

### RIGHT-OF-WAY / SOUND SIGNALS

Any time two vessels on the water meet one another, one vessel has the right-of-way. It is called the stand-on vessel. The vessel which 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.

#### Stand-On Vessel

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 direction and speed, the other vessel will be able to determine how best to avoid you.

2-1



## SECTION 2

### Give-Way Vessel

The vessel which 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 directions briefly and pass behind the other vessel. Always move in such a way that the stand-on operator can see what you are doing.

### The General Prudential Rule

***Rules do not replace your responsibility as captain to make quality decisions to avoid accident or danger. This is reflected in the International Rules as Rule 2 which 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 OTHER VESSELS

There are three main situations in which you may encounter other vessels and you must observe the Steering Rules in order to 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)

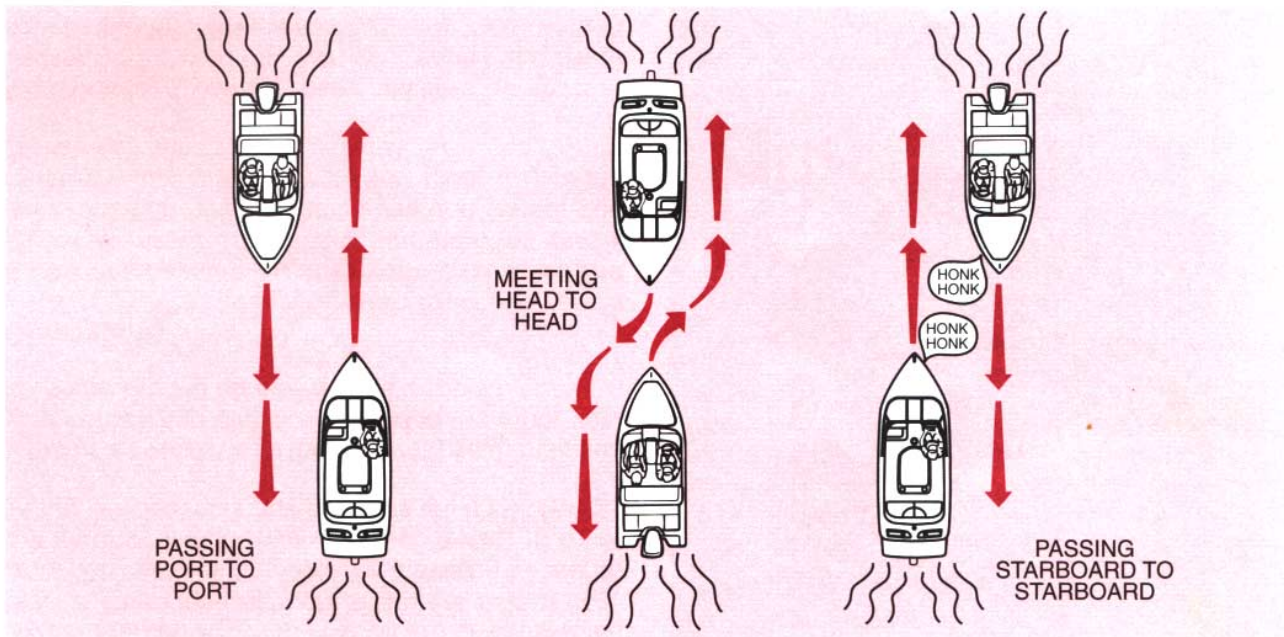
Using the following illustration in which you are the boat in the center, you should give right-of-way to all vessels shown in the white area. In this instance, you are the give-way vessel. All vessels in the shaded area must yield to you as you are the stand-on vessel. Both you and the meeting vessel must alter course to avoid each other.



## Meeting

If you are meeting another power 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.



2-3



## SECTION 2

### Crossing

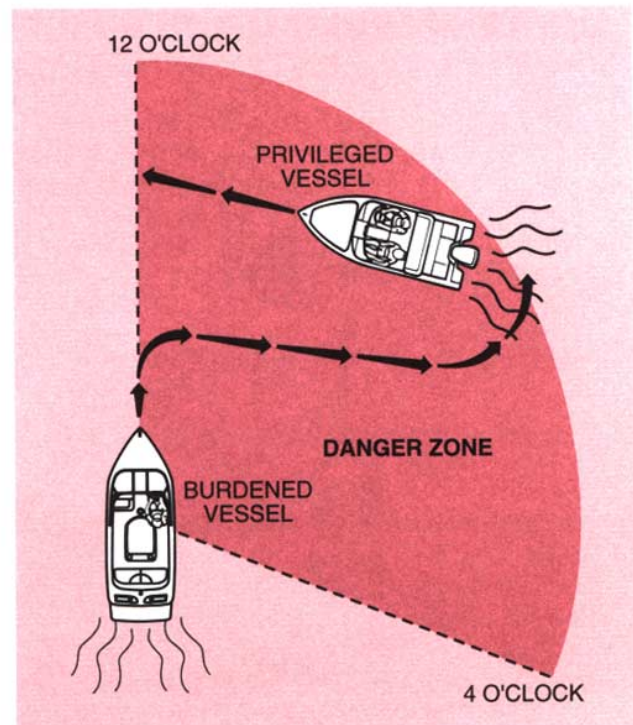
When two power-driven vessels are crossing each other's path close enough to run the risk of collision, the vessel that views the crossing vessel to the starboard (right) side must give-way. In other words, the vessel on the right has the right-of-way.

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

### Overtaking

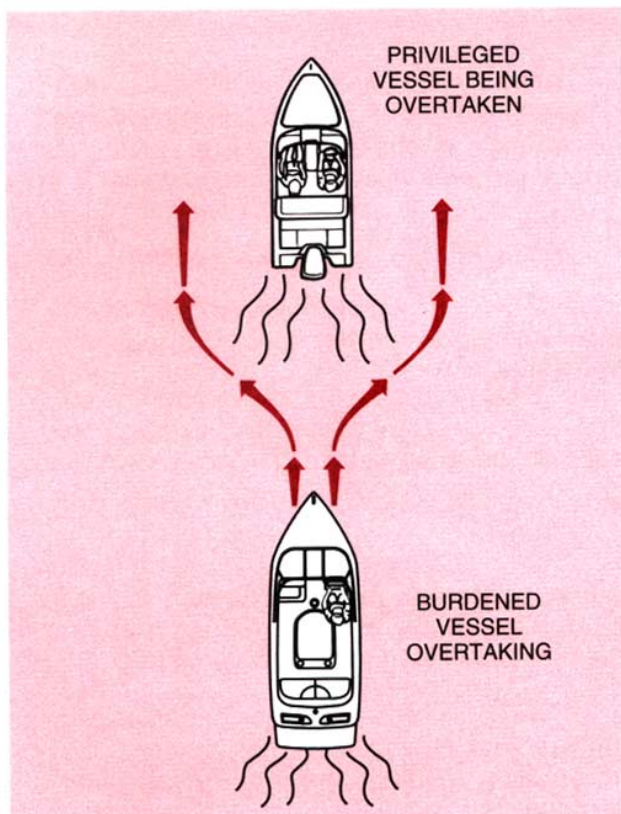
If you are passing another vessel, you are the give-way vessel. This means that the other vessel is expected to maintain its course and speed. You must stay out of its way as you clear it, altering course and speed as necessary.

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



2-4





## OTHER SPECIAL SITUATIONS

There are three other rules to always remember when driving your boat around other vessels:

### Narrow Channels and Bends

When navigating in narrow channels, you should keep to the right when it is safe and practical to do so. If the operator of a power-driven vessel is preparing to go around a bend that may obstruct the view of other water vessels, the operator should sound a prolonged blast on the whistle or horn — four to six seconds.

If another vessel is around the bend, it too should sound the whistle or horn. Even if no reply is heard, however, the vessel should still proceed around the bend with caution.

If you navigate this type of water, you should carry a portable air horn, which are available from local marine supply stores.

2-5



## SECTION 2

### Fishing Vessel Right-Of-Way

All vessels that are fishing with nets, lines or trawls are considered under International Rules to be fishing vessels. Boats with trolling lines are not considered fishing vessels.

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

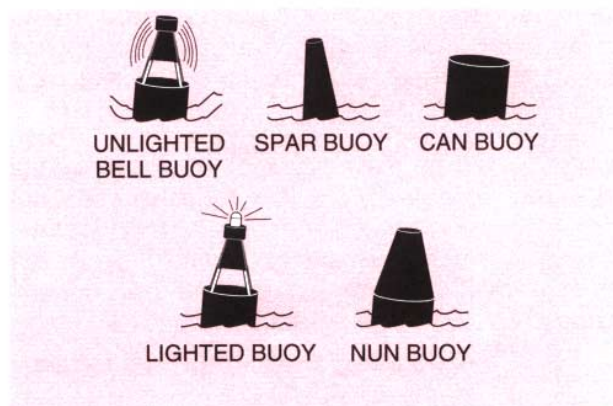
### Sailing Vessel Right-Of-Way

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.

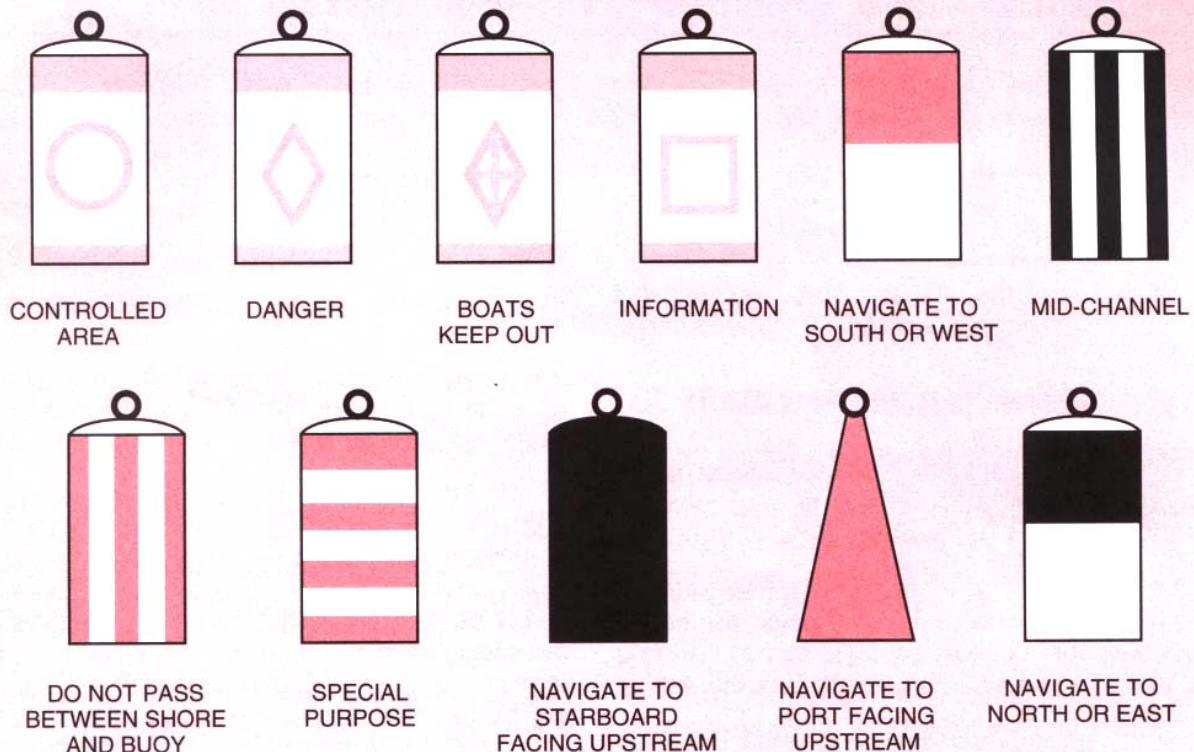
## READING BUOYS AND OTHER MARKERS

The waters of the United States are marked for safe navigation by the lateral system of buoyage. The markers and buoys you will encounter 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.



2-6





2-7



## SECTION 2

The markings on these buoys are oriented from the perspective of being entered from seaward while the boater is going towards the port. This means that red buoys are passed keeping the buoy on the starboard (right) side when proceeding from open water into port, and black buoys are kept to the port (left) side of the boat. An easy way to remember this rule is "RED RIGHT RETURNING" When navigating out of port, your position to the buoys should be reversed: red buoys to port and black buoys to starboard.

Many boating bodies of water are entirely within the boundaries of a single state. The Uniform State Waterway Marking Systems has 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 local boating authorities before driving your boat in unfamiliar waters.



## GENERAL SAFETY - SKIING / WAKEBOARDING

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. Read and comprehend this manual. Make sure that you understand all the controls and operating instructions before attempting to operate the boat. It is important you read, understand and obey all local, state and federal boating laws. Improper operation is extremely dangerous.

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 Toyota Marine Sports, you must satisfy yourself that it is safe for you and others, and that the boat will not be damaged or made unsafe as a result of your decision. Remember: always use common sense when operating, servicing or repairing the boat!

In addition to everyday safety, failure to observe the safety recommendations may result in severe personal injury or death to you or to others. Use caution and common sense when operating your

boat. Don't take unnecessary chances! Remember that 3 people are used for safe skiing.

Make certain that all boat operators and passengers are aware of this information and conform to boat safety principles.

It is the captain's responsibility to assure an experienced operator is always at the helm.

### GENERAL PRECAUTIONS

Boating safety starts with a thorough understanding of operation. In addition to careful review of this manual, you should be aware as well that there are many sources of information available. Toyota Marine Sports urges you to pursue additional training.

The following is a listing of some of the agencies and organizations that offer safety training or information. Additional information may be available by contacting your dealer or your local authorities:

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### SECTION 3

- American Red Cross, National HQ  
8111 Gatehouse Road  
Falls Church, VA 22042-1203  
(703) 206-7090  
[www.redcross.org](http://www.redcross.org)
- American Water Ski Association (AWSA)  
799 Overlook Drive  
Winter Haven FL 33884  
(941) 324-4341
- Boat Owners Association of the United States (BOAT/US)  
880 South Pickett Street  
Alexandria VA 22304  
(703) 823-9550
- National Safe Boating Council  
2550 M Street NW, Suite 425  
Washington DC 20037  
(202) 296-4588
- U.S. Coast Guard  
2100 Second Street SW  
Washington DC 20593-0001  
(800) 368-5647  
For U.S. Coast Guard Auxiliary  
call (800) 336-2628  
[www.uscgboating.org](http://www.uscgboating.org)
- American Boat and Yacht Council  
3069 Solomon's Island Road  
Edgewater, MD 21037
- National Marine Manufacturers Association  
200 East Randolph Drive  
Suite 5100  
Chicago, IL 60601-6528
- National Boating Federation  
Box 4111  
Annapolis, MD 21401-4111

### SAFETY EQUIPMENT

Federal law requires certain safety equipment to be on-board at all times. In addition, responsible boaters carry other equipment in case of emergency. Check with the local boating authorities for any additional requirements over and above the federal stipulations.

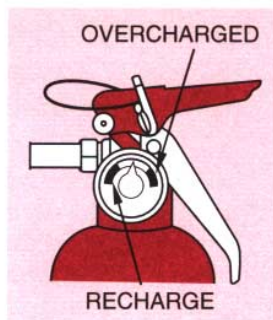
#### Required Equipment

Your Toyota Marine Sports boat has been equipped at the factory with most of the Federally required safety equipment for inland waters (Class 1, 16 feet to 26 feet). This equipment includes:

3-2



- UL-approved Marine Fire Extinguisher, Type A-BC (2 lbs.), good for solids, liquids and electrical fires
- ABYC-approved Marine Mufflers with water injection
- USCG-approved Marine Flame Arrestor
- USCG-approved Engine Box Ventilation with spark-less power blower
- ABYC-approved Electric Horn sound warning device
- USCG-approved inland lighting



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 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 Toyota Marine Sports Dealer can — and will be happy to — assist you.



It is advisable that children ALWAYS wear a PFD (local laws may require that children wear PFDs).

3-3

## SECTION 3

### NOTICE

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

### Recommended Equipment

A smart owner will avoid potential problems on an outing by having additional equipment on board. Normally, this equipment is dependent on the body of water and the length of the trip.

We suggest the following — as a minimum. Your Toyota Marine Sports 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 set of local navigation charts
- Mooring lines and fenders
- Extra engine oil
- A tool kit
- A portable AM/FM radio
- A communication device such as a VHF radio or cellular telephone

### Safety While Boating

Boating-related accidents are generally caused by the operator's failure to follow basic safety rules or written precautions. Most accidents can be avoided if the operator is completely familiar with the boat, its operation and can recognize potentially hazardous situations.

3-4



### **WARNING**

Failure to adhere to these warnings may result in severe injury or death to you and/ or others.

- Look before you turn. As a boater you are obligated to maintain a course and speed unless it is safe to alter course and speed. Look before you turn.
- Improper operation 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 securely attach the engine safety shut-off switch tether to a part of your clothing, such as a belt loop, when operating the boat.
- Never operate the boat while under the influence of alcohol or other drugs.
- Never stand or allow passengers to stand in the boat, or sit on the transom, seat backs, engine cover or sides of the boat while the engine is running. You or others may be thrown from the boat.
- 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 minutes. Failure to do so may result in fire or explosion. If you smell gasoline vapor or see liquid gasoline, DO NOT start the engine.
- Never remove or modify any components of the fuel system except for maintenance by qualified personnel. Tampering with fuel components may cause a hazardous condition.

3-5



## **SECTION 3**

- Never allow any type of spark or open flame on board. It may result in fire or explosion.
- Always keep a lookout for other boats, swimmers and obstructions in the water. Stay away from other boats and personal watercraft.
- Always have an experienced operator at the helm and always have three people present for safe skiing – one to drive, one to observe and one to ski.
- Never leave children in the boat without adult supervision.
- To avoid obstructing the operator's view, never sit in front of the operator.
- Never dive from the boat without being absolutely sure of the depth of the water, otherwise severe injury or death may occur from striking the bottom.
- Never swim near the boat when the engine is running. Being in neutral is not enough, because even in neutral, the propeller may still be turning.
- Keep track of ski lines and dock lines so they do not become entangled in the propeller.
- Never replace your boat's marine parts with automotive parts.
- Always check the integrity of the attachment points. If they show any signs of corrosion stop using them until they can be checked by your Toyota Marine Sports Dealer.
- Seek shelter from open water if there is threat of lightning.
- Operate slowly in congested areas such as marinas and mooring areas.
- The bow may be slippery, do not go forward while the engine is running.
- When you leave the boat take the keys with you. This will keep untrained and unauthorized persons from operating the boat.

3-6



- Engine exhaust contains carbon monoxide. Do not operate the engine in a confined space. Do not go under the boat cover with the engine running or shortly after the engine has been running. Do not occupy the space under the closed bow with the engine running or shortly after the engine has been running. Allow adequate ventilation with fresh air before entering.
- Slow down when crossing waves or wake in order to minimize the impact on passengers and the boat.
- Do not wrap ski lines or mooring lines around any body part which may become entangled in the line if you fall overboard and the boat is moving. Loss of a limb may result.

## SKIING/TOWLINE SAFETY

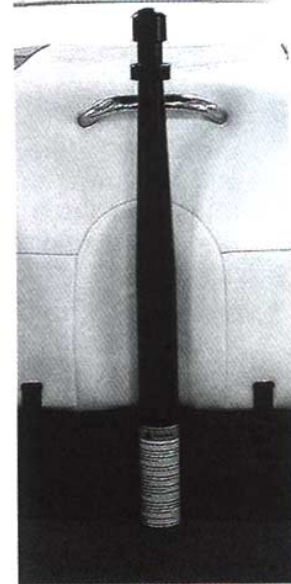
Skiers are obligated to be aware of the same fundamental safety rules as operators. If you are new

to water skiing, seek certified training before starting. You will find it especially helpful to join a local ski club and/or the AWSA, when possible.

Always remember that the majority of water skiing injuries are the result of impacts with other objects. Always look where you are going and be aware of what is going on around you.

The use of a ski pylon extension or extensions in excess of 7-feet-vertical is not recommended by Toyota Marine Sports.

If you elect to use accessories such as these, be aware that they could create excessive stress on your boat and subjectively cause damages not covered by the warranty.




3-7



## SECTION 3

### WATER BALLAST FOR WAKEBOARDING

 **CAUTION**

OVERLOADING MAY REDUCE THE STABILITY OF THE BOAT.

THE WEIGHT OF ALL PERSONS AND EQUIPMENT INCLUDING FAT SACKS, BALLAST BAGS, WATER BLADDERS, AND BALLAST TANKS SHOULD NOT EXCEED 1480 LBS FOR CLOSED BOW. FOR OPEN BOW, SHOULD NOT EXCEED 1600 LBS.

WHEN DETERMINING WEIGHT ON BOARD ASSUME ANY WATER STORAGE DEVICE WEIGHS NINE POUNDS PER GALLON OF WATER CAPACITY.



### WARNING

Failure to adhere to these warnings may result in severe injury or death to you and others.

- The engine must be shut down (OFF) before a skier enters or exits the boat, swim platform or ladder.
- Every skier must always wear a USCG-approved Type III personal flotation device. Special PFDs are available for high impact falls into the water.

- Maintain a distance of at least 100 feet from all other objects, including other boats, piers, rafts, mooring and navigational buoys, pilings, abutments or any other items.
- Always have an experienced driver and observer in the boat when skiing.
- Never ski in shallow water, close to shore or in water where you do not know the depth or what is beneath the surface.
- Look before you turn to pick up a fallen skier.
- Have ship to shore communication devices if operating at a significant distance off shore.
- The driver should never retrieve or pick up an article from the water while the engine is running. The engine must be completely shut down.
- Driver should always keep the skier in view when the skier is entering or exiting the boat.

3-8



- Communicate skiing speed before starting.
- Driver should know the ability level of the skier.
- The skier should indicate he is clear of the boat prior to starting the boat or putting the boat into gear and tightening the rope.
- Driver, observer and skier should agree to communication hand signals before starting.
- Observer in the boat should keep driver apprised of skier status.
- Driver should always watch the skier as the line is tightened to start (in case rope wraps around ski or skier).
- Driver should look ahead before starting.
- Start from a safe place with good forward and peripheral visibility.
- Driver should check direction of the rudder before starting (in gear, slowly making sure the boat goes straight).
- Driver should be primarily aware of what is occurring in front of the boat, but is aware of skier's progress.
- Never put your arm, head, or any other part of your body through the handle-bridle of the ski line nor wrap the line around any part of the body at any time.
- Never ski at night or directly in front of other boats.
- Never jump from a boat that is moving at any speed, nor enter or exit the water when the engine is running (RUN).
- Make sure that everyone knows and uses approved skiing hand signals and common skiing courtesy.

3-9



## SECTION 3

- Always turn off the engine before allowing anyone to approach the boat.
- Never approach the boat if the engine is running.
- Always inspect the tow eye or pylon before use. If there is any evidence of corrosion or other damage, do not use until it has been inspected by your Toyota Marine Sports Dealer.
- Always wear wet suits or protective shorts when skiing to prevent abrasions hypothermia and injuries to orifices (rectal and vaginal) from impact with a water surface.
- Never ski near swimming areas, beaches or personal watercraft.
- Never follow directly behind another boat or skier without leaving an adequate safe distance.
- When people are getting on or off of water toys, always turn the engine off. If boarding water toys from the boat, always do so from the ski platform.
- Always inspect water sports equipment for wear, fraying, etc., before use. Do not use if they show signs of wear or fraying.
- When approaching a skier, always turn off the engine while it is "in gear". This will keep a windmilling propeller from cutting the skier.
- Never "back up" to anyone in the water.
- Always approach a downed skier on the driver's side, keep the skier always in view.
- Display a skier down flag whenever the skier is in the water and not skiing.
- Never ski with multiple skiers with different length ropes.
- Inspect towline for fraying, unnecessary knots or cuts. Replace when the rope shows signs of wear. Do not wait for the rope to break before replacing an old rope.
- Never ski in limited visibility conditions.

3-10



- Always follow the approved ski pattern on each lake.
- Do not approach the rear of the boat while the engine is running.

## WATER SPORT DRIVING TECHNIQUES

### Before Towing A Skier

Be sure the observer knows his/her responsibilities and if not, explain and practice them.

Be sure that both the observer and the skier know the hand signals for communication.

Discuss with the skier about what type of tow he/she wants. Be sure to cover ability, speed and duration.



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## SECTION 3

Be sure that both you and the skier are aware of water hazards such as sandbars, shallows and reefs.

Choose a skiing area away from fishermen, swimmers, divers, moorings, other watercraft, and anything else that may be dangerous while skiing.

### Starting

Allow the skier plenty of time to prepare in the water. Be especially aware of how the boat is drifting.

Idle the boat away from the skier until the line is tight.

Position the skier directly behind the boat.

On skier command, start with smooth, firm acceleration.

Accelerate to agreed upon speed, then adjust per the skier's request.

If a novice skier is having difficulty staying up, decrease the speed so the skis will track better.

### Skiing Speeds (depends on skier's size and ability)

Two Skis (15-35 mph)

- Beginner ..... 15-25 mph
- Advanced ..... 25-35 mph

One Ski (18-36 mph)

- Beginner ..... 18-26 mph
- Advanced ..... 26-36 mph

Barefoot ..... 34-40 mph

Kneeboard ..... 14-20 mph

Trick skis ..... 12-22 mph

Wakeboard ..... 14-26 mph

Physically challenged

- Caged skis ..... 20-34 mph
- Amputees ..... 24-34 mph
- Blind ..... Normal Speeds

3-12

## Dropping a Skier

If pulling up alongside the boat, do so on the driver's side.

If a shore drop, keep away from docks, piers, shallow shoreline or other unmarked hazards.

Slow boat and gently swing skier – don't whip skier.

If skier is returning to the boat, shut engine off before boarding skier.

## Falls

Confirm the skier is O.K.

Return slowly, keeping the skier in sight.

Circle the skier at a safe distance (with the skier on the driver's side) to return rope and handle.

Be sure skier is not tangled in towline before getting underway.

Be careful not to let the ski rope come into contact with the propeller.

## Falls With Injury

Return expediently, but:

- Don't come back too fast and out of control.
- Don't create waves that could further injure the skier.

Get near the skier and have the observer with life vest on "slide" into the water.

- Confirm status of the skier.
- Board skier, if reasonable.
- Seek additional help as appropriate.

## Beginning Skiing

Keep speeds lower so the skis track better and the fear factor is lessened.

Wide, gradual turns so the skier is not "swallowed up" in wakes and not "whipped" along side of the boat.

Pull the skier up a little easier.

## Slalom Skiing

Slightly faster speeds.

If "drop ski" procedure, be sure to note where the ski was dropped.

3-13



## SECTION 3

### Trick Skiing

Requires less acceleration out of the water.

Don't go faster than the agreed upon speed when starting — trick skis are very unstable at higher speeds.

### Kneeboarding

Start slowly until skier is in control.

If the kneeboard porpoises, slow speed.

### Barefooting

Requires higher speeds.

Starting technique depends on the method of the skier start (i.e., step off, kneeboard, deep water, etc.).

### Driver/Observer Responsibilities

The start method consists of three basic points:

The observer watches to the front and side of the boat for other boats and/or obstacles.

The driver watches the skier so that he will know when to apply and regulate the power required.

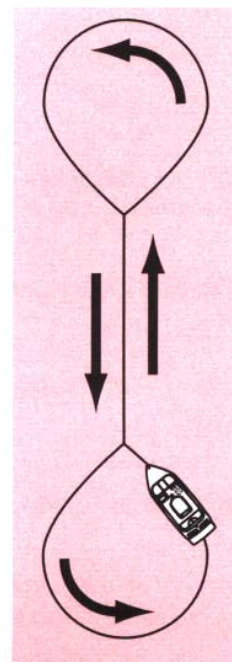
The driver is in command and is responsible for

double-checking the observer with a quick look ahead just prior to the start.

Once underway, the observer watches the skier and the driver steers the course.

### Boat Pattern

There are several acceptable boat patterns for towing water skiers. A large loop is often preferred as it does not require the skier to cross the wake and contains large turns which are easier for a beginner to negotiate. When skiers have advanced to a more competent level of skiing ability, a looped end or dumb bell pattern may be used. This dumb bell pattern provides for long, straight courses and allows the wake to be dispersed, leaving the skier with a smooth water surface. Most water ski tournaments and clinics use the dumb bell driving pattern.







## BOAT CONSTRUCTION AND CARE

### CERTIFICATION AND ASSOCIATION MEMBERSHIPS OF TOYOTA MARINE SPORTS

As an active member of the National Marine Manufacturers Association (NMMA), every Toyota Marine Sports boat and trailer meets or exceeds the rigid specifications for certification. This affirmation exceeds the Federally mandated United States Coast Guard (USCG) requirements and is backed by the 600-member NMMA.

Inspections are performed annually by a nationally recognized, independent testing organization. Inspectors visit the plant each year before the model year begins to check all our models for conformance. The inspectors then return — unannounced — during the year to insure continued compliance with certification requirements.

Certification checks are developed by the NMMA engineering staff and the Marine Service Practices

Committee to help guard against over-powering, overloading, fire, explosion, sinking and collisions.

All parts used in the construction of Toyota Marine Sports boats meet or exceed all USCG and American Boat and Yacht Council (ABYC) standards.

#### WARNING

**Never use or authorize the use of automotive parts or parts of unknown quality, design or origin. Insist on only genuine Toyota Marine Sports replacement parts from your dealer.**

#### NOTICE

**The removal, tampering, alteration or obliteration of any or all identification numbers will relieve Toyota Marine Sports from all obligations to make warranty repairs or replacements.**

4-1

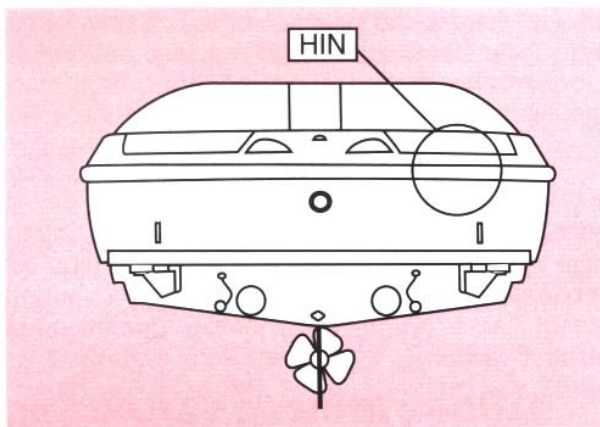


## SECTION 4

### SERIAL NUMBER LOCATIONS

#### Hull

The Hull Identification Number (HIN) can be found at the top, outside, starboard corner of the transom. The HIN is molded into the transom and federal law prohibits removal or tampering in any way.

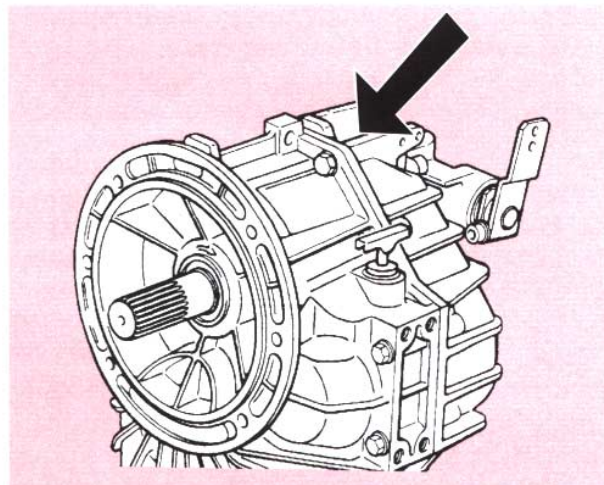


#### Engine

The Engine Identification Number (EIN) is imprinted on the front of the engine block, under the air intake.

#### Transmission

The Transmission Identification Number (TIN) is imprinted on a plate found on the top of the housing.



The identification numbers of your boat are important to you. Record the serial and model numbers of the boat in the spaces provided. Keep a copy of these numbers on a separate sheet of paper and store in a safe place other than the boat.

4-2



In case of theft, report these numbers in writing to local authorities, your insurance agent and Toyota Marine Sports in care of:

Customer Service  
Toyota Marine Sports Boat Company  
7658 Municipal Drive  
Orlando, FL. 32819

## CLEANING

Periodic cleaning is the best way to keep your boat looking like new. Regular washing and waxing keep dirt and scum from building up and deteriorating the finish. Keeping your boat in a showroom-new condition results in personal satisfaction and higher resale value.

Your 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 Gelcoat resin. While the Gelcoat is solid color, the thickness of the layer is only a few millimeters thick — much like paint on a car but much tougher, and chemically bonded.

Beneath the Gelcoat 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 keep the hull shape. The boat deck and sides also use special ceramic core material for its strength-to-weight and superior marine performance.

## Hull

When washing the boat, be sure to use a mild detergent and warm water solution. DO NOT use abrasive cleaners, solvents, ammonia or chlorine as these will damage the Gelcoat surface. Under extreme conditions, special cleaners may be used to remove marine growth from the hull. See your Toyota Marine Sports Dealer for safe cleaners and waxes.

Waxing the entire Gelcoat surface at least twice a season is recommended for all climates. Use of a specially formulated marine Gelcoat wax will prevent color fade, soil and scum adhesion. If the Gelcoat has chalked or faded from lack of proper maintenance, buffing may be necessary to bring back the shiny appearance. Hand buffing with a #7 rubbing compound or power buffing with glazing compound #1 will quickly restore the surface.

## 4-3



## SECTION 4

## FIBERGLASS/UPHOLSTERY REPAIR

### Upholstery

Regular washing with mild detergent and warm water or automotive vinyl cleaners is sufficient to keep the cushions and vinyl coverings in good condition. Keep the cushions from becoming soaked and dry thoroughly after washing to prevent mildew accumulation after the boat is covered. Prop up the cushions in the boat when it is covered to take advantage of air circulation. Spray with a mildew repellent.

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

Toyota Marine Sports vinyl fabrics are made to withstand the effects of sun, heat, acid rain and soiling, under normal conditions. Please consult these cleaning recommendations before cleaning your upholstery.

Common Stains	Steps		
	1	2	3
Betadine	B	A	
Chewing Gum	D	A	
Eyeshadow		E	B
Motor Oil	B		
Spray Paint	B		
Mildew or Wet Leaves*	C	B	A
Shoe Polish*		D	B
Yellow Mustard	A	B	C
Oil-Base Paint (fresh or dried)	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	
Ball-point Ink*	E	B	A
Household Soil	A	B	
Permanent Marker*	E	B	C
Coffee, Tea, Chocolate	B		
<b>DO NOT USE 409 CLEANER OR SILICONE-BASED PRODUCTS!!!</b>			
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.			
Note: All cleaning methods must be followed by a thorough rinse with water.			

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

## 4-4



Certain household cleaners, powdered abrasives, steel wool and industrial cleaners can cause damage and discoloration. These 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 should be used with caution because many contain dyes or solvents that can permanently damage the protective coating. See your Toyota Marine Sports Dealer for recommended cleaners.

### Carpet

Occasional washing with mild detergent and warm water or household carpet cleaners will keep the carpet clean. Thoroughly hose the detergent out of the carpet and into the bilge. (This is usually the best time to clean the bilge also.) Allow the boat to set uncovered in the sun for several days to prevent any mildew or odor caused by moisture.

### Teakwood

Regular cleaning and oiling of teakwood 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. Allow a couple of hours for the oil to soak into the wood and apply a second coat. Wipe off excess oil to prevent a varnished look. See your Toyota Marine Sports Dealer for recommended cleaners and oils.

### Windshield

Cleaning the windshield when needed is an important safety precaution. Your Toyota Marine Sports windshield is made of tempered safety glass and requires special cleaning to prevent scratches to the surface. Use a mild soap solution and damp cloth only. Harsh detergents, solvents, or chemicals could damage the windshield.

### 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 useful life. 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.

4-5



## SECTION 4

### ⚠ NOTICE

**If corrosion, pitting or other damage is found, do not use the item until it is checked by your Toyota Marine Sports Dealer.**

### Sun Top and Boat Cover

Occasional cleaning of the top and cover should be done with mild soap and warm water. Thoroughly wet the entire surface and use a soft-bristled brush. Rinse completely and allow to drip dry. Then allow it to lie in the sun until completely dry. After cleaning, treat with a water repellent as necessary.

For heavy soil, a mild solution of 1/2-cup bleach, 1/4-cup household soap and one-gallon of water may be used for soaking. DO NOT allow to soak for more than 20 minutes. Longer will cause deterioration of the stitching. Rinse completely and allow to drip dry. Then follow up with time in the sun until it is completely dry.

## STORAGE/WINTERIZATION

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. See your Toyota Marine Sports Dealer for all of your storage and winterization supplies.

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, major damage from freezing could result if the boat has been stored in below-freezing temperatures, with water inside the bilge or engine cooling system (including the optional heater or shower).

### ⚠ NOTICE

**Damage to the boat due to improper storage will void the warranty.**

The following procedures will help keep your boat from damage for a period of not longer than 5 months.

### ⚠ WARNING

**Because of the complexity of preparing your boat for proper winter storage, as well as the possibility of extreme damage to the engine if a preparation error was made during winterization, we recommend you let your Toyota Marine Sports Dealer perform the winterization procedures.**

4-6



### While Boat is in the Water

1. Fill the fuel tank and add STA-BIL® gas stabilizer in accordance with the directions.
2. Operate the boat for at least 15 minutes in water to enable the treated fuel to reach the engine.

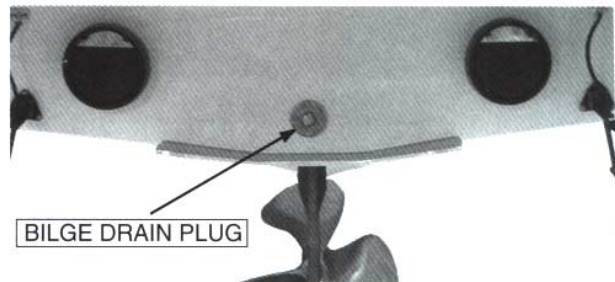
#### NOTICE

If you do not have a Toyota Marine Sports trailer for your boat, you should consider a storage cradle. If the hull is supported improperly for a period of time, a great deal of hull damage can occur. Toyota Marine Sports trailers are designed to give your boat proper support for long term storage. See the section **Lifting the Boat** for more information on storage cradles.

### When Boat is out of the Water

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 to allow as much water as possible to drain while performing other storage preparations.



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 Cleaning).
3. Apply a coat of wax to the entire surface of the boat.

4-7

## SECTION 4

4. Remove the attaching hardware from the propeller shaft coupling. Separate the flanges and coat the flange surface with waterproof marine multi-purpose grease.
5. Flush the engine cooling system with clean water. DO NOT exceed 1,500 RPMs while flushing for 5-10 minutes.
6. Perform all scheduled maintenance. Of special importance is tuning the engine if called for and changing the engine oil and filter, transmission oil and filter, and the fuel filter.
7. Remove the exhaust manifolds' drain plugs. The drains are located at the rear of the manifold on the bottom, right under where the manifold turns up.
8. For the closed cooling system, remove water hose attached to the bottom of the engine oil cooler (this is not the same as the transmission oil cooler) and then loosen the petcocks/drain plugs on both sides of the engine block and drain all remaining water from block.



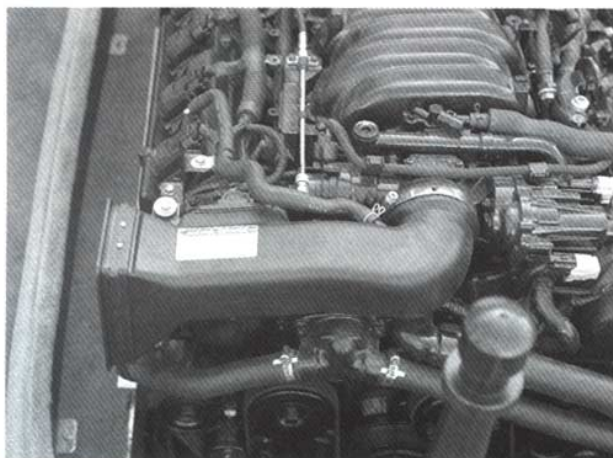
#### CAUTION

Do not mix ethylene-glycol and propylene-glycol coolant formulas as they have different freezing and boiling points. Thoroughly flush one before using the other. Following specific winterization procedures is very important. Damage that may occur to your boat and engine because of improper winterization can be costly and is not covered by your warranty. Toyota Marine Sports strongly recommends that you see your dealer for winterization.

4-8



9. Remove rubber cap and both intake and output hoses from the raw water pump. Also, remove the pump impeller if leaving stored for a long period of time so impeller does not seize in one position or deteriorate.



10. If the impeller is to stay in place, remove the ignition safety switch and spin the engine over for a few seconds to remove excess water from the pump bodies.

11. Remove the clear plastic basket from sea strainer, or remove the complete sea strainer assembly.

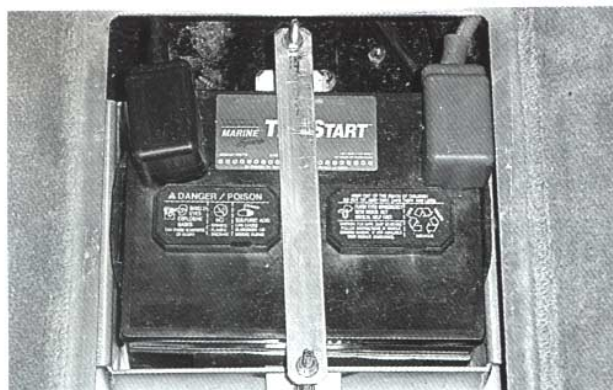


12. Turn battery switch OFF and remove the negative battery cable from the battery. Charge the battery to full-charge or remove completely. Never store batteries close to heat, spark or flame-producing objects.
13. Clean all traces of dirt, oil, grime and grease from the engine, transmission and bilge. Touch up areas of the engine and transmission where paint has been removed.

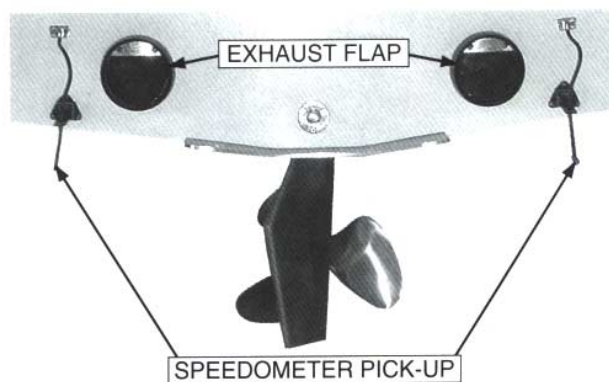
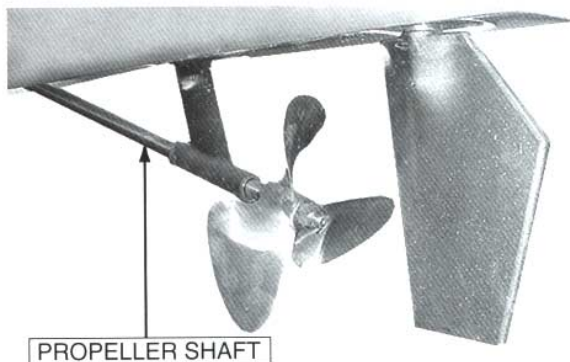
4-9



## SECTION 4



14. If the boat will be stored for more than two months in a high-moisture environment, in temperature extremes or outdoors, fog the engine with a rust-preventative fogging oil. Consult your Toyota Marine Sports Dealer.
15. Coat the entire length of the propeller shaft (inside and outside the boat) with corrosion-resistant metal protectant.
16. Seal the exhaust flaps to prevent dirt and nesting rodents from entering.
17. Check to see if the speedometer pick-ups in the rear of the boat are clogged. If so, damage can occur to the speedometer ballast tubes.



4-10



18. If your boat is equipped with an optional heater or shower, remove both hoses and blow through to remove all water.
19. Cover the boat with a boat cover or tarp.

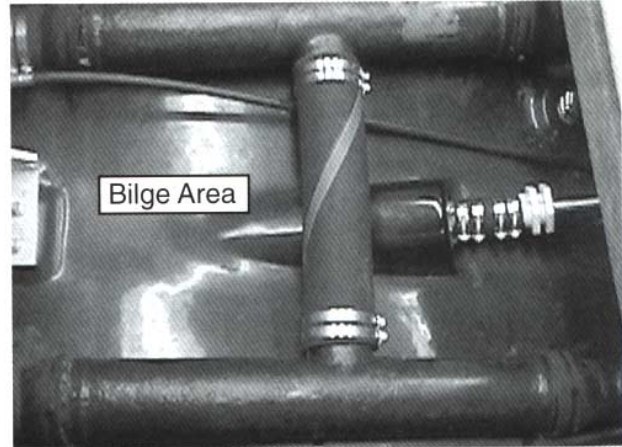
#### NOTICE

**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 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.**

#### Reactivating the Boat After Storage (refer to Maintenance)

1. Remove the duct tape and balled-up rags from the exhaust flaps.
2. Charge and install the battery in the boat.

3. Wrap the two exhaust manifold drain plugs with Teflon sealing tape. Install the plugs into the exhaust manifolds.
4. Close the engine drain petcocks/drain plugs on each side of the block and re-attach lower oil cooler hose.
5. Check the propeller shaft coupling alignment. Install and tighten the coupling hardware.
6. Check the engine compartment and bilge for signs of nesting animals. Clean as necessary.

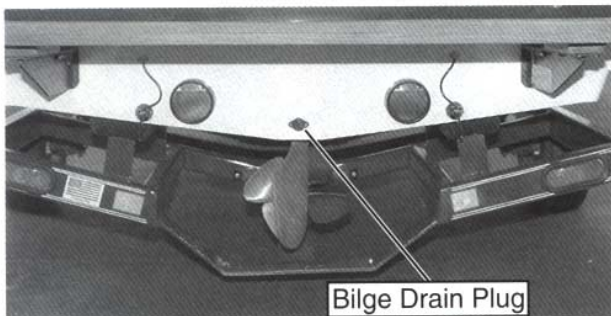


4-11



## SECTION 4

7. Check the entire engine for cracks or leaks caused by freeze damage.
8. Re-install sea strainer basket or assembly, as necessary.
9. Check all hose clamps for tightness. Install the bilge drain plug.



10. Grease the propeller shaft taper and install the propeller if previously removed.
11. Perform the daily maintenance. If not performed during storage, perform the annual maintenance.
12. If the boat is equipped with the optional fresh-water cooling system, and was drained for storage, fill the system with fresh coolant solution.

13. With the boat in the water, cycle the key ON and then OFF 2-3 times, allowing 10 seconds between key cycles, before cranking the engine. As an alternative to this method, you may use the primer button located on the back of 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 20 seconds of cranking. When the engine starts, keep a close watch over the gauge readings and check for leakage and abnormal noises. Keep speeds low for the first 15 minutes to allow the engine to reach normal operating temperature.

## CORROSION

### Galvanic Corrosion

Galvanic corrosion (electrolysis) to the boat is the decomposition of metals due to the effects of electrolytic action. When two dissimilar metals are immersed in a conductive fluid (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, a great deal of damage could occur.

4-12



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

### Salt Water Corrosion

Your boat has been designed for operation in fresh water. If you are operating temporarily in salt, polluted or brackish water, you will need to flush the system with fresh water. The entire engine cooling system should be flushed with fresh water for at least 10 minutes after each use. If you operate continuously in salt water, the closed cooling system option is required.

### Marine Growth

If accelerated marine growth is a problem in your area, an anti-fouling bottom paint may be necessary to slow growth while protecting your Gelcoat.

Before selecting a bottom paint, talk with other boaters and your Toyota Marine Sports Dealer to determine which product works best in your area. Many local variables can affect the selection of paint. Be sure to follow the paint manufacturer's directions exactly.

### FIBERGLASS BLISTERING

Water can be a very harsh chemical, depending on alkali, chemical or iron levels. Note that such water conditions may cause fiberglass/Gelcoat blisters on submerged hull surfaces and damage to upholstery, chrome plated and anodized surfaces. For boats left in the water for more than a 3 week period, Toyota Marine Sports strongly recommends applying a quality marine bottom paint to protect the hull from osmosis and possible blisters. You can help minimize the chance of blisters by removing your boat from the water every 2 weeks and allowing the hull to thoroughly dry before re-launching. All upholstery and chrome plated and anodized finishes should be protected with approved protective coatings or treatments.

4-13



## Section 5

# SERVICE AND MAINTENANCE

Proper care, maintenance and adjustment will contribute to the peak performance of your Toyota Marine Sports craft, while also extending the overall service life and the resale value.

Use the following information to establish your maintenance routine. The instructions are grouped by the required service intervals. The pages that follow also provide instructions on how to accomplish the required checks, inspections and services listed. Your Toyota Marine Sports Dealer or service center is the best source for 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 torque with a torque wrench.

**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

- ✓ Change the engine and transmission oil and filter after the initial 200 hour mark of operation. Use only recommended lubricants. (See Annual Maintenance.)
- ✓ Check the alignment of the propeller shaft coupling. (See Annual Maintenance.)

### ⚠ NOTICE

**All items listed in the maintenance section are posted at the minimum required intervals to maintain boat warranty. It may be advisable to maintain certain items more frequently for maximum engine life. Your Toyota Marine Sports Dealer will furnish you with all necessary details of a more aggressive preventative maintenance schedule.**

Be sure to replace worn or damaged parts with genuine marine parts from Toyota Marine Sports. Under no circumstances should automotive parts be used in place of genuine marine parts.



## PERIODIC MAINTENANCE

### Before Each Use (8 hours)

- ✓ Open motor box and inspect compartment and bilge for gasoline vapors or liquid gasoline.
- ✓ Check the engine oil level.
- ✓ Check the transmission fluid level.
- ✓ Check the cooling system sea (raw) water strainer.
- ✓ Check engine belt for looseness or damage.
- ✓ Inspect the drive train for loose or missing hardware.
- ✓ Inspect the steering, throttle and shift cables for kinks, wear and interference with other components.
- ✓ Inspect the battery connections and hold-downs.
- ✓ Inspect the exhaust system for leaks.
- ✓ Inspect the propeller shaft log for excessive water entry.
- ✓ Inspect the fuel system lines and connections for leakage.

### Quarterly (50 hours)

- ✓ Check the safety equipment.

### Annually (Every 100 hours)

- ✓ Inspect all hardware for pitting, corrosion or wear.
- ✓ Replace the fuel filter.

### Annually (Every 200 hours)

- ✓ Change the engine oil and filter at the 1 year / 200 hour mark, whichever comes first.
- ✓ Clean the engine flame arrestor.
- ✓ Perform an engine inspection (tune-up / service if necessary).
- ✓ Change the transmission fluid and filter.
- ✓ Clean the battery terminals.
- ✓ Check the propeller shaft coupling alignment.
- ✓ Inspect and lubricate the steering system.
- ✓ Lubricate the throttle and shift cables.
- ✓ Inspect the exhaust flaps for damage.
- ✓ Check the engine mounts.
- ✓ Inspect the complete fuel system for leakage.
- ✓ Inspect exhaust manifolds for cracking and leakage.

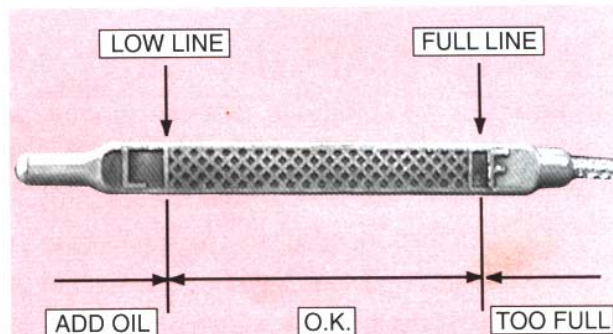
5-1



## SECTION 5

### Check Engine Oil Level

1. Operate the engine at idle while in the water for about 3 minutes or until warm. Turn the engine OFF and disconnect the engine safety switch.
2. Open the motor box cover and locate the engine oil level dipstick.
3. Remove the dipstick and wipe with a clean rag.
4. Reinsert the dipstick fully and push it in as far as it will go, or the reading will not be correct.
5. Pull the dipstick out and look at the oil level on the end. If it is between the full line and the low line, the oil level is okay.



6. If the oil level is below or only slightly above the low line, add engine oil of the same type as already in the engine. Use only SAE 5W-30, preferably synthetic. Never mix different types or brands of oil.
7. Remove the oil filler cap and add engine oil a little at a time, checking the dipstick. When the oil level is within the operating range, replace the cap and turn clockwise until you hear a click.



5-2

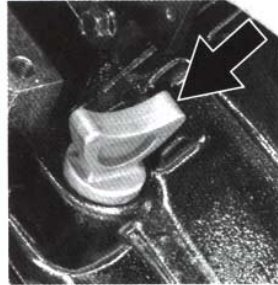
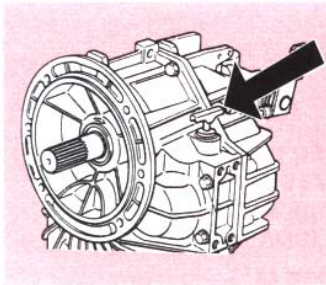


**⚠ NOTICE**

Too much oil could damage the engine. After adding oil check the dipstick to make sure it falls within the operating range. **DO NOT** overfill.

**Check Transmission Fluid Level (In-Line)**

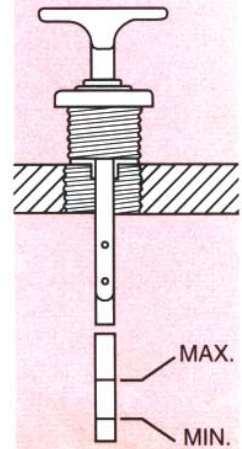
1. Operate the boat for about 5 minutes to warm the transmission fluid. Turn the engine OFF and disconnect the engine safety switch. Make sure that the throttle/shift control level is in neutral.
2. Open the motor box cover and locate the transmission fluid level dipstick.



**⚠ NOTICE**

The transmission fluid level must be checked immediately after engine shut-down to prevent an incorrect reading. Fluid drains back into the transmission from the cooler and cooler lines, and the dipstick could give a false reading if not done quickly.

3. Remove the dipstick and wipe off with a clean rag. Quickly re-insert the dipstick without screwing it in and immediately remove. Check that fluid level is at the MAX mark on the stick.
4. Add or remove fluid as necessary to maintain the level at the mark. Use only Dextron III transmission fluid. See Specifications. Never mix different types or brands of fluid.



5-3



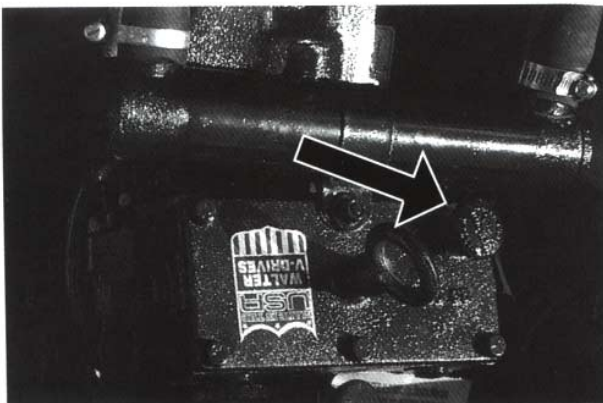
**SECTION 5**

**Check Transmission Fluid Level (V-Drive)**

**⚠ WARNING**

The V-Drive in your Toyota boat uses Gear Oil for lubrication. Do not use ATF or Motor Oil or serious damage will result not covered by the warranty.

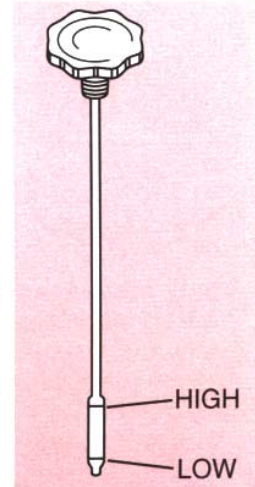
1. Operate the boat for about 5 minutes to warm the transmission oil. Turn the engine OFF and disconnect the engine safety switch. Make sure that the engine throttle/shift control is in neutral.
2. Remove the aft, center passenger seat and locate the transmission oil level dipstick.



**⚠ NOTICE**

The transmission oil level must be checked immediately after engine shut-down to prevent an incorrect reading. Oil drains back into the transmission from the cooler and cooler lines, and the dipstick could give a false reading in not done quickly.

3. Remove the dipstick by pulling straight out and wipe off with a clean rag. Quickly re-insert the dipstick completely and immediately remove. Check that oil level is at the H (High) mark on the dipstick.
4. Add or remove fluid as necessary to maintain the level at the mark. Use only Mobil "Mobil Gear 626", Shell "OMALA 68", Exxon "Spartan EP-60" or Lubriplate "APG-60" Gear Oil. Never mix different types or brands of oils.



5-4

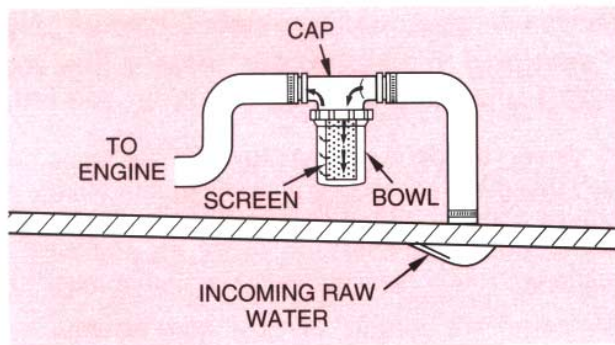


## Check Cooling System Sea (Raw) Water Strainer

### **WARNING**

**The boat must first be removed from the water before cleaning the sea water strainer.**

1. Open motor box cover and inspect the screen for debris by looking through the clear plastic bowl.

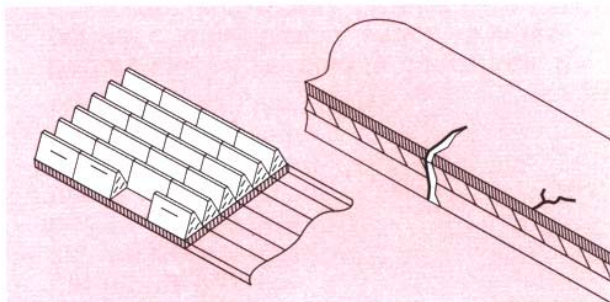


2. If debris is seen, remove the boat from the water and unscrew the bowl. Flush sediment from the screen with water.

3. Carefully fit screen to flange in cap.
4. Inspect bowl gasket for cuts or wear and replace if necessary. Align gasket in bowl and tighten bowl hand tight.

## Check Engine Belt for Looseness or Damage

Visually inspect the belt. If there is any evidence of fraying or cracking it should be replaced immediately.



Checking the belt tension is not necessary, because a belt tensioner is used. If your belt seems loose, see your Toyota Marine Sports Dealer.

5-5



## SECTION 5

### Inspect Drive Train for Loose or Missing Hardware

1. Turn the engine OFF and disconnect the engine safety switch. Make sure that the throttle/shift control lever is in neutral. The engine must be cool.
2. Thoroughly and systematically check the entire engine for loose and missing hardware by sight. Try to shake components such as the alternator by hand. If a looseness problem persists, see your Toyota Marine Sports Dealer.

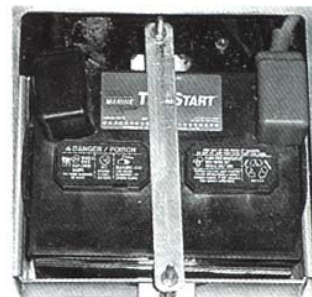
### Inspect Steering, Throttle and Shift Cable for Kinks, Wear, Interference or Stiffness

1. Turn the engine OFF and disconnect the engine safety switch. Make sure that the throttle/shift control lever is in neutral. The engine must be cool.
2. Open the motor box cover and locate the steering, throttle and shift cables. Follow each cable back under the floorboards and feel for kinks and wear on the outer jacket.

Any sign of stiffness or cable damage is cause for replacement. See your Toyota Marine Sports Dealer.

### Inspect Battery Connections and Hold-Downs

1. The battery is located under floorboard access panel to the fore of the motor box. It can be accessed by firmly pulling on the small metal handle.



### **WARNING**

**Battery electrolyte fluid is dangerous. It contains sulfuric acid, which is poisonous, corrosive and caustic. Always wear approved eye protection when servicing or working around batteries. If electrolyte is spilled or splashed on any part of the body, immediately flush the area with large amounts of clean water and seek medical aid. 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.**

5-6



2. Check that the battery post connections are clean and tight. IF NOT:
  - a. Turn the battery switch to the OFF position.
  - b. Loosen and remove the negative terminal connection first. Be careful not to touch the positive terminal with the wrench.
  - c. Loosen and remove the positive terminal connection.
  - d. Remove battery hold-downs and remove the battery from the boat.
  - e. 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.
  - f. Use a battery terminal cleaning brush to remove corrosion from the inside of the battery terminals. Clean the terminals with a water-and-baking-soda solution and rinse.
  - g. Reconnect the positive terminal first, and 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.

- h. Return the battery switch to the ON position to test the effectiveness of the repair.
- i. Replace battery access panel.

### Inspect Exhaust System for Leaks

1. Turn the engine OFF and disconnect the engine safety switch. Make sure that the throttle/shift control lever is in neutral. The engine must be cool.
2. Open the motor box cover and floor access panels as necessary to visually check the exhaust system from the engine to the transom for obvious damage.
3. To open the access panel it is first necessary to remove the rear seats. The seat cushions pull out to reveal the seat cushion support. This support is held in place by 2 clips. Remove the support by firmly pulling straight up on the support.
4. Remove the bilge access panel by pulling firmly on the small metal handle.



5-7



## SECTION 5

### WARNING

**The motor box serves as a machinery guard. The engine must be OFF whenever the box is opened.**

5. Check the hose connections between the exhaust manifolds and the mufflers for signs of leakage. Make sure there are two stainless steel hose clamps on each end of the exhaust hose.
6. If leakage is apparent, tighten the hose clamps, being careful not to crimp the hose.
7. Check exhaust components for signs of corrosion, rust or other damage. If any of these signs are evident, do not operate the vessel until it is inspected by an approved Toyota Marine Sports Dealer.



8. Replace access panels, seat support, seat cushions and close the motor box cover.

### Inspect Propeller Shaft Log for Excessive Water Entry

1. Turn the engine OFF and disconnect the engine safety switch. Be sure that the throttle/shift control lever is in neutral.
2. With the boat in the water, open the engine box and check for leakage while the engine is OFF. No leakage is permissible while the engine is OFF. See also Check Propeller Shaft Coupling Alignment.
3. Start the engine, and with another person operating the boat, inspect the shaft log for leakage. 10-to-15 drops of water per minute is normal. If the water entry is excessive, however, adjust the packing-gland nut. To adjust:
  - a. Turn the engine OFF and disconnect the safety switch.
  - b. Loosen the packing-gland lock nut.
  - c. Hand-tighten the packing-gland nut, and re-tighten the lock nut.

5-8



- d. Operate the boat and recheck for proper adjustment. If the water leakage continues, the shaft log must be re-packed. If the problem continues, see your Toyota Marine Sports Dealer.

### Inspect Fuel System for Leaks

1. Turn the engine OFF and disconnect the engine safety switch. Make sure that the throttle/shift control lever is in neutral. The engine must be cool.

#### **WARNING**

**Gasoline is highly flammable and its vapors may result in fire or explosion. Be particularly cautious when working on any part of the fuel system. Be sure that the engine has cooled completely, and keep all sparks and flames well away from the area. Never smoke when working on the fuel system. Take care not to spill any gasoline. If gasoline is spilled accidentally, wipe up all traces of it immediately with dry rags, and dispose of the rags properly on-shore.**

2. Open the motor box cover and visually check the fuel system from the fuel pump to the fuel rails

and injectors for obvious leakage. Also check the fuel filter and return line.

#### **WARNING**

**The motor box serves as a machinery guard. The engine must be OFF whenever the box is opened.**

3. Open the trunk and remove the access panels to the fuel tank.
4. Visually check the fuel tank connections for signs of leakage. If leakage is suspected see your Toyota Marine Sports Dealer before operating.



5-9



## SECTION 5

5. Check the fuel tank mounting points for security.
6. Start the engine and look for leakage. Stop the engine immediately if leakage occurs. The leak must be repaired before the engine is restarted. See your Toyota Marine Sports Dealer.



#### **WARNING**

**Gasoline is highly flammable and its vapors may result in fire or explosion. Be particularly cautious when working on any part of the fuel system. Make sure that the engine has cooled completely and keep all sparks and flames away from the area. Never smoke when working on the fuel system. Take care not to spill any gasoline. If gasoline is spilled accidentally, wipe up all traces of it immediately with dry rags and dispose of the rags properly on shore. Fuel system maintenance and repairs should be performed by your Toyota Marine Sports Dealer.**

## Annually (Every 100 Hours)

### Check/Service Fuel Filter

1. Due to the complexity and potential danger in working with an environment that features gasoline, Toyota Marine Sports recommends that this work be completed by your dealer.

There is one in-line fuel filter on your boat. It is on the line near the engine. It should be regularly serviced; this is critical to maintaining your engine.

## Annually (Every 200 Hours)

Some boat owners choose to accomplish these tasks as part of a winterization process or during the off-season, but regardless of the seasonal timing, this should be performed at least once a year. Toyota Marine Sports recommends that you change your oil and filter prior to storage, even if

5-10



your last oil change was just a few weeks ago. Water that may have invaded the oil system will separate and could cause rust or corrosion. Toyota Marine Sports recommends that your annual, or 200-hour, maintenance requirements be performed by your Toyota Marine Sports Dealer. Their staff has the proper equipment and technical training to best meet your service needs.

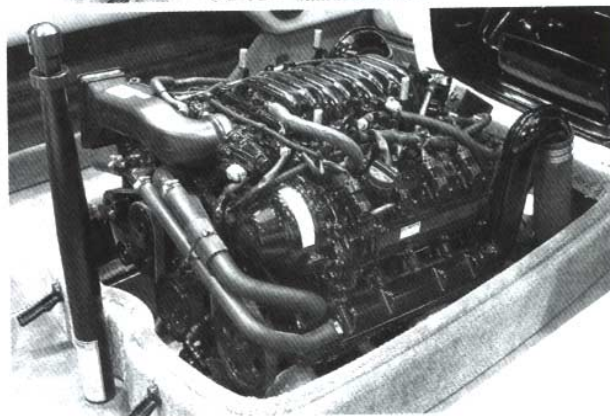
### Change Engine Oil and Filter

1. Start and run the engine until it is warm. Turn the engine OFF and disconnect the engine safety switch. Make sure that the throttle/shift control lever is in neutral.

#### NOTICE

**Never drain oil into the bilge or into the water. Wipe up any spilled oil immediately, and dispose of the rags and drained oil properly on-shore.**

2. Remove the 4 thumbscrews that attach the rain cover to the engine.
3. Remove the rain cover.

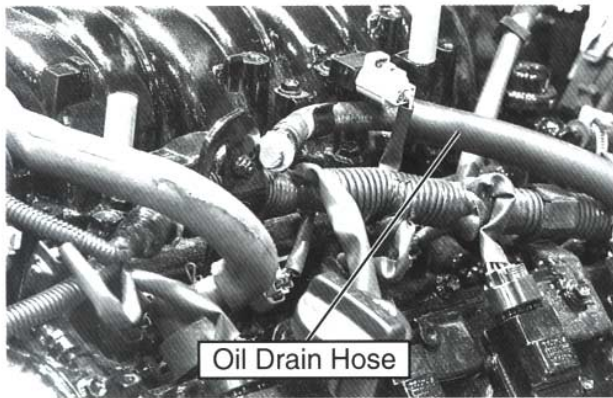


5-11



## SECTION 5

4. Remove the engine oil filler cap. This will speed-up the oil draining process.
5. Locate the drain hose on top of the exposed engine.



6. Drain procedure: Attach pump to drain hose, open the drain plug, and run until no more

comes out. As an alternate method, the hose may be extended through the garboard drain and the oil may be gravity fed out of the engine oil pan.

7. The filter must be changed every year or 200 hours. Remove the oil filter and dispose of it properly on-shore.



8. Lightly lubricate the filter gasket of the new filter with clean motor oil.
9. Replace your oil filter with a new one from Toyota Marine Sports. Screw on the filter by hand until the gasket just touches the block, then tighten it one-half turn more by hand. DO NOT use a filter wrench to tighten.
10. Re-attach the oil drain plug and refill the crankcase through the filler opening. Check the oil level with the dipstick.

5-12



11. After filling the engine with oil, start the engine and check the area around the filter for leaks.

### NOTICE

**The engine oil recommendation is a synthetic SAE 5W-30 oil. Any other SAE rating may result in damage or excessive wear to the engine and should be avoided.**

### CAUTION

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

## Clean Engine Flame Arrestor

Due to the complexity of the procedures and the inherent risks of debris entering an open intake area, Toyota Marine Sports recommends having the engine flame arrestor inspected and cleaned

by your dealer. This procedure should be performed once a year. The recommended time is prior to the boating season, to check for small animals or rodents which may have nested over the winter season.



## Engine Tune-Up/Inspection

Toyota Marine Sports recommends having the engine tune-up/inspection performed by your dealer on an annual basis, although the spark plugs and timing belt will only need to be changed once every 10 years or 1000 hours.

## Change Transmission Fluid

1. Run the boat to bring it to normal operating temperature. Turn the engine OFF and disconnect the engine safety switch. Make sure that the throttle/shift control lever is in neutral.

5-13



## SECTION 5

2. Open the motor box cover and locate the transmission.
3. Remove the transmission filter cover.
4. Use a suction pump through the transmission fluid filter opening to remove fluid from the transmission casing.
5. Refill the transmission with fluid through the filler opening and replace the transmission filter. See Specifications for capacities and recommended fluid type.



## Check Propeller Shaft Coupling Alignment

### NOTICE

**It is recommended that this procedure be performed by your Toyota Marine Sports Dealer.**

1. Turn the engine OFF and disconnect the engine safety switch. Make sure the throttle/shift control lever is in neutral. The engine must be cool.
2. Open the motor box cover and locate the propeller shaft coupling.
3. Remove the coupling bolts and slide the coupling apart only slightly so that the pilot flange on the propeller shaft side is still seated in the pilot bore of the transmission side.
4. Using a feeler gauge, measure the gap between the coupling halves at four places. Rotate the coupling flanges together one complete revolution, stopping every 90° to check clearance with the feeler gauge.
5. Alignment is satisfactory when the flanges are parallel within 0.003 inch.
6. If the alignment is not satisfactory, an adjustment must be made. Special tools and procedures are required for proper adjustment and should only be made by a trained technician. See your Toyota Marine Sports Dealer.

5-14



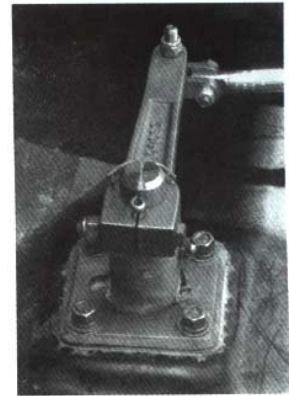
7. If alignment is satisfactory, re-install the flange bolts and tighten securely.
8. Water test to ensure that there is no vibration. If a vibration is noticeable, see your Toyota Marine Sports Dealer immediately.

### Lubricate Steering System

1. Turn the engine OFF and disconnect the engine safety switch. Be sure that the throttle/shift control lever is in neutral. The engine must be cool.
2. Remove the rear seat, remove the floorboard in front of the rear seat back, and finally the floorboard in the trunk.
3. Visually inspect the steering cable for wear. Check connections at rudder and helm for tightness. Turn the steering wheel lock-to-lock and check rudder to verify proper operation.
4. Replace the steering cable after 10 years or 1000 hours, whichever comes first.
5. Turn the steering wheel so that the maximum amount of steering cable is seen.

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

7. Spread a generous amount of waterproof marine multi-purpose grease over the cable end. Work the steering wheel back and forth and re-apply grease if necessary.



8. Using the flexible end on a grease gun, give two full shots of waterproof marine multi-purpose grease to the three grease fittings: one on the rudder shaft, one on the tube and one on the pivot. Clean up any grease purged from the areas.
9. Rotate the steering wheel back and forth several times to work lubricant in.
10. Install the floorboards and rear seat.

5-15



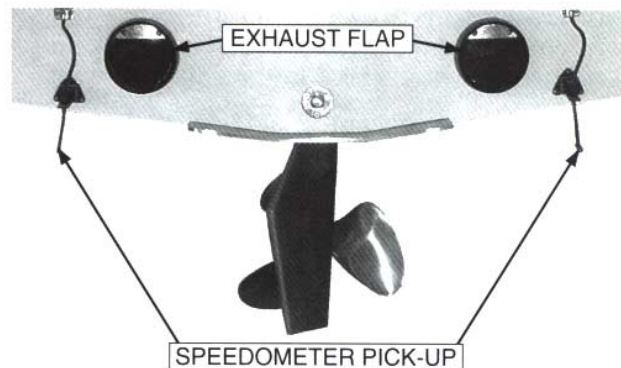
## SECTION 5

### Lubricate Shift and Throttle Cables

1. Turn the engine OFF and disconnect the engine safety switch. Make sure that the throttle/shift control lever is in neutral. The engine must be cool.
2. Open the motor box cover and locate the shift and throttle cable ends.
3. Shift to full-throttle-forward.
4. Lubricate the cable ends and connections with a coating of waterproof marine multi-purpose grease.
5. Lubricate the pivots and linkages with a light grease.
6. Shift the control lever from full-throttle-forward to full-throttle-reverse several times to work the lubricant in.

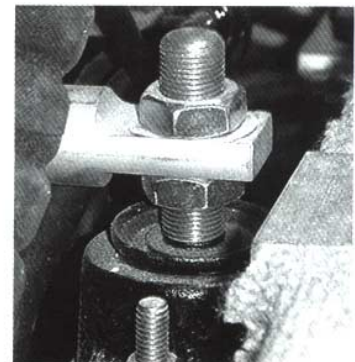
### Inspect Exhaust Flaps for Damage

1. Turn the engine OFF and disconnect the engine safety switch. Make sure that the throttle/shift control lever is in neutral.
2. Inspect the exhaust flap hinge for signs of deterioration. Replace the flaps if necessary.



### Check Engine Mounts

1. Turn the engine OFF and disconnect the engine safety starting switch. Make sure that the throttle/shift control lever is in neutral. The engine must be cool.
2. Open the motor box cover and locate the four motor mounts.



5-16



3. Check the tightness of the mounting hardware and adjustment locknuts. Tighten any loose hardware securely.

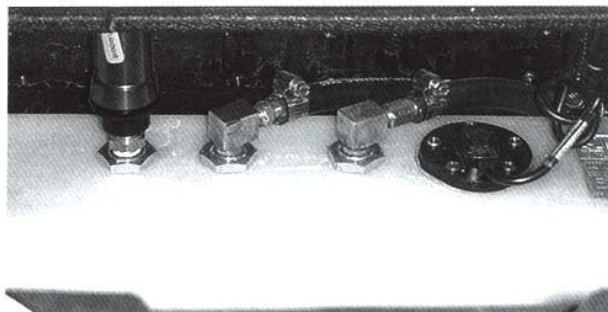
### Inspect Complete Fuel System for Leakage

1. Turn the engine OFF and disconnect the engine safety switch. Make sure that the throttle/shift control lever is in neutral. The engine must be cool.

#### **WARNING**

Gasoline is highly flammable, and its vapors may result in fire or explosion. Be particularly cautious when working on any part of the fuel system. Be sure that the engine has cooled completely, and keep all sparks and flames well away from the area. Never smoke when working on the fuel system. Take care not to spill any gasoline. If gasoline is spilled accidentally, wipe up all traces of it immediately with dry rags, and dispose of the rags properly on-shore.

2. Check the fuel tank mounting points for cracks or other damage.
3. Check all hose connections for tightness.



4. Check fuel hoses for wear, kinks, cracking, deterioration or other problems and damage.
5. Replace fuel filter.

5-17



## SECTION 5

#### **WARNING**

All replaced fuel system components must meet USCG and ABYC standards, and must be UL-approved. Inferior quality components pose a serious safety threat to you and others, and their use may result in serious injury or death. Resulting damage may void your warranty.

6. Replace all damaged components immediately. If new components are installed, start the engine and look for any sign of leakage.

#### **NOTICE**

Throughout the instructions for maintenance, from break-in to annual, you have been instructed to disconnect the engine safety switch. In every instance, you must re-connect it after completing the maintenance procedures for the boat to run.

## UNSCHEDULED MAINTENANCE

### Changing Propeller

Your boat has been fitted with a propeller that offers the best overall combination for top performance. It may be necessary at times to change the propeller to meet certain operating conditions, such as more speed (at the expense of torque) or more torque (at the expense of speed). The use of unapproved propellers may void the warranty. Consult your Toyota Marine Sports Dealer for specific recommendations

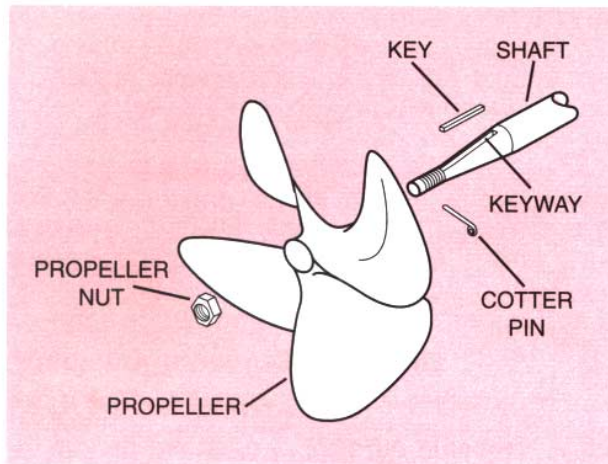
#### **CAUTION**

**The edges of propellers are sharp and can cause injury if not handled carefully.**

New propellers should be fitted to the shaft while it is out of the water to assure good contact. To replace and fit a propeller, use these procedures:

1. Turn the engine OFF and disconnect the engine safety switch. Place the throttle/shift control lever in forward gear.





2. Remove and discard the cotter pin.
3. Remove the propeller nut.
4. Using a propeller puller, pull the old propeller off the shaft. Remove the key from the shaft keyway. Inspect the key for damage. Discard if damaged.
5. Use a honing stone to remove any small burrs or nicks from the tapered end of the propeller shaft.

6. Apply a thin layer of "Prussian Blue" to the tapered area of the propeller shaft.
7. Install the new propeller on the shaft without the key and rotate it slightly from side to side. Remove the propeller.
8. Inspect the tapered area of the shaft. Where the propeller contacts the shaft the bluing will be gone. At least 60 percent contact is required. If the contact area is sufficient, go to Step 11.
9. If the contact area is too small, apply a coat of coarse lapping compound to the taper area of the shaft. Install the propeller and rotate it on the shaft at least 100 times. Alternate every 10 revolutions between clockwise and counter-clockwise rotation.
10. Remove the propeller and use a solvent to clean the lapping compound from the propeller and shaft. Repeat Steps 6, 7 and 8.
11. Thoroughly clean and apply a light coat of waterproof marine multi-purpose grease to the taper area of the shaft and propeller.

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## SECTION 5

12. Install the key into the keyway of the shaft. The key should fit tight from side to side in both the shaft and the propeller.
13. Install the propeller on the shaft, aligning the keyway with the key in the shaft. There should be a small amount of clearance between the key and propeller keyway. If there is no clearance, the propeller may be forced off center, causing a vibration.
14. Install the propeller nut and torque to 50-ft-lb.
15. Install a new cotter pin and bend the ends around the shaft to lock the propeller on the shaft.

### Checking/Repairing Propellers

Propeller damage is caused by striking solid objects. If the propeller is not rotating, usually only one blade is bent, and it is difficult to see. If the propeller is rotating when it strikes an object, usually damage can easily be seen on all the blades. To check for a bent blade(s):

1. Turn the engine OFF and disconnect the engine safety switch. Place the throttle/shift control lever in forward gear.

2. Clamp a small rule scale to the shaft strut parallel to the shaft so that the end of the scale is 3/32-inch from the leading edge of a propeller blade.
3. Rotate the propeller slowly. There should be no more than 3/32-inch variance between the blades. If the propeller is damaged, see your Toyota Marine Sports Dealer.

### Speedometer Calibration

To precision calibrate the speedometer you need an accurately measured course of 850 feet and a certified stopwatch accurate to one thousandth of a second. To calibrate to AWSA official-tournament rules:

1. Approach the course at an indicated 36 miles per hour (MPH). Hold the speed steady and have an observer check course time with a stopwatch.
2. If the course time is between 15.88 and 16.28 seconds, no adjustment is necessary.
3. If the course time is not within tolerance, adjust the DDU as outlined in Section 1.



## Replacing Lights

**Bow Light** - Pop the top black plastic piece off. Push down and turn the red-and-green lens. Remove the bulb and replace it.

### NOTICE

**During re-installation of the bow light lens, be sure that the red lens is to the port side of the boat and the green lens is to starboard.**

**Stern Light** - Remove the two retaining screws. Unscrew the lens cover counterclockwise 1/8-turn. The cover will lift off. Remove the bulb and replace it. Reassemble, using care to avoid stripping the screws.

**Instrument Lights** - Your Toyota Marine Sports Dealer is better equipped to change instrument panel lights when necessary. However, if you would like to check to be certain that the problem is not simply a loose connection, access to the panel is through a cut-out area under the console. With the aid of a flashlight, you can probably see well enough to reach up to the wiring and check the connections. If these seem snug but you still don't have illumination in the gauges, check with your dealer.

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## Section 6

# TRAILERING AND LAUNCHING

## TOYOTA MARINE SPORTS TRAILER

With the purchase of your new, custom-built Toyota Marine Sports trailer you have added value to your Toyota Marine Sports boating enjoyment. You can now enjoy almost any of the thousands of recreational waterways in the country.

Toyota Marine Sports has engineered your boat and trailer to provide years of convenient, trouble-free service. Proper care and maintenance will assure continued performance and safe operation.

Please read and follow its warnings and instructions carefully.

### WARNING

**Before towing this trailer, be sure to read and familiarize yourself with this section of your Owner's Manual.**

This trailer is manufactured to meet the applicable federal safety standards. Check the local and state requirements regarding any additional equipment that may be required.

### NOTICE

**Trailer laws covering such things as brakes, lights, safety cables, licenses, etc., will vary from state to state. Make sure that your trailer is in full compliance with applicable state laws. Your Toyota Marine Sports Dealer can help you in this regard. Otherwise, contact your nearest state motor vehicle department.**

### WARNING

**Follow the Trailer Safety Checklist before each outing.**



## TRAILER SAFETY CHECKLIST

Never tow this trailer before you check to be sure:

- ✓ Coupler, hitch and hitch ball are of the same size.
- ✓ Coupler and safety cables are safely secured to the hitch.
- ✓ Check all fasteners for proper tightness.
- ✓ The boat is securely anchored to the trailer. (The winch strap is not a satisfactory tie-down.)
- ✓ The wheel lug nuts are properly tightened.
- ✓ The wheel bearings are properly adjusted and maintained.
- ✓ The load is within the maximum load-carrying capacity of both the trailer and of the tow vehicle.
- ✓ The tires are properly inflated.
- ✓ All trailer lighting is working properly.
- ✓ Trailer brakes are properly adjusted and working.

The key to carefree boat trailering is the proper match of boat to trailer. This proper match is only one reason why the Toyota Marine Sports

Engineering Department has designed your trailer to carry the full weight of your boat, engine and gear. It also provides the proper support to prevent damage to the boat hull.

### WARNING

**The total weight of your boat, engine, fuel, water and gear must not exceed the trailer's maximum load-carrying capacity. Overloading can cause serious injury or property damage.**

### NOTICE

**Maximum load-carrying capacity is the gross vehicle weight rating (GVWR) less the weight of the empty trailer.**

## Load Carrying Capacity

Check the metallic certification label attached to the left, forward side of your trailer. It will show the maximum load-carrying capacity of the trailer. It will also show the Gross Vehicle Weight Carrying Rating (GVWR), which is the load-carrying capacity plus the weight of the trailer itself. Be sure that the total weight of your boat engine, gear and trailer do not exceed the GVWR.



## SECTION 6

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GVWR:	<input type="text"/>
GAWR FRONT:	<input type="text"/>
GAWR CENTER:	<input type="text"/>
GAWR REAR:	<input type="text"/>
SERIAL NO.:	<input type="text"/>
TYPE:	<input type="text"/>

THIS TRAILER CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MFG.

If you don't know the correct weight of your boat once it is loaded with gear, don't guess. Have it weighed. This usually can be done at a local lumber yard, feed and fertilizer store or truck weigh station.

Be especially careful to avoid overloading your trailer by putting in heavy baggage, camping gear, etc., inside the boat.

### CAUTION

**DO NOT tow the boat with a water-filled bladder for wakeboarding. Empty the contents or the tongue weight will be incorrect.**

## Weight Distribution

Improper weight distribution can cause a boat trailer to fish-tail (sway from side-to-side) as it moves down the highway, putting excessive strains on both trailer and towing equipment, increasing gas consumption and sometimes causing an accident. The most effective way to guard against fish-tailing is to make sure the weight load on your trailer is properly distributed.

### NOTICE

**It is extremely important that 5-to-10-percent of the total weight of your loaded trailer should be felt at the trailer coupling ball when the tongue is parallel to the ground. A bathroom scale can be used for this determination.**

For example, if the gross weight of the trailer, boat and gear is 3,000 pounds, the weight on the tongue should be no more than 300 pounds, but not less than 150 pounds. (Some auto manufacturers say that tongue weight should not exceed 200 pounds when using a weight-carrying bumper-mounted hitch with full-sized cars.)



### ⚠ NOTICE

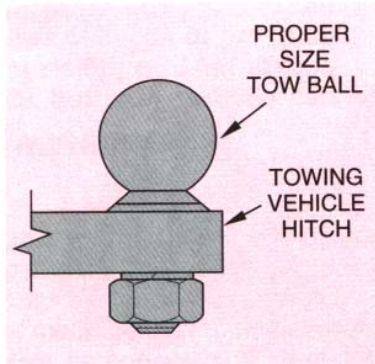
The importance of an adequate down-load on the hitch ball cannot be over-emphasized.

### ⚠ WARNING

Fish-tailing caused from improper tongue weight on the tow vehicle can cause an accident, resulting in serious injury, death, and/or property damage.

#### Trailer Hitch

There are two basic types of trailer hitches: a weight-carrying hitch and a weight-distributing hitch. A weight-carrying hitch is recommended for your Toyota Marine Sports. Before deciding which type of hitch to use, consult your automobile manufacturer on recommendations for your car or truck.



### ⚠ NOTICE

Be sure that the total weight of your trailer-boat rig does not exceed the hitch or tow vehicle's load capacity. The maximum weight it can handle is stamped on the hitch. Also, make sure the hitch ball is the correct size to match the coupler on your trailer. The correct ball diameter is marked on the trailer coupler. The hitch also should provide a place for attaching the trailer's safety cables — two rings or holes on either side of the hitch ball.

A truck or van using a step bumper as the hitch platform will need to have safety cable attachments such as eye-bolts, as well as a hitch ball, installed according to the Society of Automotive Engineers SAE J684 Standard. Installing a light or heavy-duty hitch can be a major undertaking. The hitch and its installation should meet the SAE J684 Standard. It is recommended that you have the job done by a professional. Your Toyota Marine Sports Dealer can advise you.

To insure that the boat is riding properly on the trailer supports, the trailer should be in a level posi-

6-3



## SECTION 6

tion when hitched to the tow vehicle. More importantly, if the coupler is much lower than the rear end of the trailer, it may prematurely activate the surge brakes. This can be corrected in a number of different ways. For example, you may install air-pressure adjustable shock absorbers on the tow vehicle, or switch from a weight-carrying hitch to a weight-distributing hitch. Again, consult your tow vehicle dealer.

### ⚠ WARNING

Serious injury or property damage can result if the total weight on your loaded trailer exceeds the capacity of the hitch on your tow vehicle.

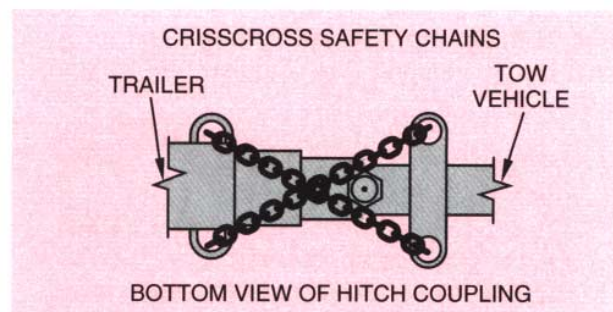
#### Safety Cables

### ⚠ WARNING

Before each trip, you should make sure that the proper safety cables are correctly attached between the towing vehicle and the trailer.

Your trailer hitch should provide a place for attaching safety cables, holes or rings on both sides of

the hitch ball. It is strongly recommended that you crisscross the cables under the trailer tongue. The cables on the left side of the trailer tongue should be attached to the hole or ring on the right side of the hitch ball, and the right cable should be attached to the hole or ring on the left side of the hitch ball. This can help prevent the trailer tongue from dropping to the road if the trailer coupler separates from the hitch ball.



The chains should be rigged as tight as possible, with just enough slack to permit tight turns. If for any reason you should find it necessary to replace a safety cable, do not substitute with any part other than a genuine Toyota Marine Sports part.

6-4



**⚠ WARNING**

Failure to properly attach the safety cables between your trailer and the tow vehicle can result in a run-away trailer if the trailer coupler becomes detached from the hitch.

**Trailer Winch Assembly**

**⚠ WARNING**

Upon each use of the winch, check for the proper ratchet operation. DO NOT use the winch if it is damaged. Seek immediate repairs.

- Maintain a firm grip on the winch handle at all times. NEVER release the handle when the ratchet lever is in the unlocked position with a load on the winch. The handle will spin violently under these conditions, which could cause personal injury.



6-5

- NEVER use the winch handle as a handle for pulling or maneuvering the entire trailer or other equipment. Never pull on the winch handle against a locked ratchet.
- NEVER exceed the rated capacity of the winch. Excessive loads may cause premature failure and result in serious personal injury.
- NEVER apply a load on the winch with the line fully extended. Keep at least three full turns of line on the reel.
- Secure properly. When the winching operation is completed, DO NOT depend on the winch to support the load.
- Inspect the condition of the winch line. Using one that is damaged or worn can result in serious personal injury or damage to the boat.
- It is not recommended to use the winch as the sole method for loading the boat onto the trailer. However, it is satisfactory in assisting in the event of engine power loss.
- Check the winch lines frequently. The strength in these can deteriorate from exposure to weather, ozone and ultraviolet light. If a line becomes frayed or worn, replace it immediately with a new one.

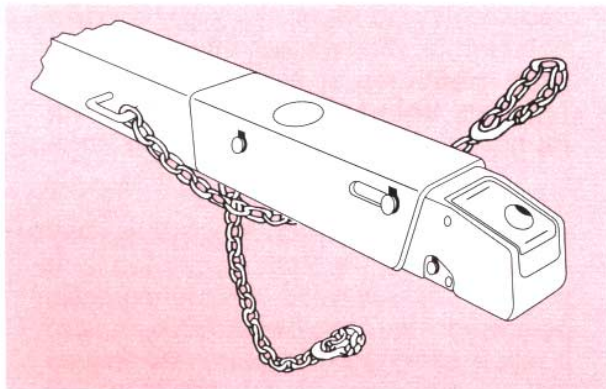


**SECTION 6**

- A heavy grease should be applied to the gears to provide a free-running drive and to minimize the effort you have to expend to crank the boat on the trailer.

**Trailer Coupling**

Your trailer coupling is designed to have the required strength when a hitch ball is in its socket. It is therefore necessary to exercise care when the trailer is disconnected from the hitch that the coupling is not subjected to any impact.



**⚠ WARNING**

Failure to properly engage the hitch ball in the coupler ball socket and securely lock the coupler latch mechanism can cause the trailer to become detached from the tow vehicle while traveling, which may cause serious injury or property damage.

The coupling should not be allowed to lay on the ground where dirt and sand can enter the socket. This can cause excessive wear when the trailer is towed again, or it can cause the locking mechanism to jam.

If the coupler becomes damaged, it must be repaired or replaced before towing. When the coupling is placed on the ball, the latch should close firmly. Keep the latch mechanism lightly oiled and clean.

**⚠ WARNING**

Failure to replace the coupler or latch assembly if either shows any evidence of damage can result in serious injury or property damage.

6-6



## Lights

A special wiring harness for connecting the trailer lights to the lighting system of the tow vehicle comes with your trailer.

Here are a few things you can do to keep your trailer lighting system in good working order:

- ✓ Be sure the white ground wire is properly connected to the trailer frame. Replace any parts that are damaged or badly worn.
- ✓ A small amount of waterproof grease on the plug contacts and light bulb bases will help to prevent rust and corrosion.
- ✓ Before every trip, check for burned-out or broken bulbs, cracked or broken light lenses, etc.
- ✓ Disconnect the lights from the tow vehicle during launching and loading operations.

### **WARNING**

**To reduce the risk of serious injury or property damage, make certain that all the trailer lights are in proper working order.**

## Wheels and Hubs

Because they are often exposed to water, trailer wheels and tires require more attention than the wheels on your family car. The three major items to check are lug nuts, lubrication and the tire pressure.

### **WARNING**

**Maintain the proper torque on the lug nuts or wheel bolts. Failure to do so may result in serious injury or property damage.**

Also, keep the wheel bearings lubricated. Failure to do so may cause bearing failure and possible wheel loss, resulting in serious injury or property damage.

## Lug Nuts/Wheel Bolts

Loose lug nuts can cause more than just an annoying wheel wobble — you could lose a wheel. Before each trip, check for loose or missing lug nuts.

When tightening the lug nuts, use the correct-sized wrench. The wrong size can round-off the lug nuts and render them useless. If you lose a lug nut, replace it promptly. Take special care to insure the

6-7



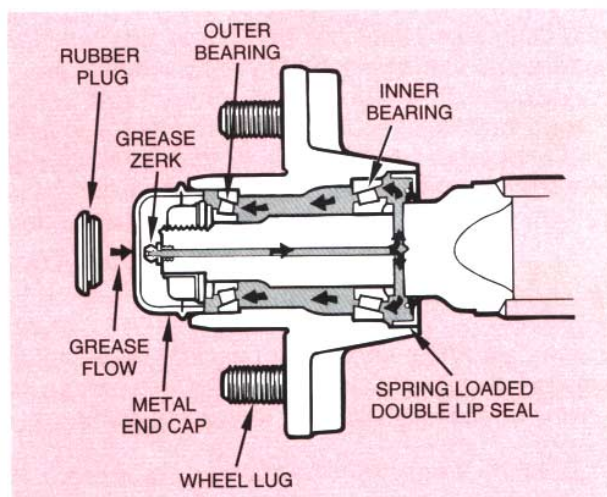
## SECTION 6

replacement lug nut is the correct type. While the threads of the lug nut may match, it may be a size that does not hold the wheel securely against the hub, even when fully tightened. Be certain a replacement lug nut is an exact match for the original. Proper torque on the lug nuts is 80 to 90 foot pounds.

## Lubrication

Your Toyota Marine Sports trailer is equipped with easy lubricating hubs. However, water invades and seeps through the smallest opening. When a warm hub is submerged in cold water, any air inside the hub will contract and draw water through the best of seals.

Your best protection against wheel bearing damage from water is to always keep your wheel assembly fully lubricated. If the wheels have been in the water, the bearings should be re-packed if the trailer remains unused for two weeks or longer. When on a trip, make it a habit to check the wheel hubs every time you stop for gas or refreshments. If the hub feels abnormally hot, the bearings should be inspected before continuing your trip.



## Tires

The most common cause of trailer tire trouble is under-inflation. It is important, therefore, that you always maintain correct air pressure, as indicated on the sticker attached to the trailer. Always check the air pressure when the tires are cold. Tires heat up and the air pressure increases after traveling only short distances. Inflate tires to the proper air pressure as noted on the tire pressure decal.

6-8



When your trailer tires become worn or damaged, replace them with new tires. Your Toyota Marine Sports Dealer can help you in this regard.

For safety and convenience, it is recommended that you always carry a spare wheel and tire.

**⚠ WARNING**

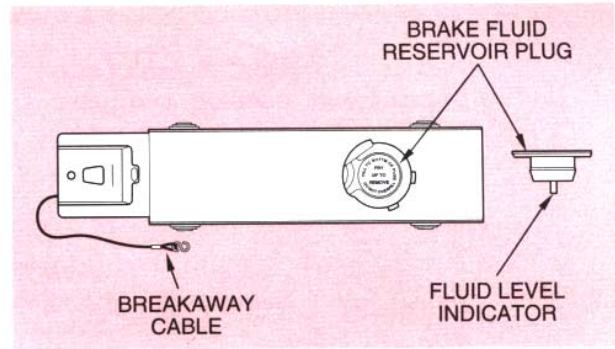
**Keep your tires properly inflated. Failure to maintain the correct pressure may result in tire failure and loss of control, resulting in serious injury or property damage.**

## Brakes

Your Toyota Marine Sports trailer is equipped with disc brakes. Like disc brakes on your car, your brakes are self adjusting and very little maintenance is needed. These brakes are also known as surge brakes. When the tow vehicle brakes are applied, the “surge” or push of the trailer toward the tow vehicle applies the brakes through a mechanism in the actuator.

A breakaway cable is connected to the tow vehicle. If the trailer accidentally becomes detached while towing, this cable activates the braking mechanism, thereby applying and holding pres-

sure trailer brakes. The breakaway mechanism shall not be used as a parking brake and must be manually reset after activation.



**⚠ WARNING**

**Before each and every towing of your trailer with surge brakes, check that brake fluid level is full. If fluid must be added on a regular basis, a leak in the brakes system is indicated. DO NOT pull trailer until cause of leak is determined and repaired.**

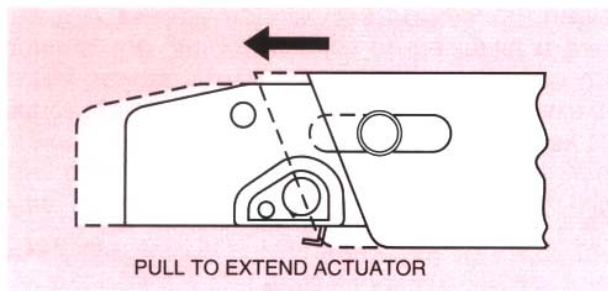
Keep the brake fluid reservoir full with DOT 3 brake fluid. Check for leaks and repair as required. See your Toyota Marine Sports Dealer for assistance.

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## SECTION 6

After parking the trailer, always manually extend the actuator to keep moisture from coming in contact and corroding the actuator master cylinder bore.



Try out your brakes before each trip. On a regular basis, have your brake linings inspected, necessary adjustments made and any damaged or worn parts replaced.

Wet brakes usually do not hold very well. If your wheels have been in water, several brake applications at slow speeds will dry them out.

**⚠ WARNING**

**Saltwater and corrosive materials are destructive to metal. To prolong the life of the braking system use under corrosive conditions, flush the actuator with a high pressure hose and oil all moving parts after the unit has dried. Re-grease wheel bearings. Failure to properly grease and maintain the actuator could weaken it and/or cause it to fail, resulting in serious injury and/or property damage**

Before towing, examine the actuator for bent parts or wear.

**⚠ WARNING**

**Trailer brakes must be maintained in good working condition. The loss of adequate braking could result in serious injury or property damage.**

Have the brakes and brake system checked yearly by your Toyota Marine Sports Dealer as part of your annual maintenance routine.

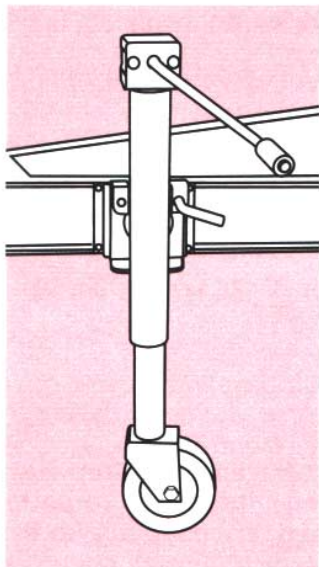
6-10



## Trailer Jack

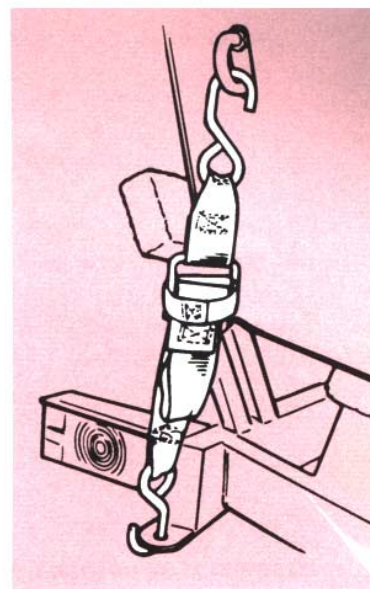
Toyota Marine Sports recommends using the jack to lift the coupling of a loaded trailer from the hitch ball and for moving the trailer about when it is disconnected from the towing vehicle. The trailer jack should be lowered to a minimum position and tilted horizontally before towing the trailer.

Like any mechanical assembly, a jack requires maintenance to function properly over a long period of time. The drive gear and the rack and pinion should be greased. The caster and wheel bearing should be oiled frequently.



## Tie-Downs

Ensuring that your boat is held securely in place on the trailer's hull support, especially when underway, is extremely important. If it is not firmly and properly secured, your boat can be damaged as it bounces against the hull supports. All the necessary tie-down hooks for holding your Toyota Marine Sports are provided on your trailer.



A separate tie-down strap is provided and should then be attached to hold the boat down to the trailer. Besides keeping your boat from sliding off the rear if the Boat Buddy latch would fail, it will keep the boat on the trailer during quick stops or minor collisions.

6-11



## SECTION 6

Check often to be sure that the rear tie-downs are securely locked in place and that they are tight enough to prevent any movement of the boat. Check by rocking the boat on the trailer. If it does not remain firmly in place on the supports, tie-downs should be tightened or re-rigged. The strength of the rear tie-downs should at least equal the trailer's empty weight.

## Hitching Up

Before trailering, avoid accidents.

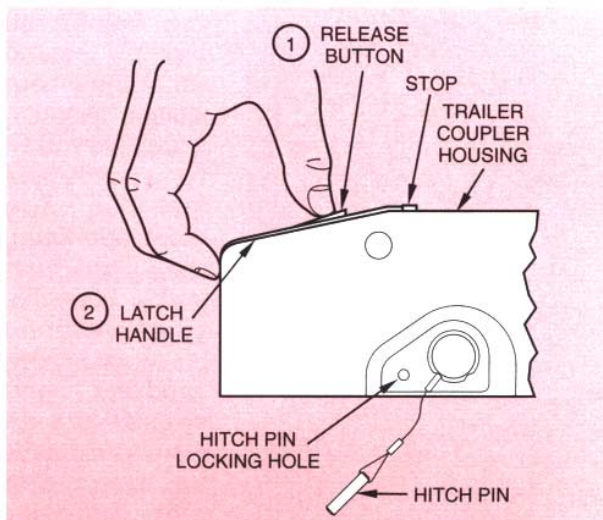
- ✓ Hitch only to the ball-size marked on the coupling.
- ✓ Be certain the ball clamp captures the ball and lever or the handwell is fully closed or tightened. Also be sure the coupler safety lock pin is in place.
- ✓ Cross the safety cables under the coupling.
- ✓ Allow only enough slack in the safety cables to handle turns.

When hitching your trailer, you should always observe each item of the "Trailer Safety Check List" found at the beginning of this section.

Hitching your trailer to your tow vehicle can be a one-man job, but it is easier if you have a second person to help you. Here are the basic steps:

Back your tow vehicle as close as possible to the trailer. It's easier — and safer — than pulling the trailer to your car or truck.

Check to be sure the latch handle is released.



6-12



Raise the front end of the trailer with your jack, position the coupler directly over the hitch ball and lower until it is all the way down over the ball.

Check under the coupling to be certain that the ball clamp is **BELOW THE BALL** and not riding on top of the ball.

Lock the coupler to the hitch ball and engage the hitch pin. To be sure it is in the locked position and securely in place, raise up on the trailer tongue. If it comes loose from the ball, unlock the coupler, raise the front of the trailer and check for obstructions in the coupler.

Make certain the jack is in the fully raised and locked position.

Your Toyota Marine Sports trailer has a surge brake breakaway cable. Attach it to the tow vehicle, making sure there is enough slack for tight turns.

Attach the safety cables.

Connect the trailer wiring harness to the lighting system of the tow vehicle. Check the operation.

## TRAILERING TECHNIQUE AND TIPS

### **WARNING**

**NO ONE is allowed to ride in the boat while it is being trailered.**

### Technique

With a boat trailer in tow, you are operating a vehicle combination that is longer, heavier and sometimes wider and taller than your car or truck. This means you will have to make a few adjustments in your normal driving practices to compensate for the difference. Here are a few tips to help you enjoy trailering:

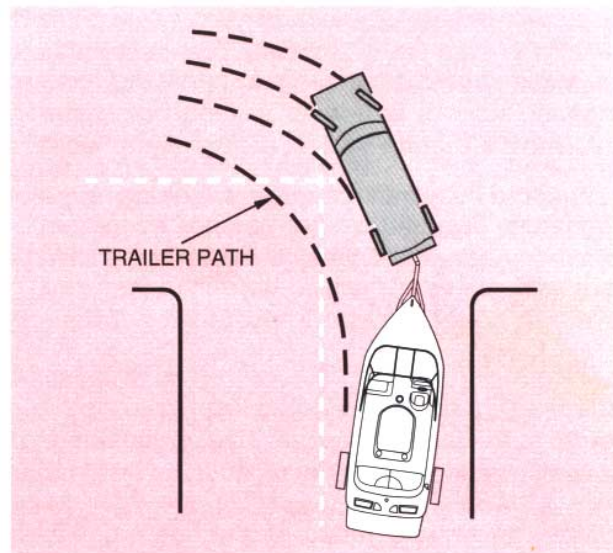
- Take a shakedown cruise. Before you make your first major trip or first trip to the lake with your trailer, make at least one short trial run to familiarize yourself with its handling characteristics. Be sure everything is working properly.
- Slow down. There is less strain on your car, trailer and boat at moderate to slow speeds. Also, many states have lower speed limits for vehicles towing trailers.

6-13



## SECTION 6

- Allow extra time and space. You'll need more of both when passing and stopping.
- Check the rear view mirrors. Install outside rear view mirrors on both sides of the tow vehicle. Make it a habit to check the mirrors at frequent intervals to be sure your trailer and boat are riding properly.
- Swing wider. Trailer wheels are closer to the inside of turns than the wheels on your car or truck. This means you should swing wider at curves and corners.
- Pass with extra care. With a trailer in tow, you'll need more time and distance to accelerate, get around a slower vehicle and return to the right lane.
- Watch the wind. Be prepared for sudden changes in air pressure and/or wind buffeting when larger vehicles pass you from either direction. Slow down a little and keep a firm hold on the steering wheel.
- Conserve fuel. Wind resistance against the boat and trailer can reduce your gas mileage significantly, especially at higher speeds.



- Avoid sudden stops and starts. Even though your trailer has brakes, a sudden stop could cause it to skid, slide or even jackknife. (Be especially careful to avoid the necessity for quick stops while turning.) Smooth, gradual starts and stops will improve your gas mileage and put less strain on your tie-downs, etc.)

6-14



- Signal your intentions. Well before you stop, turn, change lanes or pass, use your light signals to let other vehicles know what you intend to do.
- Shift to a lower gear. If your tow vehicle has a manual transmission, traveling in lower gears when going up steep hills or over sand, gravel or dirt roads will ease the load on your engine and transmission. If your tow vehicle has an overdrive gear (manual or automatic) you may get better gas mileage in a lower gear. Check the automobile Owner's Manual for their recommended towing specifications.
- Always be courteous. Make it as easy as possible for faster-moving vehicles to pass you. Remain in the slower lane and be prepared to slow down if they need extra time to return to their proper lane.
- Don't tailgate. Allow at least one combined-car-and-trailer-length between you and the car ahead for every 10 MPH you are traveling.

If a problem occurs, the general rule is to stay calm. Don't panic and don't do anything any more suddenly or violently than you have to.

A sudden bumping or fish-tailing may be a flat tire. Don't jam on the brakes or mash the accelerator to try to drive out of it. Stop slowly and in as straight a line as possible. If conditions permit, allow your rig to coast to a very slow speed and try to avoid braking, except when your wheels are straight ahead and the trailer and your tow vehicle are in line.

If your trailer begins to fish-tail as you accelerate to highway speed, back off a little and it should cease. If it begins again as you accelerate, stop and check your load. If it is not evenly distributed side-to-side, or it is too far back so that the hitch load becomes too low, the result can be this condition. Re-distribute the load before continuing.

### Tips

- The jack and lug wrench that came with your tow vehicle may also work on your trailer, but don't count on it! Check to make sure.
- Your trailer will look better and last longer if you rinse it off with fresh water several times a year. If you boat in brackish or salt water, the trailer should be rinsed thoroughly after every trip. An annual washing with a mild detergent and waxing with an auto wax also will help to keep your trailer bright and clean.

6-15



## SECTION 6

- Make up a special Boating Kit and carry it with you on all trips. The kit should include a spare wheel and tire, lug wrench, wheel chocks, bearing grease, spare line (for tie-downs and winch) extra lights, wheel bearings and road flares.
- Some insurance policies do not provide coverage when towing a trailer. Check your policy, or call your insurance agent to be sure you are fully covered.

## LAUNCHING

Every Toyota Marine Sports owner develops their own favorite launching technique. Until you do, here are a few helpful tips:

- Check the ramp first. Whether you're launching from an unimproved or surfaced ramp, check it out before starting your launching procedure. How steep is it? Is the surface firm enough to support the weight of the trailer rig and tow vehicle? Is it wide enough? How deep is the water at the end of the ramp?

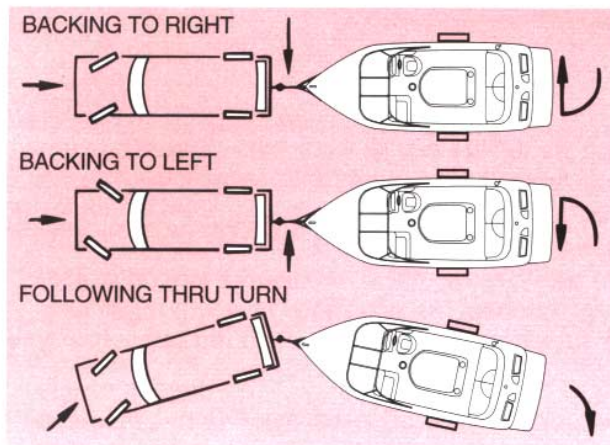
### CAUTION

**Some surfaced ramps become very slippery when wet.**

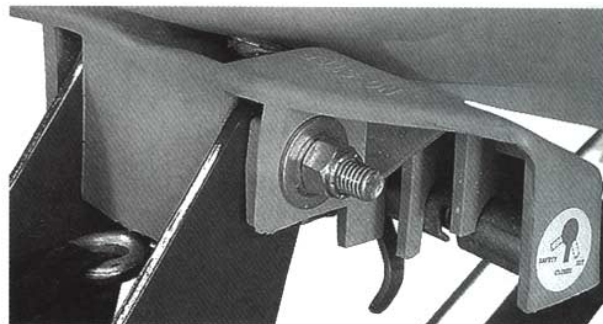
- Prepare for launching. Install your drain plugs and detach the trailer tie-downs.
- Back your trailer down the ramp. If possible, have someone stand to one side of the ramp to direct you. Backing up a trailer can be tricky. A good way to simplify the procedure is to grasp the steering wheel with one hand at its lowest point (6 o'clock). When you want the trailer to go right, move your hand on the wheel to the right; to make the trailer go left, move your hand to the left.
- Back your trailer into the water until the trailer wheel well is about two inches above the top of the water surface. Set the parking break and shift into park (automatic transmission) or first gear (manual transmission). Shut off the engine. Unlock the tie-downs and winch hook; then back the boat off the trailer.

6-16





To re-load the boat on the trailer, simply reverse the above procedure. Your Toyota trailer is equipped with a quick latch system to temporarily connect the boat to the trailer without the need of connecting the winch strap. Before backing the trailer into the water, move the lever on the quick latch to the "set" position. Back the trailer into the water, and drive your boat on the trailer at a slow pace. Before loading, we recommend that you clean any dirt or sand off the rollers and bunks. Sand on these can abrade the boat's bottom while trailering.



When the bow of the boat touches the quick latch, the spring-loaded pin will move to the "closed" position through the bow eye. After removing the boat from the water, set the quick latch to the "safety" position.

### **WARNING**

**The quick latch is designed for temporary removal of the boat from the water and not for on-the-road towing. Using the quick latch for towing may damage the boat or the latch.**

Be certain all the boat tie-downs are properly fastened before departing from the launching ramp area.

6-17



## **SECTION 6**

### **CAUTION**

**Wet brakes may not hold. A few braking applications at a slow speed will help dry them out.**

## **STORAGE**

When your boat and trailer will not be in use for several months, you can help it continue to give you good performance by taking the following steps:

- If at all possible, park your boat-trailer rig in a protected area such as a garage, carport or similar shelter.
- If you must park the trailer outdoors, install a boat cover that is tight enough for adequate protection but not air-tight.
- Service or re-pack the wheel bearings.
- Jack up the trailer and place blocks under the trailer frame to take most of the weight off the trailer springs and tires.
- Loosen the tie-downs and winch strap, but be sure the boat is still resting properly on the hull supports.
- Remove the drain plug and elevate the trailer tongue slightly (just an inch or two) to allow water to drain out so the boat will be dry. If it is unsecured, tie the plug to something obvious-like the steering wheel-so you will remember to replace the drain plug before your next outing!
- While the trailer is in storage, this is a good time to touch up rust spots, nicks and chips. Replace damaged tie-downs, winch straps, wiring, etc.
- Lubricate moving parts such as the rollers and winch, as well as the ball coupler.
- Tighten any loose nuts and bolts.



**TROUBLESHOOTING**

The following charts will assist you in finding and correcting minor mechanical and electrical problems with your boat. Problems are listed in the order of the most-likely event to the least-likely.

To correct a problem, first determine what the problem is. Start with the first cause and eliminate

the possibility of each until the problem is corrected. Because of the specialized skill and tools needed to correct major issues, we have not included that information. If you suspect a problem not addressed here, please contact your Toyota Marine Sports Dealer.

Symptom	Possible Cause	Solution
Engine will not turn over.	Battery switch Off. Safety switch activated. Throttle/shift control in gear. Main circuit breaker open. Battery terminals corroded. Battery weak or worn out. Loose or corroded battery wiring connections. Defective starter solenoid.	Turn battery switch to the "ON" position. Connect the safety switch tether. Shift to neutral. Re-set the circuit breaker. Clean the battery terminals. Charge or replace the battery. Clean and tighten the battery wiring connections. Replace starter solenoid.

7-1

**SECTION 7**

Symptom	Possible Cause	Solution
Engine will not turn over. (Cont.)	Defective neutral safety switch. Defective starter motor. Defective ignition switch or wiring. Water in the engine.	Replace the neutral safety switch. Replace the starter motor. Replace the ignition switch or repair the wiring. Remove the spark plugs and look for water or gas in the cylinders. See your Dealer.
Engine turns over, but will not start.	No fuel to the engine. No fuel in the tank. Fuel filter(s) clogged. Contaminated fuel. Weak or shorted ignition coil(s).	Turn the fuel valve to the "ON" position. Fill the fuel tank. Replace fuel filter. Replace fuel and filter. Replace the ignition coil(s). See your Dealer.
Engine is hard to start.	Flooded engine. Plugged flame arrestor. Fouled spark plugs.	Start the engine at full throttle and back off immediately. Clean the flame arrestor. Replace the spark plugs.

7-2



	Battery cables loose or corroded. Weak battery. Ignition problems.	Clean and tighten the battery cables. Charge or replace the battery. See your Dealer.
Engine misses or idles rough.	Fouled spark plugs. Plugged PCV valve. Weak ignition coil(s). Vacuum leak.	Replace the spark plugs. Replace the PCV valve. Replace the ignition coil(s). See your Dealer.
Poor boat performance.	Fouled spark plugs. Contaminated fuel. Plugged flame arrestor. Weak ignition coil(s). Fuel filter clogged. Ignition problems.	Replace the spark plugs. Replace the fuel and filter. Clean the flame arrestor. Replace the ignition coil(s). Replace the fuel filter. See your Dealer.
Poor gas mileage.	Fouled spark plugs. Plugged flame arrestor. Inefficient driving habits.  Plugged PCV valve. Ignition problems.	Replace the spark plugs. Clean the flame arrestor. Plane the boat quickly, then slow down to desired speed. Replace the PCV valve. See your Dealer.

### 7-3



## SECTION 7

Symptom	Possible Cause	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 detent ball.  Replace the cable(s). See your Dealer.
Steering problems.	Corroded cable. Rudder worn.	Clean and lubricate the cable. See your Dealer.
Excessive vibration.	Fouled propeller.  Damaged propeller. Misaligned propeller shaft coupling.  Bent propeller shaft.	Remove objects from the propeller shaft and rudder. Replace the propeller. Check the alignment. See your Dealer for proper realignment.  See your Dealer.



Electrical problems.	<p>Open circuit breaker or blown fuse.</p> <p>Loose wiring connections or corrosion.</p> <p>Defective sending unit.</p> <p>Shorted wiring harness.</p> <p>Defective switch or gauge.</p>	<p>Reset the circuit breaker or replace the fuse.</p> <p>Clean and tighten wiring connections.</p> <p>Replace the sending unit.</p> <p>Repair the wiring harness. See your Dealer.</p> <p>See your Dealer.</p>
No speedometer reading.	<p>Disconnected, kinked or plugged tubing.</p> <p>Plugged pitot pick-up.</p> <p>Defective pitot pick-up.</p> <p>Defective speedometer.</p>	<p>Repair or replace the tubing.</p> <p>Remove objects from pitot pick-up.</p> <p>Replace pitot pick-up.</p> <p>Replace the speedometer.</p>
Incorrect speedometer reading.	<p>Blocked pitot gauge.</p> <p>Water in the tubing.</p> <p>Improper calibration.</p> <p>Defective speedometer.</p>	<p>Remove the blockage.</p> <p>Disconnect the tubing at the speedometer and blow out the tubing. Tighten nut finger snug, then 1/4-turn more.</p> <p>Recalibrate the speedometer.</p> <p>Replace the speedometer.</p>

7-5



## Section 8 OPTIONS

### Bimini Top

The bimini top is attached with two thumbscrews on each side of the windshield. The center brace (item 1, Figure 8-1) is extended to meet the aft brace (item 2) and locked in position with a pin (item 3). The center brace is then extended until the lock button (item 4) engages.

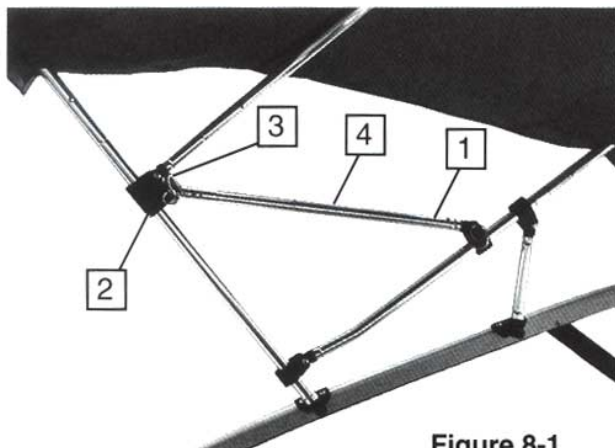


Figure 8-1

### WARNING

**Use of the bimini top can increase the risk of CO exposure. Refer to Section I for Safety Warning information.**

The bimini top can be stowed in three pieces in the transom storage locker. Do not tow the boat on the trailer with the top in position. The top has a zippered opening to accommodate extended ski pylons. To clean the top, use a mild soap and water solution with a stiff bristle brush and rinse with fresh water. Allow to air dry thoroughly.

### Bow Cover

The bow cover for open bow models snaps in position. Locate the center bow portion of the cover and start at the bow. Work the snaps alternately from port to starboard one at a time to prevent over-stressing the fabric. The last snaps are attached to the windshield door.

The bow cover can be stowed beneath one of the bow seats. To clean the top, use a mild soap and water solution with a stiff bristle brush and rinse with fresh water. Allow to air dry thoroughly.



## CD Changer With Amp

The 10 disc CD Changer is mounted below the operator dash panel and the amplifier is mounted in the walk through storage area. Although the CD Changer and Amplifier were chosen for durability and weather resistance, the demands of the harsh marine environment demand extra caution to prevent damage from the sun, weather and shock. Use caution to keep the CD Changer and amplifier dry and out of direct sunlight. Remove the discs when not in use. Please refer to the CD Changer and amplifier user's manuals for more information.

## Heater

The Heater uses water heated by the engine and passes it through a heater core. An electric fan blows through the core, where the air is heated, and routed to the vents. There are three vents, one at the top of the dashboard, one near the driver's feet (Figure 8-2) and one "pull out" for the passengers.

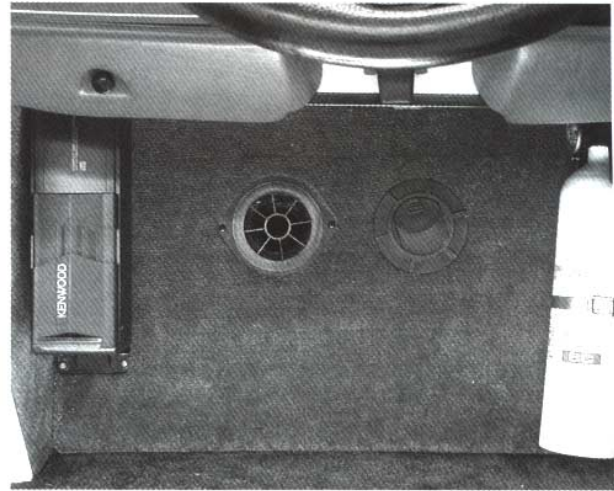


Figure 8-2

To operate the heater, push the heater switch located in the dashboard switch panel once for LOW, twice for MEDIUM, three times for HIGH and four times for OFF. The Pull Out vent extends approximately eight feet. The driver's vents are adjustable.

8-1



## SECTION 8

### Jump Seats

Jump seats are mounted to each side of engine box. Place the seat in position in the bracket and secure with one thumbscrew.

### Mooring Cover

The mooring cover is designed to keep rain and debris from entering the boat when it is not in use. Do not tow the boat on the trailer when the cover is in place. To clean the cover, use a mild soap and water solution with a stiff bristle brush and rinse with fresh water. Allow to air dry thoroughly.

### Observation Seat Extension

The Observation Seat Extension is mounted to the side of the observation seat. Place the seat in position in the brackets and secure with two thumbscrews.

### Transom Shower

The transom shower uses water from the engine cooling system raw water supply. A small electric pump pressurizes the showerhead and draws from

the inlet (cool) and outlet (hot) sides of the cooling system. To operate the shower, the engine must be running and the dash switch activated. A shut-off valve (item 1, Figure 8-3) on handle will switch the pump On and OFF. Use the red (hot, 2) and blue (cold, 3) knobs to control water temperature.

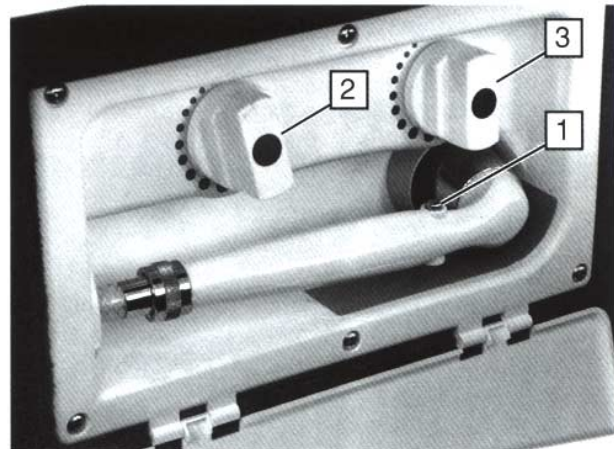


Figure 8-3

8-2



## Stereo

The dash mounted AM/FM/CD Stereo is protected from the elements with a spring loaded weather cover and has removable faceplate for security. To operate the Stereo the engine must be running; or, when the engine is not running, the key switch must be in the Accessory (ACC) position. Please refer to the Stereo user's manual for more information.

## Fresh Water Cooling

The Fresh Water (Closed) cooling system is self-contained, similar to an automobile. Coolant circulates through the engine where it absorbs heat and travels through one side of a heat exchanger. A raw water pump takes water from the outside and pumps it to the opposite side of the heat exchanger. The heat in the coolant is transferred to the raw water where it is discharged outside the boat.

The coolant level should be checked weekly; the expansion tank (Figure 8-4) will be approximately 2/3 full with a warm engine. If the level is low, add a 50/50 mixture of Ethylene glycol (Toyota Specification Type C) and distilled water. The coolant should be replaced every three years.

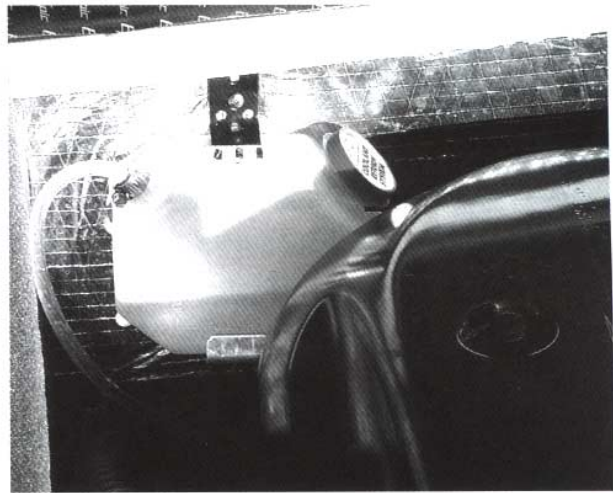


Figure 8-4

## Docking Lights

The Docking Lights should only be used during slow speed docking maneuvers. The lights are activated by a switch on the dashboard switch panel. Bulb access is through the lens cover outside the boat.

8-3



## Section 9

# BOAT AND ENGINE SPECIFICATIONS

## ENGINE

Width Includes Exhaust Manifolds .....	26.94 Inches (682.4 cm)
Displacement .....	4.0 Liter (242 Cubic Inches)
Bore x Stroke .....	3.44 x 3.25 Inches (87.5 x 82.5 mm)
Compression Ratio .....	10.5 to 1
Maximum Flow of Fuel Pump .....	150 LPH (39.6 GPH)
Maximum Output SAE-NET .....	300 HP @ 6000 RPM (224 KW @ 6000 RPM)
Idle RPM .....	700 - 800
Horsepower Rating Standard .....	SAE J 1228
Power to Weight Ratio .....	0.53 lbs Per Horsepower
Maximum Torque SAE-NET .....	310 lb-ft @ 4200 RPM (Approx. 400 NM)
Ignition System .....	Direct Ignition System (DIS) No Distributor
Spark Plugs .....	Iridium and Platinum Tipped (1500 Hour Life)
Fuel Octane Requirement .....	95 RON (92 US Rating)



Alternator .....	960 Watts (BOA)
Starter .....	2.7 HP (2.0 KW)
Engine Paint .....	Epoxy Based, Anti-Corrosion Primer w/ Acrylic
Cooling System .....	Raw Water (Standard) Fresh Water Half System as an Option
Filter / Water Separator .....	In Line Type / Replaceable Fuel Element
Arrangement / No. of Cylinders .....	V-90 Deg. / 8 Cylinders
Valve Mechanism .....	32 Valve Twin DOHC, Belt and Gear Driven
Combustion Chamber Type .....	Pentroof (Spark Plug in Center Between Valve)
Manifold-Exhaust .....	Stainless Steel / Full Water Jackets
Fuel System .....	All Type, Sequential Multiport Fuel Injection Intake Air Assisted Fuel Injectors
Weight with / without Transmission .....	628 lbs (285 kg) / 566 lbs (257 kg) without Fluids
Length with / without Transmission .....	43.52 in. (1005.5 cm / 31.52 in. (800.5 cm)
Length to End of Exhaust Riser .....	36.1 in. (917.0 cm)
Height Crankshaft Centerline to Top of Raincap .....	19.8 in. (503.0 cm)
Height Overall .....	28.26 in. (717.7 cm)

## 9-1



## SECTION 9

### TRANSMISSION (In-Line)

Manufacturer .....	Hurth Marine Gear
Model .....	HSW 450 A2
Shaft Down Angle .....	7 Degrees
Ratio .....	1.26:1
Weight .....	77 lbs (35 kg) without Fluid

### TRANSMISSION (V-Drive)

Manufacturer .....	Walters Machine Co.
Model .....	RV-26D
Shaft Down Angle .....	20°V
Weight .....	90 lbs. (41 kg)



## BOAT

### EPIC 21

#### Specifications

Deadrise .....	7 degrees
Length .....	20' 10"
Beam .....	90"
Fuel Capacity .....	27 gallon
Seating Capacity .....	6
Cockpit .....	10' 0"
Freeboard .....	24"
Dry Weight .....	2500 lbs
Engine (Toyota VT300i) .....	4.0 liter
Propeller .....	13 x 13 RH4B
Capacity (Persons and Gear) .....	1480 lbs

#### Construction

All Fiberglass Construction with Ceramic Core  
Fore-Deck Stiffener  
Integrated Stringer w/ Liner System  
Aluminum Engine Frame and Floor Panels  
Integrated Intake and Exhaust Ventilation  
Double Foam Upholstery  
Precision Machined Underwater Gear  
Stainless Steel Runner Post  
Packing-Less Rudder Port  
Revolutionary Hull to Deck Bonding Flange

#### Wake Characteristics\*

Slalom .....	WC
Trick .....	WC
Jump .....	WC
Wakeboard .....	WC
Barefoot .....	WC

\* AWSA Classifications: WC=World Class, TC=Tournament Class, R=Recreational

9-3



## SECTION 9

### EPIC 22 & X22

#### Specifications

Deadrise .....	7 degrees
Length .....	21' 8"
Beam .....	93"
Fuel Capacity .....	27 gallon
Seating Capacity .....	9
Cockpit .....	10' 6"
Freeboard .....	26.5"
Dry Weight .....	2800 lbs
Engine (Toyota VT300i) .....	4.0 liter
Propeller .....	13 x 13 LH 3B

#### Construction

All Fiberglass Construction with Ceramic Core  
Fore-Deck Stiffener  
Integrated Stringer w/ Liner System  
Aluminum Engine Frame and Floor Panels  
Precision Machined Underwater Gear  
Stainless Steel Runner Post  
Packing-Less Rudder Port  
Revolutionary Hull to Deck Bonding Flange  
Integrated Intake and Exhaust Ventilation  
Double Foam Upholstery

#### Wake Characteristics\*

Slalom .....	TC
Trick .....	TC
Jump .....	TC
Wakeboard .....	TC
Barefoot .....	R

\*Predicted AWSA Classifications (not yet rated): WC=World Class, TC=Tournament Class, R=Recreational

9-4



## EPIC S22 V-Drive

### Specifications

Deadrise .....	32° @ entry
.....	11° @ transom
Length.....	21' 7"
Beam .....	93"
Draft.....	24"
Height above Waterline.....	26"
Fuel Capacity .....	42 gallons
Seating Capacity .....	10
Weight Capacity (passengers & gear)	1700 lbs
Cockpit.....	7' 6"
Freeboard.....	26"
Dry Weight .....	3100 lbs
Engine (Toyota VT300I) .....	4.0 liter V8
Propeller .....	13 x 13 LH 3B

### Construction

All Fiberglass construction with Ceramic Core  
Fore-Deck Stiffener  
Integrated Stringer w/Liner System  
Aluminum Engine Frame with Floor Panels  
Precision Machined Underwater Gear  
Stainless Steel Runner Post  
Packing-Less Rudder Port  
Revolutionary Hull to Deck Bonding Flange  
Integrated Intake and Exhaust Ventilation  
Double Foam Upholstery

### Wake Characteristics\*

Slalom .....	TC
Trick .....	TC
Jump .....	TC
Wakeboard.....	TC
Barefoot.....	R

\*Predicted AWSA Classifications (not yet rated): WC=World Class, TC=Tournament Class, R=Recreational

9-5



## SECTION 9

## Epic X22 Wake Board

### Specifications

Deadrise .....	9° @ transom
Length.....	21' 8"
Beam .....	93"
Draft .....	
Height above Waterline .....	
Fuel Capacity .....	27 gallons
Seating Capacity .....	9
Weight Capacity (passengers & gear)	1600 lbs
Cockpit.....	10' 6"
Freeboard.....	26.5"
Dry Weight .....	2950 lbs
Engine (Toyota VT300I) .....	4.0 liter V8
Propeller	

### Construction

All Fiberglass construction with Ceramic Core  
Fore-Deck Stiffener  
Integrated Stringer w/Liner System  
Aluminum Engine Frame with Floor Panels  
Precision Machined Underwater Gear  
Stainless Steel Runner Post  
Packing-Less Rudder Port  
Revolutionary Hull to Deck Bonding Flange  
Integrated Intake and Exhaust Ventilation  
Double Foam Upholstery



# TOYOTA MARINE SPORTS LIMITED WARRANTY

## BASIC TERMS

Toyota Marine Sports, a division of Toyota Motor Sales, U.S.A., Inc., warrants to the original retail purchaser of each new Toyota Marine Sports boat or trailer, that it will be free from defects in material and workmanship when it is used under normal conditions and properly maintained during the warranty period. During the warranty period, any covered repairs or replacement of parts required due to defects in material or workmanship will be performed at no charge to the original retail purchaser at any authorized Toyota Marine Sports Dealer during normal business hours. Parts replacements will utilize genuine new or remanufactured Toyota Marine Sports parts, unless otherwise specified by Toyota Marine Sports. Repairs and replacement parts used in covered repairs are similarly warranted for the remaining balance of the applicable warranty period. These basic terms are subject to the remainder of the terms and conditions of this Limited Warranty.

## WARRANTY BEGINS

The Warranty period begins on the earlier of (a) the date the new Toyota Marine Sports boat or trailer is delivered to the first retail purchaser or (b) the date it is first used

as a commercial, demonstrator, lease or company boat or trailer. This date will be referred to as the "in-service date."

## HULL LIMITED WARRANTY

### NON-COMMERCIAL, RECREATIONAL USE

The new boat hull, deck, liner, and stringers are warranted, as above, to be free from structural defects for as long as the original retail purchaser owns the boat and the boat is used only for non-commercial, recreational purposes. During the first five years from the in-service date of such boat in the event the boat is sold by the original retail purchaser or any subsequent purchaser, the remaining balance of this limited hull warranty is fully transferable to subsequent non-commercial, recreational use owners of the boat, at no cost, provided that within ten days of each transfer:

1. The boat is inspected and approved as to condition by an authorized Toyota Marine Sports Dealer, and
2. A properly completed warranty transfer form is submitted to Toyota Marine Sports.

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## SECTION 10

If such a boat is at any time used for commercial use or purposes, then the terms and conditions of COMMERCIAL USE, set forth below, will apply.

### COMMERCIAL USE

The new boat hull, deck, liner and stringers are warranted, as above, to be free from structural defects for a period of 12 months or 500 hours of operation, whichever occurs first, from the in-service date if the boat is used for commercial purposes. COMMERCIAL USE OR PURPOSE is defined as including, but not being limited to, a boat used to produce income from rental, charter, paid transportation or hire activities, use by a ski club or ski school, or use by a professional water sports association in shows or training/demonstration/tournament activities. THIS WARRANTY IS NOT TRANSFERABLE.

## EXCLUSIONS AND LIMITATIONS OF HULL LIMITED WARRANTY

GELCOAT defects, including, but not limited to blemishes, glazing, spider cracking, fading, discoloration, blistering or bubbling are not structural defects and are excluded from all warranties herein. Further, this warranty does not apply to any components which are fastened to or applied to the hull, deck, liner or stringer system, and same are specifically excluded from all warranties. The terms and provisions of the section **WHAT IS NOT COVERED BY THE TOYOTA MARINE SPORTS NEW BOAT AND TRAILER LIMITED WARRANTY** further limit this warranty.

tem, and same are specifically excluded from all warranties. The terms and provisions of the section **WHAT IS NOT COVERED BY THE TOYOTA MARINE SPORTS NEW BOAT AND TRAILER LIMITED WARRANTY** further limit this warranty.

## ENGINE, TRANSMISSION, ACCESSORIES LIMITED WARRANTY

The new boat engine, transmission, and all of its original equipment parts, components, and accessories provided by Toyota Marine Sports with the new boat are warranted, as above, to be free from defects in materials or workmanship for (a) a period of 36 months from the in-service date for non-commercial, recreational purposes or (b) a period of 12 months or 500 hours of operation (whichever occurs first) from the in-service date if the boat is ever used for any commercial use or purpose. During the warranty period, the remaining balance of this limited warranty is FULLY TRANSFERABLE only by a purchaser for non-commercial, recreational purposes to subsequent non-commercial, recreational purposes owners of said boat. Such warranty transfers will be done at no cost, but a properly completed warranty transfer form must be submitted to Toyota Marine Sports within ten days of such transfer.

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## EXCLUSIONS OF ENGINE, TRANSMISSION, ACCESSORIES LIMITED WARRANTY

BOAT BATTERIES ARE EXCLUDED from any warranty from Toyota Marine Sports, since batteries are separately warranted by the battery manufacturer. The terms and provisions of the section **WHAT IS NOT COVERED BY THE TOYOTA MARINE SPORTS NEW BOAT AND TRAILER LIMITED WARRANTY** further limit this warranty.

## TRAILER LIMITED WARRANTY

All Toyota Marine Sports trailers, including all original equipment components, parts and accessories installed by Toyota Marine Sports are warranted, as above, for a period of 36 months from the in-service date for non-commercial, recreational purposes or for a period of 12 months from the in-service date if the trailer is ever used for commercial use or purpose. During this warranty period, the balance of this limited warranty is FULLY TRANSFERABLE only by a purchaser for non-commercial, recreational purposes to subsequent non-commercial, recreational purposes owners of said trailers, at no cost, to subsequent owners, provided that within ten days of such transfer:

1. The trailer is inspected and approved as to condition by an authorized Toyota Marine Sports Dealer, and

2. A properly completed warranty transfer form is submitted to Toyota Marine Sports.

## EXCLUSIONS OF TRAILER LIMITED WARRANTY

TRAILER TIRES ARE EXCLUDED from any warranty from Toyota Marine Sports, since same are separately warranted by the tire manufacturer. Also excluded is any damage to the trailer's backing plates, brake components, brake drums, or wheel bearings caused by lack of proper maintenance (maintenance requirements are outlined in the trailer owner's manual) and rusting or corrosion of trailer frame or components due to use in salt water. The terms and provisions of the section **WHAT IS NOT COVERED BY THE TOYOTA MARINE SPORTS NEW BOAT AND TRAILER LIMITED WARRANTY** further limit this warranty.

## IMPORTANT WARRANTY AND PRODUCT USAGE INFORMATION

Shall a covered repair or parts replacement be necessary, the owner should take the boat or trailer, at owner's expense, to any authorized Toyota Marine Sports Dealer during the applicable warranty period and provide that Dealer with any necessary documentation needed to establish warranty coverage. In cases where the owner is unsure as to the location of the closest Toyota Marine Sports Dealer, please call Toyota Marine Sports at (407) 370-7000 or Toyota Marine Sports Dealer Locator toll-free number at 1-800-975 EPIC.

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## SECTION 10

Delivery of the product to a Dealer shall be at owner's expense.

Warranty coverage may be delayed if Warranty Registration Information is not on file with Toyota Marine Sports. Warranty Registration is a service provided by your delivering Dealer after completion of a formal Quality Delivery Service. Copies of both the Warranty Registration and Quality Delivery Service documents should be provided to you at delivery.

The operation, maintenance and care of your Toyota Marine Sports product, in accordance with the instructions and requirements listed in your Owner's Manual and this Limited Warranty are your responsibility; failure to meet those requirements will void this Limited Warranty. You are responsible for keeping records of all maintenance performed, since you may be required to establish proof of proper maintenance for warranty coverage.

This warranty is only valid for boats and trailers sold and serviced in the continental United States and Canada. In some areas, there may be additional monetary charges levied by local governments and their respective agencies including, but not limited to, freight surcharges, insurance, permits/license requirements, taxes or import duties. These charges are not covered under this warranty and are the sole responsibility of the retail purchaser and/or owner.

## WHAT IS NOT COVERED BY THE TOYOTA MARINE SPORTS NEW BOAT AND TRAILER LIMITED WARRANTY

- Normal maintenance items and/or routine adjustments and services, including all required maintenance listed in the Toyota Marine Sports Boat Owner's Manual.
- Dealer installed or other add-on (after-market) parts and accessories.
- Premium or overtime labor costs and parts shipping charges in excess of those which are normal and customary, i.e. in excess of what Toyota Marine Sports pays its authorized Toyota Marine Sports Dealer for such work pursuant to the Dealer Warranty Manual.
- Charges for boat haul-out, launching, towing, salvage, storage, fuel or lubricant usage, dealer travel time, rental costs of any type, and any other incidental or consequential damages or expenses including loss of use of the boat or trailer, loss of income, loss of time, or inconvenience. Some states or governmental authorities do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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- Use of a propeller size or type not specified for that model boat or modifications, required by high altitude boat operation unless pre-approved by Toyota Marine Sports in writing.
- Damage caused by prolonged storage, mildew, improper winterizing procedures, improper mooring or docking, improper trailering, improper mating of boat to trailer, improper lifting or improper cradling.
- Windshield glass, tires, batteries and trailer disc brake pads/linings.
- Water entry into engine cylinders through the exhaust or air intake systems.
- Damage to carpeting and punctures, tears, discoloration, fading, physical abuse of boat upholstery, dash and/or interior padded components or canvas.
- Boats used in racing, speed competitions or for non sales-related dealer demonstrations, or boats used in governmental, military or other similar applications.
- Repairs required because of misuse, negligence, modifications, disconnections, alteration, improper repair or adjustment, grounding, improper salvage operations, striking of underwater hazards, overloading, accidents, add-on parts, overspeeding, overfueling or other abnormal operations.
- Repairs resulting from lack of proper maintenance, operation or care of the products (including failure to comply with the instructions in the Owner's Manual);
- or sinking, fires, fuel system contamination, use of improper or incorrect octane level fuel, use of fuels containing alcohol; use of improper or incorrect oils, lubricants, chemical additives, polishes, cleaners and bottom paints.
- Damage or warranty noncompliance caused by defective replacement parts or replacement parts not equivalent to original equipment parts.
- Trailer repairs resulting from corrosion/rusting caused by use in salt water and/or water entry into the drum/axle assembly or electrical components of the trailer and/or rust formation on trailer frame and component parts caused by failure to perform normal and customary maintenance of a painted steel exposed to water/moisture. (SEE TRAILER OWNER'S MANUAL FOR TRAILER MAINTENANCE RECOMMENDATIONS)
- Colorfastness of finishes, chrome-plated, anodized or aluminum finishes.
- Cosmetic conditions or surface corrosion from stone chips or scratches.
- Damage or surface corrosion resulting from the environment, such as acid rain, airborne fallout, polluted water, salt, hail, windstorms, lightning, floods and other Acts of Nature.
- Normal noise, vibration, wear, tear or deterioration.
- State and local taxes (or the equivalent) due on warranty repairs.

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### SECTION 10

- Failure of the boat to meet any specific performance standards.

#### OTHER TERMS, CONDITIONS AND EXCLUSIONS

Toyota Marine Sports reserves the right at any time and without notice to discontinue models or to make changes to products manufactured or sold by Toyota Marine Sports without incurring any obligation to make the same or similar changes on products previously manufactured or sold.

**THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER ORAL OR WRITTEN, EXPRESSED OR IMPLIED. NO IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY SHALL APPLY TO THE EXTENT ALLOWED BY LAW, AND OTHERWISE ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE APPLICABLE TO THIS BOAT OR TRAILER IS LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. TOYOTA MARINE SPORTS DOES NOT AUTHORIZE ANY CORPORATION, ENTITY, DEALER OR INDIVIDUAL TO CREATE FOR IT ANY OBLIGATIONS, LIABILITIES OR OTHER WARRANTIES IN CONNECTION WITH THESE PRODUCTS. ALL ITEMS REPLACED UNDER THIS WAR-**

#### **RANTY BECOME THE PROPERTY OF TOYOTA MARINE SPORTS.**

**TOYOTA MARINE SPORTS SHALL NOT BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, SPECIAL OR OTHER SIMILAR DAMAGES ARISING OUT OF ANY BREACH OF THIS WRITTEN OR ANY IMPLIED WARRANTY.**

**TOYOTA MARINE SPORTS SHALL NOT BE LIABLE FOR ANY DAMAGES CAUSED BY DELAY IN DELIVERY OR FURNISHING ANY PRODUCT, REPAIR AND/OR SERVICE. TOYOTA MARINE SPORTS' OBLIGATION IS LIMITED TO ITS OPTION OF REPAIRING OR REPLACING A DEFECTIVE PART OR REFUNDING TO THE OWNER THE PURCHASE PRICE AS NECESSARY TO REMEDY ANY DEFECT IN MATERIALS OR WORKMANSHIP AS COVERED BY THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY.**

**SOME STATES OR COUNTRIES DO NOT ALLOW LIMITATIONS ON WARRANTIES, OR ON REMEDIES FOR BREACH. IN SUCH AREAS, SOME OF THE ABOVE LIMITATIONS MAY NOT APPLY.**

**ANY WARRANTY NOT SPECIFICALLY SET FORTH ABOVE, IF ADJUDICATED TO EXIST, SHALL BE FOR ONE YEAR FROM THE IN-SERVICE DATE.**



THIS WARRANTY GIVES OWNERS SPECIFIC LEGAL RIGHTS AND YOU MAY HAVE OTHER LEGAL RIGHTS WHICH VARY FROM AREA TO AREA.

ALL CORRESPONDENCE INVOLVING REPAIRS CLAIMED UNDER THIS WARRANTY OR ANY OTHER WARRANTY MATTER SHOULD BE DIRECTED TO:

TOYOTA MARINE SPORTS  
ATTN: SERVICE MANAGER  
7658 MUNICIPAL DRIVE  
ORLANDO, FLORIDA 32819  
(407) 370-7000

## **TOYOTA MARINE SPORTS REPLACEMENT PARTS AND ACCESSORIES LIMITED WARRANTY**

### **WHAT IS WARRANTED**

Toyota Marine Sports, a division of Toyota Motor Sales, U.S.A., Inc. warrants to the original retail purchaser, that the new or remanufactured part or accessory with which this warranty is furnished will be repaired or exchanged during the warranty period at no charge, due to defects in material or workmanship (except for exclusions specified hereunder, including under the **WHAT IS NOT COVERED BY THE TOYOTA MARINE SPORTS REPLACEMENT PARTS AND ACCESSORIES LIMITED WARRANTY** section).

All repairs or exchanges will be made by any authorized Toyota Marine Sports Dealer at no charge during the warranty period. Repairs or exchanges will be made

during Dealer's normal business hours and within a reasonable time period after the request for repair or exchange is made. Parts replacement will be made using genuine new or remanufactured Toyota Marine Sports parts, unless otherwise specified by Toyota Marine Sports.

### **EXCLUSIONS OF REPLACEMENT PARTS AND ACCESSORIES LIMITED WARRANTY**

Labor for removal and replacement of a defective part or accessory is not covered by this warranty. Labor will be covered only if the part or accessory was originally installed by an authorized Toyota Marine Sports Dealer and is replaced by an authorized Toyota Marine Sports Dealer during the warranty period.

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## **SECTION 10**

### **THE WARRANTY PERIOD**

The warranty period is 12 months from the date that the part or accessory was purchased by the original retail purchaser.

### **IMPORTANT WARRANTY INFORMATION**

Shall a covered repair or replacement be necessary, the owner should bring the boat, trailer, or part at owner's expense, to any authorized Toyota Marine Sports Dealer during the applicable warranty period and provide that Dealer with any necessary documentation needed to establish warranty coverage. In cases where the owner is unsure as to the location of the closest Toyota Marine Sports Dealer, please call Toyota Marine Sports at (407) 370-7000 or Toyota Marine Sports Dealer Locator toll-free number at 1-800-975 EPIC. Delivery of the product to a Dealer shall be at owner's expense.

### **⚠ WARNING**

**It is recommended that owners read the Toyota Marine Sports Service Manual available from any Toyota Marine Sports Dealer since the owner must comply with all installation instructions, safety and warning labels attached to the product or products.**

This warranty is only valid for parts and/or accessories installed in Toyota Marine Sports' boats and/or trailers sold and serviced in the continental United States and Canada. In some areas, there may be additional monetary charges levied by local governments and their respective agencies including, but not limited to, freight surcharges, insurance, permits/license requirements, taxes or import duties. These charges are not covered under this warranty and are the sole responsibility of the retail purchaser and/or owner.

### **WHAT IS NOT COVERED BY THE TOYOTA MARINE SPORTS REPLACEMENT PARTS AND ACCESSORIES LIMITED WARRANTY**

- Normal maintenance items and/or routine adjustments and services, including all required maintenance listed in the Toyota Marine Sports Boat Owner's Manual.
- Dealer installed or other add-on (after-market) parts and accessories.
- Premium or overtime labor costs and parts shipping charges in excess of those which are normal and customary, i.e. in excess of what Toyota Marine Sports pays its authorized Toyota Marine Sports Dealer for such work pursuant to the Dealer Warranty Manual.



- Charges for boat haul-out, launching, towing, salvage, storage, fuel or lubricant usage, dealer travel time, rental costs of any type, and any other incidental or consequential damages or expenses including loss of use of the boat or trailer, loss of income, loss of time, or inconvenience. Some states or governmental authorities do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.
- Use of a propeller size or type not specified for that model boat or modifications, required by high altitude boat operation unless pre-approved by Toyota Marine Sports in writing.
- Damage caused by prolonged storage, mildew, improper winterizing procedures, improper mooring or docking, improper trailering, improper mating of boat to trailer, improper lifting or improper cradling.
- Windshield glass, tires, batteries and trailer disc brake pads/linings.
- Water entry into engine cylinders through the exhaust or air intake systems.
- Damage to carpeting and punctures, tears, discoloration, fading, physical abuse of boat upholstery, dash or interior padded components or canvas.
- Boats used in racing, speed competitions or for non sales-related dealer demonstrations, or boats used in governmental, military or other similar applications.
- Repairs required because of misuse, negligence, modifications, disconnections, alteration, improper installation, repair or adjustment, grounding, improper salvage operations, striking of underwater hazards, overloading, accidents, add-on parts, over-speeding, overfueling or other abnormal operations.
- Repairs resulting from lack of proper maintenance, operation or care of the products (including failure to comply with the instructions in the Owner's Manual); or sinking, fires, fuel system contamination, use of improper or incorrect octane level fuel, use of fuels containing alcohol; use of improper or incorrect oils, lubricants, chemical additives, polishes, cleaners and bottom paints.
- Damage or warranty noncompliance caused by defective replacement parts or replacement parts not equivalent to original equipment parts.
- Trailer repairs resulting from corrosion/rusting caused by use in salt water and/or water entry into the drum/axle assembly or electrical components of the trailer and/or rust formation on trailer frame and component parts caused by failure to perform normal and customary maintenance of a painted steel exposed to water/moisture. (SEE TRAILER OWNER'S MANUAL FOR TRAILER MAINTENANCE RECOMMENDATIONS.)
- Colorfastness of finishes, chrome-plated, anodized or aluminum finishes.

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## SECTION 10

- Cosmetic conditions or surface corrosion from stone chips or scratches.
- Damage or surface corrosion resulting from the environment, such as acid rain, airborne fallout, polluted water, salt, hail, windstorms, lightning, floods and other Acts of Nature.
- Normal noise, vibration, wear, tear or deterioration.
- State and local taxes (or the equivalent) due on warranty repairs.
- Failure of the boat to meet any specific performance standards.

### OTHER TERMS, CONDITIONS AND EXCLUSIONS

Toyota Marine Sports reserves the right at any time and without notice to discontinue models or to make changes to products manufactured or sold by Toyota Marine Sports without incurring any obligation to make the same or similar changes on products previously manufactured or sold.

**THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER ORAL OR WRITTEN, EXPRESSED OR IMPLIED. NO IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY SHALL APPLY**

**TO THE EXTENT ALLOWED BY LAW, AND OTHERWISE ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE APPLICABLE TO PARTS OR ACCESSORIES ARE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. TOYOTA MARINE SPORTS DOES NOT AUTHORIZE ANY CORPORATION, ENTITY, DEALER OR INDIVIDUAL TO CREATE FOR IT ANY OBLIGATIONS, LIABILITIES OR OTHER WARRANTIES IN CONNECTION WITH THIS PRODUCT. ALL ITEMS REPLACED UNDER THIS WARRANTY BECOME THE PROPERTY OF TOYOTA MARINE SPORTS.**

**TOYOTA MARINE SPORTS SHALL NOT BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, SPECIAL OR OTHER SIMILAR DAMAGES ARISING OUT OF ANY BREACH OF THIS WRITTEN OR ANY IMPLIED WARRANTY.**

**TOYOTA MARINE SPORTS SHALL NOT BE LIABLE FOR ANY DAMAGES CAUSED BY DELAY IN DELIVERY OR FURNISHING ANY PRODUCT, REPAIR AND/OR SERVICE. TOYOTA MARINE SPORTS' OBLIGATION IS LIMITED TO ITS OPTION OF REPAIRING OR REPLACING A DEFECTIVE PART/ACCESSORY OR REFUNDING TO THE OWNER THE PURCHASE PRICE AS NECESSARY TO REMEDY ANY DEFECT IN MATERIALS OR**



**WORKMANSHIP AS COVERED BY THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY.**

**SOME STATES OR COUNTRIES DO NOT ALLOW LIMITATIONS ON WARRANTIES, OR ON REMEDIES FOR BREACH. IN SUCH AREAS, SOME OF THE ABOVE LIMITATIONS MAY NOT APPLY.**

**ANY WARRANTY NOT SPECIFICALLY SET FORTH ABOVE, IF ADJUDICATED TO EXIST, SHALL BE FOR ONE YEAR FROM THE DATE OF PURCHASE BY THE ORIGINAL RETAIL PURCHASER. THIS WARRANTY GIVES OWNERS SPECIFIC LEGAL RIGHTS AND YOU MAY HAVE OTHER LEGAL RIGHTS WHICH VARY FROM AREA TO AREA.**

**ALL CORRESPONDENCE INVOLVING REPAIRS CLAIMED UNDER THIS WARRANTY OR ANY OTHER WARRANTY MATTER SHOULD BE DIRECTED TO:**

**TOYOTA MARINE SPORTS  
ATTN: SERVICE MANAGER  
7658 MUNICIPAL DRIVE  
ORLANDO, FLORIDA 32819  
(407) 370-7000**

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