
C49
GARMIN
Tiara
YACHTS
2024 OWNERS MANUAL

CALIFORNIA PROPOSITION 65 WARNING

WARNING

WARNING: Operating, servicing and maintaining a recreational marine vessel can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, service your vessel in a well-ventilated area and wear gloves or wash your hands frequently when servicing this vessel. For more information go to www.P65warnings.ca.gov/marine.

Welcome to the family of Tiara Yachts boat owners and congratulations on your purchase of your new Tiara.

We understand there are many choices available to you, and we appreciate the investment that you've made and the subsequent faith and confidence that you've placed into our product. Hopefully, during the selection and buying process, you discovered that each Tiara has been designed, engineered, and built with care and precision.

When our company was started, it was the goal of my father, Leon Slikkers, to provide you with the finest quality boat available. We want to be the best and deliver the best to you. And part of that includes a delightful ownership experience. Everything we have achieved since our humble beginnings has been with this same goal in mind.

The information within this owner's manual was assembled to assist you in understanding how to operate your boat to obtain the maximum enjoyment of your Tiara. So please take time to read the manual completely and please operate your boat safely and courteously.

I would also like to ask you a personal favor. Shortly, you will receive a survey asking for your opinion about the sales process you experienced when you purchased your boat. Approximately nine months later, you'll be sent another survey inquiring about your ownership experience. By taking a few minutes to complete these surveys, you will be providing us with valuable information.

Best wishes for many happy hours aboard your new Tiara Yacht,

Thomas B. Slikkers
CEO/President S2 Yachts

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LIMITED WARRANTY

2024 MODELS
TIARA YACHTS, INC. LIMITED WARRANTY COVERAGE

Tiara Yachts, Inc. (Tiara) provides limited warranty coverage on Tiara Yachts products sold for use by retail (non-commercial) customers, as described in this Limited Warranty. For customers in the U.S.: this warranty gives you specific legal rights; you also may have other rights, which vary from state to state. For customers in the European Union: the purchaser may have additional legal rights under applicable national legislation governing the sale of consumer goods, and those rights (if applicable) are not affected by this warranty.

This warranty is provided only to the original purchaser of the boat from an authorized Tiara Yachts dealer but can be transferred to subsequent owners. Contact Tiara's Customer Relations Department if you need information about transferring this warranty. No warranty coverage is provided to subsequent owners unless they follow Tiara's transfer procedures. This warranty does not extend or apply to anyone else. The terms of this written warranty cannot be changed or modified, except by a written agreement signed by an officer of Tiara Yachts, Inc.

COVERED PRODUCTS AND LIMITATIONS:

Tiara's limited warranty coverage applies only to:

1. Defects in materials and workmanship in the boat and all components and accessories (except for the excluded items described below) for a period of two (2) years;
2. Structural defects in materials and workmanship in the hull and deck for a period of five (5) years;
3. Blistering due to defects in material and workmanship in the gelcoat surface of the hull bottom for a period of five (5) years, provided that the gelcoat surface has not been altered in any way such as sanding, sandblasting or application of a coating other than standard antifouling paint, any of which will void this warranty.

Each of the warranty coverage periods runs from the date of purchase of the boat from an authorized Tiara Yachts dealer and applies only to warranted defects that first manifest themselves and are reported to Tiara within the applicable warranty period. Tiara retains the right to determine to its reasonable satisfaction whether any claimed defect is covered by this warranty.

Certain items are excluded from warranty coverage by Tiara, and this limited warranty coverage does not apply to:

1. Engines, transmissions, generators, air conditioning systems, swim platforms and lifts, seakeeping systems, electronics and batteries, and other components manufactured by other manufacturers. These products may come with separate warranties from their manufacturers; see the Owner Packet for warranty registration requirements and details on these products.
2. Dealer final assembly and pre-delivery commissioning, and dealer installed components.
3. Scratching, chipping, discoloration or flaking of any powder coated or painted surface including engines and hardtop components.
4. Gelcoat stress cracking, chalking, fading or discoloration. This includes bilge gelcoat.
5. Damage caused by accident, wear, storm damage, grounding, towing, commercial use of the boat, or misuse or abuse, or deterioration resulting from normal use (including gaskets, seals, springs, wipers and sealants).
6. Maintenance, adjustments or realignments to any components including latches, hinges, hatches, doors and drive train components.
7. Mold, mildew, upholstery damage or deterioration and cleaning.
8. Damage or deterioration resulting from environmental conditions, including electrolysis, crevice or galvanic corrosion, any deterioration of underwater equipment, or any damage or deterioration resulting from any failure to undertake reasonable, routine maintenance.
9. Any repairs, adjustments, alterations or modifications made by anyone other than an employee of Tiara Yachts, or an authorized Tiara Yachts dealer with Tiara's prior, written authorization.
10. Damage which has occurred as a result of the boat being operated as a demonstrator and/or displayed for sale.
11. Damage or deterioration of the hull or deck structure due to the attachment of hardware or other components.
12. Weight, speed, fuel consumption or other performance characteristics.
13. Damage or deterioration resulting from improper trailering, hauling, launching or storage.
14. Boats purchased or used for commercial or governmental purposes or uses.

REMEDIES UNDER THIS LIMITED WARRANTY

If a defect covered by this warranty occurs, Tiara (or one of its authorized dealers, as determined by Tiara) will repair and replace the defective component, in its sole discretion. This 'repair or replacement' remedy is the exclusive remedy under this warranty. Tiara has no responsibility or liability for any consequential or incidental damages, such as loss of use, storage charges, interest or finance charges, insurance or depreciation, transportation or lodging charges, or charges for towing or hauling out, etc. which are specifically excluded and disclaimed from this warranty. For customers in the U.S.: some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. UNDER CERTAIN APPLICABLE LAWS, THERE MAY BE NO IMPLIED WARRANTIES OR GUARANTEES FROM TIARA APPLICABLE TO YOUR BOAT, AND ALL IMPLIED OR STATUTORY CONDITIONS AND WARRANTIES (INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE) AND GUARANTIES ARE DISCLAIMED WHERE ALLOWED BY LAW. TO THE FULLEST EXTENT ALLOWED BY LAW, ANY AND ALL APPLICABLE IMPLIED WARRANTIES AND GUARANTIES (IF ANY), INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE DURATION OF THE APPLICABLE PROVISIONS OF THIS WRITTEN WARRANTY. For customers in the U.S.: some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

RESPONSIBILITY OF PURCHASER

1. No warranty coverage is provided by Tiara unless the customer and dealer complete and return all Vessel Registration and Customer Acceptance Forms to Tiara Yachts, Inc. within seven (7) days after delivery of the boat to the original purchaser.
2. The original purchaser or approved transferee must notify the Tiara Yachts dealer from which the boat was purchased of any claimed defect within fifteen (15) days after first detecting the claimed defect. Warranty work in excess of $500 requires Tiara's prior written approval.
3. If the dealer fails to satisfactorily repair the claimed defect within fifteen (15) days, written notice must then be promptly given directly to Tiara. Tiara is not responsible for unreported warranted defects.
4. The boat, including any claimed defective part, must be returned to the Tiara Yachts dealer from which the boat was purchased (or to another dealer or facility as directed by Tiara Yachts) within the warranty period for inspection and warranty service. The expense of returning and transporting the boat or any part for warranty service, and the expense of returning and transporting it back to the owner after repair or replacement, is the responsibility of the owner, and will not be reimbursed by Tiara.
5. If the dealer from whom the boat was purchased is no longer an authorized Tiara Yachts dealer, contact Tiara for instructions on how to obtain warranty service.

S2 reserves the right to improve its products through changes in design or materials without being obligated to the owners of the boats of similar or the same model of prior manufacture. We may be contacted as follows: Tiara Yachts Customer Relations Department, 725 East 40th Street, Holland, Michigan 49423 (616/394-7460) or CR@tiarayachts.com.

SUPPLEMENTAL LIMITED WARRANTY INFORMATION ON FINISHED WOOD COMPONENTS

Your Tiara Yachts® Boat may be furnished with certain finished wood panels and components that require periodic maintenance and refinishing to maintain their appearance and finish. S2 Yachts, Inc.'s Limited Warranty coverage does not include the matching of wood grains, or the condition or durability of any finishes for such panels and components. This statement supplements S2 Yachts, Inc.'s Limited Warranty with respect to these wood panels and components. All other terms of S2 Yachts, Inc.'s Limited Warranty remain in effect, and you should refer to the Limited Warranty for other terms, conditions and requirements

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CALIFORNIA EVAPORATIVE EMISSIONS CONTROL SYSTEM WARRANTY STATEMENT: YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board and S2 Yachts, Inc. is pleased to explain the evaporative emission control system's warranty on your 2024 model year spark-ignition marine watercraft. In California, new spark-ignition marine watercraft (SIMW) must be designed, built, and equipped to meet the State's stringent anti-smog standards. S2 Yachts, Inc. must warrant the evaporative emission control system on your spark-ignition marine watercraft for the period listed below provided there has been no abuse, neglect, or improper maintenance of your SIMW.

Your evaporative emissions control system may include parts such as: canisters, carburetors, clamps, connectors, filters, fuel caps, fuel lines, fuel tanks, valves, vapor hoses, and other associated evaporative emissions control system components.

MANUFACTURER'S WARRANTY COVERAGE:

This evaporative emission control system is warranted for two years. If any evaporative emission-related part on your SIMW is defective, the part will be repaired or replaced by S2 Yachts, Inc.

OWNER'S WARRANTY RESPONSIBILITIES:

- As the spark-ignition marine watercraft owner, you are responsible for performance of the required maintenance listed in your owner's manual. S2 Yachts, Inc. recommends that you retain all receipts covering maintenance on your spark-ignition marine watercraft, but S2 Yachts, Inc. cannot deny warranty solely for the lack of receipts.
- As the spark-ignition marine watercraft owner, you should however be aware that S2 Yachts, Inc. may deny you warranty coverage if your spark-ignition marine watercraft or a part has failed due to abuse, neglect, or improper maintenance or unapproved modifications.
- You are responsible for presenting your spark-ignition marine watercraft to a S2 Yachts, Inc. dealer or authorized service center as soon as the problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days. If you have a question regarding your warranty coverage, you should contact S2 Yachts, Inc. at 1-616-392-7163.

The California evaporative emissions control system warranty covers the following list of components:

(1) Canister Mounting Brackets
(2) Carbon Canister
(3) Carburetor Purge Port Connector
(4) Clamps*
(5) Control Cables*
(6) Control Linkages*
(7) Control Solenoids*
(8) Control Valves*
(9) Electronic Controls*
(10) Fuel Cap
(11) Fuel Line
(12) Fuel Line Fittings
(13) Fuel Tank
(14) Liquid/Vapor Separator
(15) Pressure Relief Valves*
(16) Purge Valves
(17) Vacuum Control Diaphragms*
(18) Vapor Hoses
(19) All other parts not listed that may affect the evaporative emissions control system

*Note: As they relate to the evaporative emissions control system.

IMPORTANT INFORMATION

Your Tiara Owner's Manual has been written to include a number of safety instructions to assure the safe operation and maintenance of your boat. These instructions are in the form of **WARNING** and **CAUTION** statements. The following definitions apply:

All instructions given in this book are as seen from the stern looking toward the bow, with starboard being to your right, and port to your left. A glossary of boating terms is included in the Appendix.

DANGER

DANGER INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.

WARNING

WARNING INDICATES HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

CAUTION

CAUTION indicates hazards or unsafe practices which could result in minor personal injury, or product and property damage.

NOTICE

NOTICE is used to address best practices not related to physical injury.

IMPORTANT NOTE: Your boat uses internal combustion engines and flammable fuel. Every precaution has been taken by Tiara Yachts to reduce the risks associated with possible injury and damage from fire or explosion, but your own precaution and good maintenance procedures are necessary in order to enjoy safe operation of your boat.

If for any reason you have trouble with your Tiara Owner's Manual, or require replacement pages, please contact our Customer Service department at the address on the cover page. We will be happy to supply replacement pages at no charge.

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

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

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

Owner's manuals for the installed equipment on your boat have also been provided for your reference. They have been stored in a valise that is included in your new boat. Please read this information, and also hand them over to the new owner when you sell the boat.

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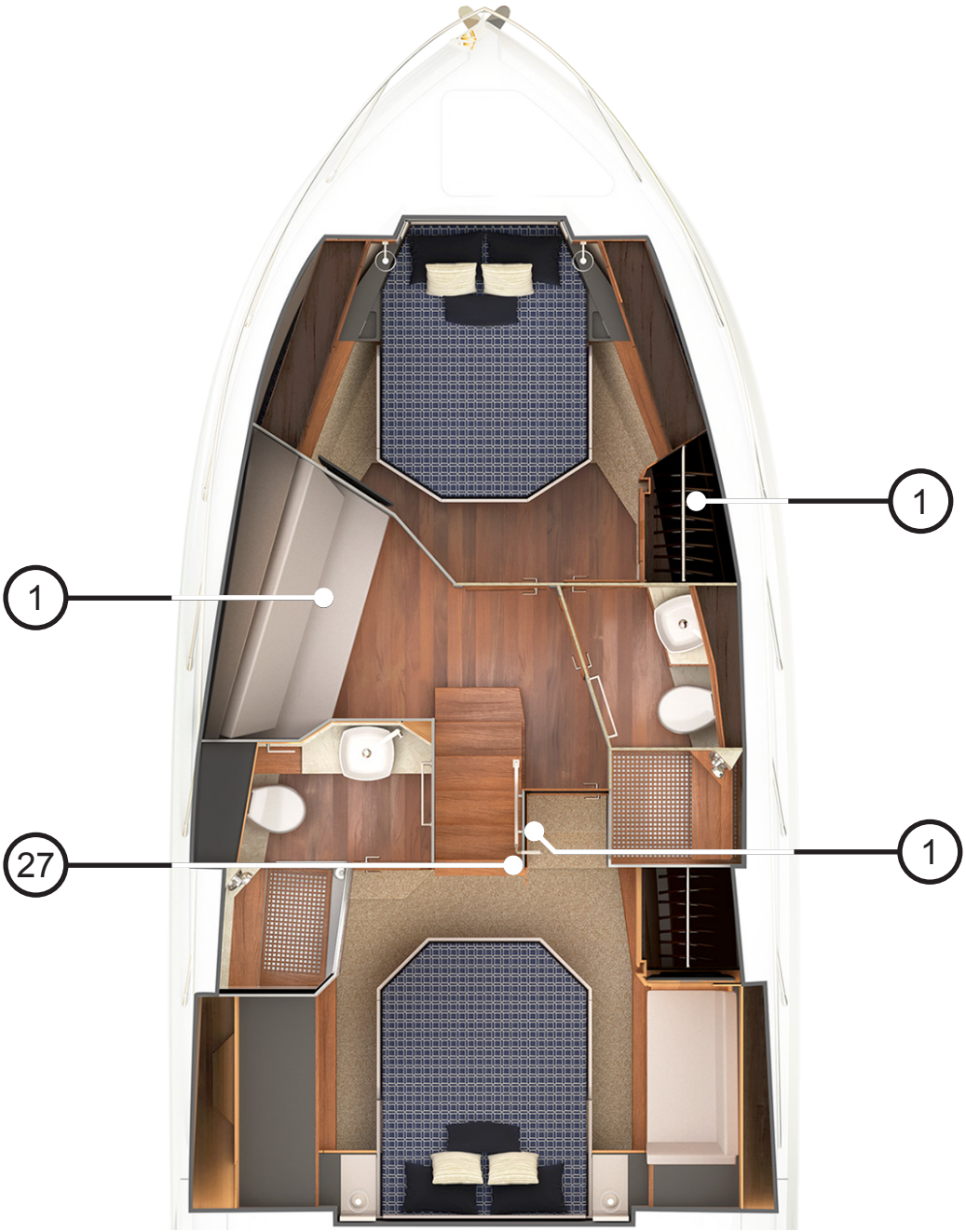
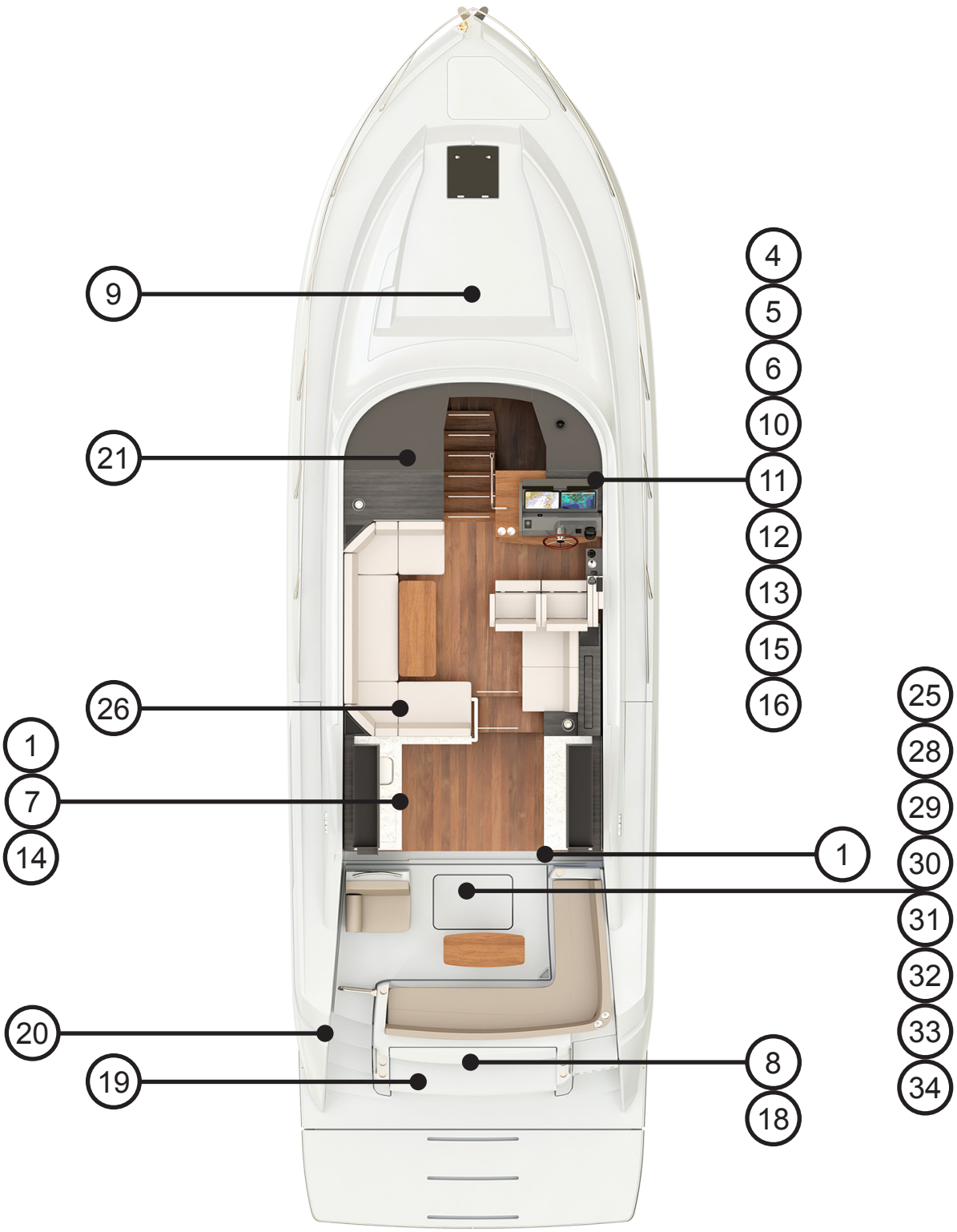
Safety Labels

The following diagrams indicate where safety labels can be found on your Tiara. The numbers correspond to the list in the table that follows. To obtain replacement labels refer to the part number of the label in the table and contact your Tiara dealer.

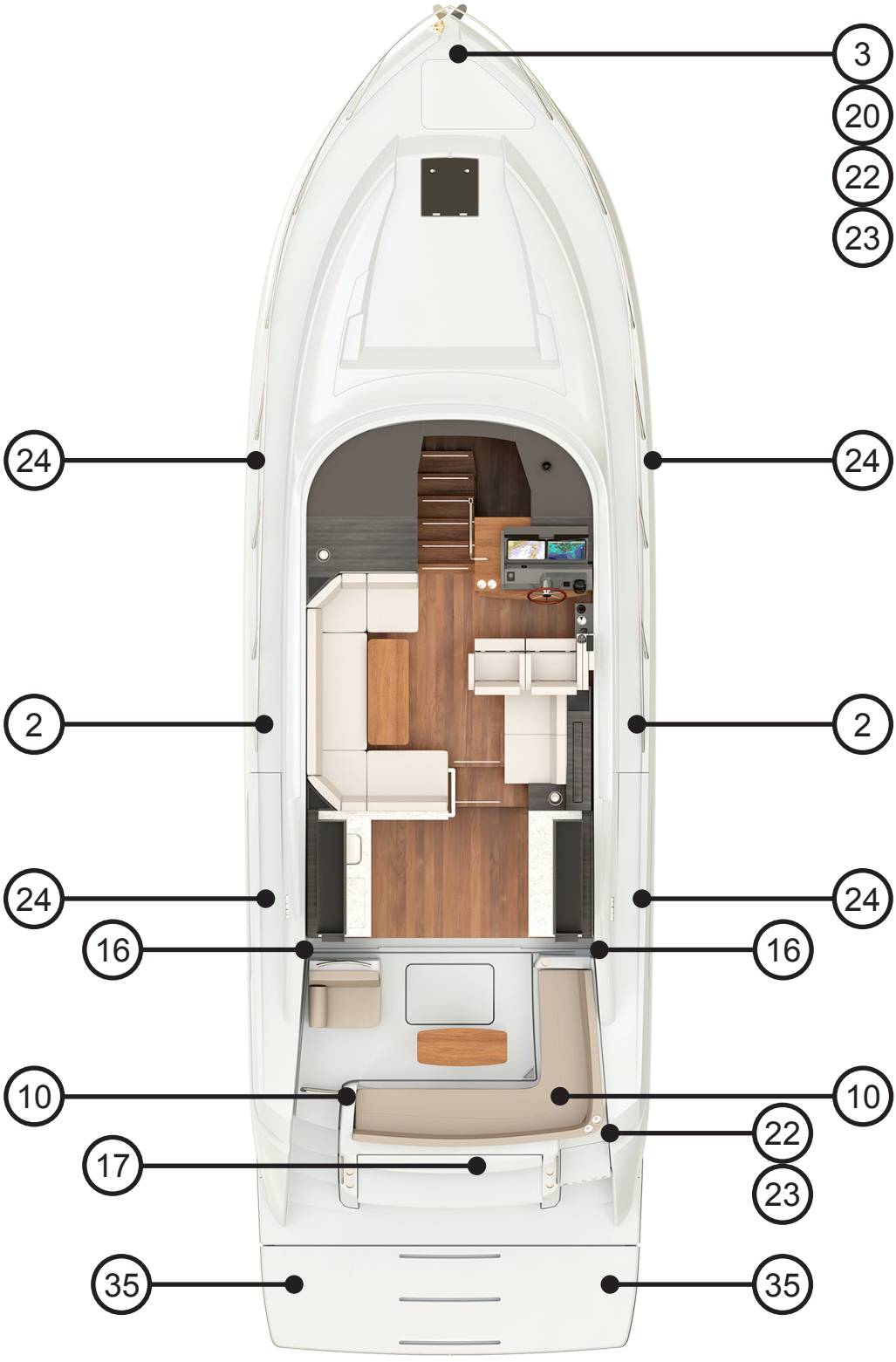
Interior

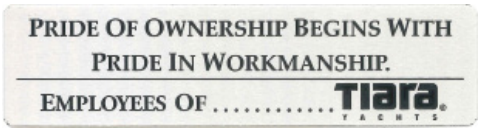


Exterior

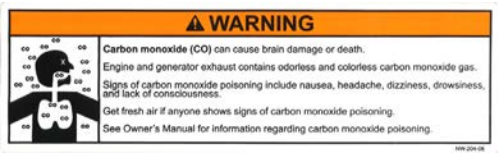
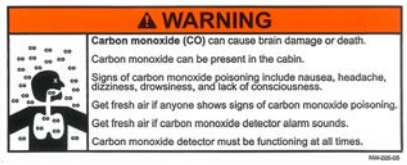


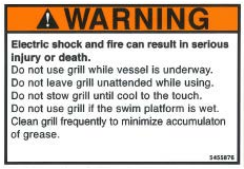
Safety Labels



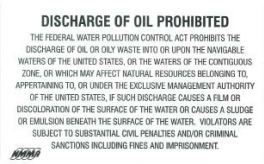
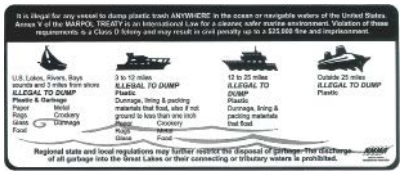
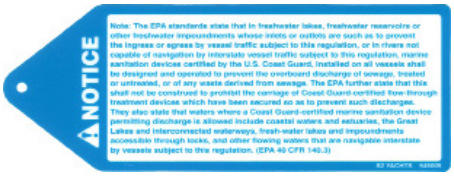
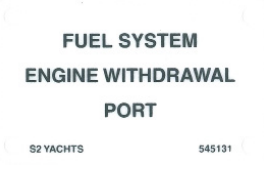
1	FIRE EXTINGUISHER INSIDE P/N: 5452010 Location: Master stateroom hanging locker, VIP stateroom hanging locker, port galley, starboard aft facing seat in aft cockpit.	
2	NO SMOKING P/N: 5451130 Location: Port & starboard fuel fill	
3	NOTICE: ANCHOR LINE LOSS P/N: 5453180 Location: Underside of anchor hatch	
4	NOTICE: FIRE EXTINGUISHING SYSTEM P/N: 5453300 Location: Helm	
5	BOATERS CHECK LIST P/N: 5453130 Location: Helm	
6	YACHT CERTIFICATION PLATE P/N: 5450570 Location: Helm	
7	PRIDE OF OWNERSHIP P/N: 5450058 Location: Helm	
8	DANGER: CARBON MONOXIDE P/N: 5453670 Location: Top of transom buffet	

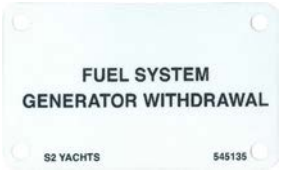
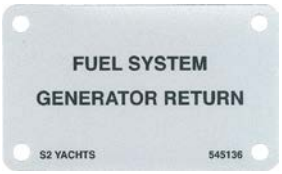
Safety Labels

9	WARNING: SEAT USE WHILE UNDER-WAY P/N: 5455875 Location: Sun pad	
10	WARNING: CLOSE TRANSOM DOOR(S). P/N: 5453220 Location: Helm & near port and starboard transom doors.	
11	WARNING: LEAKING FUEL P/N: 5453150 Location: Helm	
12	DANGER: ROTATING PROPELLERS P/N: 5450151 Location: Helm	
13	WARNING: CARBON MONOXIDE P/N: 5453690 Location: Port galley	
14	WARNING: CARBON MONOXIDE P/N: 5453680 Location: Helm	
15	WARNING: SUNSHADE STOWAGE P/N: 5450054 Location: Under port covering board aft cockpit	
16	WARNING: HARDTOP P/N: 5453160 Location: Helm, underside of hardtop port & underside of hardtop starboard	

17	WARNING: GASOLINE VAPORS P/N: 545323 Location: Inside trunk at top of opening	
18	WARNING: OPEN TRUNK P/N: 5455620 Location: Top of transom buffet	
19	WARNING: GRILL SHOCK AND FIRE P/N: 5455876 Location: Underside of grill lid	
20	WARNING: HAZARDOUS VOLTAGE P/N: 5451110 Location: Port shore power locker & optional forward shore power connection	
21	LOCK SEAT P/N: 5454050 Location: Salon port end table	
22	FRESH WATER P/N: 5455490 Location: Cockpit water connection locker	
23	RAW WATER P/N: 5455480 Location: Starboard aft cockpit water connection locker & optional forward wash down connection	
24	SLING P/N: 5450240 Location: Port & starboard hull sides	

Safety Labels

25	DISCHARGE OF OIL PROHIBITED P/N: 5450190 Location: Underside of engine room hatch	
26	DUMPING TRASH OVERBOARD P/N: 5451640 Location: Galley trash cabinet	
27	TAG: OVERBOARD DISCHARGE OF SEWAGE P/N: 5450050 Location: Optional overboard discharge seacock	
28	TAG: BATTERY MOUNTING REQUIRE-MENTS P/N: 5450160 Location: Batteries in the engine room	
29	TAG: FUEL SYSTEM STBD WITHDRAWAL P/N: 5451290 Location: Forward engine room bulkhead	
30	TAG: FUEL SYSTEM STBD RETURN P/N: 5451300 Location: Forward engine room bulkhead	
31	TAG: FUEL SYSTEM PORT WITHDRAWAL P/N: 5451310 Location: Forward engine room bulkhead	
32	TAG: FUEL SYSTEM PORT RETURN P/N: 5451320 Location: Forward engine room bulkhead	

33	TAG: FUEL SYSTEM GENERATOR WTH-DRWL P/N: 5451350 Location: Forward engine room bulkhead	
34	TAG: FUEL SYSTEM GENERATOR RE-TURN P/N: 5451360 Location: Forward engine room bulkhead	
35	DANGER: ROTATING PROPELLERS P/N: 5450152 Location: Port and starboard side of swim platform	

Engine and General Specifications

L.O.A. with integrated platform .....50'3" (15.31 meters)
Beam ..... 15'4" (4.67 meters)
Draft (fully loaded, motors down).....50" (1.27 meter)
Clearance with Hardtop (from waterline)..... 12'9" (3.88 meters)
Approximate Dry Weight.....41,000 lbs. (18,642 kg)
Fuel Capacity..... 500 U.S. gallons (1,893 liters)
Water Capacity .....135 U.S. gallons (511 liters)
Holding Tank Capacity..... 68 U.S. gallons (257.4 liters)
Deadrise at Transom ..... 17°

Boat Information

Fill out the following information and leave it in your Tiara Owner's Manual. This information will be important for you and Tiara service personnel to know, if and when you may need to call Tiara for technical assistance or service.

Boat	
Model: Tiara 49 Coupe	**Hull Identification #:**
Purchase Date:	**Delivery Date:**
Ignition Keys:	**Registration #:**

Engines		
Port Engine	**Center Engine**	**Starboard Engine**
Make:	**Make:**	**Make:**
Model:	**Model:**	**Model:**
Engine Serial Number:	**Engine Serial Number:**	**Engine Serial Number:**
Lower Unit Serial Number:	**Lower Unit Serial Number:**	**Lower Unit Serial Number:**

Propellers	
Make:	**Diameter / Pitch:**
Blades:	**Other:**

Generator	
Make:	**Model:**
Serial #:	**kW:**

Dealer	Tiara
Name:	**Phone #:**
Phone #:	**Representative:**
Sales Associate:	**Address:**
Service Manager:	
Address:	

Tiara Yachts reserves the right to make changes and improvements in equipment, design and vendor supplied equipment at any time without notification.

Warranty & Warranty Registration Cards

The Tiara Limited Warranty Statement is included with your boat. It has been written to be clearly stated and easily understood. If you have any questions after reading the warranty, please contact Tiara Customer Relations.

Tiara, engine manufacturers, and the suppliers of major components maintain their own manufacturer's warranty and service facilities. It is important that you properly complete the warranty registration cards included with your boat and engine(s) and mail them back to the manufacturers to register your ownership. This should be done within 15 days of the date of purchase and before the boat is put into service. A form for recording this information is provided at the beginning of this manual. This information will be important for you and service personnel to know, if and when you may need service or technical information.

The boat warranty registration requires the **H**ull **I**dentification **N**umber "**HIN**" which is located on the starboard side of the transom, just below the rub rail. The engine warranty registration requires the engine serial number(s). Refer to the engine owner's manual for the location of the serial number(s).

Federal Boat Safety Act

All boat manufacturers are required by the Federal Boat Safety Act of 1971 to notify first time owners in the event any defect is discovered "which creates a substantial risk of personal injury to the public." It is essential that we have your warranty registration card complete with your name and mailing address in our files so that we can comply with the law if it should become necessary.

Product Changes

Tiara is committed to the continuous improvement of our boats. As a result, some of the equipment described in this manual or pictured in the catalog may change or no longer be available.

Tiara reserves the right to change standard equipment, optional equipment and specifications without notice or obligation. If you have questions about the equipment on your Tiara, please contact Tiara Customer Relations.

Transferring the Warranty

For a transfer fee, Tiara will extend warranty coverage to subsequent owners of Tiara models for the duration of the original warranty period. Please refer to the Tiara Limited Warranty Statement for the procedure to transfer the warranty. To take advantage of this program, notification of the change of ownership, including the new owner's name, address and telephone number together with the appropriate fee, must be sent to Tiara Sport within 30 days of the date of resale. Contact Tiara Customer Relations for details.

Tiara will confirm, in writing, that the transfer of the warranty has taken place. After which, the transferee will be treated as the original purchaser as outlined in the Tiara Limited Warranty Statement.

Owner/Operator Responsibilities

Registration and Documentation

Federal law requires all undocumented vessels equipped with propulsion machinery be registered in the state of principal use. A certificate of documentation will be issued upon registration. These registration numbers must be displayed on your boat. The owner/operator of a boat must carry a valid certificate of registration whenever the boat is in use. When moved to a new state of principal use, the certificate is valid for 60 days.

In order to be valid, the numbers must be installed to the proper specifications. Check with your dealer or state boating authority for numbering requirements. The Coast Guard

issues the certificate of number in Alaska; all others are issued by the state.

Insurance

In most states the boat owner is legally responsible for damages or injuries the boat causes. Responsible boaters carry adequate liability and property damage insurance for their boat. You should also protect the boat against physical damage and theft. Some states have laws requiring minimum insurance coverage. Contact your dealer or state boating authority for information on the insurance requirements in your boating area.

Reporting Boating Accidents

All boating accidents must be reported by the owner or operator of the boat to the proper marine law enforcement authority for the state in which the accident occurred. Immediate notification is required if a person dies or disappears as a result of a recreational boating accident.

If a person dies or there are injuries requiring more than first aid, a formal report must be filed within 48 hours.

A formal report must be made within 10 days for accidents involving more than $500.00 damage or the complete loss of a boat.

A “Boating Accident Report” form is located near the back of this manual to assist you in reporting an accident. If you need additional information regarding accident reporting, please call the Boating Safety Hotline, 800-368-5647 or uscgboating.org.

Education

If you are not an experienced boater, we recommend the boat operator and other people that normally accompany the operator, enroll in a boating safety course. Organizations such as the U.S. Power Squadrons, United States Coast Guard Auxiliary, State Boating Authorities and the American Red Cross offer excellent boating educational programs. These courses are worthwhile even for experienced boaters to sharpen your skills or bring you up to date on current rules and regulations. They can also help in providing local navigational information when moving to a new boating area. Contact your dealer, State Boating Authority or the Boating Safety Hotline, 800-368-5647 or uscgboating.org for further information on boating safety courses.

Required Equipment

U.S. Coast Guard regulations require certain equipment on each boat and minimum safety standards for vessels. “Coast Guard Approved Equipment” has been determined to be in compliance with USCG specifications and regulations relating to performance, construction or materials. The equipment requirements vary according to length, type of boat, and propulsion system. Some of the Coast Guard equipment is described in this manual.

Be aware that some state and local agencies go beyond USCG regulations or impose similar equipment requirements on waters that do not fall under Coast Guard jurisdiction. For more information, contact your dealer or local boating authority; download the USCG Boating Safety App to your smartphone; or visit www.uscgboating.org. We also recommend reading the latest edition of the book *Chapman Piloting & Seamanship.*

EPA Compliant Fuel System

EPA (Environmental Protection Agency) regulations have required additional emissions related components for the fuel tank, fuel fill and fuel vent systems. It is unlawful to remove or intentionally defeat these emission related components.

Fire Extinguisher Locations

This boat is equipped with a fire suppression system. See section 9, Safety Equipment, for more information.

There are four (4) fire extinguishers installed on this boat. Make sure they are fully charged at all times. Fire extinguishers are located:

- inside the starboard cockpit aft facing seat base
- inside the port galley aft storage cabinet
- inside the master stateroom hanging locker
- inside the VIP stateroom hanging locker

Pre-Cruise Checklist

Before casting off on your voyage, ensure that proper safety gear is aboard. Familiarize yourself with all engine controls, steering operation, starting procedure, and how to interface with the helm multi-function displays (MFDs) and other instrumentation. Understand local regulations and waterways, and review the contents of this owner's manual before casting off.

Before your voyage:

- Check the weather forecast. Decide if your planned cruise can be made safely.
- Make sure all required documents are onboard.
- Make sure all necessary safety equipment (items like running lights, spotlight, life saving devices, etc.) is onboard and operative. Refer to section 9, Safety Information, for additional information
- Each person onboard must have at least one personal flotation device. Check the U.S. Coast Guard standards for the correct type required for your boat.
- Make sure signal kits are onboard, in good operating condition, and not expired.
- Make sure all fire extinguishers are in position and in good operating condition.
- Make sure you have sufficient water and other provisions for the planned cruise.
- Leave a written message listing details of your planned cruise (Float Plan) with a friend ashore. Include a description of your boat, where you intend to cruise, schedule of your arrival in the cruising area, and when you expect to return. Keep the person informed of any changes in your plan to prevent false alarms. This information can tell authorities where to look and your boat type in the event you fail to arrive.
- Check the amount of fuel onboard. Observe the "rule of thirds": one third of the fuel for the trip out, one third to return and one third in reserve. An additional 15% may be consumed in rough seas.
- Check the water-separating fuel filters for water.
- Turn on the battery switches.
- Check for bilge water and for other signs of potential problems. Monitor for the scent of fuel fumes.
- Test the automatic and manual bilge pump switches to make sure the system is working properly.
- Have a tool kit and spare parts onboard (see below).

Before starting the engines:

- Make sure the shift control is in NEUTRAL.
- Make sure the emergency engine stop lanyard is attached to the operator and the stop switch.

See section 10, Operation, for additional important information regarding how to safely operate your boat.

Tool kit

Have a tool kit and spare parts onboard. **The kit should include basic tools:**

- ❑ Spark plug wrench
- ❑ Hammer
- ❑ Spark plug gap gauge

- ❑ Electrician's tape
- ❑ Screwdrivers
- ❑ Lubricating Oil
- ❑ Pliers
- ❑ Jackknife
- ❑ Adjustable wrench
- ❑ Vise grip pliers
- ❑ Needle nose pliers
- ❑ Wire crimping tool
- ❑ End wrench set
- ❑ Wire connector set

The spare parts kit should include:

- ❑ Extra light bulbs
- ❑ Spark plugs
- ❑ Fuses and circuit breakers
- ❑ Flashlight and batteries
- ❑ Drain plugs
- ❑ Engine oil
- ❑ Propellers
- ❑ Fuel filters
- ❑ Propeller nuts
- ❑ Fuel hose and clamps

Propulsion Systems

1.1 General

Your Tiara boat is designed to be powered by dual diesel Volvo® IPS engines.

The engine manufacturer provides an owner's information manual. It is important you read and understand the information and become familiar with the warranty, operation and maintenance of the engine and drive systems.

⚠ CAUTION

Engines and equipment in the engine room may be hot to the touch and might burn your skin. Care must be taken to avoid these areas while in the engine room.

⚠ NOTICE

DO NOT attempt to service boat systems unless you are familiar or qualified to do so. Do not use parts which are not designed for a marine application.

⚠ NOTICE

Use only the fuel recommended by the engine manufacturer. Use of old, contaminated fuel can cause the engine to malfunction or severe damage.

1.2 Engine Lubrication

Use the oil type, grade, and level recommended by the engine manufacturer. Check the oil level before each use and use only the type specified by the engine manufacturer. Also monitor the oil level by checking the gauge on the helm or visually checking the oil level in the tank by using the reference marks on the tanks. Change the oil according to the engine manufacturer's recommendation.

Refer to section 3, Fuel Systems, and the engine owner's manual for additional information.

⚠ NOTICE

Use only the oil recommended by the engine manufacturer, and monitor the oil level. Use of any other type of oil can cause severe damage or engine malfunction.

1.3 Propellers

Repair or replace a propeller immediately if it has been damaged. A damaged propeller can cause vibration that can be felt in the boat and can damage the engine gear case.

Refer to the engine owner's manual for information on propeller removal and installation. We recommend having the propellers installed by your Tiara dealer or other qualified marine service facility.

1.4 Engine Instrumentation

The helm is equipped with dual Garmin® multi-function displays (MFD). The MFDs allow the operator to monitor all engine functions (including fuel level and engine trim), operate the engine most efficiently, and prevent serious costly damage. The instrumentation is unique to the type of engine installed on your boat.

Interface with the MFDs by touching the screens or by using the GRID (Garmin Remote Input Device) found on the helm seat armrest aft of the joystick. Refer to the Garmin owners manual for more information.

Your MFDs may not be equipped with all of the following gauges.

Tachometer

The tachometer displays the speed of the engine in revolutions per minute (RPM). This speed is not the boat speed or the speed of the propeller. The tachometer may not register zero with the key in the OFF position.

NOTICE

DO NOT exceed maximum recommended engine RPM. Exceeding, maintaining or coming close to maintaining maximum RPM can reduce engine life.

Speedometer

The speedometer indicates the speed of the boat in miles per hour (MPH).

Temperature Warning

The temperature warning indicates the temperature of the engine. A sudden increase in the temperature could indicate an obstructed water inlet or an impeller failure.

NOTICE

Continued operation of an overheated engine will cause severe engine damage. If the engine overheats, shut off the engine, investigate the problem and correct it.

Fuel Gauge

The fuel gauge indicates the approximate fuel level in the fuel tanks. This gauge is a relative indication of the fuel supply available; it is not a calibrated instrument.

Voltmeter

The voltmeter displays the voltage for the batteries and the charging system. The normal voltage for a fully charged battery is 12.6 volts with the engine(s) off and 13 to 14.5 volts with the engine(s) running.

Hourmeter

The hourmeter keeps a running total of engine hours of operation.

Tilt/Trim Gauge

The tilt/trim gauge monitors the position of the trim tabs. The lower range indicates the trim position. Trim is used to adjust the hull angle while operating your boat on plane. Refer to the engine owner's manual for more information on the operation of the trim tabs.

Engine Alarms

An audible alarm system mounted in the helm area monitors selected critical engine systems and functions. The alarm will sound if one of these systems begins to fail. Refer to the engine owner's manual for information on the alarms installed with your engine.

CAUTION

If an engine alarm sounds, shut off the engine, investigate the problem and correct it.

1.5 Gauge Maintenance

The electrical system, instruments and ignition circuitry are protected by a circuit breaker or fuse located on the engine. The ignition switches and all instruments, controls, etc., must be protected from the weather when not in use. Excessive exposure can lead to gauge and ignition switch failures.

Moisture may fog the inside of the gauge lens. Turning the gauge lights on will help dry the lenses. Fogging will normally not harm the gauges, but if the fogging continues and moisture accumulates, the excess water can damage the gauges. The gauges are designed with drain holes to reduce the accumulation of moisture. Make sure that if a gauge is removed, it is reinstalled with the drain holes in the proper position.

1.6 Seakeeper Gyro Stabilization System (optional)

To operate the optional Seakeeper® Gyro Stabilization System, if installed, use the control display located on the helm. Refer section 4, Electrical Systems, and the Seakeeper user manual for more information.

Operator Notes

Helm Systems

2.1 General

The helm controls consist of the engine throttle and shift controls, steering wheel, trim tab control panel, and joystick control.

The manufacturer of each control component provides an owner's manual with its product. It is important that you read, understand, and become familiar with the proper care and operation of all control systems.

CAUTION

Service or repairs to equipment inside your console should be performed by your Tiara Dealer or other qualified marine repair technician. Failure to do so could result in damage to equipment used to safely operate the boat.

2.2 Multi-Function Displays

The Multi-Function Displays (MFDs) on the helm allow you to monitor a variety of functions, operate the stereo system, and more. Interface with the Garmin® MFDs by touching the screens or by using the GRID (Garmin Remote Input Device) found aft of the joystick on the outboard helm seat armrest. Refer to the Garmin owners manual for more information.

2.3 Engine Throttle and Shift Controls

The Volvo e-Key control ignition panel, located outboard of the steering wheel, allows you to engage the engines with a single RFID key fob.

Volvo® e-Key

Volvo® e-Key control panel

The shift and throttle controls on your boat may vary depending on the engine(s). Refer to the engine owner manuals for specific information on the controls installed on your boat.

The helm is designed for a binnacle-style control with two throttle levers. Each throttle has a position for neutral (straight up and down), forward position (first detent forward of neutral) and reverse position (the first detent aft of neutral). Advancing the control lever beyond the shift range will advance the throttle, forward or reverse. Each control is equipped to allow the engines to be operated above idle RPM while in neutral, for cold starting or warming up.

Binnacle throttle control (example)

The handles of the dual lever mechanical controls may not always align with each other at all RPM settings because of variations in the routing of control cables, cable length, and adjustments at the engine. Usually the alignment of the handles can be optimized at a chosen RPM, but may vary at other settings. See the engine owners manual for additional information.

CAUTION

To avoid possible injury or engine damage when shifting:

- **Pause in neutral before shifting from FORWARD to REVERSE, or REVERSE to NEUTRAL.**
- **DO NOT shift into reverse while the boat is traveling forward at speed.**
- **Keep area around shifter control clear of obstructions.**

2.4 Neutral Safety Switch

Every throttle/shift control system has a neutral safety switch. The switch allows the engines to be started in NEUTRAL only. If engines will not start, make sure controls are in NEUTRAL. If the starter engages with the shift controls in any position other than neutral, the neutral safety switch is not functioning properly and must be repaired before using your boat.

Control or cable adjustments may be required to correct this condition should it persist. See your Tiara dealer for necessary control and cable adjustments. Refer to section 9 for neutral safety switch information.

Starting Your Engines

Before starting your engines, be sure that you have read your engine owner's manual and performed all the maintenance and safety checks listed in the Pre-Cruise Checklist section of this manual.

Before starting the engines:

1. Switch ON all breakers except the OIL CHANGE PUMP breaker on the Master DC Panel in the engine room.
2. Confirm that the ELECTRONICS, both ENG ROOM FANS, 24VDC MAIN, TRIM TABS, WIPER PORT and WIPER STBD breakers on the DC distribution panel are ON.
3. Press ON the PORT BATTERY, STBD BATTERY, and HOUSE BATTERY buttons on the Power Control Panel, located in the starboard galley electrical cabinet.
4. Open all hatches to the bilge area(s). Investigate and remedy any fuel vapors that are detected.
5. Check the engine and drive units' oil levels.
6. Check the engines' coolant level.
7. Open the engines' raw water seacocks.
8. Open the engines' fuel supply and return valves. The fuel valves are located in the engine room.

CAUTION

Prior to starting engines, ensure fuel supply and return valves are in the open position. A fuel valve is open when it is parallel to its associated fitting. Failure to open all fuel valves will damage the engine.

9. Press ON the BLOWER button outboard of the helm. Run the blower(s) for five minutes prior to starting the engines.

To start the engines:

1. Make sure the engine control levers are in the neutral position.
2. Hold the Volvo e-Key in front of the Volvo e-Key control panel to unlock the system. A sound confirms the system is unlocked.
3. Press the IGNITION buttons on the e-Key control panel to switch the ignitions ON. Make sure the green light on the IGNITION buttons indicates the ignitions are ON.
4. To start, press each of the two START/STOP buttons.
5. Check the voltage and amperage for each battery bank using the system monitors on the Power Control Panel. If

the voltage is below 12 volts or above 15 volts, stop the engines and investigate the cause before proceeding. Refer to the system monitor manufacturer's user manual for more information.

6. Monitor all engine-related gauges and data on the Multi-Function Displays at the helm. If anything seems abnormal, stop the engines and investigate the cause before proceeding.
7. Let the engines run at idle for several minutes before leaving the slip.

2.5 Automatic Fire Suppression System

The Fireboy fire suppression system is mounted on the forward wall of the engine room, and protects the engine room in the case of fire. The helm-mounted display indicates if the system is charged or discharged; if the system is not charged, an audible alert will sound as well. An override switch allows engine restart.

Fire suppression system status indicator

To manually discharge the fire suppression system, remove the pin and pull the red handle of the fire system manual discharge pull, located below the helm seat armrest, on the outboard forward-facing wall of the seat base.

Fire system manual discharge pull

After the fire suppression system discharges, operate the generator blower and reset the system by engaging the override switch. Run the blower for five minutes before opening the generator compartment to evacuate the fire suppression agent.

For additional important information, see section 9, Safety Information, and the automatic fire suppression system owner's manual.

2.6 Steering System

Steer your boat using the steering wheel, joystick control, or engine controls. For detailed information, see the engine user manual.

Steering Wheel Driving

Steering wheel responsiveness can be quick. Aggressive steering can turn and heel the boat dramatically. While underway, maneuverability is highly responsive to the skipper's command.

Tilt the steering wheel to a comfortable position by pushing the tilt catch on the 6 o'clock position of the wheel base.

The steering wheel sends a digital signal to the Electronic Vessel Control (EVC) computer, which sends commands to the IPS drives to rotate accordingly. The steering wheel will rotate in either direction limitlessly, but a digital stop has been encoded. No matter how many turns the wheel is given in either direction, the drives will stop rotating

once the digital stop point has been realized. At higher engine speeds the steering turning degree is more controlled: that is to say, the angles of turning will be limited at higher engine revolutions (RPMs). At higher engine speeds a built-in resistance will interface with the wheel, giving the helmsman the analog feel of force when turning.

The rudder angle indicator on the Multi-Function Displays (MFDs) shows an approximation of the drive angle.

When the ignitions are turned off, the IPS drive units automatically center.

Joystick Driving

The Helm Master® joystick is located on the outboard helm armrest. Before using this system, carefully review the owner's manual for important safety warnings and operating instructions.

Helm Master joystick

The joystick control may be used to steer the boat in place of the steering wheel. The joystick makes docking easier, with intuitive maneuvering that allows the boat to move sideways or spin on its own axis. When using the joystick to steer, the throttles still control the engine RPMs. To steer gradually, twist the joystick in the desired direction. To dodge or turn quickly, push the joystick to port or starboard and the boat will quickly turn hard. The steering wheel is in standby position while joystick driving. To use the steering wheel, simply turn it and it will become fully available, deactivating the joystick.

The joystick provides driving, docking, and high mode options. Engage HIGH MODE when conditions (e.g., high winds or strong current) call for more power. The HIGH MODE button will illuminate and an audible signal will sound. Select the HIGH MODE button again to deactivate and return the system to regular docking mode.

All joystick buttons are ON-OFF switches. Press once for ON and a second time for OFF. See the engine owners manual for more information.

Trim Tabs (Lenco® system)

The Lenco® Auto Glide boat leveling system controls the boat's trim tabs to automatically *set* your boat in the most fuel efficient, highest performing position. Trim tabs are installed on the transom of the hull. The Lenco panel controls bow up and down movements and starboard and port up and down movements. Bow up and bow down will control the hull planing attitude, while port and starboard up and down provide control for the hull trim side to side.

Auto Glide (trim tab) panel

Before leaving the dock, make sure the tabs are in the full UP position by holding the trim tab switches in the UP position for ten seconds. Do not continue to operate the switch once the tabs are fully up or down.

CAUTION

Before backing your boat at more than idle speed, depress both trim switches to UP to fully retract the trim tabs. Failure to do so could result in damage to trim tab actuators.

The Auto Glide panel will light to indicate the position of the trim tabs.

Refer to the Auto Glide owners manual for more information.

2.7 Seakeeper Gyro Stabilization System (optional)

To operate the optional Seakeeper® Gyro Stabilization System, if installed, use the control display located on the helm. Refer section 4, Electrical Systems, and the Seakeeper user manual for more information.

2.8 12-Volt DC Helm Switches

There are a number of DC buttons on the helm. For any of the buttons to function, the corresponding circuit breaker on the Master DC Panel or the DC distribution panel must be switched ON. The DC distribution panel is located under the starboard salon loveseat cushion. See section 4, Electrical Systems, for more information.

Helm Seat Aft/Fwd: Move the helm seat forward or aft.

Windlass Deploy/Retrieve: Deploy and retrieve the anchor. To operate, the windlass breaker on the right side of the Master DC Panel housing, and the windlass button on the DC distribution panel, must be ON. Refer to the windlass information in section 7, Exterior Equipment.

Sunroof Close/Open: Open and close the sunroof. When closing, there is a defined stop to the motion, for safety purposes. Release the button, then press again to fully close.

Wipers (Port, Stbd): Activate the port and starboard windshield wipers.

Wiper Hi/Lo: Select high (fast) or low (slow) windshield wiper speed.

Washer: Activate the windshield washer. The fresh water system must be on to operate the washer.

ACC: This unassigned button is reserved for user-installed accessories. DO NOT install a component with an operating current that exceeds 10 amps (12V DC).

Nav Lights: Activate the red and green navigation (or 'running') lights and the all-around light on the masthead. Use when operating the boat at night or when visibility is reduced.

CAUTION

Always make sure the aft navigation light is visible. Never obstruct or block the visibility of any of the navigation (NAV) lights.

Wht Lights: Activate the white lights mounted on the underside of the hardtop.

Blue Lights: Activate the blue lights mounted on the underside of the hardtop.

Anc Light: Activate the all-around anchor light on the masthead. Use this light when the boat is at anchor at night.

Red Lights: Activate the red lights mounted underneath the hardtop. For use when navigating at night.

Horn: Activate the boat horn.

The blower and bilge pump buttons are located outboard of the helm, forward of the engine control head.

Helm station

2.9 Outboard of the Helm

The area outboard of the helm houses the Fireboy fire suppression system status indicator; bilge and blower buttons; VHF radio; cup holder; 12v outlet and USB port; and Fireboy fire suppression system override. Refer to the Automatic Fire Suppression System information in this manual for more information.

Outboard of the helm

2.10 Blower and Bilge Pump Controls

The bilge pump and blower buttons are located outboard of the helm.

BLOWER: Press the button ON to activate the engine room exhaust blower(s). The button lights up blue when the blower(s) is ON.

BILGE (FWD, MID, AFT): Press the appropriate button to manually activate the corresponding bilge pump. The button will light up red if the bilge pump has been automatically activated. See the drainage information in section 5, Plumbing Systems, for bilge pumps locations.

2.11 Compass

The compass is located forward of the helm. To adjust the compass, read the instructions on 'Compass Compensation' provided with this manual. The compass cannot be adjusted accurately at the factory; it must be compensated for the influence of the electrical equipment and electronics unique to your boat. The compass should be adjusted by a professional after all electronics and additional electrical accessories are installed and before operating the boat.

2.12 Spotlight (optional)

Operate the optional ACR spotlight using the helm control panel, below the throttle control. Refer to the spotlight owner's manual for operating instructions.

Spotlight control

2.13 Control Systems Maintenance

Control Maintenance

Periodic inspection should be made of the control systems and all connections. Periodic lubrication of all moving parts and connections with light waterproof grease is required. Signs of rust, corrosion, wear, or other deterioration must be serviced immediately.

If control system adjustments become necessary, see your Tiara dealer.

Trim Tab Maintenance

Marine growth can affect the operation of the trim tab planes and actuators. To help reduce marine growth, return the trim tabs to the full UP position after operating the boat. Inspect and clean the actuators and planes regularly.

The trim tabs also include a zinc anode to help prevent galvanic corrosion. Galvanic corrosion occurs when different metals are submerged in an electrolyte. Sea water is an electrolyte and submerged metal components must be protected. Anodes were factory installed and need to be replaced when they are 75% of their original size.

Refer to the sacrificial anodes information in section 11, Routine Maintenance, and the trim tab owner's manual for additional maintenance information, fluid specifications, and operating instructions.

Operator Notes

Fuel Systems

3.1 General

Your Tiara is equipped with two fuel tanks. Fuel fills labeled DIESEL are located on the starboard deck walkway. Fuel system vents are located below the fuel fills in the hull sides.

The fuel system of your boat is designed to meet the requirements of the U.S. Coast Guard, Environmental Protection Agency (EPA), National Marine Manufacturers Association (NMMA), and American Boat and Yacht Council (ABYC) in effect at the time of manufacture.

DANGER

FIRE/EXPLOSION HAZARD

Fuel and its vapors are highly explosive when exposed to open flame or spark, resulting in death or serious injury.

- **Make sure no vapors are present before turning on electrical equipment or starting engines.**
- **Make sure fuel is added to the fuel tank only. DO NOT confuse other deck fills with fuel fills.**
- **DO NOT remove anti-siphon valves from the system.**
- **Turn off all electrical switches before servicing the fuel system.**
- **DO NOT drain any fuel in the bilge.**
- **Check all fuel lines and fittings for leaks before and after starting the engines and after any fuel system service.**
- **Prime fuel system and check all fittings for leaks before and after starting the engines.**
- **DO NOT block fuel vents.**
- **DO NOT store fuel in any containers or compartments not designated for fuel storage.**

NOTICE

Certain bulkhead areas are sealed in compliance with U.S. Coast Guard regulations at the date of manufacture. Any modifications must be made in accordance with the regulations.

Fuel Fills

Diesel fuel fills are located on the starboard gunwale and are marked DIESEL. Remove the cap by inserting the provided fill cap key into the slot and turning the key counterclockwise. The boat's dual tanks together hold approximately 500 gallons (1,893 liters) of fuel. The engines and the generator share the same diesel fuel supply.

WARNING

FUEL IS FLAMMABLE. DO NOT SMOKE. NEVER FILL THE TANK WHILE THE ENGINES, BLOWERS, GENERATOR, OR OTHER EQUIPMENT IS OPERATING. DO NOT FILL NEAR OPEN FLAMES.

Diesel fuel fill

Filling the fuel tank

To fill the fuel tank:

1. Turn off all breakers on the AC and DC distribution panels.
2. Make sure the generator is OFF.

3. Make sure your boat is securely moored
4. Close all port lights, hatches and doors.
5. Estimate how much fuel will be needed to fill the tank.
6. Insert the provided fill cap key into the slot in the fuel fill cap, turn the key counterclockwise, and remove the cap.

WARNING

BE SURE THAT THE FUEL FILL IS IN CONTACT WITH THE FUEL NOZZLE TO PREVENT ANY STATIC SPARKS DURING THE FUELING OPERATION. FAILURE TO HEED THIS WARNING COULD RESULT IN A STATIC ELECTRICITY CHARGE THAT COULD LEAD TO INJURY, DAMAGE OR DEATH.

7. Insert the fuel nozzle into the fuel fill and dispense the fuel until the tank is full. The fuel delivery system will shut off when the tank is filled to the proper capacity. If your tank takes significantly more fuel than expected, investigate the cause immediately.
8. Remove the nozzle. Tighten securely with the provided key.
9. Wash the areas around the fuel fill(s) to help reduce discoloration of the fiberglass or striping. Use only the fuel recommended by the engine manufacturer. Refer to the engine owner's manual for additional information.
10. Check the engine room and bilge areas for fuel odors. If you smell fuel, do not start the engines or other electrical equipment. Investigate and correct the problem, and completely ventilate the bilge area before proceeding.

WARNING

DO NOT START THE ENGINES UNTIL YOU ARE SURE THERE ARE NO FUEL FUMES IN THE BILGE OR ENGINE COMPARTMENT OF YOUR BOAT. FUEL VAPORS ARE EXPLOSIVE AND MAY IGNITE DURING ENGINE START-UP CAUSING SERIOUS INJURY OR DEATH.

During refueling, the tank will vent out at both the fuel fill plate and the vent located on the side of the hull. Note: There should not be any residual fuel at the vent but there could be residual fuel at the deck fill plate. Do not block or restrict either of these vents.

If fuel is accidentally added to any other tank, DO NOT attempt to pump fuel out; these systems are not designed to pump fuel. Fuel must be removed by qualified personal only. Fuel in other systems will also require replacement of that system and/or multiple components.

CAUTION

A no-spill vent system is used so that fuel will not spill out of the vents when filling; however, fuel will exit the fuel fill pipe if overfilling occurs. When filling the fuel tank listen carefully for fuel filling up in the fill pipe.

NOTICE

To prevent damage to your fuel system, use only a quality grade of fuel as recommended by the engine manufacturer. Do not use a fuel which contains harsh additives. Damage to your fuel system as a result of using these fuels will not be covered by your warranty.

NOTICE

Be careful not to spill any fuel outside the boat into the water. If you do, clean up the fuel immediately in the manner prescribed by your local regulations.

WARNING

The Federal Water Pollution Control Act prohibits the discharge of oil or oily waste into or upon the navigable waters of the United States, or the waters of the Contiguous Zone, or which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States, if such discharge causes a film or discoloration of the surface of the water or causes a sludge or emulsion beneath the surface of the water. Violators are subject to substantial civil penalties and/or criminal sanctions, including fines and imprisonment. Report all discharges to the USCG National Response Center at 1-800-424-8802 or to your local U.S. Coast Guard office by phone or VHF radio, Channel 16.

Engine Fuel Filter/Water Separators

Fuel filters are located on the forward engine room wall, to port and starboard. There is one water-separator type filter for each engine fuel line. Check filters for water frequently to ensure an adequate supply of clean, dry fuel to the engines. The filter elements should be changed every 500 engine hours, at every other oil change, once a season, or if a power loss is noticed, whichever comes first. Refer to the engine and filter user manuals for additional information, and see the end of this section for more fuel system maintenance information.

Inspect or drain the fuel filter's collection bowl of water daily or as necessary. The collection bowl must be drained before contaminants reach the top of the turbine. The contamination level of the fuel will determine how frequently the bowl must be drained.

To drain water from the fuel filter/water separators:

1. Ensure all engines are OFF.
2. Turn OFF engine fuel valves.
3. Open the drain on the bottom of the bowl with a suitable container in place.

NOTE: DO NOT leave the drain open too long as it will eventually drain the entire filter assembly of water and fuel, and possibly drain the entire fuel tank.

4. Close the drain after all the water and contaminants have been evacuated.
5. Follow the priming instructions below.

Priming instructions:

1. Ensure all engines are OFF.
2. Turn OFF engine fuel valves.
3. Remove the T-handle and lid from the top of the filter assembly.
4. Fill the filter assembly with clean fuel.
5. Lubricate the lid gasket and T-handle O-ring with clean fuel or motor oil.
6. Replace the lid and T-handle and tighten snugly **by hand only—do not use tools.**
7. Turn ON engine fuel valves.
8. If applicable, refer to the engine user manual to complete the fuel priming procedure.
9. Start the engine and check for fuel system leaks.
10. Shut the engine OFF and check for fuel system leaks.
11. Correct any leaks as necessary with all engines OFF and pressure relieved from the filter assembly.

Fuel water separating filter (typical)

To change the engine fuel filter elements:

1. Ensure all engines are OFF.
2. Turn OFF engine fuel valves.
3. Remove the T-handle and lid from the top of the filter assembly.
4. Remove the element by holding the bail handles and slowly pulling upward with a twisting motion.
5. Dispose of the old element properly.
6. Replace the old lid gasket and T-handle O-ring with new seals (supplied with the new element).f
7. Lubricate both seals with motor oil or diesel fuel before installation.
8. Follow 'priming instructions' above.

NOTE: We recommend having extra filter elements on hand, as one tankful of excessively contaminated fuel can require multiple element changes.

3.2 Generator Fuel System

The engines and generator share the port fuel tank. The generator fuel withdrawal tube is designed to stop drawing fuel when the tank is one quarter (1/4) full with the boat sitting at rest. Cruising attitudes and sea conditions may affect when this occurs. The system was designed in this manner to allow for a margin of safety so the generator does not deplete the engines' fuel supply.

Make sure the fuel valve on top of the port fuel tank is in the ON position before attempting to start the generator.

Generator Fuel Filter/Water Separators

The generator fuel filter/water separator is located in the engine room. The filter element should be changed either every 400 engine hours; at every generator oil change; or annually, whichever comes first. Refer to the generator user manual for additional information.

Check the sediment bowl periodically and drain if water is present. Water and contaminates settle to the bottom of the bowl.

Generator water-separator fuel filter

To drain water from the generator fuel filter/water separator:

1. Ensure all engines are OFF.
2. Remove the drain plug on the bottom.
3. Drain the bowl into a proper receptacle and discard according to local laws and regulations. (Drain one cup of fuel and check for consistency in color; if water is visible, drain out more fuel until clean fuel is present).
4. Reprime the unit by following the generator priming instructions below.

To prime the generator:

1. Ensure all engines are OFF.
2. Spin the filter element/bowl assembly off the mounting head and fill with clean fuel.
3. Spin the filter element/bowl assembly back onto the mounting head and tighten snugly **by hand only—do not use tools.**
4. Verify all other connections are tight.
5. Start the generator and check for fuel system leaks.
6. Correct as necessary with all engines off.

To change the generator fuel filter element:

1. Turn OFF generator fuel valves.
2. Remove the drain plug on the bottom of the fuel filter.
3. Remove the filter element/bowl assembly from the head/mounting bracket.
4. Remove the bowl and discard of the filter properly.
5. Clean the bowl and the bowl O-ring gland.
6. Lubricate the O-ring with clean motor oil or diesel fuel and place it in the bowl gland.
7. Spin the bowl onto the new filter element and tighten snugly **by hand only—do not use tools.**
8. Lubricate the element gasket with clean motor oil or diesel fuel.
9. Prime the fuel filter system by filling the bowl/element assembly with clean fuel.
10. Spin the bowl/element assembly onto the head/mounting bracket. Tighten snugly **by hand only—do not use tools.**
11. Turn the generator fuel valves ON.
12. Start the generator and check for fuel system leaks.
13. Correct any leaks with the generator OFF.

3.3 Fuel System Maintenance

Spray the valves, fuel tank gauge sender and ground connections with a metal protector.

Inspect the fuel fill cap o-ring seals frequently and lubricate with petroleum jelly or silicone grease. The o-ring seal prevents water from entering the fuel system through the fuel fill cap. If the o-ring is damaged, or you suspect it is damaged, replace it.

DANGER

FIRE / EXPLOSION HAZARD

Fuels are extremely flammable and highly explosive under certain conditions. DO NOT smoke or allow open flames or sparks nearby when inspecting the fuel system. Check fuel lines and all system components (filters, primer bulbs, clamps and connections) frequently for leaks, damage or deterioration. If you suspect damage, replace as necessary. Surface cracking on a hose indicates wear—replace it.

Diesel engine operation requires a good supply of clean, water-free diesel fuel. Algae can grow in the accumulated water in the diesel fuel tank. This will normally occur in warm climates. Adding a high-quality diesel fuel additive containing an algaecide may be required periodically to control algae in your diesel system, depending on your boating area. Contact your Tiara dealer or engine manufacturer for additional information regarding fuels and additives.

See section 12, Seasonal Maintenance, for more information.

Operator Notes

Electrical Systems

4.1 General

The electrical systems in your Tiara have been developed to supply all the boat's electrical needs at the dock, at anchor, and underway. While this manual will not attempt to describe all of the electrical engineering that went into the system, a basic understanding will help assure trouble-free operation.

Some compartments on your boat may be lighted. Lights bulbs produce heat and can ignite combustible products. Turn off all lighting before you leave the boat.

Your boat is equipped with DC and AC electrical systems. The DC system draws current from onboard batteries. The AC system can draw current from either a dockside power outlet or the generator.

Tiara recommends you take your boat to an authorized Tiara dealer for service or installation of additional electrical equipment. Electrical schematics are included in Appendix F to assist technicians in the servicing of the electrical systems. Tiara reserves the right to modify or update the electrical system at any time without notice to the consumer or obligation to make updates to boats built prior to the change.

WARNING

ALL SERVICE WORK ON THE ELECTRICAL SYSTEMS IN YOUR TIARA SHOULD BE PERFORMED ONLY BY AN AUTHORIZED TIARA DEALER OR OTHER QUALIFIED MARINE ELECTRICAL SERVICE FACILITY. FAILURE TO DO SO MAY RESULT IN PERSONAL INJURY OR DEATH.

WARNING

FIRE OR EXPLOSION HAZARD

IGNITED COMBUSTIBLE PRODUCTS CAN CAUSE FIRE OR EXPLOSION, RESULTING IN DEATH OR SERIOUS INJURY. DO NOT STORE COMBUSTIBLES NEAR LIGHTS AND TURN OFF ALL LIGHTING BEFORE LEAVING THE BOAT.

4.2 12V DC System

Power Supply

Two 8D batteries have been selected to provide optimum performance for engine starting and house loads. The batteries are located in the engine room. Refer to the engine owner's manual for information about the circuit breakers installed on your engines.

The house battery bank supplies power to all the boat's comfort and convenience functions such as lighting, pumps, actuators, 12V stereo, and electronics. Use the house to power any aftermarket electronics.

CAUTION

All aftermarket electrical components should be installed by your Tiara dealer or other qualified marine electrical service facility. They must be installed to be powered from the house battery bank only. The engine battery banks are strictly reserved for engine power only.

Battery Charging

The 12-volt DC system batteries are charged by the engine alternators when the engines are running. When connected to shore power or when operating the generator, batteries

are charged by the battery chargers. Turn the battery chargers on by using the BATTERY CHARGER switches on the Master DC Panel and the AC Distribution Panel.

Your boat is equipped with two battery chargers. The 12v/100 amp charger charges the house batteries, and the 24v/16 amp charger charges the engine batteries. Both chargers are calibrated to provide the proper charge levels for each specific battery. Changing the battery specification will require recalibration of the battery chargers. The battery chargers are located in the forward engine room.

Battery chargers (typical)

It is important that your batteries be kept in a state of full charge as much as possible. Fully charged 12V batteries will indicate a voltage in excess of 12.6 volts with no load, or while being charged. Consult the helm MFD to check battery voltage.

Prolonged periods of discharge will cause the batteries to deteriorate rapidly, and will result in their inability to hold a charge for the expected amount of time. This can happen easily if excessive DC loads (such as lights) are left on while the battery charger is off.

When underway, batteries are charged by the engine alternators. At dockside, when the boat is connected to shore power, the battery chargers maintain the charge on the engine and house batteries. When operating on the generator, the engine and house battery chargers must be on to maintain charge to the batteries.

When leaving the boat for any extended period of time, connect your boat to shore power with the battery chargers ON. To do so, be sure the Master DC Panel BATTERY CHARGER breakers and the AC Distribution Panel BATTERY CHARGER breakers are ON.

DC Distribution

Power from each engine battery supplies the respective red engine battery switch (STBD ENGINE, PORT ENGINE) on the Master DC Panel, located in the engine room. These red switches may be controlled remotely using the PORT BATTERY and STBD BATTERY buttons on the Power Control Panel in the starboard galley electrical cabinet.

Power from the house batteries supplies the red HOUSE battery switch on the Master DC Panel. This switch may be controlled remotely using the HOUSE BATTERY button on the Power Control Panel in the starboard galley electrical cabinet.

Power Control Panel with AC voltage monitor.

When the red main battery switches on the Master DC Panel are in the OFF position, all DC power to the rest of the boat (including power to the CO detector and high water alarm) is disconnected. **The only exceptions are** the forward, mid, and aft automatic bilge pumps and the battery chargers. Shutting

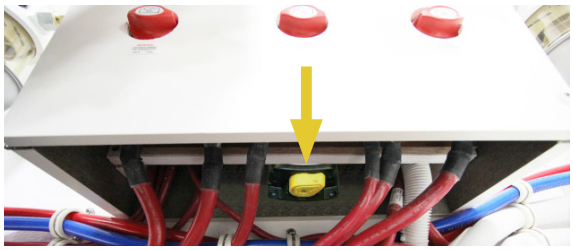
OFF the red main battery switches will not disconnect power to bilge pumps or battery chargers.

DC Volt Meter

Periodically monitor the voltage (charge) on your batteries. To do so, use the DC volt meter on the Power Control Panel in the starboard galley electrical cabinet. Do not operate the DC system if the voltage is lower than 12v or higher than 15v.

Automatic Charging Relay

Your Tiara is equipped with an automatic charging relay (ACR). The yellow ACR remote override knob is located on the bottom of the Master DC Panel in the engine room. See the automatic charging relay owners manual for more information.

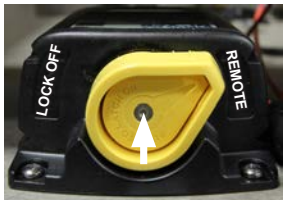


Yellow ACR override knob under the Master DC Panel

An ACR automatically parallels (combines) battery banks during charging, and isolates them when charging has stopped and battery voltage has fallen. The ACR is intended to keep a load from discharging both of the battery banks it is connected to. The ACR is connected to the port engine battery bank and the starboard engine battery bank. The ACR, when in **REMOTE MODE,** continuously monitors the voltage in the battery banks and, if needed, automatically charges the starboard engine battery bank when the port engine is running.

The ACR should be kept in REMOTE MODE (automatic) unless the boat is in storage or being serviced by an authorized Tiara dealer, or the **battery banks need to be interconnected in an emergency situation.** For REMOTE MODE (automatic), the yellow override knob should be oriented to the right, as shown.

ACR in REMOTE mode



ACR in LATCH ON mode

Emergency Battery Bank Interconnect

If one of the engine battery banks is discharged and will not start its engine, the ACR can be used to manually interconnect the port and starboard engine battery banks for additional power to start the engine.

To combine battery banks: Locate the yellow ACR override knob under the Master DC Panel. With the knob in the REMOTE (right) position, push the center button until latched.

To isolate battery banks that are combined: Rotate the override knob to LOCK OFF (left) position to release the center button. The button will pop up. Rotate the override knob back to the REMOTE (right) position.

To prevent automatic operation: Rotate the override knob to LOCK OFF (left) position.

ACR in LOCK OFF mode

To secure for servicing: Rotate the override knob to LOCK OFF (left) position. Pass a cable tie through the hole, and tie.

WARNING

WHEN BATTERY BANKS ARE INTERCONNECTED, ALL NON-ESSENTIAL LOADS SHOULD BE TURNED OFF UNTIL THE PROBLEM WITH THE FAILED BANK IS CORRECTED. FAILURE TO DO SO CAN RESULT IN RAPID DEPLETION OF THE BATTERY POWER NEEDED TO SAFELY OPERATE THE BOAT, AND MAY RESULT IN PERSONAL INJURY OR DEATH.

DC Main Breakers

There are a number of breakers on the Master DC Panel that need to be switched ON for their corresponding components to operate. For all practical purposes, all breakers on the Master DC Panel should be left in the ON position when the boat is in use **except the oil changer breaker**.

Master DC Panel

The following breakers on the Master DC Panel provide circuit protection for the following components, and must be switched ON in order for the components to operate:

Battery Charger (12v): The 12v battery charger.

12 Volt: DC distribution panel

Oil Change Pump: Oil changer pump. Leave this breaker OFF at all times except when you are changing the oil.

Remote Ctrl Lights: Courtesy lights

Sunroof: SUNROOF switch at the helm

Alternator 12v: The engine alternators, which charge the batteries.

House Meter (+): Digital voltmeter displays

House Meter (-): Digital voltmeter displays

Battery Charger (24v): 24v battery charger

Bilge Fwd: Forward bilge pump

Bilge Mid: Mid bilge pump

Bilge Aft: Aft bilge pump

See section 5, Plumbing Systems, for bilge pump locations.

Port Engine Battery: The operational functions (e.g., trim tabs, wipers) that are powered by the port engine.

Engine Meter (+): Voltage monitoring

Engine Meter (-): Voltage monitoring

Two breakers are located on the right side of the Master DC Panel housing.

Windlass: Supplies power to the windlass motor

Swim Platform (optional): Supplies power to the hydraulic swim platform motor

Windlass or swim platform breaker (typical)

4.3 DC Distribution Panel

DC Breakers: 12-Volt

The DC distribution panel is located underneath the starboard salon loveseat cushion. The cushion is hinged; to lift, pull the outboard edge of the seat cushion to inboard.

The following 12-volt breakers on the DC distribution panel must be switched ON for the corresponding components to function.

Cabin Lights 1, 2 and 3: Cabin light switches.

Fresh Water Pump 1 and 2: Fresh water pumps. Must be turned ON in order to use the showers and sinks. Turn OFF when the boat is unattended.

Vacuum Pumps: Head vacuum flush pump(s). Must be switched ON in order for the head vacuum flush to function.

Head Fan: Shared exhaust fan, operated by the switches in the master and VIP heads.

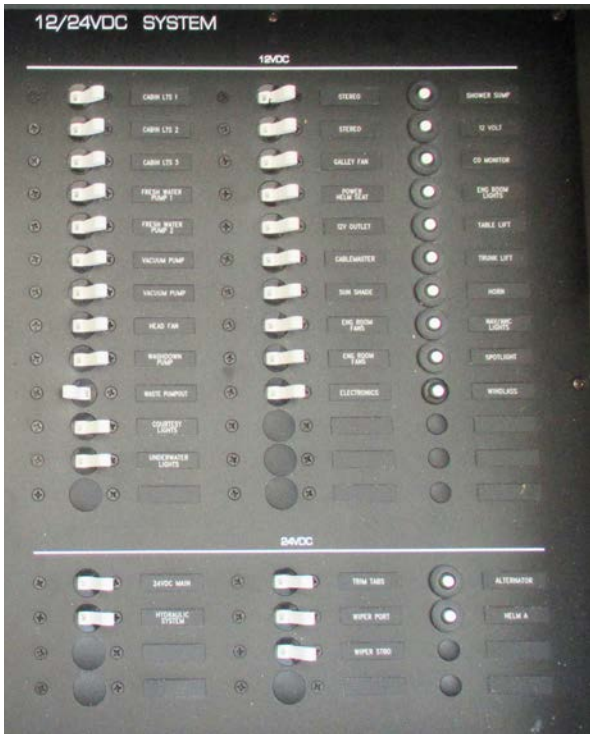
Washdown Pump: Pressure-demand raw water washdown pump. The pump is also protected by an automatically resetting breaker on the pump motor. Refer to section 5, Plumbing Systems, for more information.

Waste Pumpout: Overboard waste discharge pump. **This breaker should be kept OFF at all times** unless pumping waste overboard in a legal raw sewage discharge area. See section 5, Plumbing Systems, for more information.

Courtesy Lights: Courtesy lights throughout the boat.

Underwater Lights (optional): Underwater lights switch on the transom buffet. For use only when the boat is in the water.

Stereo: Stereo, amplifier, and stereo remote units**.**



DC distribution panel

Galley Fan: Exhaust fan switch in the port galley.

Helm Seat: Helm seat fwd and aft buttons on the helm.

12v Outlet: 12v outlet outboard of the helm/

Cablemaster: Supplies power to the CABLEMASTER switch in the aft starboard shore power locker.

Sun Shade (Optional): On boats equipped with the optional Makefast aft cockpit sunshade, this switch supplies power to the SUNSHADE button located on the aft-facing port cockpit seat.

Engine Room Fans: BLOWER button outboard of the helm.

Electronics: Electronics on the helm

Shower Sump: Supplies power to the shower sump located under the master stateroom sole.

12 Volt: Control circuit for deck switches

CO Monitor: Carbon monoxide detectors. See section 9, Safety Equipment, for locations.

Eng Room Lights: Automatic engine room light.

Trunk Lid: Transom trunk lid switch, located above the transom buffet counter.

Horn: Horn button on the helm.

Nav/Anc Lights: NAV and ANC LIGHTS buttons on the helm.

Spotlight (optional): SPOTLIGHT button on the helm, if installed.

Windlass: WINDLASS DEPLOY and RETRIEVE buttons on the helm. The windlass breaker on the right side of the Master DC Panel housing must also be turned on for the windlass to function.

DC Breakers: 24-Volt

The following 24-volt breakers on the bottom of the DC distribution panel must be ON for the corresponding components to function.

24VDC Main: PLC processor that controls the shore power/generator select switch.

Hydraulic System (optional): Hydraulic swim platform switch on the transom buffet, if installed. The swim platform breaker on the right side of the Master DC Panel housing must also be switched on for the swim platform to function.

Trim Tabs: Supplies power to the Lenco trim tab panel at the helm.

Wiper Port: PORT WIPER and HI/LO buttons on the helm

Wiper Stbd: STBD WIPER and HI/LO buttons on the helm

Alternator: Engine alternators

Helm A: Bilge pump buttons, outboard of the helm

4.4 Seakeeper Gyro (optional)

Boats equipped with the optional Seakeeper® gyro features a gyro low voltage alarm. Refer to the Seakeeper owners manual for additional information.

In situations where there is a net discharge on the house battery bank (i.e. engines off), the Seakeeper – which continually monitors battery voltage – will run at full power until it detects 11.1 VDC. At this level, which reflects approximately 11.3-11.5 VDC at the battery bank, the Seakeeper will begin incrementally decreasing its power consumption to ensure that its measured voltage does not decrease below 11.0 VDC.

During this decrease in power consumption, if the measured voltage at the Seakeeper does not increase above 11.1 VDC, then the Seakeeper will continue to de-rate power consumption until it reaches 67% of its flywheel target speed. At this point, an alarm will trigger and the Seakeeper will shut itself down.

If, before the 67% flywheel speed automatic shutdown is triggered, a net charge is fed back into the battery bank (i.e. engines have been started) and the voltage at the Seakeeper is raised above 11.1 VDC, the Seakeeper will detect this and begin incrementally increasing its power consumption once again, until it resumes full-speed stabilization.

If the system voltage is raised after the 67% flywheel speed automatic shutdown is triggered, the user will need to manually restart the Seakeeper to resume stabilization.

4.5 AC System

All AC current is distributed to the AC components through individual circuit breakers located on the AC distribution panel, found beneath the starboard salon loveseat cushion.

To supply power to the boat's AC system, do one of the following:

- Connect the aft shore power cable or optional forward shore power cable to a dockside power outlet. See section the Shore Power Connection section in this manual for more information.
- Run the onboard generator. See the generator's user manual for operating instructions.
- Use the optional inverter, if installed.

DANGER

ELECTROCUTION, FIRE OR EXPLOSION HAZARD

Contact with live wires or working on an energized electrical system can cause electrocution. It can also cause sparks, resulting in fire and/or explosion. Both cases will result in death or serious injury. DO NOT work on an energized system or allow unqualified personnel to work on the system.

The SHORE POWER and GENERATOR POWER buttons on the Power Control Panel are designed to prevent the two power sources from being energized simultaneously and damaging the electrical system components. Refer to further information about connecting to shore power and using generator power later in this section.

Use 240V-50A shore power whenever possible to allow full functionality of your boat's AC system. Using a 120V-30A adapter will reduce the functionality of the AC system. A 120V-30A connection will allow the use of only the battery charger, refrigerator/freezer, 120V outlets, microwave, and cockpit grill.

Inverter (optional)

If the optional inverter is installed, and you are using the generator or shore power, the INVERTER breaker on the AC Distribution Panel **must be switched ON** to provide power to the REFRIGERATOR, OUTLETS 1, OUTLETS 2, MICROWAVE and DECK GRILL breakers.

Inverter control panel

To use the optional inverter, switch OFF the SHORE POWER and GENERATOR POWER buttons on the Power Control Panel in the starboard galley electrical cabinet. Then switch ON the INVERTER breaker on the AC distribution panel. Switch the inverter ON using the Inverter Control Panel located in the starboard galley electrical cabinet.

Using the optional inverter will reduce the functionality of the AC system. The inverter will allow the use of only the refrigerator/freezer, 120V outlets, microwave and cockpit grill.

The amount of time these items will be powered depends on the charge level of the house battery bank. Monitor the house battery bank voltage frequently during inverter operation. If the voltage drops too low, the low voltage alarm will sound.

AC Voltmeter

Monitor the available AC voltage periodically, in order to detect abnormal operating conditions early. To check the voltage, consult the AC volt meter on the Power Control Panel in the starboard galley electrical cabinet, or on the helm multi-function display (MFD). See the volt meter manufacturer's user manual for more information. The meter will indicate the current voltage of the power source (shore power or generator) and the load currently being applied to that source. The batteries must be switched ON to use the power monitors.

Power Control Panel with volt meters

If the voltage being supplied while using the 240V-50A connection is lower than 210V or higher than 260V, or the voltage being supplied while using 120V-30A connection is lower than 105V or higher than 130V, discontinue use and correct the problem as soon as possible.

AC Distribution

Power is supplied from the selected main power source (aft shore power, generator, optional forward shore power or optional inverter) to the AC Distribution Panel. The boat's AC-powered components are supplied power via breakers on the AC Distribution Panel.

4.6 AC Distribution Panel

The AC distribution panel is located under the starboard salon loveseat cushion. The cushion is hinged; lift up and back to access the panel.

The AFT SHORECORD and, if equipped, FWD SHORECORD main breakers protect the AC distribution system. These breakers are very sensitive. The resulting power surge that occurs when connecting the dockside cord or starting the generator may cause the main breaker to trip. To avoid this surge, always turn the breakers to the OFF position before plugging or unplugging the shore power cord.

The following breakers on the AC distribution panel must be switched ON for the corresponding components to function.

Outlets 1, 2, 3, and 4: Supply electrical current to the boat's electrical outlets and protect against short circuits and overloads. AC electrical outlets are provided with ground fault interrupters (GFI) to protect against electric shock. These outlets should be tested periodically to ensure proper operation by pressing the test/reset buttons in the center of the face plate. The GFI outlets themselves do not protect against short circuits and overloads.

NOTE: GFI outlets do not provide 100% protection from electric shock. Even though ground fault interrupters provide protection by reducing exposure time from line to ground shock hazards, it is still possible to receive an electric shock from defective appliances or power tools and misused electrical equipment.

Water Heater: Supplies electrical current to the water heater. Do NOT turn this switch ON without having water in the water heater. The water temperature is automatically controlled by the temperature valve on the water heater. See section 5, Plumbing Systems, and the water heater owner's manual for more information.

AC distribution panel

Gyro Pump (optional): Supplies power to the Seakeeper gyro pump, if installed. Must be switched ON in order to operate the gyro?

Gyro Stabilizer (optional): Supplies power to the Seakeeper gyro stabilizer, if installed. Must be switched ON in order to operate the gyro?

Battery Charger: Supply power to the battery chargers, which maintain the charge on the engine and house batteries. These breakers should ALWAYS be ON when shore power is connected or the generator is operating. The battery chargers, located in the engine room, are automatic and equipped with an ammeter to monitor charging. See the battery charger owner's manual for more information.

Microwave: Supplies power directly to the port galley microwave. See the microwave manual for more information.

Refrigerator: Supplies power to the starboard galley drawer refrigerators.

Air Cond 1, 2, 3 and 4: Supply electrical current to the air conditioning units. This breaker must be ON in order to use the air conditioning unit(s). Refer to the air conditioner owner's manual for additional information.

Air Cond Pump: Supplies electrical current to the air conditioner pump. This breaker must be ON in order to use the air conditioning unit(s). Refer to the air conditioner owner's manual for additional information.

Deck Grill (optional): Supplies electrical current to the transom grill, if equipped. This breaker should ONLY be on when the grill is being used. See the grill owner's manual for more information.

Beverage Cooler (optional): Supplies power to the port galley beverage cooler, if installed.

Stove: Supplies power to the port galley cooktop.

Cockpit Refrig (optional): Supplies power to the transom refrigerator, if installed.

4.7 Shore Power Connection

Connecting to Shore Power

Use 240V-50A shore power whenever available to allow full functionality of your boat's AC system. A 240V-50A shore power cable is located in the aft cockpit starboard shore power locker, and is connected to a powered cable recoil system. To pay out or retrieve the cord, the CABLEMASTER breaker on the DC Distribution Panel must be ON.

Shore power locker

DANGER

ELECTROCUTION HAZARD

Exposure to high voltage will cause death or serious injury. DO NOT attempt to correct wiring yourself. DO NOT swim in marinas or near boats connected to shore power. Keep children away from any electrical cables or equipment and use grounded appliances onboard only.

WARNING

DO NOT MAKE CONNECTIONS IN WET WEATHER, WITH WET HANDS, OR WITH WET CABLES AND CONNECTIONS. ALWAYS USE A 3-WIRE ELECTRICAL SYSTEM CONNECTED TO A GROUND. DO NOT USE WORN OR DAMAGED CABLES. FAILURE TO HEED THIS WARNING CAN RESULT IN AN ELECTRICAL SHOCK INJURY OR DEATH.

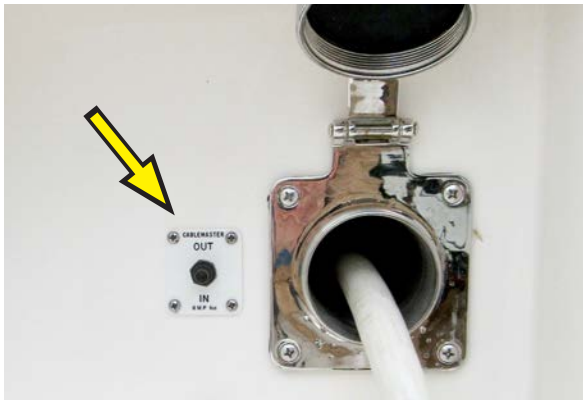
To connect to shore power:

1. Switch OFF the AFT SHORECORD breaker and, if installed, the FWD SHORECORD breaker on the AC Distribution Panel.
2. Switch OFF the shore power breaker in the starboard transom shore power locker. If using the optional forward shore power connection, switch OFF the additional breaker located in the anchor locker.
3. If there is a breaker switch at the dockside shore power station (on the dock), verify it is in the OFF position.
4. Determine the voltage/amperage available from the dockside shore power station (240V-50A or 120V-30A).

Note: Using 120V-30A shore power will reduce the functionality of your Tiara's AC electrical system. Use 240V-50A shore power whenever available to allow full functionality of your Tiara's AC system.

Shore power breaker (left) and ground fault sensing module

5. Open the cover and extend the shore power cord. Flip the cablemaster switch, located near the shore power cord cover, to the OUT position. When sufficient cable is extended to reach the dockside shore power station, return the cablemaster switch to the neutral or center position.
6. If using the forward cable instead of the aft cable, plug the separate forward cable into the receptacle located in the anchor locker, and extend it to the dockside power station.



Cablemaster switch and shore power cord

CAUTION

When routing electric cables and dockside water hoses from the boat to the dock, be sure to allow sufficient slack so the cables and hoses will not be strained in any way as the boat moves within its slip. Do not allow cables or hoses to dangle into the water.

7. Plug the cable into the dockside shore power station outlet.
8. Switch ON the breaker(s) at the dockside shore power station outlet.
9. Switch ON the shore power breaker in the aft port shore power locker or anchor locker.
10. Check the shore power indicator lights on the AC distribution panel. Be sure the green AVAIL light for the applicable shore power source (AFT SHORECORD or optional FWD SHORECORD), is lit.

Note: If the REV polarity indicator is illuminated red, do not proceed. Turn OFF all breakers and contact marina personnel immediately.

Shore power and generator indicator lights, on the AC distribution panel

11. Switch ON the AFT SHORECORD breaker (or optional FWD SHORECORD breaker) on the AC distribution panel.

To disconnect from shore power:

1. Switch OFF the AFT SHORECORD breaker and, if installed, the FWD SHORECORD breaker on the AC Distribution Panel.
2. Switch OFF the shore power breaker in the starboard transom shore power locker or forward anchor locker.
3. Switch OFF any breaker(s) at the dockside shore power station outlet (on the dock).
4. Disconnect the shore power cable from the dockside shore power station outlet.
5. Return the aft shorepower cable to the boat and carefully retract it by flipping the cablemaster switch to IN. When fully retracted, flip the cablemaster switch to the neutral or center position, and replace the cover.

NOTE: The optional forward shore power connection does not have a cable recoil system. After disconnecting from the dockside shore power station, remove the separate cable from the receptacle located in the anchor locker. Coil up and stow the cable.

4.8 Generator

The diesel generator is located in an enclosure in the engine room. Fuel injected generators require bleeding of air from the fuel delivery system prior to initial start-up. Bleeding of the fuel system will also be required if the generator is allowed to run out of fuel. Continued attempts to start the generator without bleeding the fuel system under these circumstances can lead to engine damage or erratic operation. This procedure must be completed by your servicing dealer.

The generator is equipped with an automated start-up sequence to prevent over-cranking (which can lead to engine damage) and to ensure that the generator is up to operating temperature before the electrical load is applied. The display on the remote generator control panel, located in the starboard galley electrical cabinet, provides detailed informa-

tion on the operating status of the generator. Refer to the generator owner's manual for instructions on operation and interpretation of the displayed data.

Remote generator control panel, in the starboard galley electrical cabinet

To ensure that the batteries remain at peak charge, Tiara strongly recommends that the generator be run whenever the boat is in use (and not connected to shore power). Because of the number of DC systems on this boat, a significant drain on the batteries can occur. Depending on the RPM and the duration of operation of the engines, the engines' charging systems may not be able to keep up with the DC electrical demand, particularly when the engines are run at low RPM for extended periods. It is important to activate the house battery charger (using the button on the DC distribution panel) to maintain the house batteries whenever the generator is running.

CAUTION

To reduce the risk of fire, investigate all fuel odors immediately and do not start the engines, generator or other electrical equipment if fuel odors are present.

WARNING

DO NOT START THE GENERATOR UNTIL YOU ARE SURE THERE ARE NO FUEL FUMES IN THE BILGE OR ENGINE COMPARTMENT. FUEL VAPORS ARE EXPLOSIVE AND MAY IGNITE DURING GENERATOR START-UP, CAUSING SERIOUS INJURY OR DEATH.

CAUTION

Before starting the generator, ensure the fuel supply and return valves are open. A fuel valve is open when it is parallel to its associated fitting. Failure to open all fuel valves will damage the generator.

To start the generator:

1. Open all hatches to the bilge area. Investigate and remedy any fuel vapors that are detected.
2. Check the generator oil and coolant levels.
3. Open the generator raw water seacock.
4. Open the generator fuel supply and return valves. The valves are located on top of port fuel tank in the engine room.
5. Switch OFF the main AFT SHORECORD and FWD SHORECORD (if installed) breakers at the top of the AC Distribution Panel.

CAUTION

Allow the generator to warm-up three to four minutes before transferring the electrical load. After warm-up, press on the GENERATOR button in the starboard galley electrical cabinet.

6. Switch ON all breakers except the OIL CHANGE PUMP breaker on the Master DC Panel in the engine room.
7. Press ON the main battery buttons (PORT BATTERY, STBD BATTERY, and HOUSE BATTERY) on the Power Control Panel in the starboard galley electrical cabinet.
8. Turn ON the BLOWER button located outboard of the helm. Run the blower for five minutes prior to starting the generator.
9. Press and hold the GENERATOR POWER button on the Power Control Panel until the generator starts. The button will blink and the generator display panel will read 'STARTING' while the engine is preheating and cranking. The display will read 'RUNNING' once the generator starts and is running.

CAUTION

If the generator fails to start after 60 seconds of cranking, cease operation. Before attempting to crank again, drain the water from the generator's muffler. Failure to do so could result in raw water contamination of the generator's cylinders and damage the engine.

10. The boat's AC system is now being powered by the generator.
11. To stop the generator:
12. Turn OFF the GENERATOR POWER button on the Power Control Panel, located in the starboard galley electrical cabinet.
13. Allow the generator to run for two minutes without load to cool down.
14. Press and release the STOP button on the remote generator control panel in the starboard galley electrical cabinet.

The engines and the generator share the same fuel tank. The generator fuel withdrawal tube is designed to stop drawing fuel when the tank is one quarter (1/4) full with the boat sitting at rest. Cruising attitudes and sea conditions may affect when this occurs. The system was designed in this manner to allow for a margin of safety so the generator does not deplete the engines' fuel supply.

NOTICE

DO NOT allow the generator to run out of fuel. Fuel injected generators require air to be removed from the fuel delivery system before initial start-up or if the generator is allowed to run out of fuel. Continued attempts to start the generator with air in the fuel system can lead to engine damage or erratic operation. Air must be purged by your servicing dealer only.

4.9 Other Electrical Controls

Starboard Galley Electrical Cabinet

The starboard galley electrical cabinet houses the Power Control Panel, generator control panel, and the Fusion stereo head unit and USB/AUX input ports.

Starboard galley electrical cabinet

Helm Seat Cabinet

The helm seat cabinet, accessible from the inboard side of the seat base, contains salon climate control panels; fresh water and waste tank monitor; bilge high water alarm; and Blu-ray player. The up and down buttons on the upper right of the cabinet lift and lower the television hi-lo actuator.

Helm seat cabinet

4.10 Electrical System Maintenance

DC Electrical System Maintenance

At least semi-annually, spray all exposed electrical components behind the helm and in the plugs with a protector specific for electrical connections. Exterior light fixture bulbs should be removed and the metal contact areas coated with a non-water-soluble lubricant like petroleum jelly or silicone grease. The sockets should be sprayed with a protector. DO NOT get any oil or petroleum jelly on the glass portion of the bulbs; this will cause the bulb to overheat and burn out.

CAUTION

Use an exact replacement light bulb; a different bulb can cause fixture to overheat, melt, or short circuit.

Make sure to check that all below-deck wiring is properly supported, the insulation is sound, and there are no loose or corroded terminals. Clean any corroded terminals thoroughly with sandpaper, or replace them. Tighten securely and spray with a metal and electrical protector. Inspect all engine wiring.

DANGER

FIRE OR EXPLOSION HAZARD
Explosion or fire from hydrogen gases produced by lead acid batteries will cause death or serious injury. DO NOT smoke or bring a flame near the battery storage area. If ignited by a spark or flame, gas may explode violently, causing spraying of battery acid or fragmentation of the battery.

Battery Maintenance

Check the electrolyte level in the batteries regularly and add distilled water as necessary. If the batteries are frequently charged by a battery charger, check the electrolyte level more often. The correct fluid level in the cells is approximately 1/4 to 1/2 inch above the plates. If fluid is needed, fill to the proper level with distilled water ONLY. DO NOT overfill. Some batteries are sealed and cannot be filled.

Keep the tops of any battery clean and dry. Dirt and water can conduct electricity from one post to the other and can cause battery discharge or engine warnings.

Keep the battery posts free of corrosion. DO NOT use wing nuts to attach battery cables. Remove the cables and clean the posts and cable clamps with a battery post cleaner or sandpaper as required. Coating the battery posts and cable clamps with petroleum jelly or silicone grease will help protect them and reduce corrosion. Battery cables, both positive and ground, must be replaced when they show signs of corrosion or fraying. Deteriorated cables cause a considerable voltage loss when high currents are drawn, such as when starting the engine. See the battery owner's manual for maintenance information.

AC Electrical System Maintenance

Inspect all wiring insulation for nicks, chafing, brittleness, improper support, etc., periodically. Inspect portable appliance cords and plugs.

DANGER

ELECTROCUTION, FIRE OR EXPLOSION HAZARD

Contact with live wires or working on an energized electrical system will cause electrocution. It can also cause sparks, resulting in fire and/or explosion. Both cases will result in death or serious injury. DO NOT work on an energized system or allow unqualified personnel to work on the system.

Examine the shore power cord(s) for cracks in the insulation and corrosion in electrical connectors. Spray receptacles and electrical connections with an electrical contact cleaner or a metal and electrical protector to help reduce corrosion and improve electrical continuity.

General Precautions

- Whenever possible, have electrical work done by a qualified electrician or your Tiara dealer.
- DO NOT work on an energized system; make sure all power sources are off.
- DO NOT allow unqualified personnel to perform electrical maintenance; only a qualified marine electrician should work on the electrical system.
- DO NOT work in a wet area.
- Use caution when connecting wires to avoid reversing polarity.
- DO NOT alter wires or connectors, or use inferior parts. Use OEM replacement parts only.

Corrosion on the electrical connectors can cause poor connections, shorts and ground faults, and/or poor ground connections. Check at least annually and clean as required. DO NOT allow corrosion to build on connections.

Inspect all terminals and make sure they are tight.

Have the entire AC circuitry and the shore power cord tested every season by an experienced marine electrician. This will detect any shorts, open wires, or ground faults. Also, have the polarity indicator system inspected for proper operation.

Test outlets periodically by pressing the test/reset buttons in the center of the face plate to ensure proper operation.

The engine maintenance required on the generator is similar to the main engines. The most important factors to the generator's longevity are proper ventilation and the maintenance of the AC alternator and the fuel, ignition, cooling and lubrication systems.

Maintenance schedules and procedures are outlined in your generator owner's manual; follow them exactly.

Operator Notes

Plumbing Systems

5.1 Fresh Water System

The fresh water system consists of one potable water tank, distribution lines, and distribution pump. The pump is equipped with an automatic pressure switch.

The tank is are filled through the labeled deck fill on the starboard gunwale.

Operation

DO NOT confuse other deck fills with the fresh water fill. If toxic fluids or fuel is added to a fresh water tank, the system will be contaminated. DO NOT attempt to pump fuel out; this system is not designed to pump fuel. Fuel must be removed by qualified personnel only. Fuel in the fresh water systems will also require replacement of that system and/or many components.

DANGER

FIRE OR EXPLOSION HAZARD
FUEL AND THEIR VAPORS ARE HIGHLY EXPLOSIVE WHEN EXPOSED TO OPEN FLAME OR SPARK, RESULTING IN DEATH OR SERIOUS INJURY. DO NOT CONFUSE DECK FILLS.

Fill the water supply tank slowly through the fresh water fill plate, located on the starboard gunwale. Using the fill cap key provided, insert the key into the slot in the water fill cap, turn the key counterclockwise, and remove the cap.

The tanks should be filled until water runs out of the vent located on the hull side just below the fill. After filling the tanks, partially open all faucets. Switch ON the FRESH WATER PUMP switch(es) on the DC distribution panel. Allow the pump(s) to run until all of the air is purged from the system and a steady stream of water is flowing from each outlet. Next, turn off the faucets one by one.

WARNING

H E A L T H H A Z A R D
Disinfect the entire fresh (potable) water system prior to first use, and annually at the beginning of each season. Failure to do so can result in developing coliform bacteria or other disease-causing organisms (pathogens) in the water system. Consumption of contaminated water could result in severe personal injury or death.

As the pressure builds, the pump(s) will automatically shut off.

When properly primed and activated, the water system will operate like the water system in a home. An automatic pressure sensor keeps the system pressurized. If the system has been recently filled or has not been used for an extended period, air may accumulate at the pump(s) and the system may have to be re-primed.

CAUTION

DO NOT allow the fresh water pump to run dry; damage to the pump can occur. The fresh water pump works on demand and WILL NOT shut off when the tank is empty. Turn the water pump switch OFF when the system is not in use. Operating any pump from a low-charged battery can lead to a pump failure. Keep the batteries properly charged. The fresh water system must be properly winterized prior to winter lay-up. Refer to winterizing directions in section 12, Seasonal Maintenance.

Whenever the boat is left unattended, turn the FRESH WATER PUMP switch(es) OFF.

Sink and Shower Operation

To use the sinks or shower(s), switch ON the FRESH WATER PUMP and SHOWER SUMP switches on the DC distribution panel. Some minor variations in the water temperature and pressure may occur as the pump cycles.

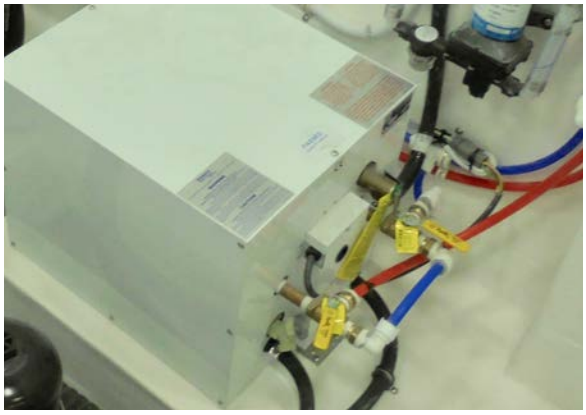
The sinks drain overboard. Shower water drains to a sump pump system located under a master stateroom floor hatch located forward of the berth. Lift the carpet to access. An automatic float switch in the shower sump controls the pump. After showering, let the cold water flow for a period of time to flush the drainage system of soap residue. The shower drain strainer should be cleaned regularly and the sump inspected periodically for accumulated debris that needs to be removed.

Shower sump box, overboard discharge valve

Water Heater

If installed, the water heater is located on the port side of the engine room. The water heater uses an AC element that is thermostatically controlled at the heater. A high pressure relief valve protects the system from excessive pressure.

To use the water heater, the WATER HEATER breaker on the AC Distribution Panel must be ON. Make sure all air is purged from the water heater and lines before activating the water heater breaker. Refer to the water heater manual for additional information.



Water heater

CAUTION

DO NOT turn on the water heater until it is filled and primed; damage to the heater will result.

CAUTION

DO NOT change or modify the shore water inlet connector without contacting Tiara Customer Relations or your dealer. Modification to or use of the wrong type of connector can damage the fresh water system.

5.2 Fresh Water System Commissioning

The fresh water system must be disinfected before first use, and annually at the beginning of each season. A clean, sanitized fresh water system will greatly reduce the risk of developing coliform bacteria or other disease-causing organisms (pathogens), and will help protect the health of everyone onboard.

WARNING

HEALTH HAZARD

Disinfect the entire fresh (potable) water system prior to first use and annually at the beginning of each season. Failure to do so can result in developing coliform bacteria or other disease-causing organisms (pathogens) in the water system. Consumption of contaminated water could result in severe personal injury or death.

Follow this procedure to disinfect the fresh water system and prepare the system for operation:

Note: The fresh water system may be filled with nontoxic potable water antifreeze. If antifreeze was not used, skip to step 8.

1. If a water heater is installed, turn both water heater valves to the normal operation position.
2. Open all sink and shower faucets (hot & cold). Set single faucets to the warm position.
3. Switch ON the FRESH WATER PUMP breaker(s), located on the DC distribution panel. The pump is self-priming.
4. When anti-freeze stops flowing out of the faucets, switch the pump breaker OFF. Do not close faucets.
5. Fill the fresh water tank(s) with clean, fresh water. The fill fitting for the water tank(s) is in the water connection locker in the starboard aft cockpit, labeled WATER. The tank(s) should be filled until water runs out of the vent located on the hull side just below the fill.
6. Keeping all faucets open, switch ON the fresh water pump breaker and empty the water tank(s). When the water tank(s) is empty turn the pump breaker(s) OFF.
7. Repeat steps 5 and 6 until all nontoxic potable water antifreeze is removed from the system.
8. Ensure the water system, including the water heater and pump, is drained completely.
9. Close all faucets.

CAUTION

Notify all persons aboard that the fresh water system is being sanitized. Do not allow anyone to drink from the fresh water system during the sanitizing process.

10. Prepare a chlorine sanitizing solution: in a container with 1 gallon of fresh water, mix 1/4 cup of Clorox® or Purex® regular unscented household bleach (5% sodium hypochlorite solution) for each 15 gallons of water tank(s) capacity (**Table A-1**).

Table A-1: Tank capacity vs. cups of bleach

Water Tank Capacity	Cups of Bleach
15 Gal	1/4 Cup
30 Gal	1/2 Cup
45 Gal	3/4 Cup
60 Gal	1 Cup
75 Gal	1-1/4 Cups
90 Gal	1-1/2 Cups
105 Gal	1-3/4 Cups
120 Gal	2 Cups
135 Gal	2-1/4 Cups
150 Gal	2-1/2 Cups

11. Fill the fresh water tank(s) halfway with clean, fresh water.
12. Pour the sanitizing solution into the water tank(s) through the deck WATER fill fitting.
13. Fill the remainder of the tank(s) with clean, fresh water. The tank(s) should be filled until water runs out of the vent. (See step 5.)

14. Switch ON the fresh water pump breaker(s) on the DC distribution panel.
15. At each faucet, run about 1/2 gallon of water out of each tap (hot and cold), then close the tap. You should be able to smell chlorine out of each tap.
16. Switch OFF the fresh water pump breaker(s).
17. **Allow the chlorine sanitizing solution to sit in the system for three (3) hours.** A shorter time period will require a greater concentration of chlorine sanitizing solution to disinfect the water system.
18. Switch ON the fresh water pump breaker(s).
19. Drain the chlorine sanitizing solution by opening all faucets (hot & cold), setting single faucets to the warm position, and empty the water tank(s). When the water tank(s) is empty turn the pump breaker(s) OFF.
20. Ensure the water system, including the water heater and pump, is drained completely.
21. Fill the fresh water tank(s) with clean, fresh water. See step 5. The tank(s) should be filled until water runs out of the vent.
22. Keeping all faucets open, switch ON the fresh water pump breaker(s) and empty the water tank(s). When the water tank(s) is empty turn the pump breaker(s) OFF.
23. Repeat steps 21 and 22.
24. Final fill: Fill the fresh water tank(s) with clean, fresh water. The tank(s) should be filled until water runs out of the vent. (See step 5.)
25. Switch ON the fresh water pump breaker(s).
26. Open each faucet. When a smooth flow of water is observed from each hot and cold tap, close the faucet. When all faucets are closed, the pump(s) will shut off as the system pressure increases. Any air should now be purged from the system.
27. Leave the fresh water pump breaker(s) ON.

The fresh water system is now commissioned and ready for use.

To remove excessive chlorine taste or odor that might remain in the system, do the following:

1. Ensure the water tank(s) has enough available capacity to accept 10 additional gallons. If there is ample room in the tank(s), proceed to step 3, below. If not, continue to step 2.
2. Drain at least 10 gallons of water out of the system so the following vinegar solution will have room to be added. To do this switch ON the fresh water pump breaker(s) and open a faucet. When at least 10 gallons has been drained, close the faucet and turn the pump breaker OFF.
3. Prepare a solution of one (1) quart vinegar to five (5) gallons fresh water.
4. Pour the vinegar solution into the water tank(s) through the deck WATER fill fitting.
5. Repeat steps 3 and 4.
6. Allow the vinegar solution to agitate in the tank(s) for 24 hours.
7. Switch ON the fresh water pump breaker(s) on the DC distribution panel.
8. Drain the vinegar solution by opening all faucets (hot & cold), setting single faucets to the warm position, and empty the water tank(s). When the water tank(s) is empty turn the pump breaker(s) OFF.
9. Close all faucets.
10. Fill the fresh water tank(s) with clean, fresh water. The fill fitting for the water tanks is located in the water connection locker under the starboard aft gunwale. The tanks should be filled until water runs out of the vent located on the hull side just below the fill.
11. Switch ON the fresh water pump breaker(s).
12. Open each faucet. When a smooth flow of water is observed from the hot and cold tap, close the faucet. When all faucets are closed, the pump will shut off as the system pressure increases. Any air

should now be purged from the system. Leave the fresh water pump breaker(s) ON.

13. Repeat if necessary.

5.3 Marine Head System

Your boat is equipped with a VacuFlush® marine head system. This system uses a small amount of water and a vacuum, which is generated by the 12-volt vacuum pump, to flush. The toilet is connected to the pressurized fresh water system. Fresh water is used to reduce odor in the head compartment.

Before using the toilet, ensure the VACUUM PUMP breaker(s) on the DC distribution panel is ON. Use the Dometic® control panel to flush. If the DO NOT FLUSH or SERVICE lights on the panel are illuminated, check the level of the holding tank monitor, located in the helm seat cabinet. See the head system user manual(s) for more information.

Toilet control panel

A sharp popping noise is normal when the vacuum seal is broken and flushing action begins. It is also normal for a small amount of water to remain in the bowl after flushing.

Waste is directed to the holding tank, located under the atrium floor hatch, until it is pumped out by a waste dumping station or the overboard macerator discharge system. The waste moves through a small opening in the toilet base. Incoming air mixes with and fragments the waste as it passes through the base opening. This process eliminates the need for a macerator or mechanical motors in the toilet base. When the tank is full, the indicators on the tank monitor (located in the helm seat cabinet) will show full and the vacuum pump will not run.

NOTICE

DO NOT operate the macerator dry; damage to the pump can occur.
In some waters it is illegal to discharge waste overboard. Remove the seacock handle or use another method to prevent accidental discharge.

Tank vent filter, vacuum pumps, waste tank under the atrium floor hatch

It is normal for the vacuum pump to run for a short period between flushes. After the last flush, the pump should not run more than once every three hours to recharge the system. Refer to the head owner's manual for more information on the operation of the marine head system.

Holding Tank and Monitor

Monitor the holding tank level using the holding tank monitor (located in the helm seat cabinet, inboard of the helm), and have the tank pumped out before it is completely full.

Lights on the monitor will indicate the fill levels of the waste tank and fresh water tank. The graphic guide on the left of the panel indicates if the waste tank is full or empty. If the tank is allowed to overfill, the waste will overflow out the tank vent and overboard. See the tank monitor user manual for more information.

Holding tank monitor

Emptying the Holding Tank

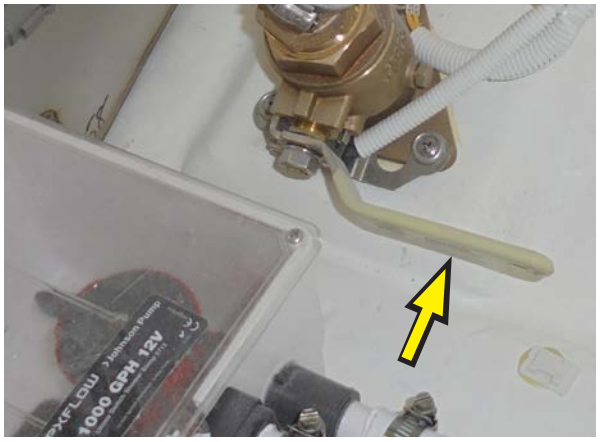
To pump out the waste tank:

1. At a marine facility pump-out station, remove the cap from the WASTE deck plate, located on the starboard gunwale, with the spanner wrench provided. Turn counterclockwise until the cap is loose; remove the cap and set it in a safe place.
2. Insert the pump-out station hose into the WASTE deck plate opening.
3. Turn the pump-out station pump equipment on. Remove all waste from the holding tank (check the tank monitor for progress).
4. Insert the pump-out station's water hose into the WASTE deck plate opening. Fill the tank with clean water and repeat steps 2-3.
5. Replace the deck plate cap and tighten with the spanner wrench.

To pump waste overboard:

1. Ensure your vessel is in a legal raw sewage discharge area.
2. Locate the overboard waste discharge seacock by lifting the carpet forward of the master stateroom berth and opening the floor hatch.

Note: The optional overboard discharge seacock is wired to the closed position at the factory.



Overboard discharge seacock

NOTICE

It is illegal to discharge raw sewage from a vessel within a three mile limit of the territorial waters of the United States of America. It is illegal to discharge raw sewage from a vessel within the navigable waters and rivers of the United States including the Great Lakes. When in international waters it is the responsibility of the vessel owner/operator to follow all local laws and restrictions.

NOTICE

Some local regulations require overboard discharge systems to be physically secured in a closed position during use of the boat in waters designated as "no discharge" areas. Check with local boating regulations. Refer to the system user manual for additional information.

3. Remove the cable tie securing the overboard discharge seacock.
4. Open the discharge seacock by pulling the handle to the vertical position.
5. Switch ON the WASTE PUMPOUT breaker on the DC distribution panel. Allow the discharge pump to run until the waste tank is empty. The sound of the pump's motor load and speed will change when the tank becomes empty.
6. Note: Should the pump not activate, check to see that the seacock is in the OPEN position and that the WASTE deck plate cover is tightened securely. Otherwise the discharge system will not operate properly.
7. When the tank is empty, switch OFF the WASTE PUMPOUT breaker.
8. Close the overboard discharge seacock by pushing the handle to the horizontal position, and secure it. The overboard discharge seacock MUST be closed to prevent water from being forced back into the system.

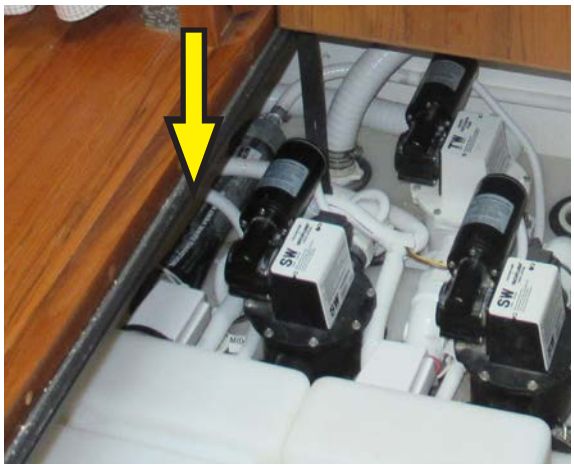
Holding Tank Maintenance

The tank vent air filter is located under the atrium floor hatch. Replace the holding tank vent air filter annually for the most effective odor control.

Clean and inspect the head(s) for leaks regularly. Periodically add chemicals to the head to help control odor and to chemically break down the waste. Refer to the head system user manual for additional operating and maintenance information.

NOTICE

The head and macerator systems must be winterized before winter lay-up; refer to section 12, Seasonal Maintenance.



Waste tank vent air filter indicated by arrow

5.4 Raw Water Washdown

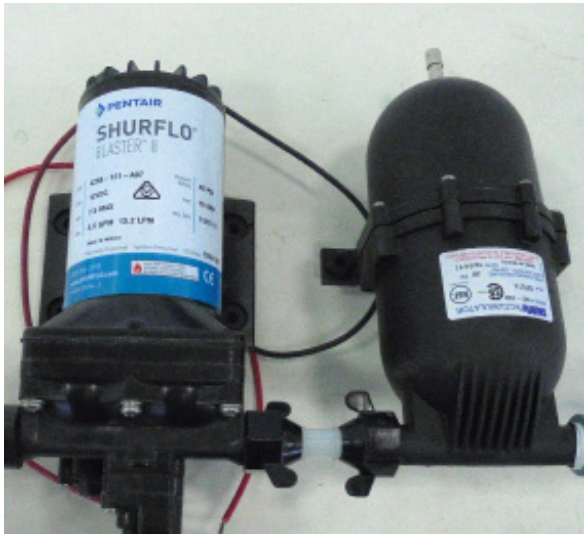
If installed, the raw water washdown system pump is supplied by hoses connected to a ball valve and a thru-hull fitting located in the forward bilge. To use the raw water washdown, connect a hose to the labeled connection in the starboard transom water connection locker; see section 7 for details.

Fresh water connection (left); fresh and raw washdown inlets

Operation

Make sure the ball valve is open before attempting to operate the raw water washdown system. Activate the pump by turning ON the WASHDOWN PUMP switch(es) on the DC distribution panel. As pressure builds in the washdown hose, the pump will shut off. When the washdown hose is in use and the pressure drops, the pump will turn on. Turn

the switch(es) off when the washdown is not in use. The raw water washdown is equipped with a sea strainer on the intake side of the pump, located in the engine room; check it frequently and clean as necessary.



Typical raw water strainer and pump

Priming the System

Open the ball valve and hose connector and switch ON the WASHDOWN PUMP switch on the DC distribution panel. Run the pump until all air is purged from the system. Close the thru-hull ball valve before the boat is hauled from the water to eliminate any air lock in the system. It may be necessary to re-prime the raw water system if the system is not used for an extended period.

⚠ CAUTION

DO NOT operate the high-pressure pump when dry, or damage to the pump will result. Turn the raw water pump switch OFF when leaving the boat unattended.

5.5 Drainage

General

Some drain thru-hull fittings are equipped with ball valves that are always open under normal operating conditions. Check and operate the drain valves at least once a month to make sure they are in good condition and operating properly. Also, check the drain system to ensure it is free flowing and that the hoses on the thru-hull fittings are secure and not leaking.

Review and become familiar with the location of your boat's thru-hull drain valves.

In the event of an emergency, close the valves to prevent sea water from entering the boat through the drainage system. NOTE: Having one or more drain valves closed can be dangerous to the boat and all onboard. If this occurs, distribute PFD's and take all necessary safety precautions, including notifying the Coast Guard or local agency, until the problem is determined and corrected.

Bilge Drainage

The forward bilge pump is located under the atrium sole; the mid bilge pump is located on centerline in the engine room (below the optional gyro, if installed); and the aft bilge pump is located in the lazarette. All bilge pumps pump water out of thru-hulls located above the waterline in the hull. A high water bilge alarm monitors excessive bilge water levels and signals a high water condition through a visual and audible alarm. Under this condition, the bilge pumps will be automatically activated and the boat horn will sound until the bilge water falls to a safe level. See section 4, Electrical Systems, for additional information on bilge pump and high water bilge alarm operations.

All three bilge pumps have both automatic and manual functions; to activate manually, use the BILGE button(s) outboard of the helm.

Power is supplied to the automatic float switches whenever the batteries are connected.

Bilge pump (typical)

Use the BILGE buttons outboard of the helm to manually activate the bilge pumps briefly each time the boat is used to ensure pumps are operating properly. Excess water in the bilge area will adversely affect the handling and maneuverability of the boat and can cause personal injury. There is a delay built into the switch before the pump will activate. Refer to the bilge pump owner's manual for more information.

Debris can prevent the pumps from operating or make it operate continuously. Make sure no debris is blocking the bilge pump float switches.

Inspect the bilge areas frequently for evidence of excessive water. Continuous operation of a bilge pump can indicate that there is excess water in the bilge or a leak, or that a drain plug is installed incorrectly. Test the bilge pumps at regular intervals. Bilge pumps and bilge pumping systems are not designed for damage control.

DO NOT allow the bilge pump to operate after all the water has been cleared from the bilge area, or damage to the pump will occur. When water has been cleared, turn OFF the BILGE buttons at the forward helm.

NOTICE

The US federal water pollution control act prohibits the discharge of oil or oily waste into or upon the navigable waters of the United States or the waters of the contiguous zone if such discharge causes a film or sheen upon, or a discoloration of the surface of the water, or causes a sludge or emulsion beneath the surface of the water. Violators are subject to a penalty of $10,000.

When the boat is out of the water, the bilge can be drained by unplugging the thru-hull drain located in the transom, near the bottom of the hull. It is important to check the drain plug regularly to make sure it is tight. A loose drain plug will allow sea water to enter the bilge and cause the boat to sink. Check the drain plug frequently to make sure it is secure.

Any oil spilled in the bilge must be thoroughly removed and properly disposed of before operating the bilge pump. The discharge of oil from the bilge is illegal and subject to fine.

Exterior Drains

The sinks drain by gravity to overboard thru-hulls.

The anchor locker drains overboard through a drain fitting located in the hull side at the bottom of the anchor locker. It is important to inspect the drain frequently to remove any accumulated debris.

5.6 Plumbing System Routine Maintenance

Refer to water system components user's manuals for additional operation and service information.

Fresh Water System

The fresh water system requires very little maintenance. The most common issue is that the water in the water tank is not used up and replenished often enough, and becomes stale. To combat this problem, drain and refill the tank periodically or add a water conditioner to the tank. Water conditioners are available at your Tiara Yachts dealer and marine or recreational vehicle supply stores.

Perform these routine maintenance procedures to maintain your fresh water system:

9. Remove filter screens from faucet spouts and eliminate any accumulated debris. A debris build-up can cause the pump to cycle excessively.
10. Check and clean the fresh water system strainer (located on the intake line near the pump) at least annually.
11. Periodically remove the lid on the shower sump assembly. To access, lift the carpet forward of the master stateroom berth and open the floor hatch. Clean debris from the sump and flush with clean water. Activate the float switch to test the pump. Spray the pumps and metal components with a metal protector periodically.
12. Add a commercially available potable water conditioner to the water tank(s) to keep it fresh.

CAUTION

Maintain a proper charge on the batteries. Operating the pressure pump from a battery with a low charge could lead to pump failure.

CAUTION

Turn the DC distribution panel FRESH WATER PUMP breaker(s) OFF when leaving the boat unattended or when the fresh water system is not in use.

13. Make sure the FRESH WATER PUMP breaker(s) on the DC distribution panel is switched OFF when leaving the boat unattended or when not in use.

The water heater, in-line water filters, and fresh water pump(s) require routine maintenance. Refer to the appropriate user manuals for details.

Change the in-line water filter, located on the engine room port aft-facing bulkhead annually. The fresh water system strainers need to be cleaned annually. The strainers are attached directly to the fresh water pump(s). The water system must be winterized before storage. Refer to section 12, Seasonal Maintenance, for details.

Raw Water System

Perform these routine maintenance procedures to maintain your raw water system:

- Check all hoses, and especially the sea water hoses, for signs of deterioration.
- Remove and clean the air conditioner and washdown pump sea water strainers, as needed. Spray the pumps and thru-hull valves with a metal protector periodically.
- Operate all thru-hull valves at least once a month to keep them operating properly.

CAUTION

Maintain a proper charge on the batteries; operating the pressure pump from a battery with a low charge could lead to pump failure.

If a hose ruptures or leaks, turn off the washdown pump(s), using the WASHDOWN PUMP breaker(s) on the DC distribution panel, immediately. Keep the thru-hull valve closed when performing service on a sea water system.

CAUTION

If a hose ruptures, turn the DC distribution panel washdown breaker OFF immediately. Close the thru-hull valve before performing maintenance on the sea water pump. Operating any pump from a low-charged battery can lead to a pump failure. Keep the batteries properly charged. The raw water system must be properly winterized prior to winter lay-up. Refer to section 12, Winterizing.

Raw Water Intake Strainers

The engine raw water intakes, generator raw water intake, air conditioning raw water intake, and optional raw water washdown pump intake are equipped with strainers. Check the strainers each time you use the boat to assure that no debris has accumulated that may block the flow of water.

Water strainer (typical)

To clean clogged strainers:

1. Turn OFF the related engine or pump (e.g., the FRESH WATER and WATER HEATER pump breakers).
2. Close the raw water seacock, in the hull bottom, to stop the flow of water to the strainer.
3. Remove the filter basket cap by unscrewing it counterclockwise. A spanner wrench has been provided for this purpose.
4. Lift the filter basket out by the top handle.
5. Remove any debris from the filter basket and rinse with clean water.
6. Use only mild soapy water to clean the sight glass.
7. Check to be sure that the O-ring under the cap is intact and replace if necessary.
8. Apply a waterproof grease that is silicon- or Teflon-based (do not use petroleum-based grease) to the cap threads and o-ring seasonally, to assure easy cap loosening for inspections and cleaning.
9. Install the filter basket.
10. Install the cap, and tighten by hand.
11. Snug the cap with the spanner wrench.
12. Open the seacock.
13. Start the related engine or pump, and check the system for leaks.
14. If the strainer is leaking, immediately close the related seacock. Then verify the filter cap is installed correctly with a good o-ring.

The raw water system must be winterized before storage. For more information, refer to section 12, Seasonal Maintenance.

Drainage Systems

Perform these routine maintenance procedures to maintain your drainage system:

- Clean the cockpit drain rails with a hose and water to remove all debris.
- Clean the hardtop leg drain holes, especially before winter storage.
- Clean the bilge pump and automatic float switch strainers of any debris.
- Check the bilge for debris that can block the function of the automatic switch.
- Test the automatic bilge pump switch(es) and the high water alarm float switch(es)

each time the boat is used, for proper operation. Operate the knob or lever on the side of the switch until the pump is activated, or add water to the bilge until the water level is high enough to activate the pump.

- Flush all gravity drains with fresh water periodically, to keep them clean and free flowing.
- Clean and inspect the shower and sink drain sump system periodically; the sump may be accessed by lifting the cabin floor hatch. Remove accumulated debris and flush with fresh water. Test the automatic sump pump switch for proper operation frequently.
- Operate the thru-hull valves once a month and service as required.
- Check the drain system regularly to ensure it is free flowing and that the hoses on the thru-hull fittings are secure and not leaking.
- Keep the o-ring on the insert end of the washdown hoses lubricated. Apply a mild liquid soap such as a liquid dish soap or boat wash to the insert on the hose end. For a long-term lubrication solution, apply petroleum jelly such as Vasoline®. Apply a light coat to the hose connection and insert it into the washdown port. Depending on your location and usage, a monthly application may be necessary.

⚠ CAUTION

DO NOT use harsh chemical drain cleaners in drain systems; permanent damage to the hoses, fittings and system can result. Drains and pumps must be properly winterized before winter lay-up.

Ventilation Systems

Ventilation is supplied by opening portlights or using the air conditioning system.

6.1 Air Conditioning System

The reverse cycle air conditioner can be operated to cool or heat. The cabin and head air conditioner is located under the companionway steps. Do not store items in this compartment. Items stored on or immediately next to the air conditioning unit could cause damage to the air conditioner or be damaged by heat or condensation. The optional helm air conditioning unit is located behind a removable panel under the helm seat.

To operate the unit(s), first turn ON all AIR COND and AIR COND PUMP breakers on the AC distribution panel. The temperature is controlled using the climate control panels in the helm seat cabinet (for salon and helm); port upper cabinet in the VIP stateroom (for VIP stateroom and head); and the cabinet aft of the starboard settee in the master stateroom (for master stateroom and head).

The air conditioning units are located under the VIP stateroom berth mattress; in the aft port corner of the master stateroom; under the starboard helm seat; and under the aft port salon lounge cushion. Units are self-contained and sea water cooled. The cooling pump(s) supplies sea water to the unit(s), which cools the condensing unit(s) and is discharged overboard.

Sea water is supplied to the pump from a thru-hull fitting located in the hull near the pump. A sea strainer between the pump and thru-hull fitting protects the system from contaminants that can damage the pump or the air conditioning system.

Periodically clean the sea strainer basket to make sure the sea water pump receives adequate water.

Typical air conditioning pump, strainer, and valve, in the engine room

Air locks can occur in the cooling pump water supply at the time of launching. If your boat has been recently launched and water is not flowing from the overboard thru-hull when the AIR COND PUMP breaker(s) on the AC distribution panel is ON, air may need to be purged from the system. This can be achieved by making sure the valve at the cooling pump intake thru-hull is open. Then run the boat at cruise speed for several minutes. A scoop attached to the intake thru-hull will pressurize the system and force the air through the pump. Refer to the air conditioner owner's manual for additional operating and maintenance information.

NOTICE

Air conditioners use surface water to cool. DO NOT operate the air conditioner out of the water or without the raw water supply, or else damage to the system will occur. Make sure there is a water supply before operating the air conditioning. The lack of a water supply can also trip the circuit breaker.

6.2 Portlights

Portlights are secured by adjustable dogs. The dogs should be adjusted so they are tight enough to seal the window in the closed position, but not so tight that they are difficult

to latch. The dogs are adjusted by turning a screw. The screw increases or decreases the pressure on each dog. Screens must be removed prior to closing portlights to ensure a water resistant seal.

6.3 Carbon Monoxide and Proper Ventilation

Read about carbon monoxide, its hazards, and the carbon monoxide detector in section 9, Safety Information.

6.4 Bilge Ventilation

Air flow into the bilge is supplied by a vent on the transom and through use of the engine room blower. To activate, use the BLOWER button outboard of the helm.

6.5 Ventilation Maintenance

Practice periodic maintenance on your boat's ventilation system.

- Periodically lubricate all hinges and latch assemblies with a light oil. Clean and coat gasket materials with silicone to help keep them pliable.
- The opening portlights are made of acrylic plastic. Acrylic can scratch easily. DO NOT use a dry cloth or glass cleaning solutions; use a soft cloth, mild soap, and water for routine cleaning. Solvents and products containing ammonia can permanently damage acrylic. Refer to the acrylic plastic information in section 11, Routine Maintenance, for directions for properly maintaining acrylic.
- Carbon monoxide detectors have a limited life span. The End of Life (EOL) date, five (5) years after the manufactured date, can be found on a sticker adhered to the body of the unit. Plan on replacing this unit prior to the EOL date. See the carbon monoxide detector owner's manual for more information.
- The engine room ventilation system is comprised of port and starboard air inlet plenums. Plenums are designed to remove moisture from the incoming air and drain it overboard. The plenum drains are located in the aft face of each plenum at the bottom, and run aft to a thru hull fitting. Check the hoses twice a year for secure connections.

Exterior Equipment

7.1 Forward Deck

CAUTION

Unsecured open exterior doors and/or hatches can slam closed and cause injury or damage the boat. Most doors and hatches are equipped with fasteners, hatch lifters, snaps and/or straps to secure them open; make sure they are properly secured while they are open.

Rails and Deck Hardware

Rails and deck hardware perform specific functions. Do not use for securing fenders or mooring lines, which must be secured to the cleats. Make sure mooring lines are clear of rails or stanchions, or damage can result.

Cleats are flush-mounted and must be raised prior to use.

DO NOT use cleats or any other hardware for the purpose of towing or being towed. Inspect all hardware periodically for loosening, wear or damage. Repair or replace immediately.

WARNING

THE CLEATS ON YOUR BOAT HAVE NOT BEEN DESIGNED FOR, AND ARE NOT INTENDED TO BE USED FOR, TOWING. USING THEM FOR THIS PURPOSE COULD RESULT IN PERSONAL INJURY OR DAMAGE TO YOUR BOAT. REFER TO *CHAPMAN PILOTING & SEAMANSHIP* FOR PROPER TOWING PROCEDURES.

Anchor/Rope Locker

The anchor locker at the bow of the boat can be accessed through the forward deck hatch. An anchor chute and roller assembly is integrated into the bow stem. The chute and roller assembly is designed for a plow-type anchor. A chain snubber is provided to secure the anchor during storage. Use the snubber to make sure the anchor chain is secured before getting underway. The anchor locker is drained by a thru-hull fitting in the hull side near the bottom of the locker. Check it frequently and keep it clean and free flowing.

The anchor must be securely stowed when not in use.

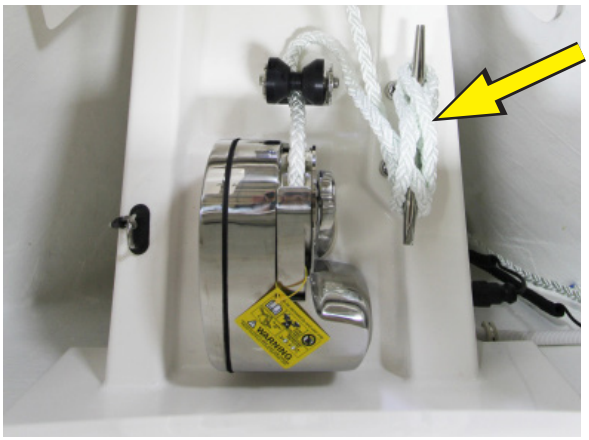
CAUTION

Secure the anchor when it is stored in its locker and make sure it does not rest against the hull sides. If the anchor is loose, it will bounce and damage the boat. Damage from the anchor bouncing in the locker is not covered by the Tiara warranty.

Anchor and Windlass

The windlass is located under the forward deck hatch in the anchor locker. The anchor is stored in the chute through the bow and is raised and lowered by the windlass. The anchor line is stored below the windlass and routed out through the windlass to the chain and anchor. The anchor locker is equipped with a receptacle for the windlass remote control.

Become familiar with the safe operation of the windless before using it. Refer to the windlass owner's user manual for operating instructions. Specifics regarding the proper techniques, equipment, and conditions for safe anchoring can be found in *Chapman Piloting & Seamanship*, or through a boating safety course.



Windlass and anchor rode cleat (typical)

To operate the windlass, switch ON the WINDLASS button on the right side of the Master DC Panel cabinet in the engine room.

The anchor is lowered by releasing the anchor from the cleat or chain snubber in the locker, and activating the windlass using the remote switch in the anchor locker or the WINDLASS DEPLOY button at the helm. After the anchor is set, do not allow the windlass to take the force from the anchor line; secure the rode to the cleat in the anchor locker.

Boats at anchor in high swell conditions will snub on the anchor line. This can cause slippage or apply excessive loads to the windlass.

Windlasses are not designed to hold high loads while a boat is at anchor. When the windlass is not in use and the boat is at anchor, the rope rode must be properly tied off to the cleat inside the anchor locker. If your boat is equipped with the optional all-chain rode, the rode must be secured using the chain stopper that is mounted forward of the windlass.

The anchor is retrieved by releasing the line from the bow cleat and activating the windlass using the remote switch in the anchor locker or the WINDLASS RETRIEVE button at the helm. Once the anchor is retrieved, secure the anchor to the chain snubber or bow cleat to prevent it from being released while underway.

DO NOT use the windlass as a winch to move the boat over the anchor. Move the boat under its own power to the anchor and to break the anchor loose.

⚠ WARNING

MOVING PARTS OR ENTANGLEMENT HAZARD

CONTACT WITH MOVING PARTS CAN ENTANGLE AND CUT, RESULTING IN LOSS OF BODY PARTS, STRANGULATION, AND/OR SEVERE LOSS OF BLOOD, CAUSING SERIOUS INJURY OR DEATH. STAY CLEAR OF MOVING PARTS.

⚠ CAUTION

DO NOT use the windlass as the only method of securing the anchor. Secure the anchor line to a cleat or chain snubber before operating your boat.

Foredeck Lounge

The foredeck includes a sunpad, ventilation hatch, mooring cleats, navigation lights, anchor locker, and bow rail.

To adjust either sunpad backrest, lift the aft end of the cushion up and engage the backrest at the desired position.

Return the backrest to its flat, snapped position when the boat is underway at speeds above 5 mph.

⚠ WARNING

DO NOT OCCUPY THE SUNPAD WHILE UNDERWAY AT SPEEDS EXCEEDING 5 MPH.

WARNING

THE CLEATS ON YOUR BOAT HAVE NOT BEEN DESIGNED FOR, AND ARE NOT INTENDED TO BE USED FOR, TOWING. USING THEM FOR THIS PURPOSE COULD RESULT IN PERSONAL INJURY OR DAMAGE TO YOUR BOAT. Refer to *Chapman Piloting & Seamanship* FOR PROPER TOWING PROCEDURES.

Water that may become trapped between the cushions and foredeck could cause the gelcoat to blister. Blistering under these conditions is not covered by the Tiara Limited Warranty.

7.2 Hardtop

Hardtop

The hardtop consists of a fiberglass top supported by the windshield in the front and powder-coated aluminum legs in the back. It is designed to accommodate radio antennas, radar antennas, navigation lights and the horn. It could also be equipped with optional outriggers and/or rod holders.

The hardtop is not designed to support the additional weight of items like an instrument locker or a life raft. Radar and electronics antennas must be mounted to the top between the windshield and rear legs. Do not mount any antennas or equipment to the brow area. The hardtop frame is not designed to support the weight of accessories in this area and can be damaged.

Do not climb on the hardtop.

The hardtop warranty will be voided if the top is modified in any way or heavy accessories are mounted to the top. Also, if items like radar antennas, spotlights and other accessories are mounted in the wrong location, the warranty can be voided. If you intend to add equipment or make modifications to the hardtop, contact Tiara Customer Relations to make sure the equipment you would like to add or the intended modification will not void the hardtop warranty.

WARNING

THE HARDTOP IS NOT A WEATHER DECK. FALLING FROM THE HARDTOP CAN RESULT IN SERIOUS PERSONAL INJURY OR DEATH. STAY OFF HARDTOP.

CAUTION

Care should be exercised to prevent damage to powder coated surfaces. If the surface is scratched, chipped or worn exposing the aluminum, it should be resealed to prevent corrosion from forming. If corrosion is allowed to form, it could cause the powder coating to bubble and lift away. Contact your dealer for repair service.

Powered Sunroof

The hardtop features a sunroof above the helm. Press and hold the SUNROOF OPEN and CLOSE buttons on the helm to operate. When closing the sunroof, there is a defined stop to the motion, for safety purposes. Release the button, then press again to fully close.

Makefast Sun Shade (optional)

The optional Makefast® sun shade is electrically powered and extends to shade the aft cockpit. Activate the sun shade using the SUNSHADE switch inboard of the aft-facing seat. The SUNSHADE breaker on the DC distribution panel must be switched ON.

CAUTION

The sun shade must be retracted during severely windy conditions, or when boat speeds exceed 5 mph.

7.3 Aft Cockpit

Engine Room Access

The center floor hatch in the mid cockpit galley provides access to the engine room. The engine room lights turn ON automatically when the hatch is opened and turn OFF when the hatch is closed. The main battery switches and the Engine Room Light breaker on the DC distribution panel must be ON for the engine room lights to operate.

Aft-Facing Seat

The aft cockpit includes a port aft-facing seat with storage space under the seat cushion. A fire extinguisher is stored under the seat.

Stereo Remote

A stereo remote control pad is located outboard of the aft-facing port cockpit seat.

Cockpit Television Mount (optional)

A mount for the optional cockpit TV is located above the port aft-facing seat. The optional cockpit TV is stored in the master stateroom hanging locker, and should be stowed whenever the boat is underway. A cable TV connection is located outboard of the port aft-facing seat.

Aft Lounge

To raise and lower the teak table, release the lever and push the table down or guide it up. Lock the lever when the table is at the desired height.

A step is located under the starboard center seat cushion of the lounge, for easier boarding and dismounting.

Aft Cockpit Lighting

Turn the aft cockpit overhead lighting on and off using the switch found inboard of the port aft-facing seat.

7.4 Stern

Transom Door(s)

Do not use the transom door(s) when the boat is in motion. DO NOT leave the transom door(s) unlatched. Always latch the door(s) in the fully CLOSED position while the boat is underway. Latch the door(s) in the fully OPEN position or fully CLOSED position when the boat is not underway.

CAUTION

Periodically inspect transom door/gate fittings for wear, damage or loose fit. Repair or replace before using your boat.

Shore Power Connection

The aft shore power and water connection cabinet is located behind a door to starboard of the transom buffet. It contains an 240v aft shore power cable, cable TV inlet, aft shore power cable recoil control switch, aft shore power breaker, an ELCI power reset button, and outlets.

Shore power and water connection locker

The ELCI (equipment leakage current interrupter) uncouples the boat's power system from shore power if a problem is detected. Use the ELCI power reset button to restore power if it has been tripped. See chapter 4 for additional shore power information.

Use the CABLEMASTER power recoil switch, located just forward of the shore power cable inlet, to release or retrieve the shore power cable. Place the switch in the middle position when not moving the cable.

Shore power breaker and ground fault sensing module

Water Connection

The aft shore power and water connection cabinet, located behind a door to starboard of the transom buffet, contains the dockside fresh water connection, fresh water washdown connection, and raw water washdown connection. To use a washdown connection, the WASHDOWN PUMP on the DC distribution panel must be ON.

The fresh water washdown uses water from a dockside water source. When a hose from the dock is attached and pressurized, your boat's fresh water system will be supplied using water from the dock, not the onboard fresh water tank. The fresh water inlet has a built-in regulator.

The raw water washdown draws sea water from a thru-hull installed in the hull bottom. See section 5, Plumbing, for more information.

Water connections

CAUTION

When routing electric cables and dockside water hoses from the boat to the dock, be sure to allow sufficient slack so cables and hoses will not be strained in any way as the boat moves within its slip. Do not allow cables or hoses to dangle into the water.

Transom Shower

A fresh water shower is located outboard of the port transom. It is supplied cold water by the fresh water system (hot water is supplied as well, if the optional water heater is installed).

To operate, switch ON the FRESH WATER PUMP breaker(s) on the DC distribution panel and the WATER HEATER breaker on the AC distribution panel (if installed). Pull the shower wand out of the holder and twist to start the flow of water and adjust the temperature. Before placing the wand back in the holder, ensure the wand is shut OFF completely. Failure to do so will cause the fresh water pump to run and water to leak into the bilge.

Transom Buffet

The transom buffet features a solid surface countertop, storage, optional electric grill, and optional refrigerator.

Transom Refrigerator (optional)

To use the transom refrigerator, turn ON the COCKPIT REFRIG breaker on the AC distribution panel.

Transom Grill (optional)

If installed, the optional 120/230V electric grill is located on the transom. The grill cover opens and locks into place.

To use the grill, the DECK GRILL breaker on the AC distribution panel must be ON. Turn the breaker OFF whenever the grill is not being used. Closing the grill lid automatically turns the breaker OFF. The grill must be allowed to cool before closing the grill lid, to avoid damage to the grill.

Never clean the grill with any form of pressurized water or other types of cleaners. Use only a cloth and a stainless steel or glass surface cleaner. This grill, like all appliances, has the potential to create safety hazards through careless or improper use. Observe all of the safety precautions listed in the grill owner's manual.

To operate the electric grill:

- Lift up the lid.
- Switch ON the DECK GRILL breaker on the AC Distribution Panel.
- Turn the grill ON using the controls built into the grill unit.

When finished, let the grill cool, clean the top, empty the drip pan contents, and lower the lid. Lowering the lid on the grill activates a safety switch that turns the DECK GRILL breaker OFF. The grill GFCI is located in the transom storage compartment, near the top of the port sidewall. Refer to the grill user manual for more information.

⚠ WARNING

SEVERE BURNS CAN OCCUR FROM THE IMPROPER USE OF THIS DEVICE. DO NOT LEAVE THE GRILL UNATTENDED WHEN IT IS HOT. CLOSE SUPERVISION IS REQUIRED WHEN THE GRILL IS BEING USED OR IS HOT. DO NOT USE THE GRILL WHILE UNDERWAY.

⚠ NOTICE

After cooking, clean the grill surface. Empty the contents of the drip pan located below the grill. Lift the grill grate up and carefully remove the fully cooled drip pan. Allow the grill to cool off before closing the lid. Failure to do so could result in damage to the grill or grill area.

⚠ NOTICE

Do not close the grill lid over a warm grill. Allow the grill to cool completely before covering. Failure to do so could result in damage to the lid and grill.

The transom buffet houses the following switches, on the port side of the backsplash:

UNDERWATER LIGHTS (optional): Switch ON to turn on the optional underwater lights on the transom.

SWIM PLATFORM (optional): Switch ON to operate the swim platform. Before using, see important information in section 7.5, Swim Platform Lift System.

HATCH: Switch UP to open or DOWN to close the transom storage compartment hatch. **NOTE:** When operating this switch be

aware of pinch points and people or pets near the hatch.

Transom Storage Compartment

The transom storage compartment is located in the transom buffet. Lines, fenders, and other items may be accessed quickly by lifting the countertop.

The transom storage compartment features:

- Storage for dock lines, fenders, dock poles, etc.
- AC power outlet
- Access to the optional hydraulic swim platform lift system pump, the Volvo® IPS drive units (via the port and starboard floor hatches), and the aft bilge pump (via the center floor hatch).

To open the hatch:

- Be certain all people (including the operator), pets, and items are cleared away from and not positioned aft of the transom buffet. The hatch will open aft and up.
- Use the hatch button on the transom buffet backsplash to lift the compartment hatch.
- Refer to the manufacturer's user manual for more information.

The storage compartment light switch is located on the port sidewall outside the storage compartment.

WARNING

FUEL VAPORS ARE A FIRE AND EXPLOSION HAZARD THAT CAN RESULT IN SERIOUS INJURY, BURNS, OR DEATH. DO NOT STORE CONTAINERS OF FUEL OR OTHER FLAMMABLE LIQUIDS IN THE TRANSOM STORAGE COMPARTMENT OR THE ENGINE ROOM.

CAUTION

When raising the transom storage hatch make sure no items are placed on the buffet. Make sure nobody is standing aft of the transom storage compartment. Failure to do so could result in damage or injury.

Swim Platform

Your boat is equipped with an integral swim platform. A fold-out boarding ladder is located under the starboard side of the platform. Lower the extended ladder down into the water to assist in boarding the boat from the water.

DO NOT use the swim platform or ladder while engines are running. All engines must be OFF when swimmers are in the water and before allowing anyone to enter or exit the boat. Stow the ladder before starting an engine.

DANGER

CARBON MONOXIDE POISONING AND/OR ROTATING PARTS HAZARD
Poisonous CO gases are present at the rear of the boat when an engine is running. A rotating propeller can cut or entangle swimmers. Either of these hazards will cause death or serious injury. DO NOT use the swim/boarding platform when the engine is running.

7.5 Swim Platform Lift System (optional)

The optional swim platform lift system raises and lowers the swim platform. Always be sure the swim platform is in the UP and LOCKED position prior to getting underway.

The swim platform hydraulic power unit is located inside the transom storage compartment. Before operating the swim platform lift system, switch ON the HYDRAULIC SYSTEM breaker on the DC distribution panel.

Activate the swim platform lift using the switch located on the port side of the transom buffet backsplash. Switch UP to raise or DOWN to lower the hydraulic swim platform lift. NOTE: Before operating this switch, be certain all people (including the operator), pets, and items are cleared away from and not standing on the swim platform. Be aware of pinch points and people and objects located around the swim platform. Refer to the manufacturer's user manual for more information.

Stern Cleats

Cleats and/or pop-up cleats are installed at the stern of your boat. The cleats are designed to handle the loads associated with mooring your boat. **Do not use these cleats for towing.**

WARNING

THE CLEATS ON YOUR BOAT HAVE NOT BEEN DESIGNED FOR, AND ARE NOT INTENDED TO BE USED FOR, TOWING. USING THEM FOR THIS PURPOSE COULD RESULT IN PERSONAL INJURY OR DAMAGE TO YOUR BOAT. REFER TO *Chapman Piloting & Seamanship* FOR PROPER TOWING PROCEDURES.

Interior Equipment

8.1 Safety Equipment

Familiarize yourself with the safety equipment found in your boat. A smoke detector and carbon monoxide alarm are located in the headliner of the salon, the master stateroom, VIP stateroom, and atrium lounge/berth. Fire extinguishers are located in the port galley cabinet, master stateroom hanging locker, and the VIP stateroom starboard hanging locker.

A deck escape hatch is located in the middle of the VIP stateroom headliner. To open, disengage the two locking levers and push up.

Read about carbon monoxide, its hazards, and the carbon monoxide detector in section 9, Safety Information.

WARNING

THE CARBON MONOXIDE MONITORING SYSTEM IS ONLY A SUPPLEMENTAL SAFETY AID. MAKE SURE YOU FOLLOW ALL SAFETY PROCEDURES FOUND IN THIS MANUAL. CARBON MONOXIDE IS A LETHAL, TOXIC GAS THAT WILL CAUSE DEATH AT CERTAIN LEVELS.

8.2 Electrical Components

In order to operate any of your boat's electrical components, the associated breaker needs to be in the ON position (or pushed to reset). Breakers are located on the AC Distribution Panel and DC Distribution Panel beneath the starboard salon loveseat. To access, lift the inboard edge of the loveseat cushion to raise the seat up, then raise the panel cover. Refer to the component user manuals for more information.

All outlets are GFCI protected. For more information on electrical systems, see chapter 4.

8.3 Helm

Helm Console and Seat

The helm seat may be adjusted using the FWD and AFT HELM SEAT buttons on the helm. The helm console features an integrated footrest and air conditioning vents.

Windshield

Your boat is equipped with a custom integrated aluminum-framed windshield with tempered glass.

Helm Seat Cabinet

Several controls are located in the cabinet under the helm seat, which is accessed through the door on the inboard side of the helm seat base.

Helm seat cabinet

The helm seat cabinet contains:

- Climate control panels for salon and helm
- Bilge high water alarm
- Waste and fresh water tank monitor
- TV raise/lower control (up and down arrow buttons)
- Blu-ray/DVD player
- Optional satellite TV receiver (if installed)

Refer to manufacturers' user manuals for more information.

8.4 Hardtop

Powered Sunroof

The sunroof is operated using the SUNROOF OPEN and CLOSE buttons on the helm. Press and hold the OPEN button to fully open the sunroof. Press and hold the CLOSE button to close the sunroof. When closing there is a defined stop to the motion for safety purposes. Release the button, then press again to fully close.

8.5 Lighting

The salon and galley feature dimmable overhead LED lights, housed in the hardtop and controlled by light switches in the starboard galley and on the starboard wall of the companionway. Press the switch to turn on or off. Press and hold the switch to adjust brightness.

8.6 Climate Control

Climate controls for the helm and salon are located in the inboard helm seat cabinet. See section 6, Ventilation Systems, for more information.

8.7 Stereo and Radios

The stereo amplifier and an aux input jack are located in the starboard galley electrical cabinet. The stereo is controlled using the helm Multi-Function Displays (MFDs) and the stereo remote control panels located outboard of the port cockpit aft-facing seat; to port of the VIP stateroom berth; and in the master stateroom, in the cabinet aft of the starboard settee. For specific operating instructions, refer to the stereo user manual.

The AM/FM radio antenna is installed on the hardtop. The VHF radio is located outboard of the helm. Refer to the stereo owner's manuals for additional operating information.

8.8 Television

A flat-screen TV is housed outboard of the starboard loveseat, on a hi-lo actuator. To raise or lower the TV, use the controls (marked with up and down arrows) found on the helm seat cabinet. The TV must be kept in the stowed position while operating the boat above idle speeds. Refer to the TV user manuals for operating information.

The Blu-ray/DVD player and optional satellite TV receiver, if installed, are located in the helm seat cabinet.

8.9 AC and DC Distribution Panels

The boat's AC and DC distribution panels are located under the starboard salon loveseat cushion. To access, lift the outboard edge of the seat cushion to inboard. See section 4, Electrical, for more information.

NOTE: The AC switching box, located forward of the AC Distribution Panel, should be accessed by qualified personnel only.

AC and DC distribution panels, under the starboard loveseat seat cushion

8.10 Salon and Galley

Salon

The starboard salon features a love seat, reading lamp with wall switch, and USB charger aft of the love seat. The port U-Lounge features seating and an expandable teak table with cup holders. Sofa seat cushions feature storage underneath.

Port lounge with expandable table

Port Galley

The port galley features a sink, cooktop, exhaust fan, optional beverage cooler, solid surface countertop, AC outlets, cutting board, storage drawer, and wastebasket. The solid surface countertop includes covers for the sink and cooktop, which may be stored in the aft drawer.

The lid for the cooktop activates a safety switch that disables cooktop operation when it is in place. Always allow the cooktop to cool before covering with the lid. Lids may be stowed in the aft drawer when not in use.

NOTICE

Do not set the lid over a warm cooktop. Allow the cooktop to cool completely before covering. Failure to do so could result in damage to the lid, the cooktop, or both.

Switches to operate the exhaust fan and optional garbage disposal are located on the port galley backsplash.

Starboard Galley Electrical Cabinet

The electrical cabinet located just forward of the starboard galley houses the Fusion® stereo head unit, controls, and auxiliary input jack; Power Control Panel; and generator control panel. See section 4, Electrical Systems, for more information.

Starboard Galley

The starboard galley features a microwave convection oven, two drawer refrigerators, drawer freezer, AC outlets, and solid surface countertop.

To operate the refrigerator and freezer drawers, the REFRIGERATOR breaker on the AC distribution panel must be switched ON and AC power must be supplied to the boat. The temperature is controlled using the thermostat inside the units. Refer to the refrigeration system owner's manual for more information.

If equipped, the optional icemaker is installed in the drawer freezer.

Refer to the manufacturers' user manuals for more information regarding galley appliances.

Starboard Galley Switches

The switches on the starboard galley backsplash control the dimmable overhead salon and galley lights (press to switch on/off, press and hold to adjust brightness) and accent lighting.

8.11 Atrium

The companionway staircase leads from the salon down to the atrium. Light switches on the starboard side of the companionway staircase control the dimmable salon overhead lighting, galley courtesy lighting, atrium overhead lighting, and companionway accent lighting.

Light switches on the port forward-facing wall of the atrium control the atrium lighting and companionway/staircase light.

A floor hatch in the atrium floor provides access to the Vacuflush system pumps, waste holding tank, holding tank vent filter, and bilge pump (at aft end of the compartment). To open, lift up on the handle and slide the hatch leaves forward.

Beneath the atrium floor hatch

Optional vacuum system

To operate the optional central vacuum system, all OUTLETS breakers on the AC Distribution Panel must be ON. The vacuum inlet is located under the bottom atrium step, outboard to port. The vacuum will automatically activate when the hose is inserted into the inlet.

The vacuum power unit and removable dirt canister are housed under the master stateroom steps.

Before servicing the unit, turn OFF all OUTLETS breakers on the AC Distribution Panel. Refer to the vacuum system user manual for operating and maintenance instructions.

Optional vacuum system inlet (typical)

8.12 Atrium Lounge

The atrium lounge features:

- Lower bunk with storage underneath
- Outlets above the lower lounge on forward wall
- Pullman-style upper berth: pull the lounge backrest up and out, and secure using the attached straps to the hooks found in the headliner
- Privacy curtain
- CO and smoke detector in headliner

8.13 Master Stateroom

The master stateroom has a private entrance aft of the atrium, and features:

- Fire extinguisher in hanging locker
- Flat screen TV with Blu-Ray DVD player (located in the cabinet aft of the starboard settee; refer to the owners' manuals for operating information.
- Private Fusion® stereo with control head and AUX input in the cabinet aft of the starboard settee
- Reading lights
- Hullside windows with operable portlights.
- Light switches on the starboard aft-facing entry wall.
- Climate control pad in the cabinet aft of the starboard settee. See section 6, Ventilation Systems, for more information.
- AC outlets above each nightstand; above the port storage cabinet, and on the floor of the hanging locker.
- Storage compartment below berth, accessible by lifting the aft end of the mattress base.

The stateroom door has a latch that secures it in the closed position. The door must be secured while underway.

The master stateroom floor hatch, located forward of the berth, provides access to the shower sump box and overboard discharge valve. See section 5, Plumbing Systems, for more information.

8.14 Master Head

The master head has a private entrance in the master stateroom, and features:

- VacuFlush® toilet, with control panel forward. See section 5, Plumbing Systems, for more information.
- Air conditioning (controlled by the panel in master stateroom)
- Overhead lighting, accent lighting, and exhaust fan switches to the right of the sink
- AC outlet forward of the toilet
- Operable portlight
- Toilet tissue roll mount installed on backside of lower vanity cabinet door

8.15 VIP Stateroom

The VIP stateroom is accessed from the atrium, and features:

The VIP stateroom features:

- Climate control panel in the upper port cabinet. See section 6, Ventilation Systems, for more information.
- Stereo remote and light switches outboard to port of berth
- Light switch and outlet outboard and to starboard of berth
- Reading lights with switches on the lamps
- Deck escape hatch, providing natural light and ventilation
- Storage space under berth mattress
- Storage drawers at bottom of the berth base
- The stateroom door has a latch at the bottom that secures it in the open position. The door must be secured or closed while underway.

8.16 V.I.P. Head

The VIP head is accessed from the VIP stateroom and the atrium. The VIP head features:

- VacuFlush® toilet, with control panel forward. See section 5, Plumbing Systems, for more information. Overhead light, accent light, and exhaust fan switches on the forward wall.
- Air conditioning vent (controlled by the panel in the VIP stateroom)
- Outlets on aft-facing outside wall of vanity
- Exhaust fan
- Operable portlight
- Toilet tissue roll mount installed on backside of lower vanity cabinet door

Operator Notes

Safety Information

9.1 General

Your boat and engines have been equipped with safety equipment designed to enhance the safe operation of the boat and to meet U.S. Coast Guard safety standards. The Coast Guard and state, county, and municipal law enforcement agencies require certain additional accessory safety equipment on each boat. This equipment varies according to length and type of boat and type of propulsion. Most of the accessory equipment required by the Coast Guard is described in this section. Note that requirements are subject to change.

Some local laws require additional equipment. Be aware of state and local laws to make sure you have the required equipment for your boating area.

For up-to-date information, download the USCG Boating Safety App to your smartphone; visit www.uscgboating.org; or contact your local marine dealer or retailer. We also recommend reading the latest edition of the book *Chapman Piloting & Seamanship.*

Your boat may be equipped with engine alarms and cabin monitoring equipment. These systems are designed to increase your boating safety by alerting you to potentially serious problems in the primary power systems, the engine compartment and the cabin. Alarm systems are not intended to lessen or replace good maintenance and a pre-cruise system check. Refer to the Pre-Cruise Checklist at the start of this manual, and sections 11 and 12 for more information.

This section describes safety-related equipment that could be installed on your boat, depending on the type of engines and other options installed by you or your dealer.

9.2 Engine Alarms

Most engines are equipped with an audible alarm system mounted in the helm area that monitors selected critical engine systems. The alarm will sound if one of these systems begins to fail. Refer to the engine owner's manual for information on the alarms installed with your engines and additional operating and maintenance information.

If the alarm sounds:

- Throttle the engines back to idle immediately.
- Shift to neutral.
- Monitor the engine gauges to determine the cause of the problem.
- If necessary, shut off the engines and investigate until the cause of the problem is found.
- If the boat is equipped with water sensors in the fuel filters, make sure to check them for excessive water.

9.3 Neutral Safety Switch

Every throttle/shift control system has a neutral safety switch. The switch allows the engines to be started in NEUTRAL only. If engines will not start, make sure controls are in NEUTRAL. Control or cable adjustments may be required to correct this condition should it persist.

Test the neutral safety switches periodically to ensure they are operating. Press the ignition key to the start position and the All Start ignition button on the Volvo ignition panel. The starter should not engage for any engine. Repeat the test with the shift levers in reverse and the engine throttles at idle; the starter should not engage for any engine. If an engine starts in gear during this test, immediately move the control levers to the neutral position and turn the engine off. Ejection or sudden loss of control can occur if the neutral safety switch system does not function properly and an engine can start in gear.

See your Tiara dealer for necessary control and cable adjustments.

WARNING

TEST THE NEUTRAL SAFETY SWITCH PERIODICALLY. IF THE SWITCH IS NOT OPERATING PROPERLY, DO NOT USE THE BOAT. CONTACT YOUR TIARA DEALER AND HAVE IT REPAIRED. A NEUTRAL SAFETY SWITCH NOT OPERATING PROPERLY CAN ALLOW THE BOAT TO START IN FORWARD OR REVERSE CAUSING SUDDEN BOAT MOVEMENT AND THROWING OPERATOR AND PASSENGERS.

WARNING

LOSS OF CONTROL AND UNSAFE BOAT HAZARD

A NEUTRAL SAFETY SWITCH THAT DOES NOT FUNCTION PROPERLY CAN CAUSE DEATH OR SERIOUS INJURY. DO NOT OPERATE THE BOAT IF THE SWITCH DOES NOT FUNCTION PROPERLY.

9.4 Fire Safety

Fire Extinguishers

Coast Guard approved fire extinguishers are hand-portable, either B-I or B-II classification and have a specific marine type mounting bracket. It is recommended the extinguishers be mounted in a readily accessible position. Your Tiara comes equipped with the fire extinguishers in these locations:

- inside the starboard cockpit aft facing seat base
- inside the port aft galley storage cabinet
- inside the master stateroom hanging locker
- inside the VIP stateroom hanging locker

Check fire extinguishers at the start of each season and have them charged or replaced as necessary.

WARNING

IF A FIRE SHOULD OCCUR, TURN OFF ALL MAIN ELECTRICAL SWITCHES AND SHUT DOWN THE GENERATOR. DO NOT OPEN THE ENGINE ACCESS HATCH. ALLOW THE CHEMICAL TO SOAK THE ENGINE COMPARTMENT FOR AT LEAST FIFTEEN (15) MINUTES.

Fire extinguishers require regular inspections to ensure:

- Seals and tamper indicators are not broken or missing.
- Pressure gauges or indicators read in the operable range.
- No obvious physical damage, corrosion, leakage or clogged nozzles.

For more information, download the USCG Boating Safety App to your smartphone; visit www.uscgboating.org; or contact your local marine dealer or retailer.

For instructions on the proper maintenance and use of your fire extinguisher, refer to the information provided by the fire extinguisher manufacturer.

Information for halon or agent FE-241 extinguishers is provided by the manufacturer. It is extremely important that you read, understand and know how this system works; refer to the manufacturer's literature.

Automatic Generator Fire Extinguishing System

Your boat is equipped with an automatic fire extinguishing system. It is extremely important that you read, understand, and know how

this system works; refer to the manufacturer's owner's manual for additional information.

The generator fire suppression system is located overhead in the engine room, just aft of the generator, and operates automatically. The extinguisher has been chosen and located to provide sufficient coverage of the generator compartment. While the system helps ensure bilge fire protection, it does not eliminate the U.S. Coast Guard requirement for hand held fire extinguishers.

WARNING

FIRE/EXPLOSION HAZARD

THE GAS OF THE FIRE EXTINGUISHER SYSTEM DISPLACES OXYGEN TO "SMOTHER" THE FIRE. DO NOT OPEN THE HATCH. OXYGEN CAN FEED A FIRE AND FLASHBACK CAN OCCUR WHICH CAN CAUSE DEATH OR SERIOUS INJURY. IF THE ONBOARD FIRE SYSTEM DISCHARGES, WAIT AT LEAST 15 MINUTES BEFORE OPENING ENGINE HATCH.

The manual discharge pin is located below the helm seat armrest, on the outboard forward-facing wall of the seat box. To manually discharge the fire suppression system, remove the pin and pull the red handle.

Fire system manual discharge pull

The system is equipped with an engine shutdown circuit to automatically shut down the generator. The red light on the Fireboy control panel (on the helm) will light and an alarm will sound if this should occur. Shut down all engines immediately. Turn off all electrical systems and powered ventilation, and extinguish all smoking materials. DO NOT open the engine compartment hatch, because this will feed oxygen to the fire and allow a flashback to occur. Allow the extinguishing agent to soak the generator compartment for at least 15 minutes and wait for hot metals or fuels to cool before inspecting for cause or damage. Have an approved portable fire extinguisher at hand and ready for use and DO NOT breathe fumes or vapors caused by the fire.

After the fire suppression system discharges, operate the generator blower for five minutes before opening the engine room to evacuate the fire suppression agent and find and fix the problem.

To restart the engines, press the override button on the helm-mounted Fireboy control panel. Refer to the system owners manual for more information.

Fire system control panel

Bilge And Fuel Fires

Fuel compartment and bilge fires or explosions are dangerous because of the presence of fuel. You must make the decision to fight the fire or abandon the boat. If the fire cannot be extinguished quickly or it is too intense to fight, abandoning the boat may be your only option. You must consider your safety, the

safety of your passengers, the intensity of the fire and the possibility of an explosion in your decision.

If you find yourself in this situation, make sure all passengers have a life preserver on and go over the side and swim well upwind of the boat, to keep clear of any burning fuel that could be released and spread on the water as the boat burns or in the event of an explosion. When clear of the danger, check and account for all passengers who were onboard. Give whatever assistance you can to anyone in need or in the water without a buoyant device. Keep everyone together for morale and to aid rescue operations.

9.5 Carbon Monoxide Safety

Carbon Monoxide Detector

Carbon monoxide detectors are installed in the headliners of the master and VIP staterooms, the atrium lounge, and the salon. CO detectors warn occupants of dangerous accumulation of CO gas. If a carbon monoxide detector is activated, this indicates the presence of CO, which can be fatal. Evacuate the cabin immediately. Make sure all passengers are accounted for. DO NOT enter the cabin until you know it is safe to do so and the problem found and corrected.

Be sure the HOUSE BATTERY button on the DC distribution panel is ON anytime the cabin is occupied. The CO detector(s) is automatically engaged whenever the house battery is on. When powered, the detector's green indicator will flash for ten to fifteen minutes as the unit warms up. The green power indicator will stop flashing when the sensor has reached optimum operating temperature. The indicator will then switch from flashing green to solid green, indicating the detector is on. Make sure this indicator light is on whenever the cabin is occupied.

This device uses a micro controller to continuously measure and accumulate CO levels. Should a very high level of CO exist, the alarm will sound within a few minutes. If small quantities are present or high levels are short-lived, the detector will accumulate the information and determine when an alarm level has been reached.

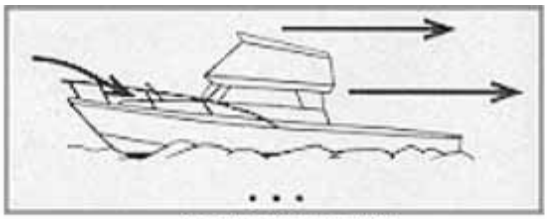
CO detectors warn occupants of dangerous accumulation of CO gas. It is automatically activated whenever the house battery switch panel feed breaker is ON. When powered, the green indicator will flash for ten to fifteen minutes, indicating the unit is in its warm-up stage. The green power indicator will stop flashing when the sensor has reached optimum operating temperature. The indicator will then switch from flashing green to solid green, indicating the detector is on.

Make sure the detector's power light is lit whenever the cabin is occupied.

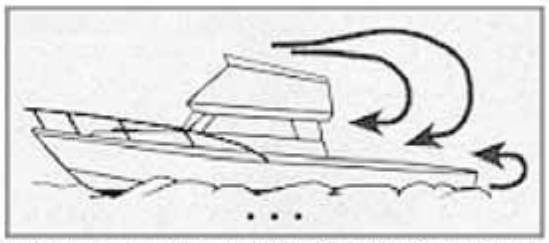
CO detectors use a micro controller to continuously measure and accumulate CO levels. Should a very high level of CO exist, the alarm will sound within a few minutes. If small quantities are present or high levels are short-lived, the detector will accumulate the information and determine when an alarm level has been reached.

While a CO detector enhances your protection from CO poisoning, it does not guarantee it will not occur. Do not use CO detectors as a replacement for ordinary precautions or periodic inspections of equipment. Never rely on alarm systems to save lives; common sense is still the best form of protection. Remember, the boat operator carries the ultimate responsibility to make sure the boat is properly ventilated and passengers are not exposed to dangerous levels of CO. Be alert to the symptoms and early warning signs of carbon monoxide.

CO detectors are very reliable and rarely sound false alarms. If the alarm sounds, DO NOT think it is false. If anyone has been

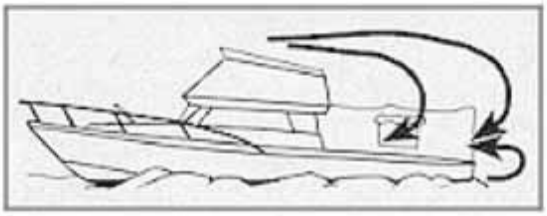


OPERATING SAFELY

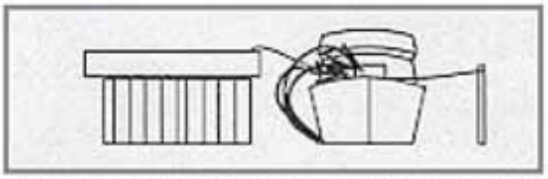


BACK DRAFTING / STATION WAGON EFFECT

NEARBY BOAT GENERATOR EXHAUST



BACK DRAFTING / STATION WAGON EFFECT



ONBOARD BOAT GENERATOR EXHAUST

exposed to CO, move them into fresh air immediately. Never disable the CO detector because you think the alarm may be false.

Contact the detector manufacturer, Tiara Customer Relations, or your local fire department for assistance in finding and correcting the situation.

Carbon Monoxide Hazards

Carbon monoxide (CO) is a by-product of combustion, is invisible, tasteless, odorless and is produced by all engines and most heating and cooking appliances. It exists wherever fuels are burned to generate power or heat. The most common sources of CO on boats are combustion engines, auxiliary generators and propane or butane stoves.

These produce large amounts of CO and should never be operated while sleeping. High concentrations of CO can be fatal within minutes. Many cases of CO poisoning indicate that while victims are aware they are not well, they become so disoriented they are unable to save themselves by either exiting the area or calling for help. Young children, elderly persons and pets may be the first affected. Drug or alcohol use increases the effect of CO exposure. Individuals with cardiac or respiratory conditions are very susceptible to the dangers of CO. CO poisoning is especially dangerous during sleep while victims are unaware of any side effects.

Low levels of CO over an extended period of time can be just as lethal as high doses over a short period. Therefore, low levels of CO can cause the carbon monoxide detector to sound before persons notice any symptoms.

Carbon Monoxide Symptoms

Carbon monoxide (CO) poisoning is lethal and should not be confused with seasickness, intoxication or heat exhaustion. If someone complains of irritated eyes, headache, nausea, weakness or dizziness, or you

suspect carbon monoxide poisoning, immediately move the person to fresh air, investigate the cause, and take corrective action. Seek medical attention if necessary.

DANGER

CARBON MONOXIDE (CO) HAZARD
Exposure to CO will cause death or serious injury. CO is colorless, odorless and extremely dangerous. Avoid CO exposure and make sure the CO detector is working properly.

All engines and fuel burning appliances produce CO as exhaust. Direct and prolonged exposure to CO will cause BRAIN DAMAGE or DEATH.

Other symptoms that may signal exposure to CO: dizziness, flushed face, ears ringing, headaches, tightness of chest or hyperventilation, drowsiness, fatigue or weakness, inattention or confusion, lack of normal coordination, nausea and unconsciousness. The victim's skin also may turn red. A slight buildup of CO in the human body over several hours causes headache, nausea and other symptoms similar to food poisoning, motion sickness or the flu. Anyone with these symptoms should immediately be moved to an area of fresh air. Have the victim breath deeply and seek immediate medical attention. To learn more about CO poisoning, contact your local health authorities.

Preventing Carbon Monoxide Poisoning

In certain situations, boats can have a problem due to the "station wagon effect" where engine exhaust fumes are captured in the vessel by the vacuum or low pressure area, usually the cockpit, bridge deck and cabin, that can be created by the forward speed of the boat. Boats that are underway should close all aft facing portholes, hatches and doors. The forward facing deck hatches should be open whenever possible to help pressurize living spaces of the boat. Sleeping, particularly in aft cabins, should not be permitted while underway. Proper ventilation must be maintained on the bridge deck by opening a forward window or windshield to drive fumes away from the occupants. The canvas drop or aft curtain must be removed and side curtains should be opened or removed to increase airflow and maintain proper ventilation whenever the engines are running.

DO NOT operate the engines with side curtains closed and the aft or drop curtain installed.

Use extreme caution when operating an auxiliary power generator while anchored or in a slip. Calm wind nights can easily allow fumes to enter the boat. Inspect the exhaust systems of propulsion and the auxiliary generators, if equipped, frequently for possible leaks. High concentrations of CO in your boat can originate from an adjacent boat through open hatches or windows.

Failure to properly ventilate the boat while the engines are running can cause CO to accumulate within the cabin. Make sure to ventilate the boat and to avoid CO from accumulating in the boat whenever an engine is running.

Read the pamphlet entitled *Carbon Monoxide Poisoning: What You Can't See* and the owner's manual supplied by the CO detector manufacturer for additional information regarding the hazards and symptoms of CO gas, CO poisoning, and operation instructions. If you did not receive these manuals, contact Tiara Customer Relations.

Many manufacturers of carbon monoxide detectors offer a testing and recertification program. We recommend that you contact the manufacturer of your CO detector and have it tested and re-certified periodically. Certain electronic equipment have a limited

life span; follow the CO detectors manufacturers recommendations on when the detector must be replaced.

9.6 First Aid

It is the boat operator's responsibility to be familiar with proper first-aid procedures and able to care for minor injuries or illness of your passengers. In an emergency, you could be far from professional medical assistance, so be prepared. We recommend you be prepared by receiving training in basic first aid and CPR, through classes given by the Red Cross or your local hospital.

Equip your boat with at least a simple marine first-aid kit and a first-aid manual. The marine first-aid kit should be designed for the marine environment and be well supplied. Keep it accessible so each person onboard knows where it is located. As supplies are used, replace them. Some common drugs and antiseptics can lose their strength or become unstable as they age.

Ask a medical professional about the supplies you should carry and the safe shelf life of prescription drugs or other medical supplies you carry. Replace old supplies whether they have been used or not.

In many emergency situations, the Coast Guard can provide assistance in obtaining medical advice for treatment of serious injuries or illness. If you are within VHF range of a Coast Guard Station, make the initial contact on channel 16 and follow their instructions.

9.7 Required Safety Equipment

In addition to items installed by Tiara, certain other equipment is required by the U.S. Coast Guard to help ensure passenger safety Items like a sea anchor, working anchor, extra dock lines, flare pistol, life vests, or a line permanently secured to your ring buoy could at some time save your passengers' lives, or save your boat from damage. Refer to the *Federal Requirements and Safety Tips for Recreational Boats* pamphlet for a more detailed description of the required equipment. You can also contact the U.S. Coast Guard Boating Safety Hotline, 800-368-5647, for information on boat safety courses and brochures listing the federal equipment requirements. Also, check your local and state regulations.

The Coast Guard Auxiliary offers a courtesy inspection that will help ensure your boat is equipped with all of the necessary safety equipment.

The following is a list of the accessory equipment required on your boat by the U.S. Coast Guard:

Personal Flotation Devices (PFD's)

PFD's must be Coast Guard approved, in good and serviceable condition, and of appropriate size for the intended user. Wearable PFD's must be readily accessible, meaning you must be able to put them on in a reasonable amount of time in an emergency. Though not required, the Coast Guard emphasizes that PFD's should be worn at all times when the vessel is underway. Throwable devices must be immediately available for use. All Tiara boats must be equipped

with at least one Type I, II or III PFD for each person onboard, plus one throw-able device (Type IV).

Visual Distress Signals

All Tiara boats used on coastal waters, the Great Lakes, territorial seas, and those waters connected directly to them, must be equipped with Coast Guard approved visual distress signals. These signals are either Pyrotechnic or Non-Pyrotechnic devices.

Pyrotechnic Visual Distress Signals

Pyrotechnic visual distress signals must be Coast Guard approved, in serviceable condition and readily accessible. They are marked with a date showing the service life, which must not have expired. A minimum of three are required. Some pyrotechnic signals meet both day and night use requirements. They should be stored in a cool, dry location. They include;

- Pyrotechnic red flares, hand held or aerial.
- Pyrotechnic orange smoke, hand-held or floating.
- Launchers for aerial red meteors or parachute flares.

WARNING

FIRE/EXPLOSION HAZARD

PYROTECHNIC SIGNALING DEVICES CAN CAUSE FIRE AND/OR EXPLOSION, DEATH, SERIOUS INJURY AND PROPERTY DAMAGE IF MISUSED. FOLLOW THE MANUFACTURER'S DIRECTIONS IN THE USE OF THESE SIGNALING DEVICES.

Pyrotechnics are universally recognized as excellent distress signals. However, there is potential for injury and property damage if not handled properly. These devices produce a very hot flame and the residue can cause burns and ignite flammable material. Pistol launched and hand-held parachute flares and meteors have many characteristics of a firearm and must be handled with caution. In some states they are considered a firearm and prohibited from use. Make sure you are careful and follow the manufacturer's instructions when using pyrotechnic distress signals.

Non-Pyrotechnic Devices

Non-Pyrotechnic visual distress signals must be in serviceable condition, readily accessible, and certified by the manufacturer as complying with U.S. Coast Guard requirements. They include:

Orange Distress Flag, day use only

The distress flag is a day signal only. It must be at least 3 x 3 feet with a black square and ball on an orange background. It is most distinctive when attached and waved from a paddle or boat hook.

Electric Distress Light, night use only

The electric distress light is accepted for night use only and must automatically flash the international SOS distress signal. Under Inland Navigation Rules, a high intensity white light flashing at regular intervals from 50-70 times per minute is considered a distress signal.

Sound Signaling Devices

The navigation rules require sound signals to be made under certain circumstances. Recreational vessels are also required to sound fog signals during periods of reduced visibility. Therefore, you must have some means of making an efficient sound signal.

Navigation Lights

Recreational boats are required to display navigation lights between sunset and sunrise and other periods of reduced visibility (fog, rain, haze, etc.) Navigation lights are intended to keep other vessels informed of your presence and course. Your Tiara boat is equipped with the navigation lights required by the U.S. Coast Guard at the time of manufacture. It is up to you to make sure they are visible, operational and turned on when required.

WARNING

BURN HAZARD

FUEL FLOATING ON WATER WHICH IS IGNITED CAN CAUSE DEATH OR SERIOUS INJURY. FUEL WILL FLOAT ON TOP OF WATER AND CAN BURN. IF THE BOAT IS ABANDONED, SWIM UPWIND, FAR ENOUGH TO AVOID FUEL THAT CAN SPREAD OVER THE SURFACE OF THE WATER.

9.8 Additional Safety Equipment

Besides meeting the legal requirements, prudent boaters carry additional safety equipment. This is particularly important if you operate your boat offshore. You should consider the following items, depending on how you use your boat.

Satellite EPIRBs

EPIRB's (Emergency Position Indicating Radio Beacon) operate as part of a worldwide distress system. When activated, EPIRB's will send distress code homing beacons that allow Coast Guard aircraft to identify and find them quickly. The satellites that receive and relay EPIRB signals are operated by the National Oceanic and Atmospheric Administration (NOAA) in the United States. The EPIRB should be mounted and registered according to the instructions provided with the beacon, so the beacon's unique distress code can be used to quickly identify the boat and owner.

Additional equipment to consider:

- ❑ VHF Radio
- ❑ Life Raft
- ❑ Spare Anchor
- ❑ Spare Keys
- ❑ Heaving Line
- ❑ Fenders
- ❑ First Aid Kit
- ❑ Portable Radio
- ❑ Flashlight and Batteries
- ❑ Mirror
- ❑ Searchlight
- ❑ Sunburn Lotion
- ❑ Tool Kit
- ❑ Ring Buoy
- ❑ Whistle or Horn
- ❑ Anchor
- ❑ Chart and Compass
- ❑ Boat Hook
- ❑ Spare Propellers
- ❑ Mooring Lines
- ❑ Food and Water
- ❑ Binoculars
- ❑ Sunglasses
- ❑ Marine Hardware
- ❑ Extra Clothing
- ❑ Spare Parts

Operator Notes

Operation

10.1 General

Before operating your boat, become familiar with the various component systems and their operation, and perform the Pre-Cruise Checklist found on page 13. A thorough understanding of the component systems and their operation is essential to operate the boat safely. This manual and the associated manufacturers' owner's manuals have been provided to enhance your knowledge of your boat. Read them carefully.

We also recommend reading the latest edition of the book *Chapman Piloting & Seamanship*, which describes the best procedures for leaving and returning to the dock. While maneuvering around the dock, have all guests on board remain in the cockpit or cabin areas, if they are not involved in the handling of mooring lines.

Your boat must have the necessary safety equipment onboard and be in compliance with the U.S. Coast Guard, local and state safety regulations. There should be one Personal Flotation Device (PFD) for each person. Non-swimmers and small children should wear PFD's at all times. You should know and understand the "Rules of the Road" and have had an experienced operator brief you on the general operation of your new boat. At least one other person should be instructed on the proper operation of the boat in case the operator is suddenly incapacitated.

The operator is responsible for his safety and the safety of his passengers. When boarding or loading the boat, always step onto the boat, never jump.

DO NOT allow passengers to sit on the seat backs, gunwales, bows, transoms, or sunpads when the boat is underway. Passengers should be seated to properly balance the load and must not obstruct the operator's view, particularly to the front.

WARNING

DROWNING OR LOSS OF CONTROL HAZARD

Ejection or sudden loss of control can cause death or serious injury from improper use of seating. DO NOT stand while driving above engine idle speeds and make sure the cockpit seat is locked/secured and all passengers are seated when boat is underway.

Overloading and improper distribution of weight can cause the boat to become unstable and are significant causes of accidents. Know the weight capacity and horsepower rating of your boat. Do not overload or overpower your boat.

WARNING

OVERLOAD HAZARD

Overloading the boat beyond maximum load or altering the stability, buoyancy or center-of-gravity can result in death or serious injury. DO NOT exceed the maximum load or alter the center-of-gravity of the boat.

Remember, it is the operator's responsibility to use good common sense and sound judgment in loading and operating the boat.

WARNING

SLIPPERY SURFACE HAZARD

Wet surfaces can generate slippery conditions which can result in death or serious injury. Use caution on wet surfaces.

10.2 Homeland Security Restrictions

Recreational boaters have a role in keeping our waterways safe and secure. Violators of the restrictions below can expect a quick and severe response:

- Do not approach within 100 yards, and slow to minimum speed within 500 yards of any U.S. Naval vessel. If you need to pass within 100 yards of a U.S. Naval vessel, for safe passage you must contact the U.S. Naval vessel or the Coast Guard escort vessel on VHF-FM channel 16.
- Observe and avoid all security zones.
- Avoid commercial port areas, especially those that involve military, cruise-line or petroleum facilities.
- Observe and avoid other restricted areas near dams, power plants, etc.
- Do not stop or anchor beneath bridges or in channels.

America's Waterway Watch

America's Waterway Watch, a combined effort of the Coast Guard and its Reserve and Auxiliary, wants your help in keeping America's waterways safe and secure. America's Waterway Watch urges you to adopt a heightened sense of sensitivity toward unusual events or individuals you may encounter in or around ports, docks, marinas, riversides, beaches or waterfront communities. To report suspicious activities, call the National Response Center at 1-877-24WATCH or 1-800-424-8802. If there is immediate danger to life or property call 911 or call the Coast Guard on Marine channel 16.

10.3 Rules of the Road

As in driving an automobile, there are a few rules you must know for safe boating operation. The following information describes the basic navigation rules and action to be taken by vessels in a crossing, meeting or overtaking situation while operating in inland waters. These are basic examples and not intended to teach all the rules of navigation. For further information consult the "Navigation Rules" or contact the Coast Guard, Coast Guard Auxiliary, Department of Natural Resources, or your local boat club. These organizations sponsor courses in boat handling, including rules of the road. We strongly recommend such courses. Books on this subject are also available from your local library.

Crossing situations

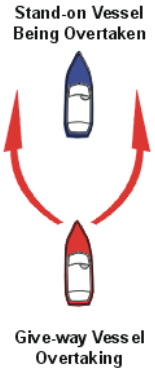
CAUTION

Avoid collisions by following navigation rules. If a collision appears unavoidable, both vessels must act. Prudence takes precedence over right-of-way rules if a crash is imminent. Less maneuverable boats generally have the right of way. Steer clear of the right-of-way boat and pass to its stern.

In the illustration below, the boat on the right has the right of way and should maintain its course and speed. The other vessel should slow down and permit it to pass. Both boats should sound appropriate signals.

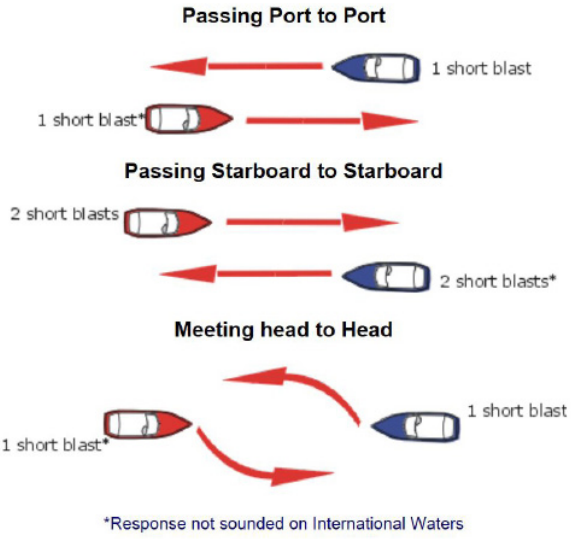
Overtaking Situations

When one motorboat is overtaking another motorboat, the boat being passed has the right of way. The overtaking boat must make adjustments necessary to provide clearance for a safe passage of the other vessel and should sound appropriate signals.



Meeting Head-On Or Nearly-So Situations

When two motorboats are approaching each other head-on or nearly head-on, neither boat has the right of way. Both boats should reduce their speed and turn to the right, passing port side to port side and provide enough clearance for safe passage. Both boats should sound appropriate signals.



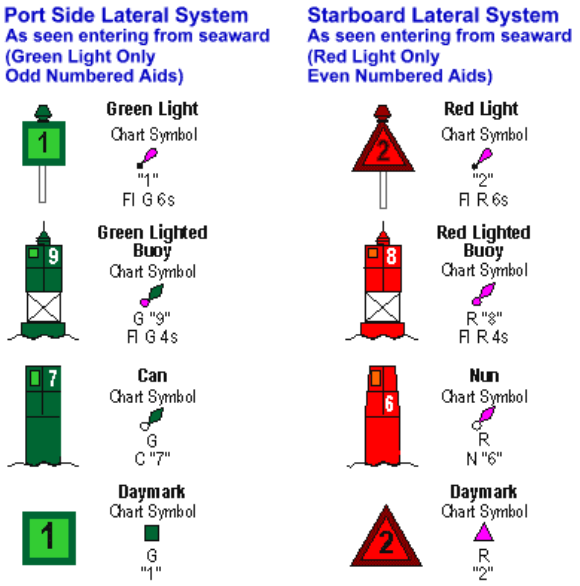
*Response not sounded on International Waters

The General Prudential Rule

In obeying the Rules of the Road, due regard must be given to all dangers of navigation and collision and to any special circumstances, including the limitations of the vessels, which may justify a departure from the rules that is necessary to avoid immediate danger or a collision.

Navigation Aids

Aids to navigation are placed along coasts and navigable waters as guides to mark safe water and to assist mariners in determining their position in relation to land and hidden dangers. Each aid to navigation is used to provide specific information. Become familiar with these and any other markers used in your boating area.



CAUTION

Storms and waves can move buoys, do not rely on buoys alone to determine your position.

10.4 Operating your Boat

Familiarize yourself with the procedures outlined in the Pre-Cruise Checklist on page 13 of this manual. The operator must be seated, and ready with the controls (steering/throttle) when the engine is started or running.

After Starting the Engines:

- Check engine gauges. Make sure all are reading normally.
- Visibly check engines to be sure there are no apparent water, fuel or oil leaks.
- Check operation of engine cooling sys-

tems.
- Check controls and steering for smooth and proper operation.
- Allow engines to warm up for 10 to 15 minutes before operating them above idle speeds.
- Make sure all lines, cables, anchors, etc. for securing the boat are onboard and in good condition. All lines should be coiled, secured and off the decks when underway.
- Have a safe cruise and enjoy yourself.

REMEMBER:

When operating a boat, you accept the responsibility for the boat, and the safety of passengers and others out enjoying the water.

- Alcohol and any mind-altering chemicals can severely reduce your reaction time and affect your better judgment.
- Alcohol reduces the ability to react.
- Alcohol makes it difficult to judge speed and distance or track moving objects.
- Alcohol reduces night vision and ability to distinguish red from green.

STAY ALERT. The use of alcohol or any other mind-altering chemicals that impair judgment pose a serious threat to you and others. The boat operator is responsible for their consequences and behavior of passengers.

WARNING

IMPAIRED OPERATION HAZARD
Operating any boat while intoxicated or under the influence of other drugs can cause death or serious injury. DO NOT operate any boat under the influence of any mind-altering chemical.

Avoid sea conditions that are beyond the skill and experience of you and your crew.

Make sure at least one other person onboard is instructed in the operation of the boat and it is operated in compliance with all state and local laws.

DO NOT operate the boat unless it is completely assembled. Make sure all fasteners are tight and adjustments are to specifications.

Before operating the boat for the first time, read the engine break-in procedures. Refer to the engine owner's manual and have your dealer describe the operating procedures for your boat. For more information, refer to the engine owner's manuals.

If the drive unit hits an underwater object, stop the engine. Inspect drive unit for damage. If damaged contact your dealer for a complete inspection and repair of the unit.

Stopping the Boat

- Allow engines to drop to idle speed.
- Shift controls to NEUTRAL.

If the engines have been running at high speed for a long period of time, allow them to cool by running at idle for 3 to 5 minutes.

- Turn the ignition keys OFF.
- Raise the trim tabs to full UP position.

CAUTION

Turn off engines at idle speed. Racing the engine before switching it off can draw water into the engine through the exhaust, resulting in internal damage.

After operation:

- Fill the fuel tanks to near full to reduce condensation. Allow room in the tanks for the fuel to expand without being forced out the vent.
- If operated in saltwater, wash the boat

and all equipment with soap and water. Check the bilge pumps and surrounding areas for excess water and debris that could clog the pumps.
- Visually inspect the gray water macerator boxes (shower sump boxes) and look for debris that could clog the pumps.
- Ensure the BILGE FWD, BILGE MID and BILGE AFT breakers are switched ON on the Master DC Panel in the engine room.
- Check all bilge pump float switches to ensure they are turning the bilge pumps on and off properly. If they are not working, do not leave your boat unattended until they are fixed. Refer to the float switch user manual for test procedures.
- Listen carefully and visually inspect for water leaks in the forward and aft bilge areas and the engine room. Pay particular attention to any hull penetrations.
- Close all unnecessary seacocks. If you are leaving the air conditioning on, make sure the air conditioning system raw water seacock remains OPEN.
- Switch OFF all unnecessary breakers on the AC and DC distribution panels. Check the security of all hatches and doors.
- Check to see that all mooring lines are secure and that your boat is properly positioned in the slip. Check to see that shore power cable(s) and dockside water hoses have sufficient slack, if left attached.
- Turn OFF dockside water supply.

If you are going to leave the boat unattended for a long period of time, put the battery main switches to OFF and close all seacocks. If possible, leave the boat connected to shore power with the battery charger on, by switching ON the BATTERY CHARGER breakers on the Master DC Panel and AC distribution panel.

CAUTION

To prevent damage, close all seacocks before leaving the boat.

10.5 Fishing

Fishing can be very exciting and distracting for the operator of the boat when the action gets intense. Be conscious that your primary responsibility is operating the boat safely to protect yourself, your passengers and other boats around you. Make sure the helm is properly manned and is never left unattended while trolling.

If you are fishing in an area that is crowded with other fishing boats, it may be difficult to follow the rules of the road. This situation can become especially difficult when most boats are trolling. Be courteous and exercise good common sense. Avoid trying to assert your right of way and stay clear to prevent tangled or cut lines and other unpleasant encounters. Also, keep in mind that fishing line wrapped around a propeller shaft can cause damage to the lower unit seal.

10.6 Docking, Anchoring and Mooring

Docking and Docklines

Maneuvering a boat near a dock and securing it requires skill and techniques that are unique to water and wind conditions, and the dock layout. If possible, position a crew member at the bow and stern to assist with the lines and docking. While maneuvering close to the dock, compensate for wind and current, and anticipate how you can use them to help docking. Practice in open water using an imaginary dock to develop a sense for how the boat handles in different scenarios. You must be able to understand docking techniques before problems occur.

Approaching a dock or backing into a slip in high winds or strong currents requires skill.

If you are new to handling a boat, take lessons from an experienced pilot and learn to maneuver in tight quarters in less-than-ideal conditions. Also, practice away from the dock during windy conditions.

Dock lines are generally twisted or braided nylon. Nylon is strong and stretches to absorb shock. Nylon also has a long life and is soft and easy on the hands. The size of the line, will vary with the size of the boat. Typically a 30-to-40 foot boat will use 5/8-inch line and a 20-to-30 foot boat will use 1/2-inch line. The number of lines and their configuration will vary depending on the dock, the range of the tide, and other factors. Usually a combination of bow, stern and spring lines is used to secure the boat.

Securing Docklines

Securing a boat alongside the dock typically requires a bow and stern line and two spring lines. The bow and stern lines are usually secured to the dock at a 40 degree angle aft of the stern cleat and forward of the bow cleat. The after bow spring line is secured to the dock at a 40 degree angle aft of the after bow spring cleat. The forward quarter spring is secured to the dock at a 40 degree angle forward of the stern cleat. The spring lines keep the boat square to the dock and reduce fore and aft movement while allowing the boat to move up and down with the tide.

Securing a boat in a slip is somewhat different. It typically requires two bow lines secured to pilings on each side of the bow, two stern lines secured to the dock and two spring lines that prevent the boat from hitting the dock. The bow lines are typically secured with enough slack to allow the boat to ride the tide. The stern lines are crossed. One line runs from the port aft boat cleat to the starboard dock cleat and the other line runs from the starboard aft boat cleat to the port cleat on the dock. The stern lines center the boat, control the forward motion and allow the boat to ride the tide. Two forward quarter spring lines typically are secured to the stern cleats and to mid ship pilings or cleats. The spring lines keep the boat from backing into the dock while allowing it to ride the tide.

Anchoring

Make sure the bitter end of the anchor rode is attached to the boat before dropping the anchor. Bring the bow into the wind or current and put the engine in neutral. When the boat comes to a stop, lower the anchor over the bow using the windlass. See section 7, Exterior Equipment. Allow enough rode so that it is at least 5 to 7 times the depth of the water and secure the line to a cleat. Use caution to avoid getting your feet or hands tangled in the line. Additional scope of 10 times the depth may be required for storm conditions. Check landmarks on shore to make sure the anchor is not dragging. If it is dragging, start over. It is prudent to use two anchors if you are anchoring overnight or in rough weather.

WARNING

SINKING OR DROWNING HAZARD
Anchoring at the stern can pull a boat under water. DO NOT anchor at the stern.

Releasing the Anchor

Release the anchor by traversing to the point where the anchor line becomes vertical. It should release when you pass that point. If the anchor does not release, stop the boat directly above the anchor and tie the line to a cleat as tight as possible. The up and down movement of the boat will usually loosen the anchor. Make sure the anchor is secured and stowed before getting underway.

10.7 Controls, Steering or Propulsion System Failure

If the propulsion, control, or steering system fails while you are operating the boat, bring both throttles to idle and shift to neutral. Determine if the boat should be anchored to prevent the boat from drifting or to hold the bow into the seas. Investigate and correct the problem if possible. Make sure the engines are off before investigating the problem. If you are unable to correct the problem, call for help.

10.8 Collision

If your boat is involved in a collision with another boat, dock, piling or a sandbar, your first priority is to check passengers for injuries and administer first aid if necessary. Once all passengers' situations are stabilized, thoroughly inspect the boat for damage. Check below decks for leaks and ensure all control systems for proper operation. Plug all leaks or make the necessary repairs to the control systems before proceeding. Operate slowly and carefully, taking all necessary precautions to be safe. Request assistance if necessary. Haul the boat and make a thorough inspection of the hull, lower unit, and control system for damage.

10.9 Grounding, Towing and Rendering Assistance

The law requires the owner or operator of a vessel to render assistance to any individual or vessel in distress, as long as his vessel is not endangered in the process.

If the boat should become disabled, or if another craft that is disabled requires assistance, be careful. The stress applied to a boat during towing can become excessive. Excessive stress can damage the structure and create a safety hazard for all onboard.

Freeing a grounded vessel, or towing a disabled boat requires specialized equipment and knowledge. Line failure and structural damage caused by improper towing have resulted in fatal injuries. To safely accomplish the towing task, we recommend this to be reserved for those with the right equipment and knowledge, e.g., the U.S. Coast Guard or a commercial towing company.

The mooring cleats or bow/stern eyes on Tiara boats are not designed or intended to be used for towing or lifting. These cleats are designed as mooring cleats for securing the boat to a dock, pier, etc. only. DO NOT use these fittings for towing, lifting or attempting to free a grounded vessel.

When towing operations are underway, have everyone on both vessels stay clear of the tow line and surrounding area. DO NOT allow anyone to be in line with the tow rope; a dangerous recoil can occur if the rope should break or pull free.

Running aground can cause serious injury to passengers and damage the boat and its underwater gear.

If your boat runs aground, evaluate the damage, then proceed at low speed to the nearest service facility and have an immediate inspection made before further use. A damaged boat can also take on water; keep all life saving devices close while heading to a dock area. If the boat cannot be immediately removed from the water, thoroughly inspect the bilge area for leaks.

10.10 Flooding or Capsizing

Boats can become unstable if they become flooded or completely swamped. Always be aware of the position of the boat to the seas and the amount of water in the bilge. Water entering the boat over the transom can usually be corrected by turning the boat into the waves. If the bilge is flooding because of a hole in the hull or the engine bracket, or a defective hose, you may be able to plug it with rags, close the thru-hull valve or assist

the pumps by bailing with buckets. Put a mayday call into the Coast Guard or nearby boats and distribute life jackets as soon as you discover your boat is in trouble.

If the boat becomes swamped and capsizes, you and your passengers should stay with the boat as long as you can. It is much easier for the Coast Guard, aircraft, or other boats to spot a capsized boat than people in the water.

10.11 Transporting your Boat

Your Tiara boat is a large boat and should only be trailered by professionals with the right equipment and knowledge to transport large boats without causing damage. Contact your dealer or the Tiara Customer Relations Department if you are planning to transport your boat and have any questions in regard to the proper equipment and support for the hull.

Damage from trailers can occur if the boat hull is not supported properly. Make sure the trailer bunks and pads are adjusted so they provide enough support for the hull and are not putting excessive pressure on the lifting strakes. Hull damage resulting from improper trailer support is not covered by the Tiara warranty.

10.12 Man Overboard

If someone falls overboard, be prepared to react quickly, especially when offshore. The following procedures will help you in recovering a person that has fallen overboard.

- Immediately stop the boat and sound a 'man overboard' alarm and have all passengers point to the person in the water.
- Circle around quickly and throw a throwable PFD, cushion, or life jacket to the person and if possible, throw another to use as a marker.
- Keep the person on the driver side of the boat to keep them in sight.
- Approach the person from the downwind side and maneuver the boat so the propellers are well clear of the person in the water.
- Turn off the engines when person is alongside and use a ring buoy or a boat cushion with a line attached, a paddle or boathook to assist person to the boat; make sure you do not hit them with the ring buoy or the boat.

DANGER

CARBON MONOXIDE POISONING AND/OR ROTATING PARTS HAZARD
Poisonous CO gases are present at the rear of the boat when an engine is running. A rotating propeller can cut or entangle swimmers. Either of these hazards will cause death or serious injury. DO NOT use the swim/boarding platform when the engine is running.

- Pull person to the boat and assist onboard.
- Check the person for injuries and administer first aid if necessary. If the injuries are serious, call for help immediately.

Refer to section 9, Safety Information, for more information on first aid and requesting emergency medical assistance.

10.13 Trash Disposal

Under the MARPOL agreement and U.S. federal law, it is illegal for any vessel to discharge plastic or garbage containing plastics into any waters. It is also illegal to discharge garbage in the navigable waters of the United States including the Great Lakes.

Regional, state, and local restrictions on garbage discharges also may apply. Vessels of 26 feet or longer must display in a prominent location, a durable placard at least 4 by 9 inches notifying the crew and passengers of the discharge restrictions. Responsible boaters store refuse in bags and dispose of

it properly on shore. Make sure your passengers are aware of the local waste laws and the trash management procedure on your boat.

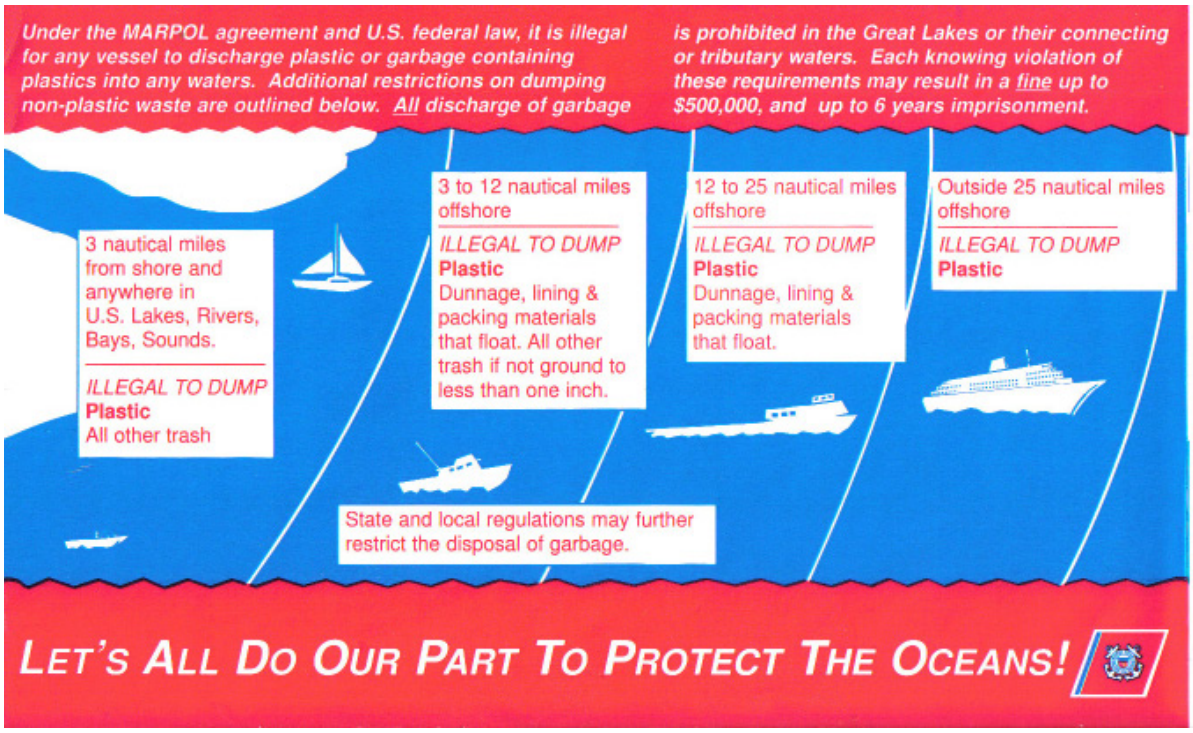
Consult the literature published by the United States Coast Guard and understand the regulations mandated by the official maritime agency in the region where you are boating.

NOTICE

Any person who violates waste disposal requirements is liable for a civil penalty of up to $25,000, a fine of up to $50,000, and imprisonment for up to five years for each violation. Regional, state, and local restrictions on garbage discharges also may apply.

10.14 Multi-Colored Lighting

Your vessel may be equipped with multi-colored LED cockpit lighting and/or underwater lights. **NOTE:** Caution should be taken when using multi-colored lights at night away from the dock. Red or green lights used at night could be confusing for other boats navigating nearby. On the water, blue lights are reserved exclusively for law enforcement vessels. The use of blue lights at night in open water, combined with boat movement, could cause confusion in a potential emergency situation, and may result in a fine.



Operator Notes

Routine Maintenance

11.1 General

WARNING

FIRE/EXPLOSION/ASPHYXIATION HAZARD

Cleaning agents and paint ingredients can be flammable and/or explosive, or dangerous to inhale. Make sure ventilation is adequate, wear proper personal protection and dispose of rags properly ashore.

Vapors from flammable solvents can cause fire, explosion or asphyxiation resulting in death or serious injury. Keep open flame or spark away from work area. DO NOT paint unless in a well-ventilated area.

Before using a cleaning product, refer to the product directions and specifications.

If urethane foam was used in the construction of your boat, be careful with high temperatures or flames in these areas. Urethane foam can ignite. DO NOT smoke, weld or burn. Avoid the use of space heaters and lights in areas where urethane foam is present. If ignited, urethane foam burns rapidly, produces extreme heat, releases hazardous gases and consumes much oxygen.

11.2 Exterior Hull and Deck

The exterior of your Tiara is made up of many different materials and finishes. Each material should be maintained by following the recommendations in the appropriate user manual.

After each use:

- Rinse the boat exterior with clean, fresh water.
- Wash all exterior surfaces and hardware with a sponge or soft bristle brush and a solution of fresh water and mild detergent. Nonskid areas may be scrubbed with a stiff bristle brush.
- Rinse the boat with fresh water.

Apply a premium marine wax to all smooth fiberglass surfaces (gel coat and/or painted) at least once a year. Follow the directions supplied with the wax.

NOTICE

Do not use abrasive cleaners on smooth fiberglass surfaces. They will dull the surface and allow dirt to penetrate the surface.

Most of the shiny white surfaces on your Tiara are gel coated. The deck, hardtop exterior and swim platform are a few examples. Depending on the build of your boat, the hull sides may be gel coated with a painted boot line or entirely painted. If you are unsure about your boat's finishes, contact your Tiara Yachts dealer.

Gel Coat

Time and exposure to the sunlight may cause the gel-coated surfaces to fade, dull, or chalk. Regular applications of a premium marine wax will minimize this. If you find a noticeable chalking of the gel coat you may choose to have it buffed to bring back the original luster. We recommend contacting your Tiara Yachts dealer or other marine service facility if your finish needs attention.

CAUTION

Experience is required to buff your Tiara. Do not buff your boat unless you have been properly trained and are using an industrial strength buffer with the appropriate pads and polishing materials.

After buffing, apply a coat of premium marine wax to all smooth surfaces, following the instructions included with the wax. Refer to gel coat care card that came with your boat.

If the fiberglass or gel coated surface should need repair, contact your Tiara dealer or another qualified marine service facility.

Polyurethane Marine Finish

The polyurethane marine finishes on your Tiara provide superior protection against the elements your boat will face throughout its long life. To ensure you maximize the benefits of the finish, use the following guide. If you are unsure about your boat's finishes, contact your Tiara Yachts dealer.

To maintain your painted hull finish:

- During the first 30 days following the boat's manufacture, when the finish is still fresh, clean the boat with a water rinse only.
- Do not wax for the first 60 days following the boat's manufacture.
- Do not use a pressure washer for the first 60 days following the boat's manufacture. Using high pressure while the paint is still fresh could affect the finish. Also avoid high pressure too close to areas with visible chips or cracks.
- Wash your boat often, especially when exposed to dusty, acidic or alkaline environments.
- When washing your boat, use non-abrasive, neutral pH (non acidic or alkaline) detergent. Do not use solvent-based solutions for washing.
- Do not wash the boat with extremely hot water or while the surface is hot.
- Avoid washing with stiff bristles. Soft cloth and soft brushes are recommended.
- Do not allow spilled gasoline, oil, anti-freeze, hydraulic fluid, or windshield washer fluid to sit on the paint or gel coat; remove immediately by rinsing with water. With some oils and hydraulic fluids, the allowable exposure time before staining occurs is significantly shortened if the fluid or the painted surface is hot.
- Have any paint chips, nicks or scratches repaired as soon as they occur to protect against future degradation.
- Should your boat's finish become damaged, have it repaired as soon as possible. Contact your Tiara dealer or a marine service facility and specify the same Imron polyurethane marine finish as used for the original finish.

Bottom Painting

If your boat is equipped with a factory-applied first coat of bottom paint, a second coat should be applied over the first, just before launching. Paint has been provided by Tiara for this purpose. Follow the paint manufacturer's recommendations for preparation and application. Applying the second coat right before launching maximizes the paint's anti-fouling properties.

If your boat has not been ordered with factory-applied bottom paint, and will be kept in the water for three weeks or more at a time, the bottom should be painted with an anti-fouling paint. Because of variations in water temperature, marine growth and pollution in different regions, your Tiara dealer and/or a qualified boat yard in your area should be consulted when deciding what bottom paint system to apply to your hull, because pollution and marine growth can damage fiberglass hulls.

Sanding or sandblasting the hull bottom will damage the fiberglass. Only use standard antifouling paints and fiberglass wax removers and primers recommended by the anti-fouling paint manufacturer when preparing the hull for bottom paint. Sanding or sandblasting and the use of a coating other than standard antifouling paint or epoxy barrier coatings are not recommended and will void the hull blister warranty.

DO NOT allow antifouling paint to contact the outboard engine. Most antifouling paints contain copper which will cause severe galvanic damage to the motor. Leave a 1/2" (12.7 mm) barrier between the hull bottom paint and outboard engine.

Most bottom paints require maintenance, especially when the boat is in saltwater or not used for extended periods, or after dry storage. If the hull bottom has been painted with antifouling paint, contact your dealer for the recommended maintenance procedures.

Sacrificial Anodes

Sacrificial zinc anodes are installed on the trim tabs, transom and outboard engines. The transom anode is connected to the bonding system and protects the underwater hardware that is bonded.

The anodes are less noble than copper-based alloys and aluminum and will deteriorate first, protecting the more noble underwater hardware against galvanic corrosion. Anodes should be checked monthly and changed when they are 75% of their original size. When replacing the anodes, make sure the contact surfaces are clean, shiny metal and free of paint and corrosion. Never paint over the anode or protect it.

Boats stored in saltwater will require anodes to be replaced at least every 6 months to one year. Anodes requiring replacement more frequently may indicate a stray current problem within the boat or at the slip or marina. Anodes that do not need to be replaced after one year may not be providing the proper protection. Loose or low quality anodes could be the problem. Contact your dealer for the proper size and type of anodes to be used and the specific installation procedure.

Fiberglass Gelcoat Surfaces

Normal maintenance requires only washing with mild soap and water. A stiff brush can be used on the nonskid areas. Kerosene or commercially prepared products will remove oil and tar which could be a problem on trailered boats. DO NOT use harsh abrasive and chemical cleaners because they can damage or dull the gelcoat, reducing its life and making it more susceptible to stains. When the boat is used in saltwater, wash it thoroughly with soap and water after each use.

Sudden changes in temperature can affect gelcoat. When planning on moving your boat from outdoors to a heated location, allow the change of temperature to be gradual. Warm the location slowly after the boat is brought inside to allow the boat to change temperature slowly as the location is warmed. Or, if you are moving your boat from a warmer area to a colder one, wait for the temperature to be closer to the temperature of the warmer area or allow the warmer area and the boat to cool down.

At least once a season, wash and wax all exposed fiberglass surfaces. Use a high quality automotive or boat wax. Follow the procedure recommended by the wax manufacturer. Washing and waxing of your boat will have the same beneficial effects as they have on an automobile finish. The wax will fill minute scratches and pores which help prevent soiling and will extend the life of the gelcoat.

After the boat is exposed to the direct sunlight for a period of time, the color in the gelcoat tends to fade, dull or chalk from oxidation of the gel. This condition will be more apparent with dark colors, which require more frequent maintenance. A heavier buffing is required to bring the gelcoat back to its original luster. For power cleaning use a light cleaner. To clean the boat by hand, use a heavier automotive cleaner. Before cleaning the surfaces, read the instructions given with the cleaner. After cleaning the surfaces, apply wax and polish all fiberglass surfaces except the nonskid areas.

If the fiberglass should become damaged and need repair, contact your dealer or an authorized repair person.

WARNING

SLIPPERY SURFACE HAZARD
Cleaning surfaces can generate slippery conditions which can result in death or serious injury. Use caution when cleaning with detergents. Rinse thoroughly.

Be careful when walking on wet gelcoat surfaces.

DO NOT wax nonskid surfaces, which could make them slippery and increase the possibility of injury.

Stainless Steel Hardware

When using the boat in saltwater, wash hardware with soap and water after each use. When your boat is used in a more highly corrosive environment—such as saltwater, water with a higher sulfur content, or polluted water—stainless steel may develop surface rust stains. This is normal under these conditions.

Clean and protect by using a high quality boat or automotive wax or a commercial metal cleaner and protectant.

DO NOT use citrus-based or abrasive materials such as sandpaper, bronze wool, or steel wool on stainless steel as damage will result.

Anodized Aluminum Surfaces

Wash aluminum surfaces periodically with soap and water to keep clean. If the boat is used in saltwater or polluted water, wash with soap and water after each use. Saltwater allowed to remain on anodized aluminum will penetrate the anodized coating and attack the aluminum.

Hardtops with aluminum frames, bimini tops, and towers with canvas and/or fiberglass tops require special attention to the anodized aluminum just below the top. This area is subject to salt build-up from salty condensation and sea spray. It is often overlooked when the boat is washed and will not be rinsed by the rain. The aluminum just below the top is more likely to become pitted than the exposed aluminum on the structure. Make sure these areas are washed frequently with soap and water and rinsed thoroughly.

Pay particular attention to places where the top material and lacing contact the frame. Coat the entire frame with a metal protector made for anodized aluminum once a month to protect against pitting and corrosion caused by the harsh effects of saltwater. The anodized aluminum used on your Tiara was coated with a metal protector at the factory. This coating protects anodized aluminum, stainless steel, brass and chrome. It also protects color anodizing from fading and discoloring due to harmful ultraviolet rays. The metal protector is available from your dealer.

Metal protectors can make the metal slippery and should not be used on tower ladders, steering wheels and other areas for gripping or stepping.

Stains can be removed with a metal polish or fine polishing compound. To minimize corrosion, use a caulking compound to bed hardware and fasteners mounted to aluminum fabrications. If the anodized coating is badly scratched it can be touched up with paint. With proper care, anodized aluminum will provide many years of service.

Contact Tiara Customer Relations before making any modifications to aluminum fabrications. Unauthorized modifications can void the warranty.

Powder Coated (Painted) Aluminum Surfaces

Regular care is necessary to maintain the appearance of the powder coat finish. Build-up of salt and grime can hold moisture and damage powder coatings. This buildup

can cause a corrosive condition that can damage the coating, especially in a salt air or coastal environment.

- Wash the finish regularly with warm water containing a pH neutral detergent (i.e. mild dish soap).
- Use a non-abrasive fiber cloth.
- Rinse thoroughly after cleaning.

Chrome Hardware

Rinse with fresh water and wipe dry with a towel or chamois after each use. Use a good chrome cleaner and polish on all chrome hardware. Clean and wax chrome prior to extended storage. In saltwater or other harsh environments, clean and wax more often.

Acrylic Plastic

Acrylic plastic scratches easily. DO NOT use a dry cloth or glass cleaning solutions on acrylic. Use a soft cloth and mild soap and water for routine cleaning. Solvents and products containing ammonia can permanently damage acrylic plastic.

Fine scratches can be removed with a fine automotive clear coat polishing compound. A coat of automotive or boat wax is beneficial to protect the surface.

DO NOT use the following on acrylic plastic:

- Abrasive cleaners
- Acetone
- Solvents
- Alcohol
- Glass cleaners
- Cleaners containing ammonia

Engines

Check your engine, transmission, and generator fluids every time you use the boat, and daily on long trips (see chapter 5 for more information). If the engines and Volvo® IPS units (if installed) are kept clean, leaks and other problems are easier to spot. Review and follow the oil, coolant, and filter change intervals outlined in your engine and generator user manuals. Have all engine, IPS units, and generator maintenance performed by your Tiara Yachts dealer or other qualified marine service facility.

Corian Surfaces

Corian® is resistant to heat, but you should always use a hot pad or a trivet with rubber feet to protect it. Avoid exposing Corian to strong chemicals, such as paint removers, oven cleaners, etc. If contact occurs, flush the surface with water immediately. Soapy water or ammonia-based cleaners will remove most dirt and stains from all types of finishes.

DO NOT use the Corian countertop as a cutting board.

Minor damage, scratches, general or chemical stains, scorches or burns and minor impact marks can be repaired on-site with a light abrasive cleanser and a product such as a Scotch-Brite® pad. For heavier damage, light sanding may be necessary. Heavy damage should be repaired by a Corian licensed professional.

Tempered Glass Sink

For best results:

- DO NOT use strong/abrasive cleaner. Test your cleaning solution on an unnoticeable area first, before applying to the entire surface.
- Wipe surfaces clean immediately after applying cleaner.
- DO NOT allow cleaner to sit or soak on the surface.
- DO NOT use an abrasive brush or scouring pad to clean surfaces as damage will occur. Use only a soft, dampened sponge and cloth.
- Rinse and wipe the fixtures to prevent soap build-up.

11.3 Seats, Upholstery, Canvas and Enclosures

Seat Slides and Swivel Bases

Perform the following periodically:

- Inspect and tighten mounting screws between seat slides and seat bottom.
- Inspect and tighten the mounting screws attaching the seat bases to the boat.
- Keep a light film of grease on manual seat slides.
- Keep a light film of grease on manual seat adjusting mechanisms.
- Clean electric seat slides. DO NOT use harsh chemicals or abrasives. Lubrication is not required.

Vinyl Upholstery

The vinyl upholstery used on the exterior seats and bolsters and headliner in the cabin should be cleaned with soap and water periodically. Stains, spills or soiling should be cleaned up immediately to prevent the possibility of permanent staining. When cleaning, rub gently. DO NOT use products containing ammonia, powdered abrasive cleaners, steel wool, strong solvents, acetone and lacquer solvents or other harsh chemicals as they can permanently damage or shorten the life of vinyl. Never use steam heat, heat guns, or hair dryers.

Stronger cleaners, detergents and solvents may be effective in stain removal, but can cause either immediate damage or slow deterioration. Lotions, sun tan oil, waxes and polishes, etc., contain oils and dyes that can cause stiffening and staining of vinyls.

- Dry soil, dust and dirt - remove with a soft cloth.
- Dried on dirt - wash with a soft cloth dampened with water.
- Variations in surface gloss - wipe with a water-dampened soft cloth and allow to air dry.
- Stubborn dirt - wash with a soft cloth, dampened with Ivory Flakes® and water. Rinse with clean water.
- Stubborn spots and stains - spray with either Fantastik Cleaner® or Tannery Car Care Cleaner® and rub with a soft cloth. Rinse with clean water.
- Liquid spills - wipe with a clean absorbent cloth immediately. Rinse with clean water.
- Food grease and oily stains - spray with either Fantastik Cleaner or Tannery Car Care Cleaner, wiping with a soft cloth immediately. Be careful not to extend the area of contamination beyond its original boundary. Rinse with clean water.

Water that becomes trapped between the cushion and foredeck may cause the gelcoat to blister. Blistering is not covered by the Tiara Limited Warranty. Remove the cushions every two – three weeks and allow them to dry out on the bottom side. For longer life we recommend that the cushions be stored out of the elements when not in use.

CAUTION

Leaving foredeck cushions installed for an extended period of time may result in gelcoat damage.

Canvas and Side Curtains

Acrylic canvas should be cleaned periodically by using a mild soap and water. Scrub lightly and rinse thoroughly to remove the soap. Do not use detergents. Canvas tops or accessories should never be folded or stored wet.

After several years, the acrylic canvas may lose some of its ability to shed water. If this occurs, wash the fabric and treat it with a commercially available water-proofing agent designed for this purpose. Some leakage at the seams is normal and unavoidable with acrylic enclosures.

Side curtains and clear connectors can be cleaned with mild soap and water. Do not allow them to become badly soiled. Dirt, oil, mildew, and cleaning agents containing ammonia will shorten the life of the vinyl that is used for clear curtains. After cleaning the curtains and allowing them to dry, apply a non-lemon furniture polish or an acrylic plastic and clear plastic protector to extend the life of the curtains.

Vinyl curtains should be stored either rolled or flat, without folds or creases. Folding the curtains will make permanent creases that could cause the vinyl to crack.

DO NOT use any polish containing lemon or lemon scents; lemon juice attacks vinyl and shortens its life.

Lubricate snaps periodically with petroleum jelly or silicone grease. Lubricate zippers with silicone spray or paraffin.

Remove the bimini top, side curtains, clear connector, back drop and aft curtain when trailering. Canvas enclosures are not designed to withstand the extreme wind pressure encountered while trailering and will be damaged. Always remove and store properly before trailering.

11.4 Cabin Interior

Clean the cabin interior just like you would clean a home interior.

- Teak woodwork - use teak oil
- Carpeting - use a vacuum cleaner
- Vinyl headliner - clean as previously described

Air and sunlight are very good cleansers. Periodically, place cushions, sleeping bags, etc., on deck, under the sun and in the fresh air to dry and air out. If cushions or equipment get wet with saltwater, remove and use clean, fresh water to rinse off the salt crystals. Salt retains moisture and will cause damage. Dry thoroughly and reinstall.

If you leave the boat for a long period of time, put all cushions on their sides, open all interior cabin and locker doors, and hang a commercially available mildew protector in the cabin.

Read the label carefully on mildew protectors, remove the protector, and allow the cabin to ventilate completely before using the cabin.

11.5 Oil Change System

An oil change system for the main engines, transmissions, and generator is installed in the engine room. Refer to the oil change system user manual for use and maintenance information.

Note: Be certain to clean up any oil spilled in the bilge during oil changing operations. Failure to do so can allow the bilge pumps to transfer oil into the surrounding water. Properly dispose of any oil-contaminated rags per local environmental requirements.

CAUTION

Always use the correct amount and type of oil recommended by the equipment manufacturer. Failure to do so can result in premature equipment failure and loss of equipment warranty.

CAUTION

Always return the oil change system valves to the closed position after using the system. Failure to do so can result in transfer of oil between the engines and/or generator due to crankcase pressures.

WARNING

THE FEDERAL WATER POLLUTION CONTROL ACT PROHIBITS THE DISCHARGE OF OIL OR OILY WASTE INTO OR UPON THE NAVIGABLE WATERS OF THE UNITED STATES, OR THE WATERS OF THE CONTIGUOUS ZONE, OR WHICH MAY AFFECT NATURAL RESOURCES BELONGING TO, APPERTAINING TO, OR UNDER THE EXCLUSIVE MANAGEMENT AUTHORITY OF THE UNITED STATES, IF SUCH DISCHARGE CAUSES A FILM OR DISCOLORATION OF THE SURFACE OF THE WATER OR CAUSES A SLUDGE OR EMULSION BENEATH THE SURFACE OF THE WATER. VIOLATORS ARE SUBJECT TO SUBSTANTIAL CIVIL PENALTIES AND/OR CRIMINAL SANCTIONS, INCLUDING FINES AND IMPRISONMENT. REPORT ALL DISCHARGES TO THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 OR TO YOUR LOCAL U.S. COAST GUARD OFFICE BY PHONE OR VHF RADIO, CHANNEL 16.

11.6 Fuel System

For fuel system maintenance requirements, see section 5, Fuel Systems, and section 12, Seasonal Maintenance.

11.7 Bilge

To keep the bilge clean and fresh, use a commercial bilge cleaner regularly. Follow the directions carefully. All exposed pumps and metal components should be sprayed with a protector periodically to reduce the corrosive effects of the high humidity present in these areas.

WARNING

FIRE/EXPLOSION OR ASPHYXIATION HAZARD

Fumes from flammable solvents can cause fire, explosion or asphyxiation resulting in death or serious injury. DO NOT use flammable solvents to clean the bilge.

11.8 Electrical

The AC and DC electrical systems require routine maintenance. See section 4, Electrical Systems, and section 12, Seasonal Maintenance.

11.9 Generator

The most important factors to the longevity of the generator is proper ventilation and maintenance of the fuel system, ignition system, cooling system, lubrication system and the AC alternator.

Maintenance schedules and procedures are outlined in the generator owner's manual; follow them exactly. See also section 5, Fuel Systems, and section 12, Seasonal Maintenance.

Seasonal Maintenance

12.1 Winterizing

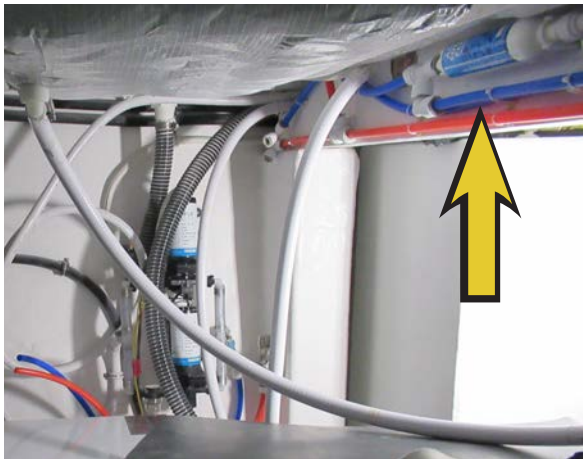
Engines

Refer to the engine owner's manual for detailed information on preparing the engines for storage.

Fresh Water System

The entire fresh water system must be completely drained. Disconnect all hoses, check valves, etc., and blow all the water from the system. Make sure the water heater and fresh water tank are completely drained. Use very low air pressure only when blowing water from the system to prevent damage to components. The check valve mechanism built in the fresh water pump will not remove the water from the pump. Remove the outlet hose on the pump, turn it on and allow it to pump out any remaining water (approximately a cupful).

Change the in-line water filter, located on the engine room port aft-facing bulkhead, annually. See chapter 12, Seasonal Maintenance, for details.

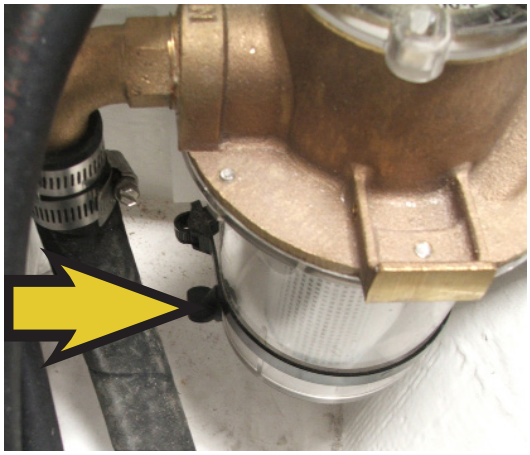


In-line water filter, indicated by arrow

The fresh water system strainers need to be cleaned annually. The strainers are attached directly to the fresh water pump(s). See chapter 12, Seasonal Maintenance, for details.

To clean the strainers:

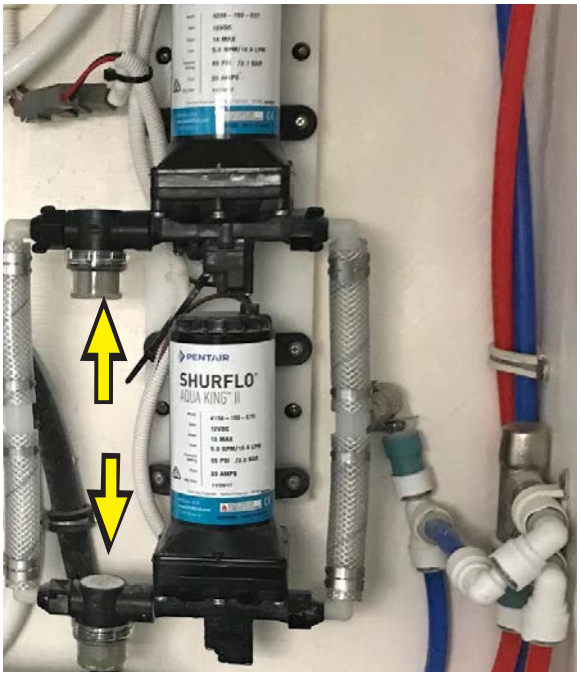
1. Switch OFF the FRESH WATER PUMP breaker(s) on the DC Distribution Panel located under the starboard salon loveseat.
2. Switch OFF the WATER HEATER breaker on the AC Distribution Panel.
3. De-pressurize the fresh water system by opening the galley faucet in the warm position.
4. Locate the strainer sight glasses.



Water strainer sight glass drain plug

5. Have towels ready and placed under the sight glasses.
6. Carefully unscrew the sight glasses.
7. Remove the strainer screens.
8. Clean the screens with mild soap and fresh water. Rinse with fresh water.
9. Replace the strainer screens and screw the sight glasses back into place.
10. With the galley faucet open in the warm position, switch ON the FRESH WATER PUMP breaker(s).
11. After observing a steady flow of water through the hot and cold tap, close the galley faucet.
12. Continue to open the hot and cold taps of all remaining faucets one at a time. After observing a steady flow of water from each tap, close the faucet.
13. Switch ON the WATER HEATER breaker.

Fresh water system strainers should be cleaned annually. The strainers are attached directly to the fresh water pumps, in the engine room.



Fresh water pumps; strainers indicated by arrows

Before storing your boat, the water system needs to be drained and winterized.

WARNING

HOT WATER WILL CAUSE BURNS. DO NOT FOLLOW THESE PROCEDURES until water in the water heater tank is cool.

CAUTION

Do not operate the water heater without water in the water heater tank. Failure to do so could damage the water heater.

To drain the fresh water system:

1. Switch OFF the WATER HEATER breaker on the AC distribution panel.
2. Open all fresh water faucets (hot and cold). Leave the faucets open.
3. Switch ON the FRESH WATER breaker(s) on the DC distribution panel.
4. Allow the water to run until the tank is empty. The tank is empty when all faucets no longer produce a stream of water.
5. Switch OFF the FRESH WATER breaker(s).
6. Remove the hoses from the input and output sides of the fresh water pump(s), and let the pump(s) and hoses drain into the bilge. The fresh water pump(s) are located in the engine room.
7. Switch ON the FRESH WATER breaker(s) for 3-5 seconds to remove the water from the bottom of the pump housing(s) and then turn OFF the fresh water breakers.
8. If installed, drain all water from the optional water heater. The water heater is located outboard of the aft engine room to starboard, and may be accessed through a panel below the starboard gunwale outboard of the helm. Refer to the water heater user manual for the draining procedure.

Next, flush the system with potable water antifreeze:

1. Close all fresh water system faucets.
2. Reconnect the hoses to the water pumps.
3. If you have an optional ice maker:
   - Disconnect the ice maker water supply and plug the supply line.
   - Switch ON the ICE MAKER breaker on the AC distribution panel.
   - Allow the unit to run for an hour.
   - Remove any cubes that may have been ejected during this period.
   - Switch OFF the breaker and prop the door open to let the unit defrost.
   - After the ice maker has defrosted, wipe it dry.

NOTE: At no time should potable water antifreeze be allowed to enter into the ice maker. Follow the ice maker user manual for winterization procedure.

4. Pour five (5) gallons of potable water antifreeze into the water tank via the WATER fill fitting(s) on the gunwale(s).
5. Turn both water heater valves fully counter-clockwise to the bypass position.
6. Switch ON the FRESH WATER breaker(s) on the DC distribution panel.
7. Open all faucets in the system (hot and cold), one at a time, until the antifreeze begins to come out, and then close.
8. Switch OFF the FRESH WATER breaker(s).

To protect the shower sump from freezing:

1. Pour potable water antifreeze into the shower drain.
2. Monitor the shower sump discharge thru-hull on the starboard hullside amidships.
3. When the antifreeze is forced out of the thru hull via the shower sump, the system is protected.

An alternate method is to use commercially available nontoxic, fresh water system antifreeze. After draining the potable water tank, lines and water heater, pour the antifreeze mixture into the fresh water tank, then prime and operate the pump until the mixture flows from all fresh water faucets. Be sure to open ALL faucets, including the water supply valve for the head. Make sure antifreeze has flowed through all of the fresh water drains. Allow the antifreeze to fill the sink traps.

The shower/cabin drain sump system must be winterized also. Clean debris from the drain and sump and flush for several minutes with fresh clean water. After the system is clean, pump the drain sump as dry as possible. Then pour a potable water antifreeze mixture into the shower drain until antifreeze has been pumped through the entire system and out of the thru-hull.

For additional information, refer to section 5, Plumbing Systems.

Raw Water System

The raw water cooling system for each engine and the generator must be drained before storage. The raw water washdown system must also be drained before storage. See chapter 5 for more information about raw water system components.

To drain the cooling systems:

1. Open the raw water intake seacock.
2. Drain the raw water intake strainer.
3. Remove and clean the strainer filter.
4. Disconnect the hoses, if necessary, to remove all water.
5. Reconnect all hoses and reassemble the strainer.
6. Repeat this procedure for each engine and the generator.

Consult the engine and generator user manual for more information on recommended winterization procedures.

To drain the raw water washdown system:

1. Connect the hose to the raw water washdown connection inside the water connection locker.
2. Ensure the end of the hose is open, or open the spray nozzle if installed.
3. Open the raw water washdown seacock in the engine room.
4. Disconnect the hoses from the intake and outlet sides of the pump and let the water drain out. Use compressed air, if necessary, to remove all the water.
5. Run the pump for 3-5 seconds to remove all water from the pump body.
6. Lubricate the pump impeller per instructions in the pump's user manual.

Reconnect all hoses and tighten the clamps securely.

WARNING

WHEN RECONNECTING RAW WATER HOSES, BE CERTAIN ALL HOSE CLAMPS ARE PROPERLY TIGHTENED. FAILURE TO DO SO COULD CAUSE A WATER LEAK AND CAN SINK THE BOAT.

CAUTION

Be very careful when using compressed air to blow water out of the system. Using too much air pressure or volume can damage the raw water system.

Exhaust System

The engines, transmissions, Volvo® IPS drives (if installed), and generator should be prepared for storage according to the manufacturers' recommendations. Please refer to the appropriate user manuals for specific instructions.

The exhaust systems for each engine and the generator must have all remaining water drained. To drain the muffler(s), remove the drain plug from the muffler, allow the water to drain out, and replace the drain plug.

WARNING

BE CERTAIN THAT THE EXHAUST DRAIN PLUGS ARE INSTALLED TIGHTLY. FAILURE TO DO SO WILL ALLOW ENGINE EXHAUST GASES CONTAINING CARBON MONOXIDE AND WATER INTO THE BILGE AREA.

CAUTION

Prior to transporting your vessel by truck and trailer the engine mufflers must be drained to prevent sea water reversion into the engines.

Generator muffler drain plug

Generator Raw Water Systems

Drain the sea strainer, heat exchangers and raw water supply and discharge lines for the generator raw water supply pumps.

Once the exhaust system has been drained, pour a nontoxic marine engine antifreeze mixture into a large pail and put the generator raw water intake lines into the solution. Run the generator until the antifreeze solution is visible at the exhaust port, then shut the engine off.

Winterize the generator engine and fuel system by following the generator manufacturer's winterizing procedures. Refer to generator's owner's manuals or contact a Tiara dealer.

Fuel System

Leave the fuel tank nearly full to reduce condensation that can accumulate in the tank.

Allow enough room for fuel to expand without leaking from the vents.

Algae can grow in the accumulated water in diesel fuel tanks, especially in warm climates. Adding a high quality diesel fuel additive containing an algaecide may be required to control algae during storage in your area.

Marine Toilet

Pump out the head. Flush the holding tank using clean soap, water, deodorizer and pump-out cleaning solution.

Refer to the toilet owner's manual and winterize the toilet following the procedures exactly. Drain the intake and discharge hoses completely using low air pressure if necessary. The head holding tank and macerator discharge pump must be pumped dry. Pour one gallon of potable water antifreeze poured into the tank through the deck waste pumpout fitting. After the antifreeze has been added to the holding tank, open the overboard discharge valve and activate the macerator pump until the antifreeze solution is visible at the discharge thru-hull.

Air Conditioner

Disconnect and drain the air conditioner intake and discharge hoses. Remove all water from the sea strainer and thru-hull fitting. Allow all water to drain from the system. An alternate method is the use of commercially available nontoxic, potable water system antifreeze. If antifreeze is used, drain the sea strainer and pour the mixture into a pail and put the raw water intake line into the solution. Run the air conditioner until the antifreeze solution is visible at the discharge fitting on the hull side.

Air conditioner components must be winterized also; follow winterizing procedure in the air conditioner owner's manual.

The air conditioning, engine control system, head, and steering systems have specific lay-up requirements. Refer to the owner's manuals for recommended winterizing procedures.

Bilge

The bilge pumps and bilge pump lines must be completely free of water and dried out when the boat is laid up for the winter in climates where freezing occurs. Compartments in the bilge that will not drain completely should be pumped out and then sponged until completely free of water. Dry the hull bilge and self-bailing cockpit troughs. Water freezing in these areas could cause damage. Coat all metal components, wire busses, connector plugs (in the bilge), all strainers, seacocks and steering components with a protecting oil. Wipe the bilge areas clean and dry.

Hardtop

Remove the canvas and thoroughly clean and store in a safe, dry place. Remove all electronics. Coat all wire connectors and bus bars in the helm compartment with a protecting oil.

Clean the aluminum frame with soap and water and dry thoroughly. Apply an aluminum metal protector to the entire frame to reduce corrosion and pitting.

NOTICE

Make sure the leg drain holes are clear when the boat is laid up for the winter. Water trapped inside the hardtop, tower or radar arch legs can freeze and cause the legs to split.

Tower (if installed)

Make sure all holes in the tower and hardtop legs are open and completely free of water. Check and clear tower basket drains of debris. Remove the tower sun shade, if installed, the belly band or other upholstery, and thoroughly clean and store in a safe, dry

place. Remove all electronics. Coat all wire connectors and bus bars in the helm compartment with a protecting oil. Cover the tower basket with a tarp and secure it properly.

Clean the aluminum frame with soap and water and dry thoroughly. Apply an aluminum metal protector to the entire frame to reduce corrosion and pitting.

Covering for Winter

Proper storage is very important to prevent serious damage to the boat. If the boat is stored outside, support and secure a storage cover properly over the boat. It is best to have a frame built over the boat to support the canvas. It should be a few inches wider than the boat so the canvas will clear the rails and allow passage of air. If this cover is fastened too tightly there will be inadequate ventilation and can lead to mildew, moisture accumulation, etc. Fasten the canvas down securely so wind cannot remove it or cause chafing of the hull superstructure. DO NOT store the boat in a damp storage enclosure. Excessive dampness can cause electrical problems, corrosion, and excessive mildew.

DO NOT use the bimini top or convertible top canvas in place of the winter storage cover. The life of these tops can be shortened if exposed to harsh weather elements for long periods.

DO NOT use an electric or fuel burning heating unit in the bilge area.

If the boat is to be stored indoors, make sure the building has enough ventilation and there is enough ventilation both inside the boat and around the boat. If the boat is to be stored indoors or outdoors, open all drawers, clothes lockers, cabinets, and doors a little. If possible, remove the upholstery, mattresses, clothing, and rugs.

12.2 Storage and Lay-up

Lifting

It is essential that care be used when lifting your boat. Make sure the spreader bar at each sling is at least as long as the distance across the widest point of the boat that the sling will surround. The positions are marked with small labels on each side of the boat under the rubrails. Tie fore and aft slings together to prevent slings from sliding on the hull.

Elevating lifts are commonly used to store boats for extended periods. To provide proper support, the bunks that support the hull should be aligned with and run parallel to the hull stringers. The bow and stern eyes, if equipped, should not be used as sole support for storage.

CAUTION

Failure to follow the proper lifting procedures while lifting your boat may result in structural damage to the hull and deck or underwater gear.

Your boat can be damaged from improper lifting and rough handling when being transported by lift trucks. Care and proper handling procedures must be used when using a lift truck to move your boat. DO NOT attempt to lift boat with a substantial amount of water in the bilge.

Severe gelcoat cracking or more serious hull damage can occur during hauling and launching if pressure is created on the gunwales (sheer) by the slings. Use flat, wide slings and spreaders long enough to keep pressure from the gunwales. DO NOT allow your boat to be hauled when the spreaders on the lift are not wide enough to take the pressure off the gunwales.

To prepare the boat for storage:

- Remove the bilge drain plug(s), if installed.
- Thoroughly wash the fiberglass exterior, especially the antifouling portion of the bottom. Remove as much marine growth as possible. Lightly wax the exterior fiberglass components.
- Remove all oxidation from the exterior hardware and apply a light film of moisture displacing lubricant.
- Remove propellers and grease the propeller shafts using light waterproof grease.
- Remove batteries and clean using clear, clean water. Make sure batteries have sufficient water and terminals are clean. Keep the batteries charged and stored in a cool, dry place and safe from freezing throughout the storage period.
- Refer to section 4, Electrical Systems, for information on the maintenance of the AC and DC electrical systems.
- Coat all faucets and exposed electrical components in the cabin and cockpit with a protecting oil.
- Thoroughly clean the interior of the boat; vacuum all carpets and dry-clean drapes and upholstery.
- Remove cushions
- Open the refrigerator/cooler door and as many locker doors as possible. Leaving as many of these areas open as possible will improve fresh air ventilation during the storage period.
- Place a mildew preventive system in the cabin area before it is closed for storage.
- Clean the exterior upholstery with a good vinyl cleaner, and dry thoroughly. Spray the weather covers and boat upholstery with a spray disinfectant. Enclosed areas such as the refrigerator, shower basin, storage locker areas, etc., should also be sprayed with a disinfectant.

Supporting the Boat for Storage

A trailer, elevating lift or a well-made cradle is the best support for your boat during storage. When storing the boat on a trailer for a long period:

- Make sure the rollers and pads support the hull of the boat and the trailer is on a level surface with the bow high enough so water will drain from the bilge and cockpit. The trailer must properly support the hull. The bunks and rollers should match the bottom of the hull and should not be putting pressure on the lifting strakes.
- Make sure the hitch is properly supported.
- Check the tires once each season. Add enough air for the correct amount of inflation for the tires.
- Make sure the engines are in the down position.

Custom-made cradles, with protective padding on the bunks, are available through your Tiara Yachts dealer.

When storing the boat on a lift or cradle:

- The cradle must be specific for boat storage. Make sure the lift or cradle is well supported with the bow high enough to provide proper drainage of the bilge. The cradle or lift must be in the proper fore and aft position to properly support the hull. When the cradle or lift is in the correct location, the bunks should match the bottom of the hull and should not be putting pressure on the lifting strakes.
- Make sure the engines are in the down position.
- Make sure bunks and rollers are adjusted so they are not putting pressure on the lifting strakes and are providing enough support for the hull. Hull damage resulting from improper cradle or trailer support is not covered by the Tiara warranty.

12.3 Recommissioning

DO NOT operate the boat unless it is completely assembled. Keep all fasteners tight. Keep adjustments according to specifications.

Before launching the boat, make sure to install hull drain plug(s).

Recommissioning the Boat after Storage

- Charge and install the batteries.
- Install hull drain plug(s).
- Check the bilge area and all thru-hulls and seacocks to ensure there are no leaks.
- Open all seacocks and make sure the hoses and fittings are not leaking.
- Verify all bilge pumps are operational by manually activating the float switch at each pump.
- Check the engines and generator for damage and follow the manufacturer's instructions for recommissioning.
- Check the mounting bolts of engines to make sure they are tight.
- Perform all routine maintenance.
- Check all hose clamps for tightness.
- Pump antifreeze from any systems winterized with antifreeze and flush several times with fresh water. Make sure all antifreeze is flushed from the water heater and it is filled with fresh water before it is activated.
- Disinfect the fresh water system. Refer to section 5, Plumbing Systems, for instructions.
- Check and lubricate the steering system.
- Clean and wash the boat.
- Install all upholstery, cushions, and canvas.

After Launching:

- Check all water systems and the engine mounting bolts for leaks. Operate each system one at a time and check for leaks and proper operation.
- Make sure all BILGE pump switches are ON
- When the engines start, check the cooling system port below the engine cowling for a strong stream of water to ensure cooling pump is operating.
- Carefully monitor the gauges and check for leakage and abnormal noises.
- Operate the boat at slow speeds until the engine temperature stabilizes and all systems are operating normally.

Aft: In, near, or toward the stern of a boat.

Aground: A boat stuck on the bottom.

Amidships: In or toward the part of a boat midway between the bow and stern.

Anchor: A specially shaped heavy metal device designed to dig efficiently into the bottom under a body of water and hold a boat in place.

Anchor locker: a locker, usually located in the bow of a boat, used for stowing the anchor line or chain

Anchorage: An area specifically designated by governmental authorities in which boats may anchor.

Ashore: On shore.

Astern: Behind the boat, to move backwards.

Athwartship: At right angles to the center line of the boat.

Barnacles: Small, hard-shelled marine animals which are found in salt water attached to pilings, docks and bottoms of boats.

Beam: The breadth of a boat usually measured at its widest part.

Beamy: boats of greater than normal beam

Bearing: The direction of an object from the boat, either relative to the boat's direction or to compass degrees.

Berth: A bunk or a bed on a boat.

Bilge: The bottom of the boat below the flooring.

Bilge Pump: A pump that removes water that collects in the bilge.

Boarding: Entering or climbing into a boat.

Boarding Ladder: Set of steps temporarily fitted over the side of a boat to assist persons coming aboard.

Boat Hook: Short shaft of wood or metal with a hook fitting at one end shaped to aid in extending one's reach from the side of the boat.

Bow: The front end of a boat's hull.

Bow Line: A line that leads forward from the bow of the boat.

Bow Rail: Knee high rails of solid tubing to aid in preventing people from falling overboard.

Bridge: The area from which a boat is steered and controlled.

Bridge Deck: A deck forward and usually above the cockpit deck.

Broach: When the boat is sideways to the seas and in danger of capsizing; a very dangerous situation that should be avoided.

Bulkhead: Vertical partition or wall separating compartments of a boat.

Cabin: Enclosed superstructure above the main deck level.

Capsize: When a boat lays on its side or turns over.

Chapman's: Chapman Piloting & Seamanship, by Chapman and Jonathon Eaton; published by Hearst.

Chain locker: See anchor locker.

Chock: A deck fitting, usually of metal, with inward curving arms through which mooring or anchor lines are passed so as to lead them

in the proper direction both onboard and off the boat.

Cleat: A deck fitting, usually of metal with projecting arms used for securing anchor and mooring lines.

Closed Cooling System: A separate supply of fresh water that is used to cool the engine and circulates only within the engine.

Coaming: A vertical piece around the edges of cockpit, hatches, etc., to stop water on deck from running below.

Cockpit: An open space, usually in the aft deck, outside of the cabin.

Companionway: Opening in the deck of a boat to provide access below.

Compartment: The interior of a boat divided off by bulkheads.

Cradle: A framework designed to support a boat as she is hauled out or stored.

Cutlass Bearing: A rubber bearing in the strut that supports the propeller shaft.

Deck: The floor-like platform of a boat that covers the hull.

Displacement: The volume of water displaced by the hull. The displacement weight is the weight of this volume of water.

Draft: The depth of water a boat needs to float.

Drydock: A dock that can be pumped dry during boat construction or repair.

Dry Rot: A fungus attack on wood areas.

Electrical Ground: A connection between an electrical connector and the earth.

Engine Beds: Sturdy structural members running fore and aft on which the inboard engines are mounted.

EPIRB: Emergency Position Indicating Radio Beacon. Operates as a part of a worldwide satellite distress system.

Even Keel: When a boat floats properly as designed.

Fathom: A measure of depth. One Fathom = 6 feet.

Fender: A soft object of rubber or plastic used to protect the topsides from scarring and rubbing against a dock or another vessel.

Fend off: To push or hold the boat off from the dock or another boat.

Flying Bridge: A control station above the level of the deck or cabin.

Flukes: The broad portions of an anchor which dig into the ground.

Following Sea: A sea that comes up from the stern and runs in the same direction that the boat is going.

Fore: Applies to the forward portions of a boat near the bow.

Foundering: When a boat fills with water and sinks.

Fuel pump: feeds fuel under pressure

Freeboard: The height from the waterline to the lowest part of the deck.

Galley: The kitchen of a boat.

Grab Rail: Hand-hold fittings mounted on cabin tops or sides for personal safety when moving around the boat, both on deck and below.

Ground Tackle: A general term including anchors, lines, and other gear used in anchoring.

Grounds: A boat touches the bottom.

Gunwale: The upper edge of a boat's side.

Hand Rail: Rail mounted on the boat, for grabbing with your hand, to steady you while walking about the boat.

Harbor: An anchorage which provides reasonably good protection for a boat, with shelter from wind and sea.

Hatch: An opening in the deck with a door or lid to allow for access down into a compartment of a boat.

Head: A toilet on a boat.

Heat Exchanger: Used to transfer the heat that is picked up by the closed cooling system to the raw cooling water.

Helm: The steering and control area of a boat.

Hull: The part of the boat from the deck down.

Inboard: A boat with the engine mounted within the hull of the boat. Also refers to the center of the boat away from the sides.

Inboard/outboard: Also stern drive or I/O. A boat with an inboard engine attached to an outboard drive unit.

Keel: A plate or timber plate running lengthwise along the center of the bottom of a boat.

Knot: Unit of speed indicating nautical miles per hour. 1 knot = 1 nautical mile per hour (1.15 miles per hour). A nautical mile is equal to one minute of latitude: 6076 feet. Knots times 1.15 equals miles per hour. Miles per hour times .87 equals knots.

Lay-up: To decommission a boat for the winter (usually in northern climates).

Leeward: The direction toward which the wind is blowing.

Length On The Waterline (LWL): A length measurement of a boat at the waterline from the stern to where the hull breaks the water near the bow.

Length Overall (LOA): a length measurement of a boat from the fore part of the stem to the after part of the stern

Life Preserver: provides additional buoyancy to keep a person afloat when he/she is in the water

Limber Hole: A passage cut into the lower edges of floors and frames next to the keel to allow bilge water to flow to the lowest point of the hull where it can be pumped overboard.

Line: The term used to describe a rope when it is on a boat.

Lists: A boat that inclines to port or starboard while afloat.

Locker: A closet, chest or box aboard a boat.

Loran: An electronic navigational instrument which monitors the boat's position using signals emitted from pairs of transmitting stations.

Lunch hook: A small light weight anchor typically used instead of the working anchor. Normally used in calm waters with the boat attended.

Marina: A protected facility primarily for recreational small craft.

Marine Ways or Railways: Inclined planes at the water's edge onto which boats are hauled.

Midships: The center of the boat.

Moored: A boat secured with cables, lines or anchors.

Mooring: An anchor permanently embedded in the bottom of a harbor that is used to secure a boat.

Nautical Mile: A unit of measure equal to one minute of latitude. (6076 feet)

Nun Buoy: A red or red-striped buoy of conical shape.

Oil Pump: Supplies lubricating oil where needed within the engine.

Outboard: A boat designed for an engine to be mounted on the transom. Also a term that refers to objects away from the center line or beyond the hull sides of a boat.

Overhead: the ceiling of a cabin or compartment,

Pad Eye: A deck fitting consisting of a metal eye permanently secured to the boat.

Personal Flotation Device (PFD): For example, a life preserver or throwable device.

Pier: A structure which projects out from the shoreline.

Pile or Piling: A long column driven into the bottom to which a boat can be tied.

Pitch: The measure of the angle of a propeller blade. Refers to the theoretical distance the boat travels with each revolution of the propeller.

Pitching: The fore and aft rocking motion of a boat as the bow rises and falls.

Plenum: a chamber for directing air flow, as in engine intake air plenum

Port: The left side of the boat when facing the bow.

Porthole (port): The opening in the side of a boat to allow the admittance of light and air.

Propeller: A device having two or more blades that is attached to the engine and used for propelling a boat.

Propeller Shaft: Shaft which runs from the back of the engine gear box, aft, through the stuffing box, shaft log, struts, and onto which the propeller is attached.

Pyrotechnic Distress Signals: Distress signals that resemble the brilliant display of flares or fireworks.

Raw Water Cooled: Refers to an engine cooling system that draws sea water in through a hull fitting or engine drive unit, circulates the water in the engine, and then discharges it overboard.

Reduction Gear: Often combined with the reverse gear so that the propeller turns at a slower rate than the engine.

Reverse Gear: Changes the direction of rotation of the propeller to provide thrust in the opposite direction for stopping the boat or giving it sternway.

Roll: A boat's sideways rotational motion in rough water.

Rope Locker: See anchor locker.

Rubrail: Railing (often rubber or hard plastic) that runs along the boat's sheer to protect the hull when coming alongside docks, piers, or other boats.

Rudder: A movable flat surface that is attached vertically at or near the stern for steering.

Sea anchor: An anchor that does not touch the bottom. Provides drag to hold the bow in the most favorable position in heavy seas.

Scupper: An opening in the hull side or transom of the boat through which water on deck or in the cockpit is drained overboard.

Seacock: Safety valves installed just inside the thru-hull fittings and ahead of the piping or hose running from the fittings.

Shaft Log: Pipe through which the propeller shaft passes.

Sheer: The uppermost edge of the hull.

Sling: A strap which will hold the boat securely while being lifted, lowered, or carried.

Slip: A boat's berth between two pilings or piers.

Sole: The deck of a cockpit or interior cabin.

Spring Line: A line that leads from the bow aft or from the stern forward to prevent the boat from moving ahead or astern.

Starboard: The right side of a boat when facing the bow.

Steerageway: Sufficient speed to keep the boat responding to the rudder or drive unit.

Stem: The vertical portion of the hull at the bow.

Stern: The rear end of a boat.

Stern line: a line that leads aft from the stern of the boat

Stow: To pack away neatly.

Stringer: Longitudinal members fastened inside the hull for additional structural strength.

Strut: Mounted to the hull which supports the propeller shaft in place.

Strut Bearing: See "cutlass bearing."

Stuffing Box: Prevents water from entering at the point where the propeller shaft passes through the shaft log.

Superstructure: Something built above the main deck level.

Swamps: When a boat fills with water from over the side.

Swimming Ladder: Much the same as the boarding ladder except that it extends down into the water.

Taffrail: Rail around the rear of the cockpit.

Thru-hull: A fitting used to pass fluids (usually water) through the hull surface, either above or below the waterline.

Topsides: The side skin of a boat between the waterline or chine and deck.

Transom: A flat stern at right angles to the keel.

Travel Lift: A machine used at boat yards to hoist boats out of and back into the water.

Trim: Refers to the boat's angle or the way it is balanced.

Trough: The area of water between the crests of waves and parallel to them.

Twin-Screw Craft: A boat with two propellers on two separate shafts.

Underway: When a boat moves through the water.

Wake: Disrupted water that a boat leaves astern as a result of its motion.

Wash: The flow of water that results from the action of the propeller or propellers.

Waterline: The plane of a boat where the surface of the water touches the hull when it is afloat on even keel.

Water pump: circulates cooling water

Watertight Bulkhead: Bulkheads secured so tightly so as not to let water pass.

Wharf: A structure generally parallel to the shore.

Windlass: A winch used to raise and lower the anchor.

Windward: Toward the direction from which the wind is coming.

Working Anchor: An anchor carried on a boat for most normal uses. Refers to the anchor used in typical anchoring situations.

Yacht Basin: A protected facility primarily for recreational small craft.

Yaw: Side-to-side movement, usually caused by rough seas.

Owner's Guide:
Care & Upkeep of Fiberglass Products

As the world's premier gel coat supplier, Polynt Composites has provided this brochure as a guide to properly maintain and care for your gel coat surface.

Gel Coats provide a protective layer against weathering on a surface. Over time, exposure to sunlight, water, dust and chemicals cause wear and tear on the gel coat surface. This results in chalking, discoloration, yellowing or loss of gloss. By following simple, regular maintenance procedures, you can minimize these effects.

Basic Maintenance

When not in use, keep the gel coat surface out of the sun or covered with a canvas tarp. Do not use plastic sheeting or other non-porous materials as they trap moisture between the cover and the surface, causing damage to the gel coat.

For best results, use a cleaner recommended for use with fiberglass and follow label instructions. Alternatively, you can wash the surface with a mild detergent, such as dishwashing soap.

DO NOT use automatic dishwasher detergent, abrasive cleaners, bleach, strong acids or bases (i.e. TSP or ammonia). Only use pH neutral cleaners.

Wax at least twice a year to restore gloss and protect the finish. Only use a wax that is recommended for gel coat surfaces and follow instructions carefully. NEVER wax a gel coat surface in direct sunlight.

Corrective Procedures*

Chalking

A fine rubbing compound as well as a mild detergent will reduce the weathering and chalking accumulated on the surface. Use only a fine grit compound and follow label directions carefully. DO NOT apply rubbing compound in direct sunlight. For best results, wax after applying compound. When applying wax, remove excess compound and apply a thin layer of wax using a clean cloth. It is recommended to use a wax designed for fiberglass.

Scratches, Nicks and Stains

Most scratches and nicks can be removed by using a rubbing compound followed by waxing as described above. Deep marks or gouges should be professionally repaired.

Most stains can be removed by washing with mild detergent. For stubborn stains, use a fine abrasive household cleanser designed for fiberglass products, followed by waxing to restore its original luster.

Non-water soluble stains such as grease and oil, rubber heel marks, etc., can be removed by using a solvent such as acetone, rubbing alcohol, toluene or xylene, followed by a mild detergent. If these solvents are not effective, try a rubbing compound or fine sanding followed by a rubbing compound and then waxing.

If you have questions, consult your local dealer.

*Always try a test spot first

Polynt Composites USA
99 E. Cottage Ave
Carpentersville, IL 60110
800-322-8103

Operator Notes

Maintenance	Each Use	Weekly	Monthly	Semi Annually	Yearly	As Needed
Clean hull below the waterline				X		
Bottom paint					X	X
Check sacrificial anodes			X			
Replace sacrificial anodes					X	
Wash boat canvas & hardware	X		X			
Wax exterior gelcoat				X		X
Clean & protect hardware						X
Polish & protect plastic glass					X	X
Clean exterior upholstery	X					X
Clean cabin & interior upholstery						X
Flush engine with fresh water	X					
Spray metal components in bilge with a protector			X			
Clean bilge				X		X
Check bilge for leaks	X		X			
Inspect & operate thru-hull valves			X			
Inspect steering & control systems	X					
Service steering & control systems				X		
Inspect fuel system for leaks	X					
Inspect & service fuel system				X		
Inspect fuel tank vents & screens					X`	
Replace fuel filters					X	
Lubricate fuel fill o-rings			X			
Inspect fire extinguisher			X			
Test bilge pump auto switches	X					
Inspect & protect electrical components, wire & battery connections				X		
Check battery electrolyte & service			X			
Test and inspect AC electrical system & shore power cord				X		
Inspect water systems for leaks				X		
Check neutral safety switch	X					
Check trim tab fluid level			X			

Date	Hours	Dealer	Service / Repairs

Date	Hours	Dealer	Service / Repairs

Date	Hours	Dealer	Service / Repairs

DEPARTMENT OF HOMELAND SECURITY
U.S. Coast Guard
OMB Control Number: 1625-0003
RECREATIONAL BOATING ACCIDENT REPORT
Expires: 07/31/2022

INSTRUCTIONS: Use "Report required because" section below to determine if a report is required for your accident. If required, please have each vessel owner or operator involved in the accident submit a report to their state reporting authority. Each boat operator/owner involved in an accident should submit a separate report. For each question below, please provide answers if applicable and if known; otherwise leave blank.

Privacy Act Notice

Authority: 46 U.S.C. 6102 and 33 CFR 173 & 174 authorize the collection of information on boating accidents.
Purpose: The Coast Guard uses this information for statistical purposes, chiefly to inform the public, to measure the Program's efforts, and to regulate issues relating to boating safety.
Routine Uses: The Coast Guard shares this information within the agency, and if state and federal law permit it, to the public.

REPORT SUBMISSION

Report required because *(select all that apply)*:

- ☐ At least one person in this accident *died*: If so, how many? _____
- ☐ At least one injured person in this accident *required or was in need of treatment beyond first aid*: If so, how many? _____
- ☐ At least one person in this accident *disappeared* and has not yet been recovered: If so, how many? _____
- ☐ *All* boat and other property *damage (e.g., fishing/hunting gear)* caused by this accident *totaled (or likely totaled)* $2,000 or more:
  - Approximate value of damage to *your* boat: $_____
  - Approximate value of damage to *your* other property: $_____
- ☐ Your or another *boat* in this accident was *(or likely was)* a *total loss*

Report submitted by *(select all that apply)*:

- ☐ Boat Operator *(required if possible)*
- ☐ Boat Owner *(if operator unable, or same as operator)*
- ☐ Other *(describe)*: _____

To be submitted within:
48 hours *(if injury, disappearance or death)*
10 days *(if boat/property damage only)*

To be submitted to: *(Local State Reporting Authority)*

Phone:

You may submit any comments concerning the accuracy of the burden estimate or any suggestions for reducing the burden to: Commandant (CG-BSX-21), U.S. Coast Guard, Washington, DC 20593-0001 or Office of Management and Budget, Paperwork Reduction Project (1625-0003), Washington, DC 20503. Questions relating to the collection of this data should be sent to the Coast Guard.

For State Agency Use Only

First Name	*Last Name*
Phone:	

First Name	Last Name	Phone	*Primary Cause of Accident*

ACCIDENT SUMMARY

WHEN

Date: *(mm/dd/yyyy)* Time: am ☐ pm ☐ *(select one)*

WHERE

Body of Water Name

Location *(on water)* description

Nearest city/town

County: State:

ACCIDENT DESCRIPTION: *Briefly* describe this accident *(attach extra pages if necessary)*

DAMAGE TO *YOUR* BOAT: *Briefly* summarize any damage to your boat

***YOUR* BOAT – PEOPLE**

# people *on board (including operator)*:	
# people *being towed (e.g., on tubes, skis)*:	
# people *wearing lifejackets (on board or towed)*:	

***OTHER* BOATS INVOLVED IN ACCIDENT**

# of *other* boats involved:	

DAMAGE TO *YOUR* OTHER PROPERTY: *(NOT BOAT)*
Briefly summarize any damage to your other property *(not boat)*

For each question below, please provide answers IF APPLICABLE AND IF KNOWN, otherwise leave blank.

YOUR BOAT

BOAT IDENTIFICATION

Your Boat Name:	Manufacturer:
Model Name:	Model Year:
Registration #:	Documentation #:
Hull Identification # *(HIN):*	Rented: ☐ Yes ☐ No

SIZE ESTIMATES

Length: ft.	Depth from transom *(stern)* to keel *(bottommost point)*: ft. in.	Beam width at widest point: ft.

HULL MATERIAL

Type of Hull Material *(select one)*

☐	Fiberglass	☐	Wood	☐	Rubber/vinyl/canvas	☐	Other *(describe):*
☐	Aluminum	☐	Steel	☐	Plastic		

BOAT TYPE

Boat Type *(select one)*

☐	Cabin motorboat	☐	Inflatable boat	☐	Personal watercraft *(PWC) (e.g., Wave Runner ™, Jet Ski ™, Sea-Doo ™)*	Paddlecraft:			
☐	Open motorboat	☐	Houseboat			☐	Canoe		
						☐	Kayak		
☐	Auxiliary sail	☐	Sail *(only)*	☐	Air boat	☐	Standup Paddleboard		
☐	Pontoon boat	☐	Rowboat	☐	Other (*describe*):				

Available Propulsion *(select all that apply)*

☐	Propeller	☐	Air thrust
☐	Sail	☐	Other *(describe):*
☐	Manual		
☐	Water jet		

ENGINE

# Engines:	Engine type and horsepower *(select one)*								Fuel type *(select all that apply)*			
Manufacturer	☐	Outboard	☐	Sterndrive	☐	Inboard	☐	Pod drive	☐	Gas	☐	Electric
Total horsepower: hp	☐	No engine	☐	Other:					☐	Diesel	☐	Other:

SAFETY MEASURES

Organizations that have conducted a vessel safety check *(VSC)* on board your boat within the past year *(including carriage of safety equipment, e.g., lifejackets, anchor and line, fire extinguishers):*

US Coast Guard Auxiliary: VSC Decal? ☐ Yes ☐ No	☐	Federal Agency *(Name):*	
US Power Squadrons: VSC Decal? ☐ Yes ☐ No	☐	State Agency (*Name*):	
	☐	Other Agency *(Name):*	

# Life jackets on board:	# Fire extinguishers on board:	Type of fire extinguishers *(e.g., ABC)*:
	# Fire extinguishers used:	

ACCIDENT DETAILS – EXTERNAL CONDITIONS

WEATHER

Overall weather was *(select one)*				It was *(select one)*		Visibility was *(select one)*		Wind was *(select one)*	
☐	Clear	☐	Raining	☐	Day	☐	Good	☐	0 mph *(none)*
☐	Cloudy	☐	Snowing	☐	Night	☐	Fair	☐	Over 0, up to 12 mph *(light)*
☐	Foggy	☐	Hazy			☐	Poor	☐	Over 12, up to 25 mph (*moderate)*
☐	Other *(describe):*			Approximate air temperature:		°F		☐	Over 25, up to 55 mph *(strong)*
								☐	Over 55 mph (stormy)

WATER

Overall water conditions *(select one)*:		Other water conditions:				
☐	Up to 6 in. waves *(calm)*	Approximate water temperature:	°F			
☐	Over 6 in., up to 2 ft. waves *(choppy)*	Strong current?	☐	Yes	☐	No
☐	Over 2 ft., up to 6 ft. waves *(rough)*	Hazardous waters? *(e.g., rapid tidal flow, currents)*	☐	Yes	☐	No
☐	Over 6 ft. waves *(very rough)*	Congested waters?	☐	Yes	☐	No

For each question below, please provide answers IF APPLICABLE AND IF KNOWN, otherwise leave blank.

ACCIDENT DETAILS – ACTIVITIES AND OPERATIONS ON *YOUR* BOAT

OPERATOR/PASSENGER ACTIVITIES

Operator/passenger activities on *your* boat at time of accident:

Activities were *(select one)*

☐	Recreational	☐	Commercial

Operator/Passenger activities *(select all that apply)*

☐	Fishing	☐	Tubing	☐	Starting engine		
☐	Hunting	☐	Water Skiing	☐	Making repairs		
☐	White water activity *(e.g., rafting)*	☐	Relaxing	☐	Other *(list):*		

BOAT OPERATIONS

***Your* boat operations at time of accident** *(select all that apply)*

☐	Cruising *(underway under power)*	☐	Drifting	☐	Racing	☐	Towing another vessel
☐	Changing direction	☐	At anchor	☐	Rowing/paddling	☐	Launching
☐	Changing speed	☐	Being towed	☐	Docking/undocking	☐	Tied to dock/mooring
☐	Sailing	☐	Other *(list):*				

ACCIDENT DETAILS – CONTRIBUTING FACTORS ON *YOUR* BOAT

CONTRIBUTING FACTORS

Indicate factors on *your* boat which may have contributed to this accident *(select all that apply)*

☐	Alcohol use	☐	Improper lookout	☐	Dam/lock	☐	Starting in gear
☐	Drug use	☐	Operator inattention	☐	Force of wake/wave	☐	Sharp turn
☐	Excessive speed	☐	Operator inexperience	☐	Hazardous waters	☐	Restricted vision *(e.g., fog)*
☐	Improper anchoring	☐	Language barrier	☐	Heavy weather	☐	Mission/inadequate aids to navigation *(e.g., buoy, daymarker)*
☐	Improper loading	☐	Navigation rules violation	☐	Ignition of fuel or vapor	☐	Inadequate on-board navigation lights
☐	Overloading	☐	Failure to vent	☐	Hull failure	☐	People on gunwale, bow or transom
☐	Other *(describe)*:						

ACCIDENT DETAILS – *YOUR* BOAT

MACHINERY/EQUIPMENT FAILURE

Failure of the following machinery/equipment on *your* boat contributed to this accident *(select all that apply)*

☐	Engine	☐	Onboard lights	☐	Shift	☐	Sound equipment *(e.g., horn, whistle)*
☐	Electrical system	☐	Seats	☐	Radio	☐	Auxiliary equipment
☐	Fuel system	☐	Steering	☐	Fire extinguisher	☐	Other (*list*):
☐	Sail/mast	☐	Throttle	☐	Ventilation		
☐	Onboard navigation aids *(e.g., GPS)*						

ACCIDENT DETAILS – EVENTS ON *YOUR* BOAT

ACCIDENT EVENTS

Types of events occurring to/on *your* boat during accident *(select all that apply)*

☐	Collision with recreational boat	☐	Flooding/swamping	☐	Person fell overboard
☐	Collision with commercial boat *(e.g., tug, barge)*	☐	Fire/explosion – fuel	☐	Person fell on/within boat
☐	Collision with fixed object *(e.g., dock, bridge)*	☐	Fire/explosion – non-fuel	☐	Sudden medical condition
☐	Collision with submerged object *(e.g., stump, cable)*	☐	Carbon monoxide exposure	☐	Person struck by boat
☐	Collision with floating object *(e.g., log, buoy)*	☐	Mishap of skier, tuber, wake boarder, etc.	☐	Person struck by propeller or propulsion unit
☐	Capsizing	☐	Person left boat voluntarily	☐	Person electrocuted
☐	Grounding	☐	Person ejected from boat *(caused by collision or maneuver)*		
☐	Sinking	☐	Other *(describe):*		

For each question below, please provide answers IF APPLICABLE AND IF KNOWN, otherwise leave blank.

ACCIDENT DETAILS – *YOUR* BOAT- INJURED PEOPLE RECEIVING *OR IN NEED OF* TREATMENT BEYOND FIRST AID

Report only injured people on, struck by, or being towed by *your boat*, receiving *or in need of* treatment beyond first aid. *Do not report* injured people on, struck by, or being towed by *another boat or no boat* (e.g., swimmers, people on a dock). *If more than one* injured person to report, attach additional copies of this page. *If none*, SKIP INJURED PEOPLE section.

INJURED PERSON

First Name	MI	Last Name
Street		
City	State	Zip
Phone	Date of Birth *(mm/dd/yyyy)*	Age

INJURY DETAILS

Injury caused when person *(select all that apply)*

- ☐ Struck the *(e.g., boat, water):*
- ☐ Was struck by a *(e.g., boat, propeller):*
- ☐ Was exposed to carbon monoxide poisoning
- ☐ Received an electric shock
- ☐ Other *(describe):*

Person was wearing lifejacket? ☐ Yes ☐ No

Person received treatment beyond first aid? ☐ Yes ☐ No

Person was admitted to a hospital? ☐ Yes ☐ No

Nature of most serious injury *(select one)*

- ☐ Scrape/bruise
- ☐ Cut
- ☐ Sprain/strain
- ☐ Concussion/brain injury
- ☐ Spinal cord injury
- ☐ Broken/fractured bone
- ☐ Dislocation
- ☐ Internal organ injury
- ☐ Amputation
- ☐ Burn
- ☐ Other *(describe):*

Body part of *most serious* injury *(e.g., head, trunk, leg):*

ACCIDENT DETAILS – *YOUR* BOAT – DEATHS/DISAPPEARANCES

Only report deaths/disappearances of people on, struck by, or being towed by *your boat*.
If more than one death/disappearance to report, attach additional copies of this page.
If none, SKIP DEATHS/DISAPPEARANCES section.

PERSON WHO DIED/DISAPPEARED

First Name	MI	Last Name
Street		
City	State	Zip
Phone	Date of Birth *(mm/dd/yyyy)*	Age

DETAILS OF DEATH/DISAPPEARANCE

Injury caused when person *(select all that apply)*

- ☐ Struck the *(e.g., boat, water):*
- ☐ Was struck by a *(e.g., boat, propeller):*
- ☐ Was exposed to carbon monoxide poisoning
- ☐ Received an electric shock
- ☐ Other *(describe):*

Nature of death/disappearance *(select one)*

- ☐ Death – by drowning
- ☐ Death – other likely cause *(describe)*
- ☐ Disappeared and not yet recovered

Person was wearing lifejacket? ☐ Yes ☐ No

For each question below, please provide answers IF APPLICABLE AND IF KNOWN, otherwise leave blank.

ACCIDENT DETAILS – *YOUR* BOAT OPERATOR

OPERATOR INSTRUCTION	OPERATOR SAFETY MEASURES
Boating safety instruction completed *(select all that apply)*	**On board, prior to accident, was operator wearing:**
☐ None	A lifejacket? ☐ Yes ☐ No
☐ State course	An engine cut-off switch *(Lanyard or wireless device)* if equipped? ☐ Yes ☐ No
☐ USCG Auxiliary course	On board, prior to accident, was operator using:
☐ US Power Squadrons course	Alcohol? ☐ Yes ☐ No
☐ Internet *(name of sponsoring organization)*	Drugs? ☐ Yes ☐ No
☐ Other *(describe)*	Operator arrested for Boating Under the Influence? ☐ Yes ☐ No
	Weather reports consulted prior to accident? ☐ Yes ☐ No

OPERATOR EXPERIENCE

Experience operating this type of boat *(select one)*

☐ 0 to 10 hours ☐ Over 10, up to 100 hours ☐ Over 100, up to 500 hours ☐ Over 500 hours

ACCIDENT DETAILS – OTHER KEY PEOPLE

Only report other key people *not already documented* as injured, died, disappeared or operator/owner of *your* boat.
If more than two other key people to report, attach additional copies of this page.

NAME/ADDRESS

This other key person was a(n) *(select all that apply)*

☐ *Other* boat operator ☐ *Other* boat owner ☐ Owner of *other* damaged property ☐ Passenger on *your* boat ☐ Witness

First Name	MI	Last Name	
Street			
City	State	Zip	Phone
Other boat name *(if any)*		*Other* boat registration # *(if any)*	

NAME/ADDRESS

This other key person was a(n) *(select all that apply)*

☐ *Other* boat operator ☐ *Other* boat owner ☐ Owner of *other* damaged property ☐ Passenger on *your* boat ☐ Witness

First Name	MI	Last Name	
Street			
City	State	Zip	Phone
Other boat name *(if any)*		*Other* boat registration # *(if any)*	

For each question below, please provide answers IF APPLICABLE AND IF KNOWN, otherwise leave blank.

YOUR BOAT OPERATOR

NAME/ADDRESS

First Name	MI	Last Name
Street		
City	State	Zip

AGE/GENDER/PHONE

Date of Birth *(mm/dd/yyyy)*	Age	Gender		Male		Female	Phone

YOUR BOAT OWNER

If same as *your* boat *operator* SKIP rest of YOUR BOAT OWNER section.

NAME/ADDRESS/PHONE

First Name	MI	Last Name	
Street			
City	State	Zip	Phone

PERSON SUBMITTING THIS REPORT

If same as *your* boat *operator* OR *owner*, SKIP rest of PERSON SUBMITTING THIS REPORT section.

NAME/ADDRESS/PHONE/ROLE

First Name	MI	Last Name	
Street			
City	State	Zip	Phone

I was a(n) *(select one)*

	Other person on board *this* boat
	Accident witness *not* on board *this* boat
	Other *(describe):*

SIGNATURE OF PERSON SUBMITTING THIS REPORT

Your signature	**Date** *(mm/dd/yyyy)*

An Agency may not conduct or sponsor and a person is not required to respond to an information collection, unless it displays a currently valid OMB Control Number.

The Coast Guard estimates that the average burden for this report form is 30 minutes. You may submit any comments concerning the accuracy of this burden estimate or any suggestions for reducing the burden to: Commandant (CG-BSX-21), U.S. Coast Guard, Washington, DC 20593-0001 or Office of Management and Budget, Paperwork Reduction Project (1625-0003), Washington, DC 20503.

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FLOAT PLAN

www.cgaux.org

INSTRUCTIONS: Complete this plan before you go boating and leave it with a reliable person who can be depended upon to notify the Coast Guard, or other rescue agency, should you not return or check-in as planned. If you have a change of plans, or will be delayed, notify the person holding your Float Plan. Finally, close your plan by notifying the holder you have arrived home safely and if the holder has reported you overdue, notify all applicable rescue authorities of your safe return.

Do NOT file this plan with the Coast Guard

www.uscgboating.org

VESSEL

IDENTIFICATION:

Name & Hailing Port _____

Document / Registration No. _____ HIN _____

Year, Make & Model _____

Length ____ Type _____ Draft ____ Hull Mat. _____

Hull & Trim Colors _____

Prominent Features _____

PROPULSION:

Primary-- Type _____ Eng. ___ Fuel Capacity _____

Auxiliary--Type _____ Eng. ___ Fuel Capacity _____

COMMUNICATION:

Radio Call Sign / Number _____

DSC MMSI No. _____

Radio-1: Type _____ Ch. / Freq. Monitored _____

Radio-2: Type _____ Ch. / Freq. Monitored _____

Cell / Satellite _____

Email _____

NAVIGATION: (Check all onboard)

☐ Compass ☐ Radar ☐ GPS / DGPS ☐ Depth Sounder

☐ Charts ☐ Maps ☐ _____

SAFETY & SURVIVAL

VISUAL DISTRESS SIGNALS:

☐ Electric Distress Light (night only)

☐ Flag (day only)

☐ Flare, Aerial (day & night)

☐ Flare, Handheld (day & night)

☐ Signal Mirror (day only)

☐ Smoke (day only)

AUDIBLE DISTRESS SIGNALS:

☐ Bell

☐ Horn

☐ Whistle

EPIRB:

UIN* _____

ADDITIONAL GEAR:

☐ Anchor - Line length _____

☐ Dewatering device

☐ Exposure suits

☐ Fire Extinguisher

☐ Flashlight / Searchlight

☐ Raft / Dinghy

☐ Food for ____ days / person

☐ Water for ____ days / person

☐ _____

☐ _____

☐ _____

☐ _____

PERSONS ONBOARD

OPERATOR:

Name _____

Address _____

City _____ State ____ Zip Code _____

Age ____ Gender ___ PFD ☐ PLB UIN* _____

Note _____

Float Plan Note _____

Has experience with: ☐ this vessel; ☐ the boating area(s).

Home Phone _____

Vehicle (Year, Make & Model) _____

Vehicle License No. _____ Trailer ☐

Vehicle parked at _____

PASSENGERS / CREW: (Identify all on board)

	Name	Home Phone	Age	Gender	PFD	Note	Passenger PLB UIN* (Not listed in a specific order)
1.					☐		
2.					☐		
3.					☐		
4.					☐		
5.					☐		
6.					☐		
7.					☐		
8.					☐		
9.					☐		
10.					☐		
11.					☐		
12.					☐		

If you have a genuine concern for the safety or welfare of the persons onboard this vessel that have not returned or checked-in, in a reasonable amount of time, then follow the step-by-step instructions on the Boating Emergency Guide™ located on the last page of this Float Plan.

(*) EPIRB and PLB registration required by Federal regulations. www.beaconregistration.noaa.gov

USCG Float Plan Version 10.2 1 of 3

www.cgaux.org

FLOAT PLAN continued

INSTRUCTIONS: Complete this plan before you go boating and leave it with a reliable person who can be depended upon to notify the Coast Guard, or other rescue agency, should you not return or check-in as planned. If you have a change of plans, or will be delayed, notify the person holding your Float Plan. Finally, close your plan by notifying the holder you have arrived home safely and if the holder has reported you overdue, notify all applicable rescue authorities of your safe return.

Do NOT file this plan with the U.S. Coast Guard

www.uscgboating.org

CONTACTS

Contact 1 _____ Phone Number _____

Contact 2 _____ Phone Number _____

Rescue Authority _____ Phone Number _____

ITINERARY

		DATE	TIME	LOCATION / WAYPOINT	MODE OF TRAVEL	REASON FOR STOP	CHECK-IN TIME
1	Depart						
2	Arrive						
	Depart						
3	Arrive						
	Depart						
4	Arrive						
	Depart						
5	Arrive						
	Depart						
6	Arrive						
	Depart						
7	Arrive						
	Depart						
8	Arrive						
	Depart						
9	Arrive						
	Depart						
10	Arrive						
	Depart						
11	Arrive						
	Depart						
12	Arrive						
	Depart						
13	Arrive						
	Depart						
14	Arrive						
	Depart						
15	Arrive						
	Depart						
16	Arrive						
	Depart						
17	Arrive						
	Depart						
18	Arrive						
	Depart						
19	Arrive						
	Depart						
20	Arrive						
	Depart						
21	Arrive						

If you have a genuine concern for the safety or welfare of the persons onboard this vessel that have not returned or checked-in, in a reasonable amount of time, then follow the step-by-step instructions on the Boating Emergency Guide™ located on the last page of this Float Plan.

USCG Float Plan - BOATING EMERGENCY GUIDE™

BEFORE YOU BEGIN – This guide is designed to work either with or without a Float Plan. You will need the following items: 1) the Float Plan, if one was given to you; 2) a pen or pencil; 3) a clean sheet of paper or writing tablet; and 4) your local telephone directory.

Step 1: Do you have a genuine concern for the safety or welfare of any persons who have not returned or checked-in, in a reasonable amount of time?

If yes, then continue with **Step 2**. Otherwise STOP – no further action is required at this time.

Step 2: Were you given a prepared Float Plan by anyone on board the vessel?

If yes, then continue with **Step 3**. Otherwise, go to **Step 5**.

Step 3: Locate the Contacts at the top of page 2 on the Float Plan. Call Contact number 1…

IF CONTACT #1	THEN
Answers phone	Take notes during your conversation. 1. Let the person know you are responding to a late return or check-in by the individuals designated on the Float Plan. 2. Determine if the person you are talking to, or anyone else at that location, has recently had contact with anyone on the vessel, and when and where that contact occurred. 3. Are you still concerned about the safety or welfare of any persons on board the vessel?
	IF: Yes — Continue with **Step 4**. IF: No — STOP. No further action is required.
Does not answer phone	Continue with **Step 4**.

Step 4: Call Contact number 2…

IF CONTACT #2	THEN
Answers phone	Take notes during your conversation. 1. Let the person know you are responding to a late return or check-in by the individuals designated on the Float Plan. 2. Determine if the person you are talking to, or anyone else at that location, has recently had contact with anyone on the vessel, and when and where that contact occurred. 3. Are you still concerned about the safety or welfare of any persons on board the vessel?
	IF: Yes — Continue with **Step 6**. IF: No — STOP. No further action is required.
Does not answer phone	Continue with **Step 6**.

Step 5: Using the checklist below, jot down only what you know about each item:

DO NOT SPECULATE. Incorrect information may mislead Search and Rescue personnel; add to the overall search and rescue time; and adversely affect the outcome.

- ☐ Period of time the vessel has been overdue.
- ☐ Purpose of the trip or voyage.
- ☐ Description of vessel. (Type, size, color, features, etc.)
- ☐ Vessel's departure point and destination.
- ☐ Places the vessel planned to stop during transit.
- ☐ Navigation equipment aboard. (Examples: GPS, radar, compass, sounder, etc.)
- ☐ Number of persons aboard. Relevant characteristics such as dependability, reliability, etc.
- ☐ Was the vessel initially docked or moored or did a vehicle tow it to a launch point?
- ☐ License plate number and description of the tow vehicle p and/or the passenger's transport vehicle.
- ☐ Communications equipment aboard, including type of radio and frequencies monitored, cellular or satellite telephone numbers of individuals, etc.
- ☐ Additional points of contact along the vessel's planned route.
- ☐ Operator and/or a passenger/crew member absolutely had to be back at the scheduled return time.
- ☐ Call your local Rescue Authority that responds to marine emergencies (Police. Sheriff, Constable, First responder, etc.).

Go to **Step 6–2**.

Step 6:

1. Call the Rescue Authority contact at the top of page 2 on the Float Plan.
2. Tell the dispatcher you are responding to a late return or check-in by the persons on board the vessel.
3. The dispatcher will instruct you from there.

> **Note:** The dispatcher will provide you with the necessary contact or agency connection to get a search and rescue mission started. This puts you in direct contact with the agency conducting the actual search and rescue, eliminating unnecessary middlemen.
>
> The dispatcher will tell you if he/she desires a follow-up call on the outcome of the rescue.

4. Continue with **Step 7**.

Step 7: Be patient… you've done everything you can possibly do for now. It is important to keep the telephone available so emergency personnel can contact you with additional information and/or questions concerning the search and rescue effort.

STOP -- End of Guide

Provided as a courtesy by:

S2 Yachts, Inc.
Holland, MI
(616) 392-7163

Get a Vessel Safety Check before you go boating.

The USCG Float Plan is the official Float Plan of the U.S. Coast Guard and U.S. Coast Guard Auxiliary. For more information visit:

www.floatplancentral.org

USCG Float Plan Version 10.2 3 of 3

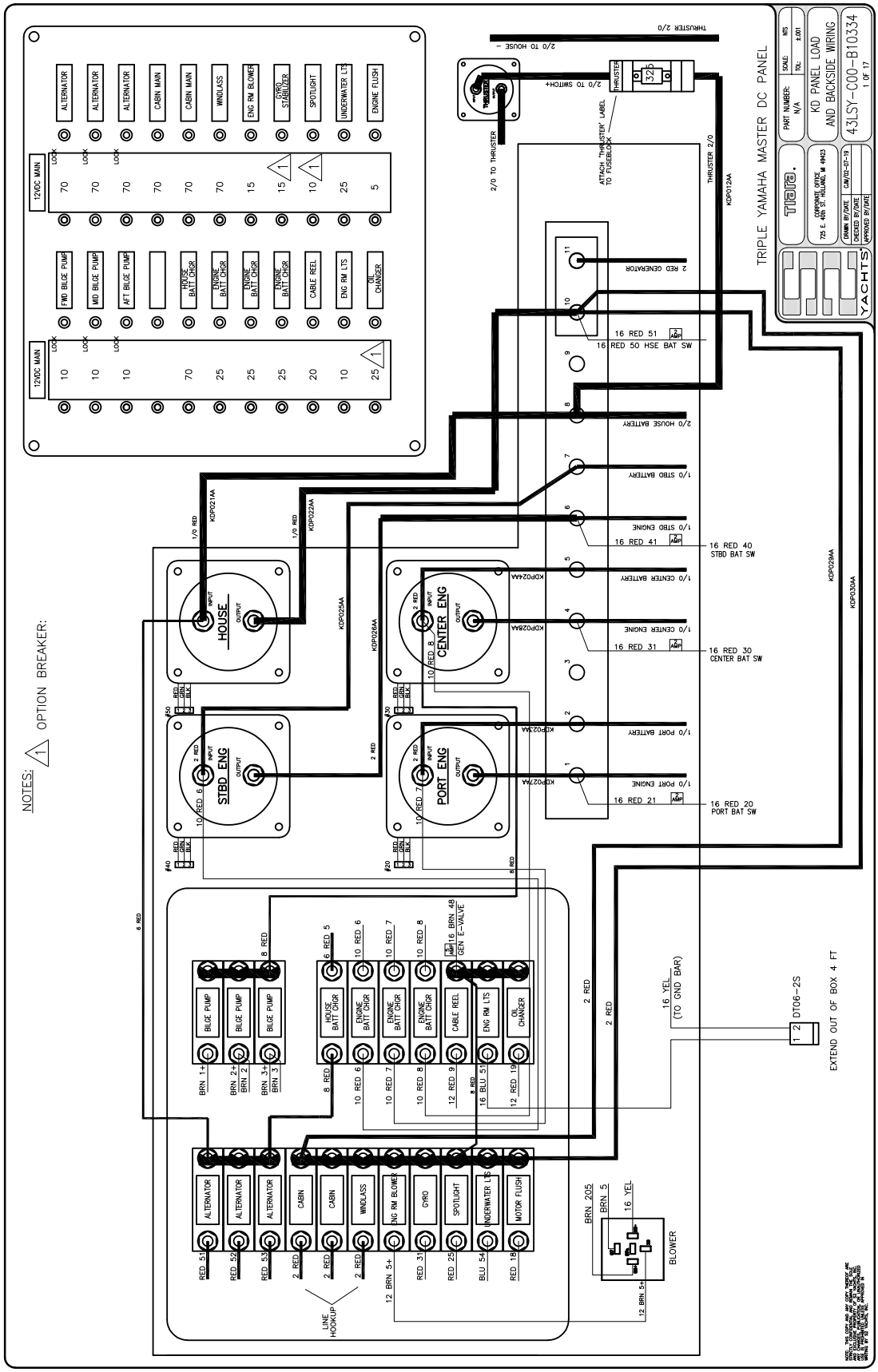
Operator Notes

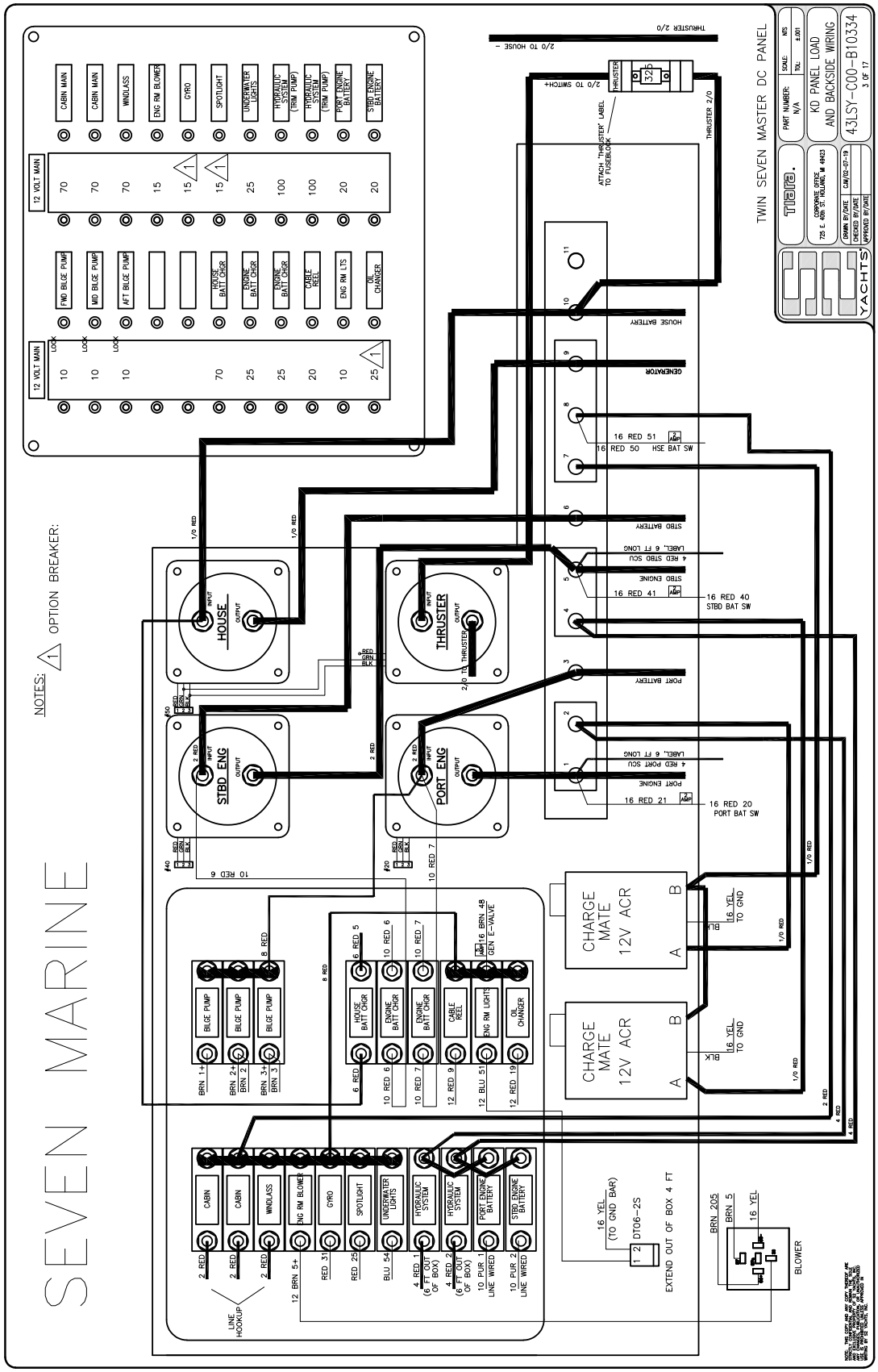
Problem	Cause and Solution
Control Systems	
Hydraulic steering is slow to respond and erratic.	• Steering system is low on fluid. Fill and bleed system. • Steering system has air in it. Fill and bleed system. • A component in the steering system is binding. Check and adjust or repair binding component. • Engine steering cylinder is binding. Grease spindle.
The boat wanders and will not hold a course at cruise speeds.	• There could be air in the steering system. Fill & bleed the system. • The engine steering tab is corroded or out of adjustment. Replace or adjust steering tab. • Engine steering cylinder is binding. Grease spindle.
The engine will not start with the shift control lever in neutral.	• The control cable is out of adjustment & not activating the neutral safety cut out switch. • The shift control lever is not in the neutral detent. Try moving the shift lever slightly. • There is a loose wire on the neutral safety switch on the transmission. Inspect wires and repair loose connections. • The starter or ignition switch is bad.
Performance Problems	
Boat is sluggish and has lost speed and RPM.	• The boat may be need to have marine growth cleaned from hull and running gear. • Propeller may be damaged & need repair. • Weeds or line around the propeller. Clean propeller. • Boat is overloaded. Reduce load. • Check for excessive water in the bilge. Pump out bilge & find & correct the problem. • The throttle adjustments has changed and the engine is not getting full throttle. Adjust the throttle cable.

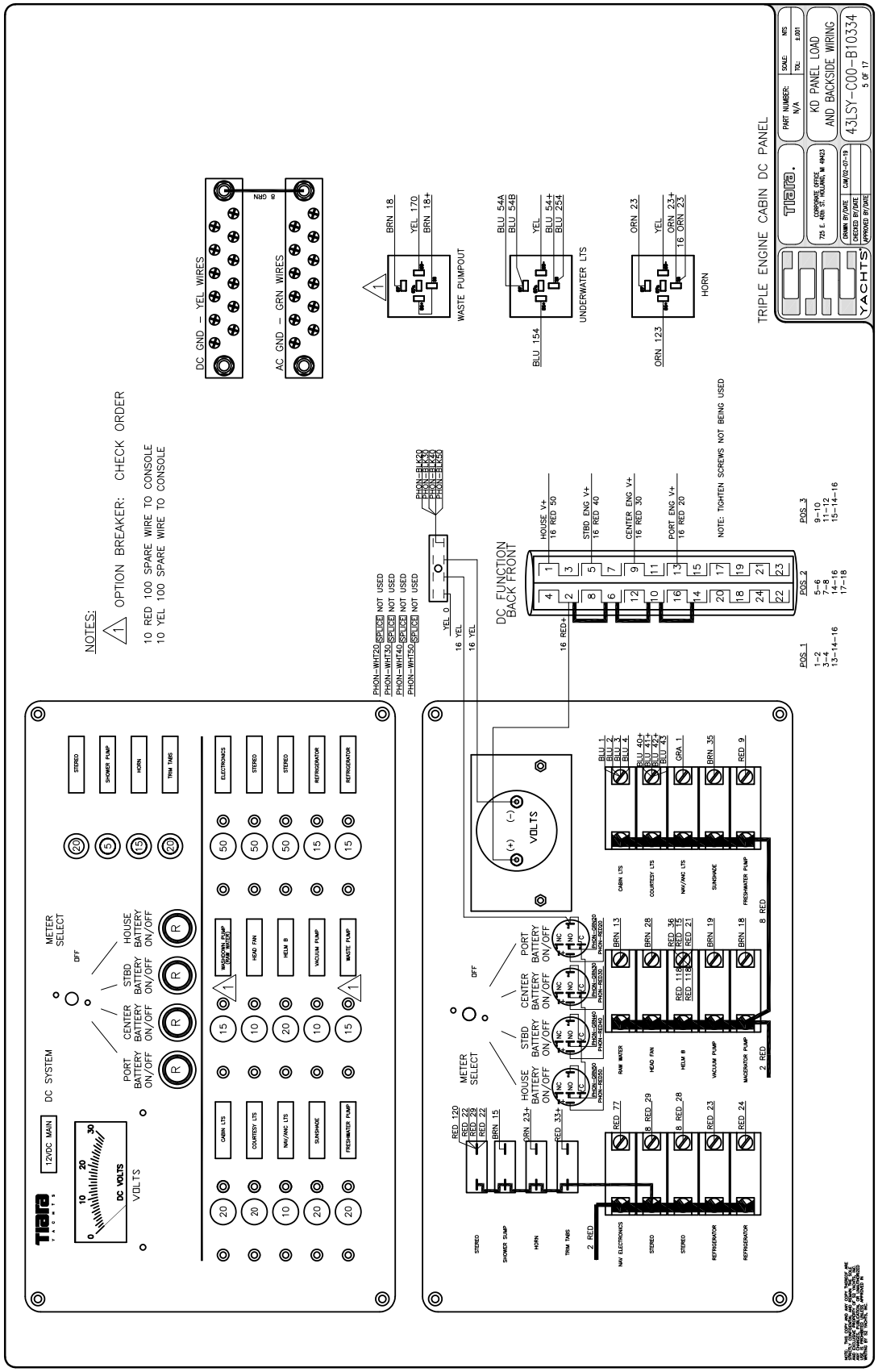
Problem	Cause and Solution
The boat vibrates at cruising speeds.	• Propeller may be damaged and need repair. • The propeller or propeller shaft is bent. Repair or replace damaged components. • The running gear is fouled by marine growth or rope. Clean running gear. • The engine is not trimmed properly. Trim the engine.
Engine Problems	
The engine is running too hot.	• The engine raw water pick-up strainer up is clogged with marine growth. Clean pick-up. • The engine raw water pump impeller is worn or damaged. Repair the pump. • The engine thermostat is faulty and needs to be replaced.
The engine alternator is not charging properly.	• The battery cable is loose or corroded. Clean and tighten battery cables. • The alternator is not charging and must be replaced. • The engine battery isolator in the charging system is not working properly. Replace the isolator. • The battery is defective. Replace the battery. • The alternator breaker may be in the OFF position.
The engine suddenly will not operate over 2000 RPM.	• The engine emergency system has been activated. The onboard computer has sensed a problem and has limited the RPM to protect the engine. Find & correct the problem. • The tachometer is bad and needs to be replaced.

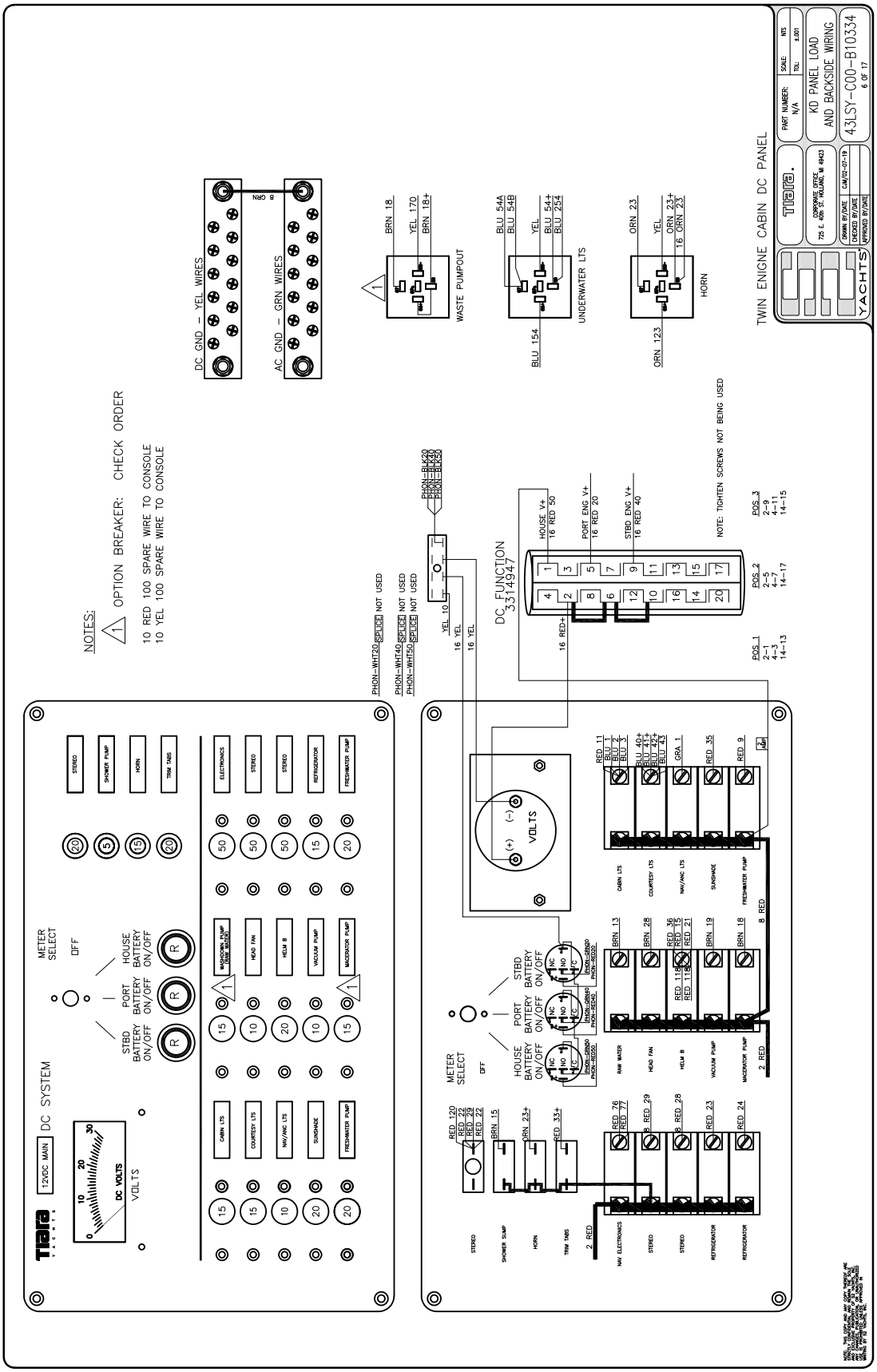
Problem	Cause and Solution
The engine is loosing RPM. The boat is not overloaded and the hull bottom and running gear are clean and in good condition.	• The engine may be having a problem with a sticky anti-siphon valve, located in the fuel line near the fuel tank, that is restricting the fuel flow. Remove & clean or replace the anti-siphon valve. • The remote gasoline fuel filter could be dirty. Inspect and replace the fuel filter. • The primary fuel filter on the engine may be dirty. Inspect and replace the fuel filter. • The electronic engine control system on the engine is malfunctioning. Repair the engine control system. • The fuel injection system on the engine is malfunctioning. Repair the fuel injection system.
Accessory Problems	
The livewell pump runs, but does not pump water.	• The strainer on the intake scoop is clogged preventing the water from getting to the pump. Put the boat in reverse to clean the strainer. • There is an air lock in the system. Run the boat above 15 m.p.h. and the pick-up scoop will force the air lock past the pump and prime the system. • The thru-hull valve is not open. Open valve. • The valve in the livewell is not open. Open the valve in the livewell.
The automatic float switch on the bilge pump raises but does not activate the pump.	• The in-line fuse near the battery switch has blown. Replace the fuse. • The pump impeller is jammed by debris. Clean pump impeller housing. • The pump is defective. Replace pump.

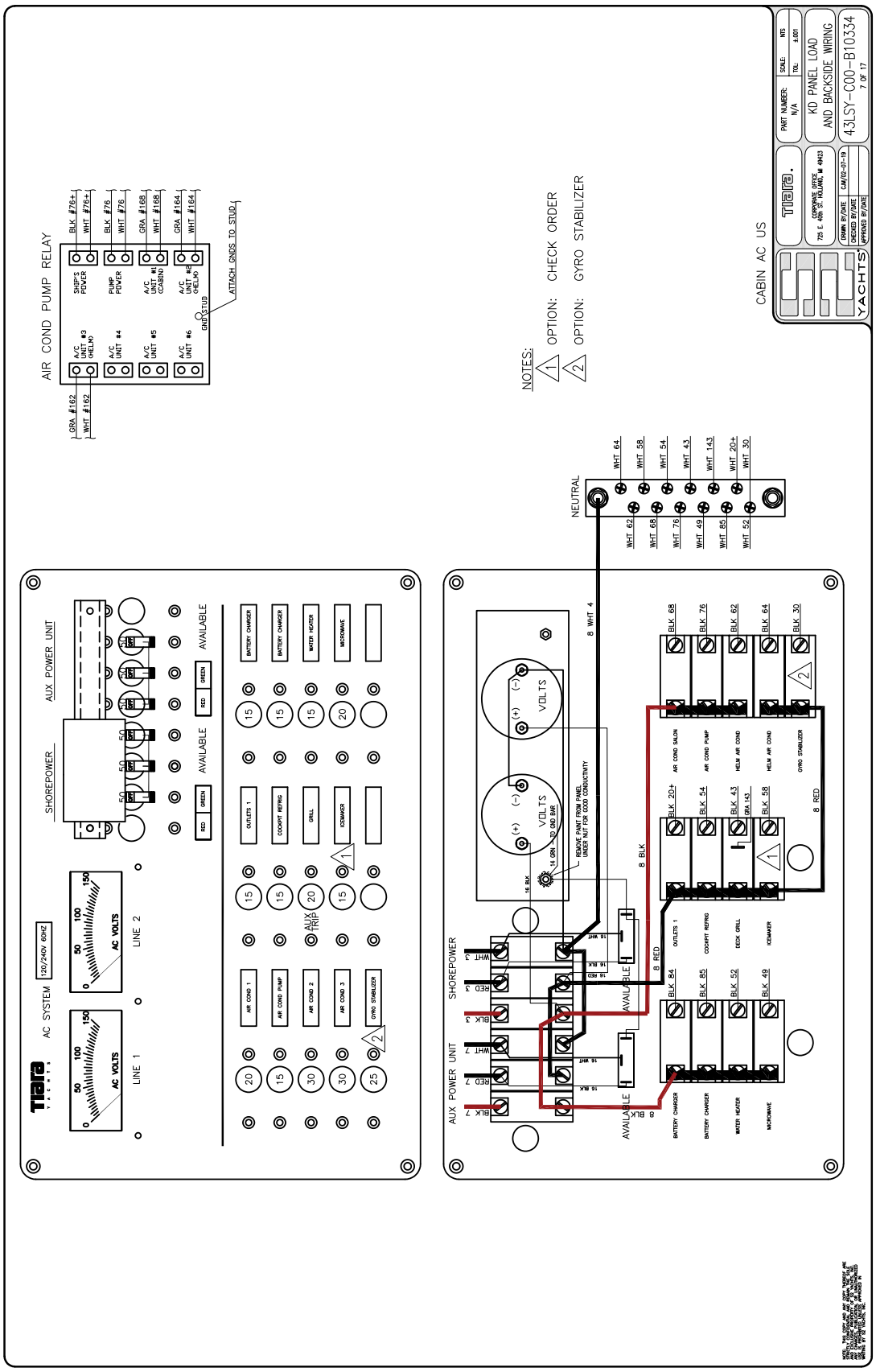
Operator Notes

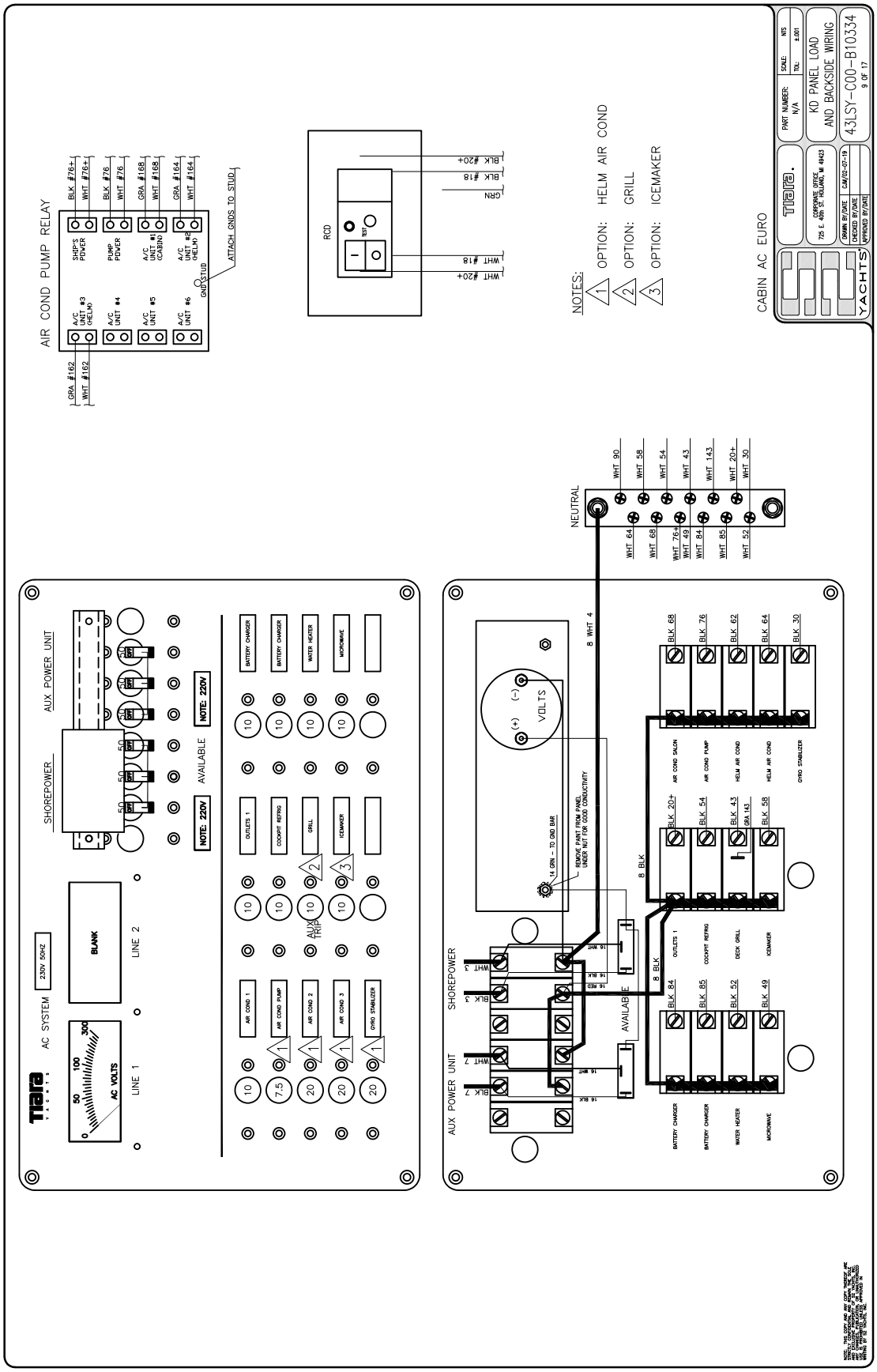

TRIPLE YAMAHA MASTER DC PANEL
KD PANEL LOAD AND BACKSIDE WIRING
43LSY-C00-B10334
NOTES:
1 OPTION BREAKER:
HOUSE
STBD ENG
PORT ENG
CENTER ENG
ALTERNATOR
CABIN MAIN
WINDLASS
ENG RM BLOWER
GYRO STABILIZER
SPOTLIGHT
UNDERWATER LTS
ENGINE FLUSH
FWD BILGE PUMP
MID BILGE PUMP
AFT BILGE PUMP
HOUSE BATT CHGR
ENGINE BATT CHGR
CABLE REEL
ENG RM LTS
OIL CHANGER
MOTOR FLUSH
BLOWER
THRUSTER
2 RED GENERATOR
16 RED 51
16 RED 50 HSE BAT SW
2/0 HOUSE BATTERY
1/0 STBD BATTERY
1/0 STBD ENGINE
16 RED 41
16 RED 40 STBD BAT SW
1/0 CENTER BATTERY
1/0 CENTER ENGINE
16 RED 31
16 RED 30 CENTER BAT SW
1/0 PORT BATTERY
1/0 PORT ENGINE
16 RED 21
16 RED 20 PORT BAT SW
2/0 TO THRUSTER
2/0 TO SWITCH+
2/0 TO HOUSE -
THRUSTER 2/0
ATTACH 'THRUSTER' LABEL TO FOSEBLOCK
16 YEL (TO GND BAR)
DT06-2S
EXTEND OUT OF BOX 4 FT
LINE HOOKUP

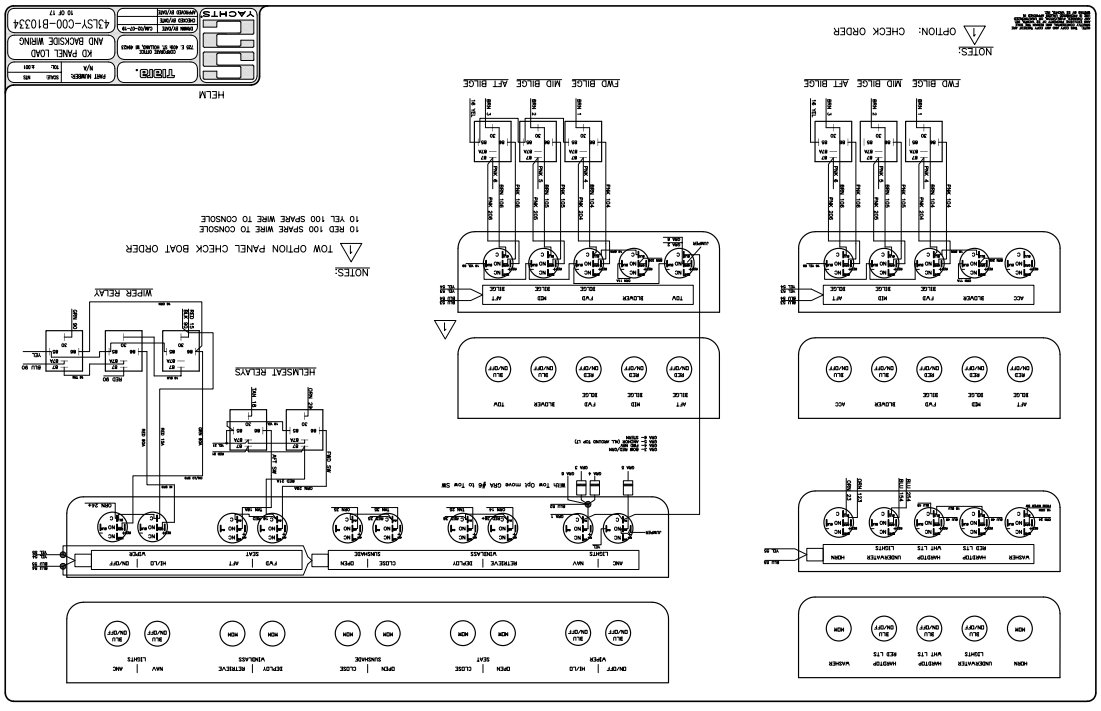

TWIN SEVEN MASTER DC PANEL
KD PANEL LOAD AND BACKSIDE WIRING
43LSY-C00-B10334
SEVEN MARINE
NOTES: 1 OPTION BREAKER:
12 VOLT MAIN
CABIN MAIN
WINDLASS
ENG RM BLOWER
GYRO
SPOTLIGHT
UNDERWATER LIGHTS
HYDRAULIC SYSTEM (TRIM PUMP)
PORT ENGINE BATTERY
STBD ENGINE BATTERY
FWD BILGE PUMP
MID BILGE PUMP
AFT BILGE PUMP
HOUSE BATT CHGR
ENGINE BATT CHGR
CABLE REEL
ENG RM LTS
OIL CHANGER
HOUSE
THRUSTER
STBD ENG
PORT ENG
CHARGE MATE 12V ACR
HOUSE BATTERY
GENERATOR
STBD BATTERY
PORT BATTERY
16 RED 51 HSE BAT SW
16 RED 40 STBD BAT SW
16 RED 20 PORT BAT SW
THRUSTER 2/0
2/0 TO HOUSE
2/0 TO SWITCH+
ATTACH 'THRUSTER' LABEL TO FUSEBLOCK
LINE HOOKUP
EXTEND OUT OF BOX 4 FT
BLOWER

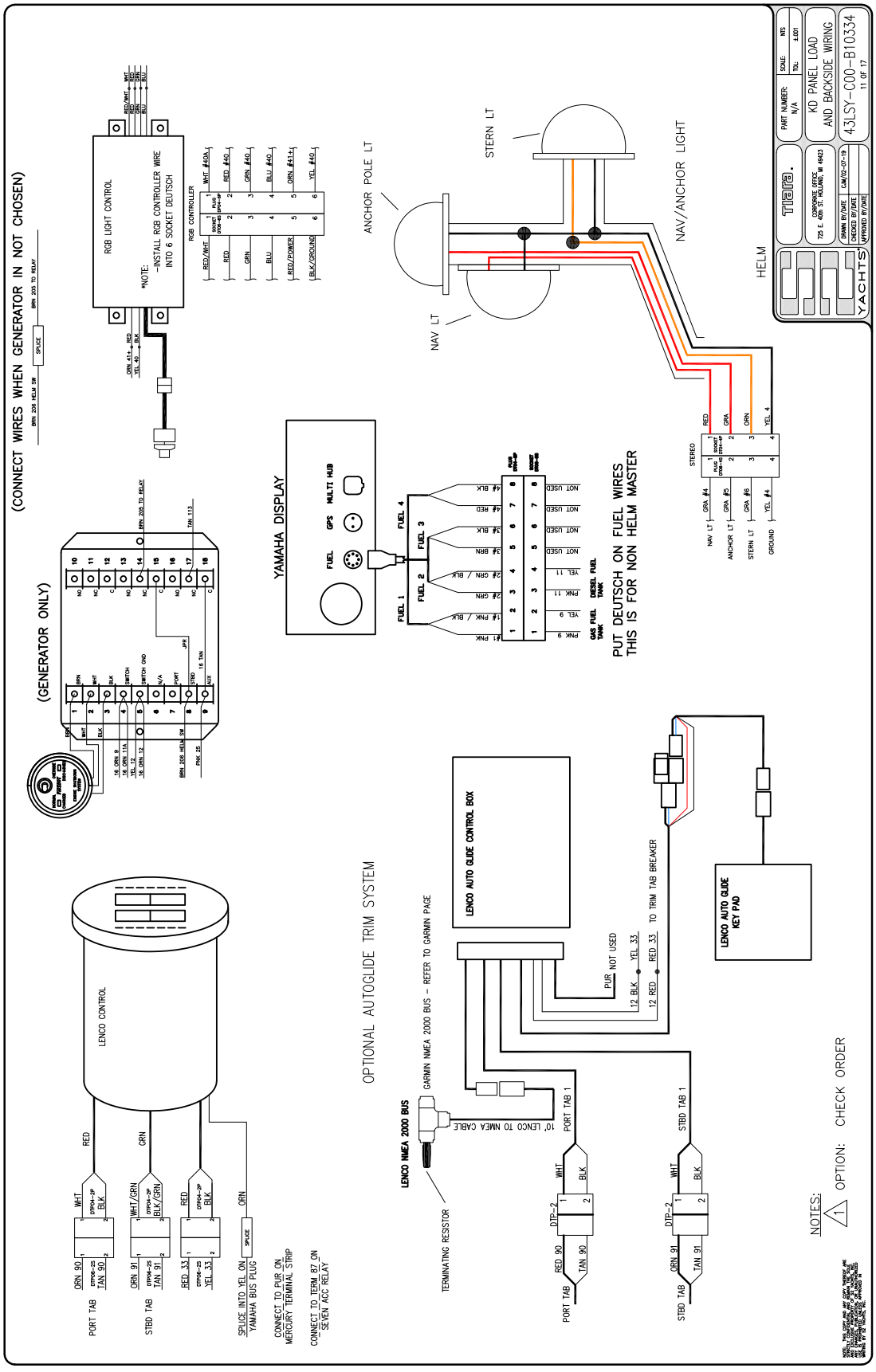

TRIPLE ENGINE CABIN DC PANEL
KD PANEL LOAD AND BACKSIDE WIRING
43LSY-C00-B10334
NOTES:
1 OPTION BREAKER: CHECK ORDER
10 RED 100 SPARE WIRE TO CONSOLE
10 YEL 100 SPARE WIRE TO CONSOLE
DC GND – YEL WIRES
AC GND – GRN WIRES
WASTE PUMPOUT
UNDERWATER LTS
HORN
DC FUNCTION BACK FRONT
NOTE: TIGHTEN SCREWS NOT BEING USED
DC SYSTEM
12VDC MAIN
DC VOLTS
VOLTS
METER SELECT
PORT BATTERY ON/OFF
CENTER BATTERY ON/OFF
STBD BATTERY ON/OFF
HOUSE BATTERY ON/OFF
CABIN LTS
COURTESY LTS
NAV/ANC LTS
SUNSHADE
FRESHWATER PUMP
ELECTRONICS
STEREO
REFRIGERATOR
SHOWER SUMP
HORN
TRIM TABS
HEAD FAN
HELM B
VACUUM PUMP
WASTE PUMP
MACERATOR PUMP
RAW WATER

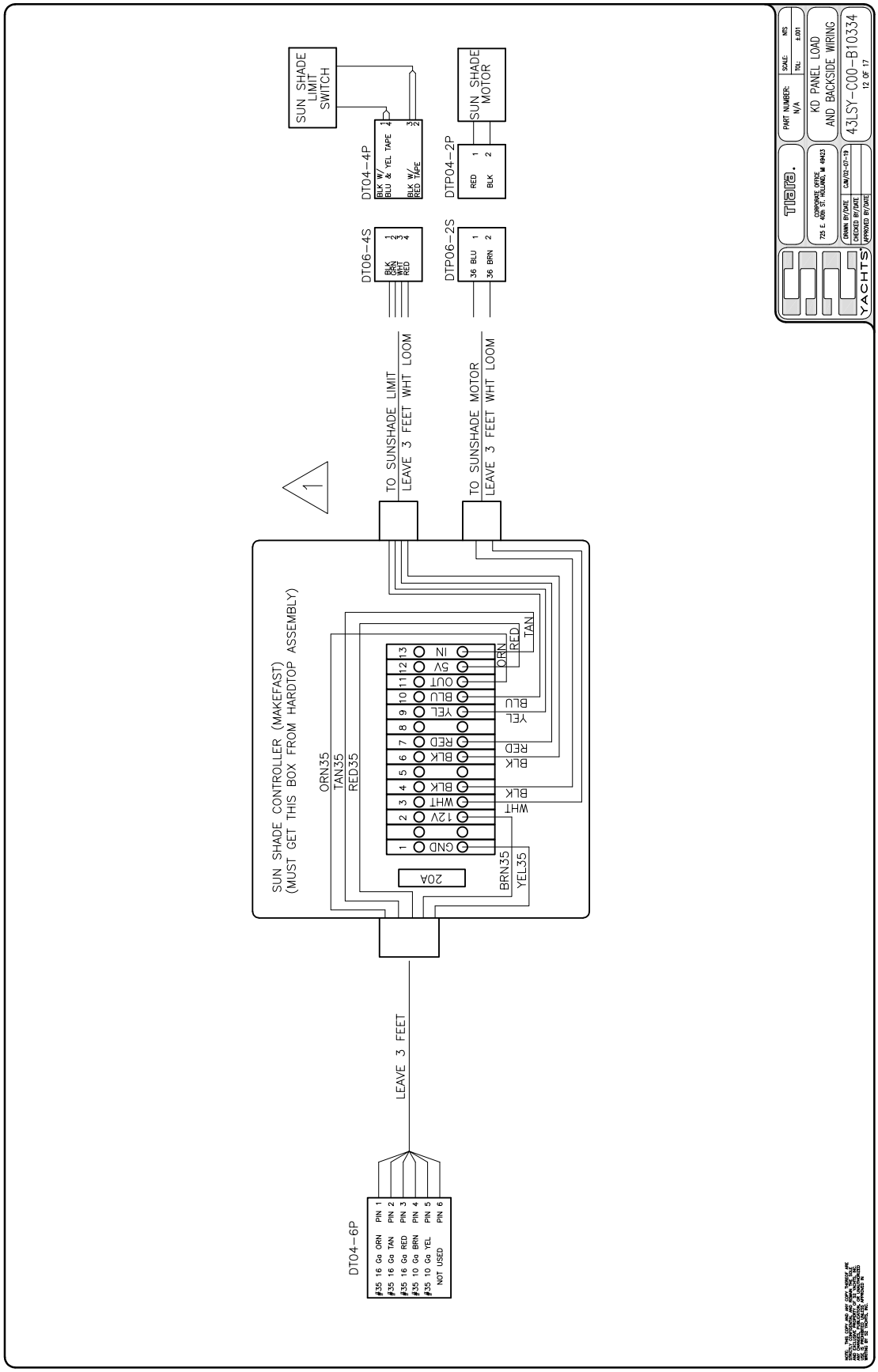

TWIN ENIGNE CABIN DC PANEL
Tiara YACHTS
CORPORATE OFFICE
725 E. 40th ST. HOLLAND, MI 49423
PART NUMBER: N/A
SCALE: NTS
TOL: ±.001
KD PANEL LOAD
AND BACKSIDE WIRING
43LSY-C00-B10334
6 OF 17
DRAWN BY/DATE CM/02-07-19
CHECKED BY/DATE
APPROVED BY/DATE
NOTES:
1 OPTION BREAKER: CHECK ORDER
10 RED 100 SPARE WIRE TO CONSOLE
10 YEL 100 SPARE WIRE TO CONSOLE
DC GND – YEL WIRES
AC GND – GRN WIRES
WASTE PUMPOUT
UNDERWATER LTS
HORN
DC FUNCTION
3314947
NOTE: TIGHTEN SCREWS NOT BEING USED
DC SYSTEM
120VAC MAIN
DC VOLTS
METER SELECT
STBD BATTERY ON/OFF
PORT BATTERY ON/OFF
HOUSE BATTERY ON/OFF
STEREO
SHOWER PUMP
HORN
TRIM TABS
CABIN LTS
COURTESY LTS
NAV/ANC LTS
SUNSHADE
FRESHWATER PUMP
ELECTRONICS
HEAD FAN
HELM @
VACUUM PUMP
MACERATOR PUMP
REFRIGERATOR

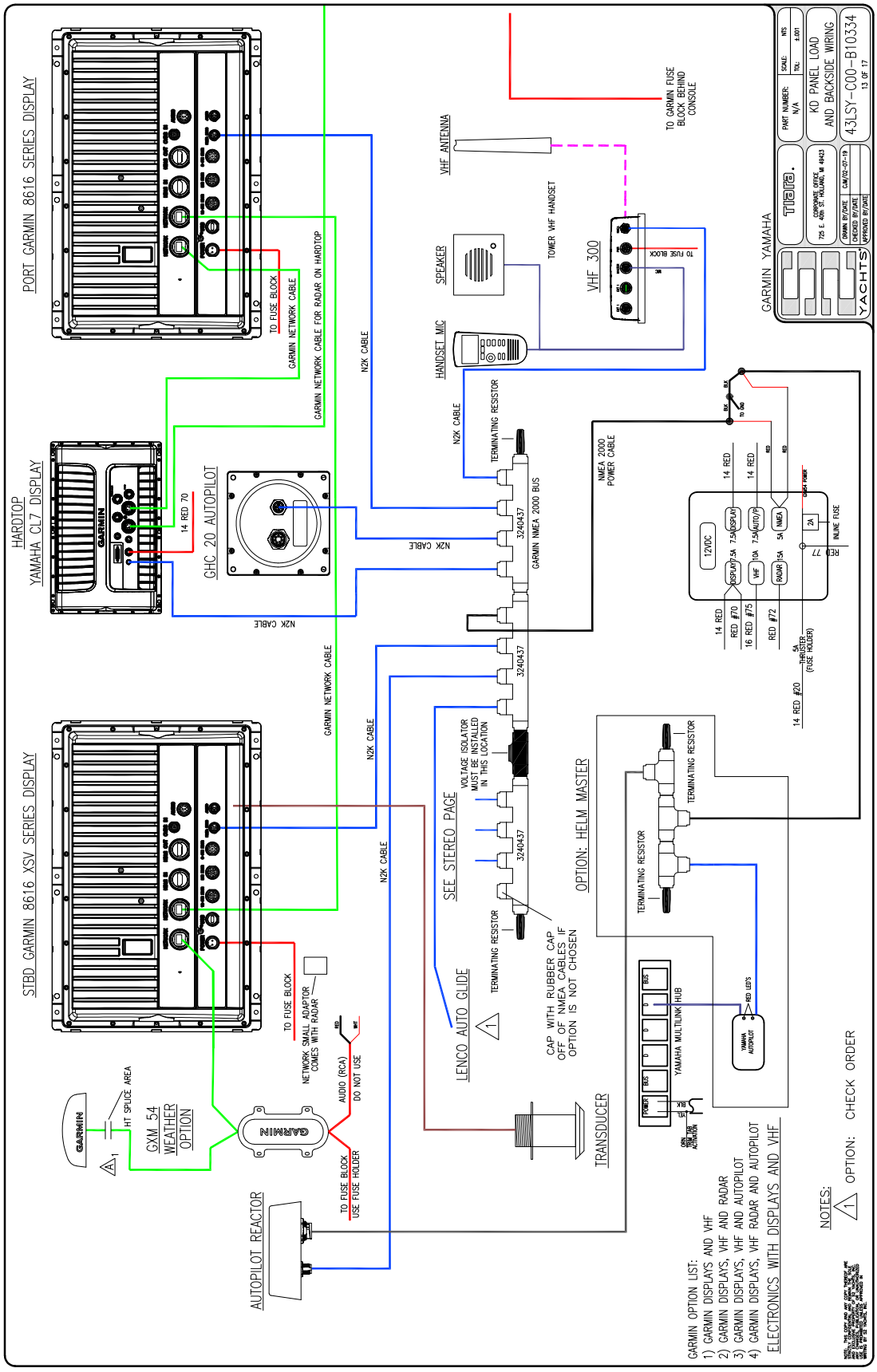

CABIN AC US
Tiara YACHTS
PART NUMBER: N/A
SCALE: NTS
TOL: ±.001
KD PANEL LOAD AND BACKSIDE WIRING
43LSY-C00-B10334
7 OF 17
DRAWN BY/DATE
CHECKED BY/DATE
APPROVED BY/DATE
AIR COND PUMP RELAY
SHIPS POWER
PUMP POWER
A/C UNIT #1 (CABIN)
A/C UNIT #2 (HELM)
A/C UNIT #3 (HELM)
A/C UNIT #4
A/C UNIT #5
A/C UNIT #6
ATTACH GNDS TO STUD
GND STUD
NOTES:
1 OPTION: CHECK ORDER
2 OPTION: GYRO STABILIZER
NEUTRAL
SHOREPOWER
AUX POWER UNIT
AC SYSTEM
120/240V 60HZ
LINE 1
LINE 2
AC VOLTS
AVAILABLE
AUX TRIP
AIR COND 1
AIR COND PUMP
AIR COND 2
AIR COND 3
GYRO STABILIZER
OUTLETS 1
COCKPIT REFRIG
GRILL
ICEMAKER
BATTERY CHARGER
WATER HEATER
MICROWAVE
VOLTS
REMOVE PAINT FROM PANEL UNDER NUT FOR GOOD CONDUCTIVITY
TO GND BAR
AIR COND SALON
HELM AIR COND
DECK GRILL

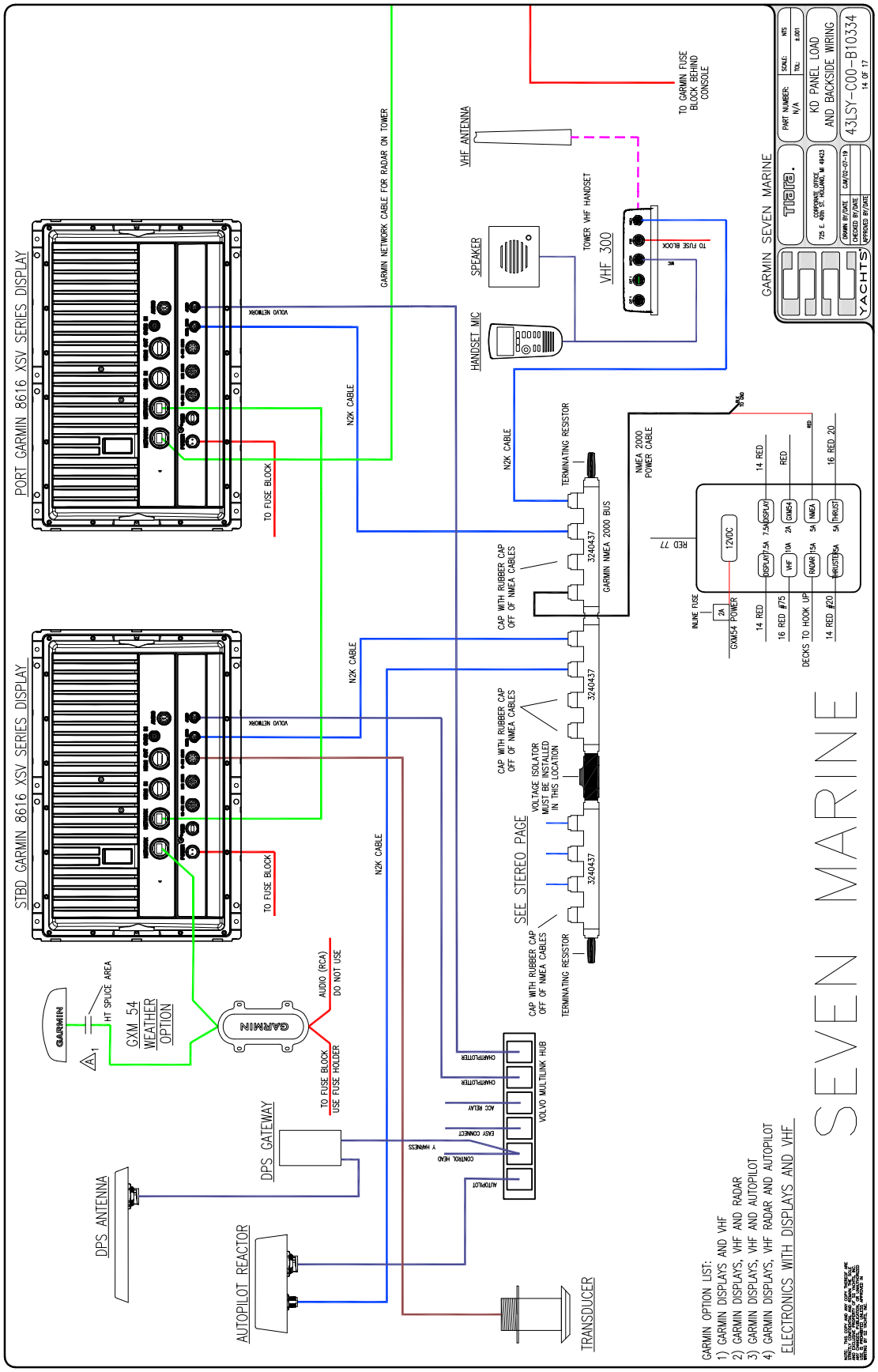

AIR COND PUMP RELAY
A/C UNIT #3 (HELM)
A/C UNIT #4
A/C UNIT #5
A/C UNIT #6
SHIP'S POWER
PUMP POWER
A/C UNIT #1 (CABIN)
A/C UNIT #2 (HELM)
GND STUD
ATTACH GNDS TO STUD
BLK #76+
WHT #76+
BLK #76
WHT #76
GRA #168
WHT #168
GRA #164
WHT #164
GRA #162
WHT #162
RCD
TEST
BLK #20+
BLK #18
GRN
WHT #18
WHT #20+
NOTES:
1 OPTION: HELM AIR COND
2 OPTION: GRILL
3 OPTION: ICEMAKER
CABIN AC EURO
Tiara YACHTS
CORPORATE OFFICE
725 E. 40th ST. HOLLAND, MI 49423
PART NUMBER: N/A
SCALE: NTS
TOL: ±.001
KD PANEL LOAD AND BACKSIDE WIRING
43LSY-C00-B10334
9 OF 17
DRAWN BY/DATE CJM/02-07-19
CHECKED BY/DATE
APPROVED BY/DATE
SHOREPOWER
AUX POWER UNIT
AC SYSTEM
230V 50HZ
AC VOLTS
LINE 1
LINE 2
BLANK
NOTE: 220V
AVAILABLE
AIR COND 1
AIR COND PUMP
AIR COND 2
AIR COND 3
GYRO STABILIZER
OUTLETS 1
COCKPIT REFRIG
GRILL
ICEMAKER
BATTERY CHARGER
WATER HEATER
MICROWAVE
AUX AMPS
VOLTS
NEUTRAL
REMOVE PAINT FROM PANEL UNDER NUT FOR GOOD CONDUCTIVITY
14 GRN – TO GND BAR
8 WHT 4
8 BLK
16 WHT
16 BLK
16 RED
WHT 90
WHT 58
WHT 54
WHT 43
WHT 143
WHT 20+
WHT 30
WHT 64
WHT 68
WHT 76+
WHT 49
WHT 84
WHT 85
WHT 52
BLK 68
BLK 76
BLK 62
BLK 64
BLK 30
BLK 20+
BLK 54
BLK 43
GRA 143
BLK 58
BLK 84
BLK 85
BLK 52
BLK 49
AIR COND SALON
AIR COND PUMP
HELM AIR COND
HELM AIR COND
GYRO STABILIZER
OUTLETS 1
COCKPIT REFRIG
DECK GRILL
ICEMAKER
BATTERY CHARGER
BATTERY CHARGER
WATER HEATER
MICROWAVE




(CONNECT WIRES WHEN GENERATOR IN NOT CHOSEN)
(GENERATOR ONLY)
RGB LIGHT CONTROL
*NOTE:
-INSTALL RGB CONTROLLER WIRE INTO 6 SOCKET DEUTSCH
RGB CONTROLLER
YAMAHA DISPLAY
FUEL GPS MULTI HUB
ANCHOR POLE LT
STERN LT
NAV LT
NAV/ANCHOR LIGHT
HELM
PUT DEUTSCH ON FUEL WIRES
THIS IS FOR NON HELM MASTER
OPTIONAL AUTOGLIDE TRIM SYSTEM
LENCO CONTROL
LENCO AUTO GLIDE CONTROL BOX
LENCO AUTO GLIDE KEY PAD
LENCO NMEA 2000 BUS
GARMIN NMEA 2000 BUS - REFER TO GARMIN PAGE
TERMINATING RESISTOR
10' LENCO TO NMEA CABLE
PORT TAB
STBD TAB
PORT TAB 1
STBD TAB 1
NOT USED
TO TRIM TAB BREAKER
SPLICE INTO YEL ON YAMAHA BUS PLUG
CONNECT TO PUR ON MERCURY TERMINAL STRIP
CONNECT TO TERM 87 ON SEVEN ACC RELAY
NOTES:
1. OPTION: CHECK ORDER
PART NUMBER: N/A
SCALE: NTS
TOL: ±.001"
KD PANEL LOAD AND BACKSIDE WIRING
43LSY-C00-B10334
11 OF 17
CORPORATE OFFICE 725 E. 40th ST. HOLLAND, MI 49423
DRAWN BY/DATE CM/02-07-19
CHECKED BY/DATE
APPROVED BY/DATE


SUN SHADE LIMIT SWITCH
DT04-4P
BLK W/ BLU & YEL TAPE
BLK W/ RED TAPE
SUN SHADE MOTOR
DTP04-2P
RED
BLK
DT06-4S
BLK
LIGHT WHT
RED
DTP06-2S
36 BLU
36 BRN
TO SUNSHADE LIMIT
LEAVE 3 FEET WHT LOOM
TO SUNSHADE MOTOR
LEAVE 3 FEET WHT LOOM
1
SUN SHADE CONTROLLER (MAKEFAST)
(MUST GET THIS BOX FROM HARDTOP ASSEMBLY)
ORN35
TAN35
RED35
BRN35
YEL35
20A
GND
12V
WHT
BLK
BLK
RED
BLK
YEL
BLU
ORN
5V
OUT
IN
RED
TAN
WHT
BLK
BLK
BLU
LEAVE 3 FEET
DT04-6P
#35 16 Ga ORN PIN 1
#35 16 Ga TAN PIN 2
#35 16 Ga RED PIN 3
#35 10 Ga BRN PIN 4
#35 10 Ga YEL PIN 5
NOT USED PIN 6
Tiara
YACHTS
CORPORATE OFFICE
725 E. 40th ST. HOLLAND, MI 49423
PART NUMBER: N/A
SCALE: NTS
TOL: ±.001
KD PANEL LOAD AND BACKSIDE WIRING
43LSY-C00-B10334
12 OF 17
DRAWN BY/DATE
CHECKED BY/DATE
APPROVED BY/DATE
CAM/02-07-19


PORT GARMIN 8616 SERIES DISPLAY
HARDTOP
YAMAHA CL7 DISPLAY
STBD GARMIN 8616 XSV SERIES DISPLAY
GHC 20 AUTOPILOT
AUTOPILOT REACTOR
GXM 54
WEATHER
OPTION
GARMIN NETWORK CABLE
GARMIN NETWORK CABLE FOR RADAR ON HARDTOP
N2K CABLE
TO FUSE BLOCK
14 RED 70
HT SPLICE AREA
NETWORK SMALL ADAPTOR
COMES WITH RADAR
AUDIO (RCA)
DO NOT USE
TO FUSE BLOCK
USE FUSE HOLDER
SEE STEREO PAGE
LENCO AUTO GLIDE
VOLTAGE ISOLATOR
MUST BE INSTALLED
IN THIS LOCATION
TERMINATING RESISTOR
3240437
GARMIN NMEA 2000 BUS
CAP WITH RUBBER CAP
OFF OF NMEA CABLES IF
OPTION IS NOT CHOSEN
OPTION: HELM MASTER
TRANSDUCER
YAMAHA MULTILINK HUB
RED LED'S
NMEA 2000
POWER CABLE
12VDC
14 RED
RED #70
16 RED #75
RED #72
14 RED #20
5A
THRUSTER
(FUSE HOLDER)
INLINE FUSE
VHF ANTENNA
SPEAKER
HANDSET MIC
TOWER VHF HANDSET
VHF 300
TO FUSE BLOCK
TO GARMIN FUSE
BLOCK BEHIND
CONSOLE
GARMIN YAMAHA
YACHTS
PART NUMBER: N/A
KD PANEL LOAD
AND BACKSIDE WIRING
43LSY-C00-B10334
13 OF 17
GARMIN OPTION LIST:
1) GARMIN DISPLAYS AND VHF
2) GARMIN DISPLAYS, VHF AND RADAR
3) GARMIN DISPLAYS, VHF AND AUTOPILOT
4) GARMIN DISPLAYS, VHF RADAR AND AUTOPILOT
ELECTRONICS WITH DISPLAYS AND VHF
NOTES:
1 OPTION: CHECK ORDER


PORT GARMIN 8616 XSV SERIES DISPLAY
STBD GARMIN 8616 XSV SERIES DISPLAY
GARMIN NETWORK CABLE FOR RADAR ON TOWER
VHF ANTENNA
TO GARMIN FUSE BLOCK BEHIND CONSOLE
SPEAKER
HANDSET MIC
TOWER VHF HANDSET
VHF 300
TO FUSE BLOCK
N2K CABLE
VOLVO NETWORK
TERMINATING RESISTOR
NMEA 2000 POWER CABLE
CAP WITH RUBBER CAP OFF OF NMEA CABLES
3240437
GARMIN NMEA 2000 BUS
VOLTAGE ISOLATOR MUST BE INSTALLED IN THIS LOCATION
SEE STEREO PAGE
GXM 54 WEATHER OPTION
HT SPLICE AREA
AUDIO (RCA)
DO NOT USE
TO FUSE BLOCK
USE FUSE HOLDER
DPS GATEWAY
DPS ANTENNA
AUTOPILOT REACTOR
TRANSDUCER
VOLVO MULTILINK HUB
CHARTPLOTTER
ACC RELAY
EASY CONNECT
Y HARNESS
CONTROL HEAD
AUTOPILOT
12VDC
INLINE FUSE
2A
GXM54 POWER
14 RED
16 RED #75
14 RED #20
16 RED 20
RED
RED 77
DECKS TO HOOK UP
DISPLAY 7.5A
VHF 10A
RADAR 1.5A
THRUST 5A
2A (GND)
5A (NMEA)
5A (THRUST)
GARMIN OPTION LIST:
1) GARMIN DISPLAYS AND VHF
2) GARMIN DISPLAYS, VHF AND RADAR
3) GARMIN DISPLAYS, VHF AND AUTOPILOT
4) GARMIN DISPLAYS, VHF RADAR AND AUTOPILOT
ELECTRONICS WITH DISPLAYS AND VHF
SEVEN MARINE
GARMIN SEVEN MARINE
YACHTS
PART NUMBER: N/A
SCALE: NTS
TOL: ±.001
KD PANEL LOAD AND BACKSIDE WIRING
43LSY-C00-B10334
14 OF 17
725 E. 40th ST. HOLLAND, MI 49423
DRAWN BY/DATE
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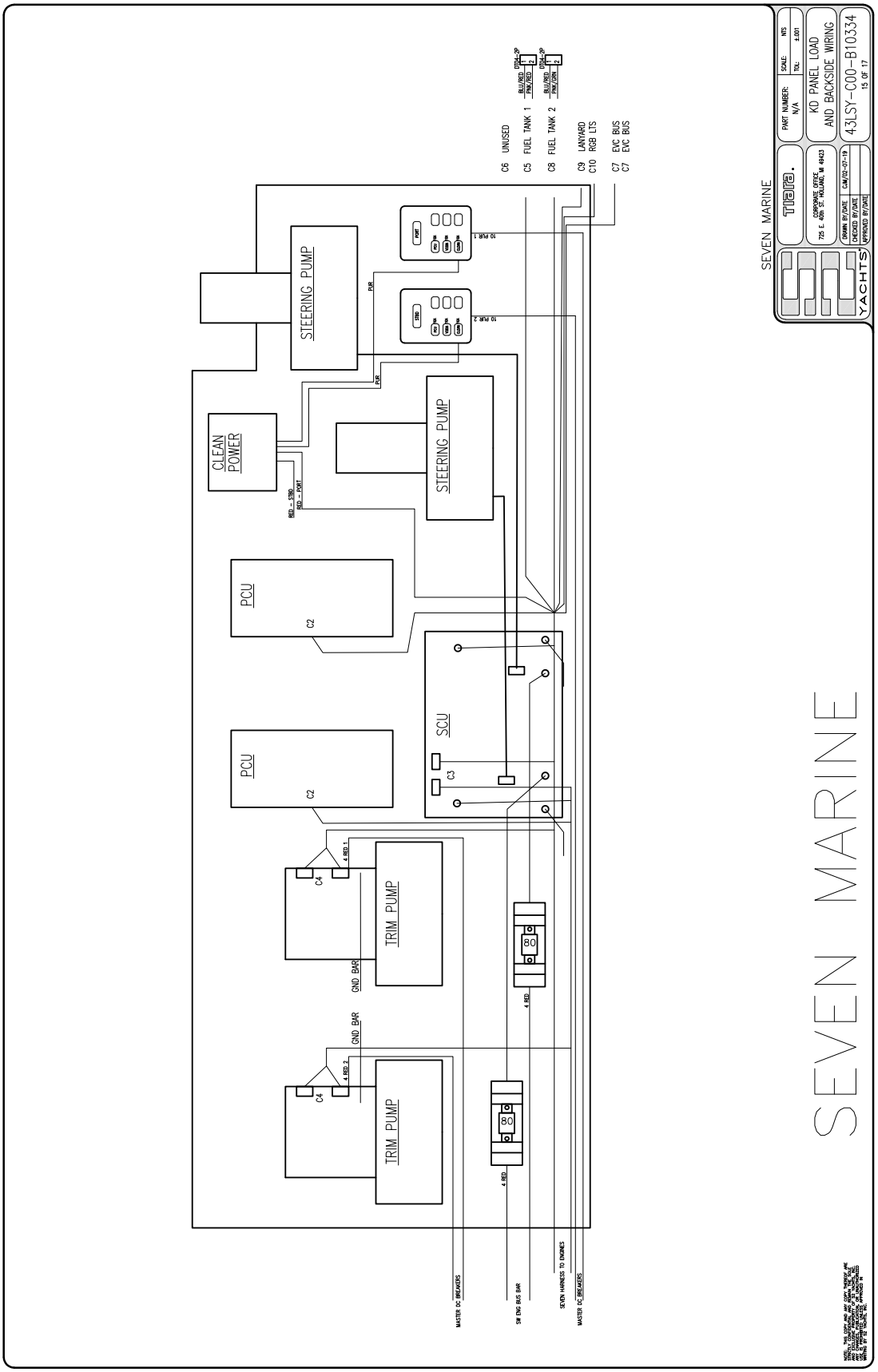
APPROVED BY/DATE


SEVEN MARINE
PART NUMBER: N/A
SCALE: NTS
TOL: ±.001
KD PANEL LOAD AND BACKSIDE WIRING
43LSY-C00-B10334
15 OF 17
DRAWN BY/DATE
CHECKED BY/DATE
APPROVED BY/DATE
CAM/02-07-19
CORPORATE OFFICE
725 E. 40th ST. HOLLAND, MI 49423
YACHTS
C6 UNUSED
C5 FUEL TANK 1
C8 FUEL TANK 2
C9 LANYARD
C10 RGB LTS
C7 EVC BUS
C7 EVC BUS
BLU/RED
PNK/RED
BLU/RED
PNK/ORN
STEERING PUMP
STEERING PUMP
CLEAN POWER
PCU
PCU
SCU
TRIM PUMP
TRIM PUMP
GND BAR
GND BAR
MASTER DC BREAKERS
SW ENG BUS BAR
SEVEN HARNESS TO ENGINES
MASTER DC BREAKERS
SEVEN MARINE

Operator Notes

Tiara®
YACHTS

725 E 40th Street, Holland, MI 49423 | 616.392.7163
tiarayachts.com

AMERICAN MADE