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*Owner Manual*

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## *Introduction*

**Welcome Aboard** and welcome to the "J/family" of owners. Your boat is designed and engineered to be the strongest, best performing, easiest-to-use, and most comfortable sailing boat of its type.

J/Boats has prepared this guide to familiarize you with rigging, tuning, and operating the J/92. Before we begin please be sure to:

**Complete the enclosed warranty card and mail to Tillotson-Pearson, Inc.**

This guide is furnished for your benefit, but shall in no way be construed as any sort of warranty or contract, express or implied, creating any obligation on the part of J Boats, Inc., with respect to any fact or facts or any advise or opinions contained herein.

The sole and exclusive warranty of the product is the Tillotson-Pearson, Inc. warranty described in the appendix hereto and on the Warranty Card furnished with the yacht.

**J/Boats, Inc. hereby disclaims any and all warranties, express or implied, including any warranty of fitness for a particular purpose or any implied warranty of merchantability.**

## **Commissioning Checklist**

### **Pre-Launch**

- |   |   |
|---|---|
| <input type="checkbox"/> Read Equipment Owner Manuals       | <input type="checkbox"/> De-winterize engine and check status of:   |
| <input type="checkbox"/> Pre-rig mast and check hardware:   | 1. engine oil/ filter   |
| 1. Halyards   | 2. coolant level  |
| 2. Blocks   | 3. transmission fluid level   |
| 3. Electronics  | 4. water intakes/filter   |
| 4. Shrouds  | 5. fuel lines/filter  |
| 5. Spreader Chafe Guards                                    | <input type="checkbox"/> Check all engine control cable attachments |
| 6. Lifeline Pins  | <input type="checkbox"/> Hook up coupling bolts                     |
| <input type="checkbox"/> Pre-rig boom                       | <input type="checkbox"/> Check battery charge                       |
| <input type="checkbox"/> Bottom painted or touched up       | <input type="checkbox"/> Align prop vertically & mark shaft         |
| <input type="checkbox"/> Check propeller/strut/zinc         | <input type="checkbox"/> Check all hose clamps, tighten as required |
| <input type="checkbox"/> Instrument transducer installation | <input type="checkbox"/> Close all seacocks                         |
| <input type="checkbox"/> Fenders                            | <input type="checkbox"/> Bilge pump handle                          |
| <input type="checkbox"/> Dock lines                         | <input type="checkbox"/> Mast wedges ready                          |
| <input type="checkbox"/> Winch handles                      | <input type="checkbox"/> Double-check sling locations               |
| <input type="checkbox"/> Ignition keys                      |   |

### **Launch**

- Check for leaks
- Check seacocks

### **Engine Start**

- |   |   |
|---|---|
| <input type="checkbox"/> Read engine owner's manual           | <input type="checkbox"/> Check oil press, water temp, charging gauges |
| <input type="checkbox"/> Align engine and shaft               | <input type="checkbox"/> Check transmission- forward/reverse          |
| <input type="checkbox"/> Start engine                         | <input type="checkbox"/> Check stuffing box                           |
| <input type="checkbox"/> Check exhaust for cooling water flow |   |

### **Step Mast**

- |  |  |
|--|--|
| <input type="checkbox"/> Hoist spar and lower into boat      | <input type="checkbox"/> Attach all shrouds and hand tighten |
| <input type="checkbox"/> Attach headstay to stemhead fitting | <input type="checkbox"/> Install wedges and mast boot        |
| <input type="checkbox"/> Attach 24:1 backstay system         | <input type="checkbox"/> Connect mast junction box wires     |

### **Rigging**

- |  |   |
|--|---|
| <input type="checkbox"/> Install boom                  | <input type="checkbox"/> Install and connect boom vang    |
| <input type="checkbox"/> Lead all halyards to stoppers | <input type="checkbox"/> Rough tune spar per tuning guide |
| <input type="checkbox"/> Rig reef lines                |   |

### **Systems Check**

- Fill fuel tank
- Check operation of electrical systems and pumps
- Check electronics (optional)

### **Trial Sail**

- Raise and lower sails to check for fit
- Monitor engine performance and check stuffing box
- Check bilge for leaks
- Tighten shrouds to straighten mast on both tacks

## *Getting Started With Your J/92*

Generally, your dealer will help you prepare your boat before launching. And in many instances will undertake the entire commissioning job. They are experts in the field and are capable of completing most commissioning tasks.

### *Before Getting Started*

Before you begin assembling your boat, you should become familiar with the different sail control systems and associated hardware. All running rigging and loose deck hardware items are shipped from the factory in parts boxes complete with part inventory sheets. To help you properly install these items please refer to the following rigging sections and the hardware diagrams in the appendix.

The Commissioning Checklist at the end of the manual will help you to double check that your J/92 is assembled properly and all systems and rigging function properly. If a boatyard other than an authorized J/Boat dealer is performing the work, review this list with them to establish what has to be done and by whom.

- **Topsides:** Wash off all the dirt and grime accumulated from delivery. Use only non-abrasive cleaners on the gelcoat. Then apply a coat of high quality carnauba boat wax or a synthetic poly-based coating. Either finish will prolong the life and sheen of the gelcoat.
- **The Bottom:** preparation is critical to long-lasting enjoyment. To ensure a professional finish carefully review the paint manufacturers recommendations for preparing the bottom, and have your dealer roll or spray it on.

### *Deck Equipment*

The following items are safety and comfort features. They are made of the highest quality materials and are engineered for your peace of mind and sailing enjoyment.

- **Lifelines:** The upper lifelines are white vinyl coated 3/16" 7x7 wire the lower lifelines are 3/16" vinyl coated 7x7 wire. They run the length of the boat and are fastened at either end by stainless forks and turnbuckles. Each lifeline is clearly marked for easy installation.
  - Insert all lifeline stanchions into the sockets provided along the toe-rail. Secure each stanchion in place by tightening down the base set screws. Drip a small amount of Lock Tight on the threads of the

set screws to prevent them from working loose.

- Attach the fork to the bow pulpit and remove the threaded end from the turnbuckle to feed through each stanchion (snake lifeline through the optional comfort pads), and attach to stern pulpit.
- Finish off the job by tightening the turnbuckles and taping off the turnbuckle "split rings".
- Install a "net" of lightweight nylon parachute cord from the bow to the second stanchion between the lower lifeline and a taught line secured between the stanchion bases to help keep the asymmetric spinnaker sock neatly on deck.
- **Skylight Hatch:** has an anodized extruded aluminum frame with scratch-resistant lexan cover, and is "ready-to-use." The hatch has a "vent" and "closed" position, both lockable.

**DO NOT PERMIT ACETONE OR TEAK CLEANER TO GET ON PORTS, FRAMES, OR HATCHES AS THIS WILL DISINTEGRATE THE LEXAN AS WELL AS DESTROY THE FINISH ON THE FRAMES.**

### *Steering System*

The steering system is carefully engineered to provide "finger-tip" control. This is achieved by utilizing high quality rudder bearings. The rudder itself is made of unidirectional glass, with two molded halves bonded together, and a highly reinforced carbon fiber shaft. It's engineered to withstand tremendous shear loads for storm conditions.

- **The Tiller** is varnished & laminated wood bolted to a custom stainless steel tiller head mounted to the shaft. The Spinlock adjustable hiking stick is attached on the forward end of the tiller to enable the helmsman improved visibility sitting further outboard.

### *J/92 Rigging*

The running and standing rigging items supplied with your boat are designed for efficiency. A wealth of racing and cruising experience has gone into the deck layout to make sailing and boat handling safe and easy to handle by a couple and for a racing crew.

The most unique feature of your J/92 is the J/Sprit system for the asymmetric spinnaker. We believe this system is a major improvement over conventional systems and so let's start by explaining how it works!

- **Carbon Fibre J/Sprit:** The carbon fibre pole is custom made by TPI and is designed to withstand the loads associated with the asymmetric spinnaker without any additional support. The J/Sprit consists of a carbon tube which is faired smooth and finished with an off-white Awlgrip high gloss paint, and two molded end fittings. The forward end fitting has a "U" bolt which serves as the tack attachment point for the spinnaker as well as the attachment for an ATN snuffer block. The aft end fitting houses all hardware necessary for the adjuster line and shock cord retrieval system.
- **J/Sprit Launching Line:** The line which controls the pole is designed to be operated without leaving the cockpit. The eye splice is attached to the outboard pad eye on the forward most bulkhead in the forepeak. The line then leads through the thru-pole blocks on the aft end fitting of the pole (be sure the "U" bolt on the other end of the sprit is up), forward through the bulkhead thru-deck block, up through the deck block, aft (to starboard) through the bullseye fairleads and finally to the lower Harken cam mounted on the cabin side to Starboard.
- **Asymmetric Shock Cord Retrieval System:** The shock cord system allows the J/Sprit to automatically retract when you uncleat the control line. The heavy duty shock cord system is set up as follows: attach one end of shock cord to the sprit end fitting pad eye, lead through the Harken block with becket mounted on padeye on hanging locker bulkhead, then lead cord through the bullseye on the bottom of the J/Sprit end fitting to the forward single Harken block mounted on the padeye under the pole opening, back through the bullseye to the becket, and tension the cord. You may need to experiment once or twice to get the appropriate tension on the shock cord. It should be relatively easy to fully extend the J/Sprit, with enough tension on the cord to retract back into the boat. Put a knot in the J/Sprit cockpit control line behind the cam cleat (in the cockpit) to serve as a stop, so that the sprit doesn't bang into the bulkhead when released.
- **Mast:** Rigging the J/92 mast is a straight forward procedure, though it is best handled by a qualified marine rigger. Should you be commissioning your own spar please refer to the **Hall Spars J/92 Rigging Manual**. Be sure all mast related electronics are installed prior to stepping.
- **24:1 Backstay:** The J/105 is equipped with a 24:1 cascading integral backstay to help you fine tune your rig and sails for optimum performance. This system is simple to operate, easy to maintain, and highly reliable.



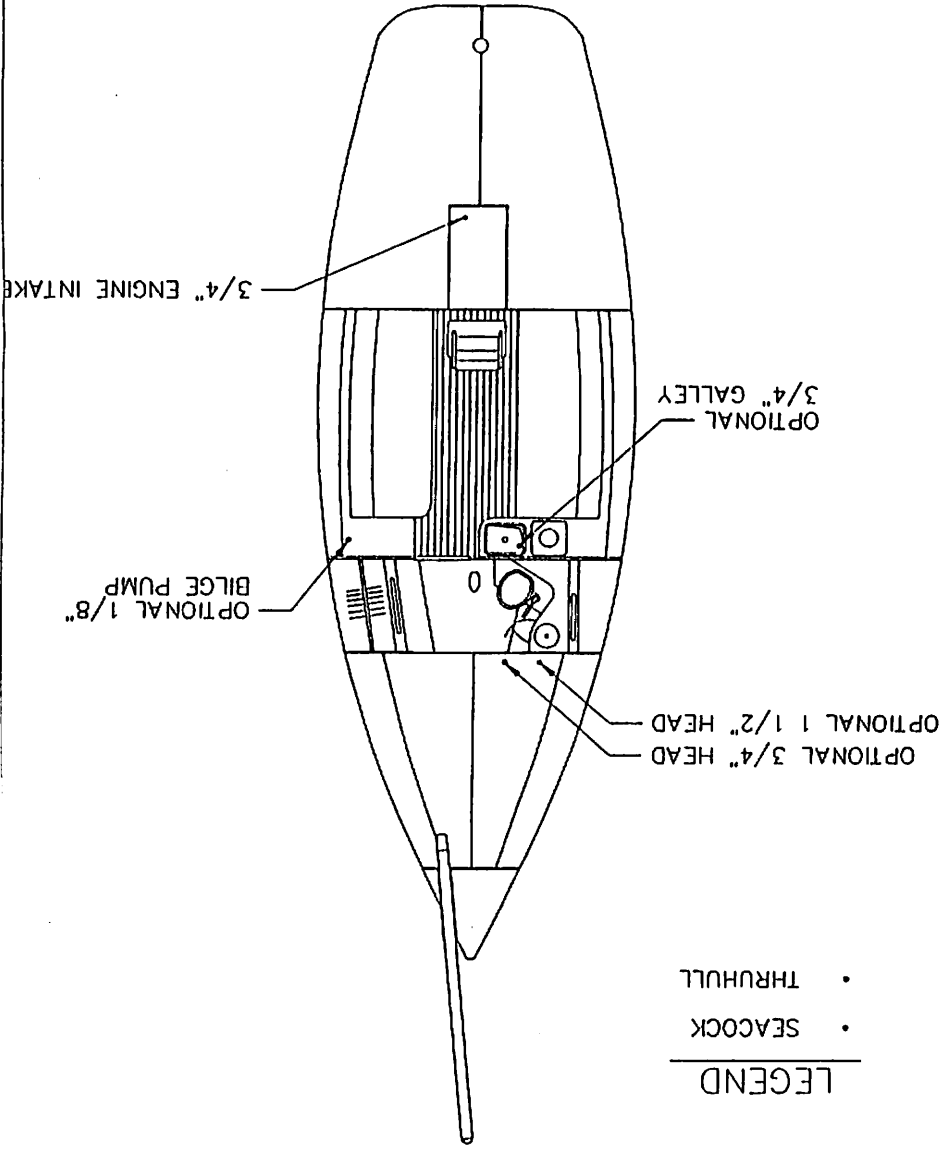
- **Boom:** Run the reef lines so the red line (port) is led through the port sheaves and the green line (starboard) is led through the starboard sheaves at both the outboard end and sheaves at the gooseneck. Please look in the appendix for the complete diagram.
- **Boom Vang:** The boom vang system is made up of a Harken cascading 8:1 purchase and is rigged as shown in the vang diagram. Three shackles, two wires, one wire block, two Harken fiddle blocks (one with a cleat) and an adjuster line are the necessary components.

### ***Sail Control Systems***

- After stepping the mast and connecting the boom, Vang, Harken Roller-Furler, and backstay, lead all halyards and set-up the remaining sail control systems. These systems are designed for maximum efficiency and complete ease of handling, making for relaxing shorthanded sailing in most wind and sea conditions.
- **Main Halyard:** exits the mast on the port side, runs through a turning block at the mast collar, through the inboard port organizer block and then aft through the port double stopper (inboard hole) and finally to the halyard winch. The tail end is stored in the supplied line bag which should be mounted forward on the port cockpit wall.
- **Jib Halyard:** exits the mast to port, leads through the forward mast base block, aft to the outboard sheave on the organizer block, through the outboard stopper hole, and store tail in line bag.
- **Spinnaker Halyard:** exits mast to starboard and leads to the sheave and stopper.
- **Mainsheet Traveler:** is a Harken low friction system. The 3:1 purchase system on each side controls a Harken Car mounted on the traveler track. The car is adjustable from either side of the cockpit.
- **Outhaul:** is adjusted on the boom and is pre-assembled by Hall Spars.
- **Cunningham:** The 5:1 cunningham system utilizes two Harken blocks a vinyl coated wire strop with hook, and the control line. These are assembled as shown in the diagram.
- **Mainsheet:** is a 6:1 system (see diagram). The system is designed to allow easy adjustments of the main-sheet. The fixed centerline cleat base rotates to port and starboard for a proper lead. Be sure to put a "stopper knot" like a figure-eight at the end of the mainsheet.

- **Jib Sheet:** is continuous and attaches to the roller-furler headsail by a simple knot, leads to the jib block on the track and to the primary winch.
- **Spinnaker Sheets:** lead from the clew aft outside the lifelines through the Harken spreader blocks (shipped loose) turning forward to Harken ratchet blocks attached to the stanchion base and then to the primary cockpit winches or secondary cabin-top winches. The ship loose kit has three ratchet blocks in it two with black knobs and one with a white knob. Use one black and one white for the port and starboard stanchions respectively. This ensures that the ratchet switch will always be facing up (rather than scratching the deck). The remaining block is mounted with a spring on the swivel base for the mainsheet.

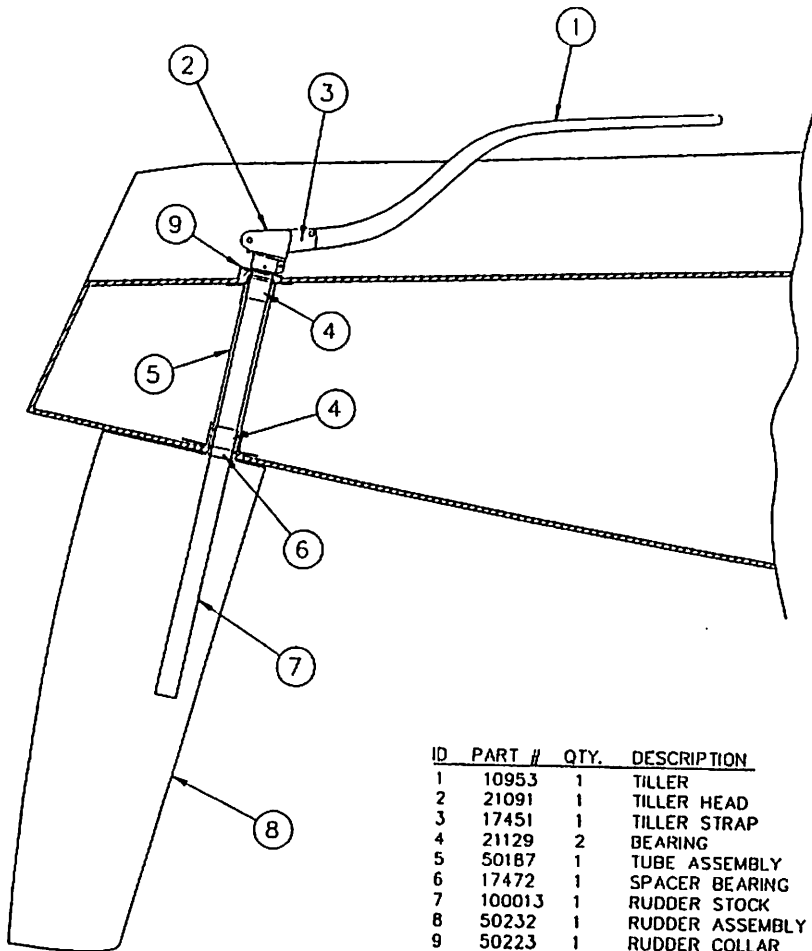
***Rigging & Systems Diagrams***



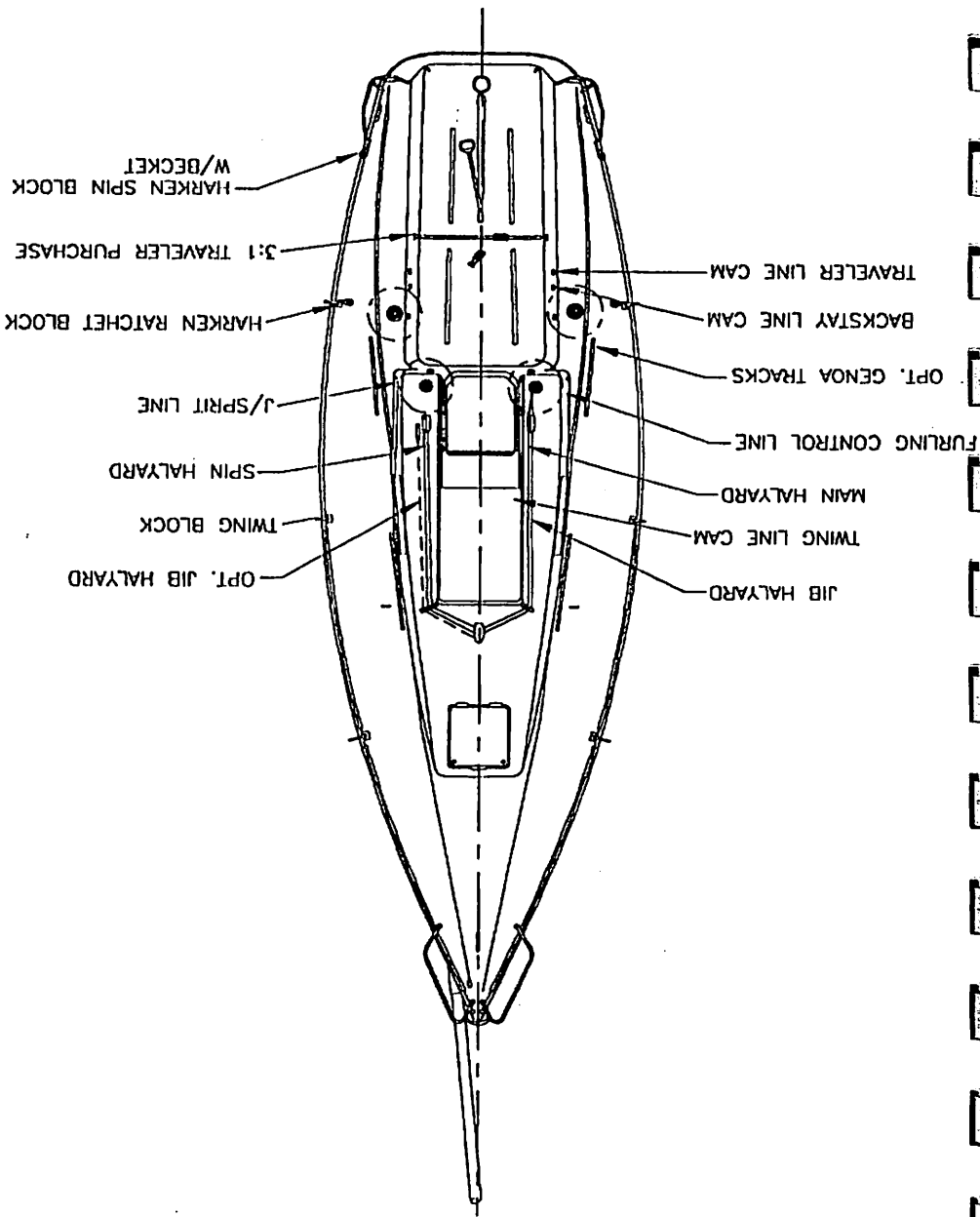
- LEGEND
- SEACOCK
  - THRUHULL

*Thru-hull & Seacock Locations*

**Steering System**

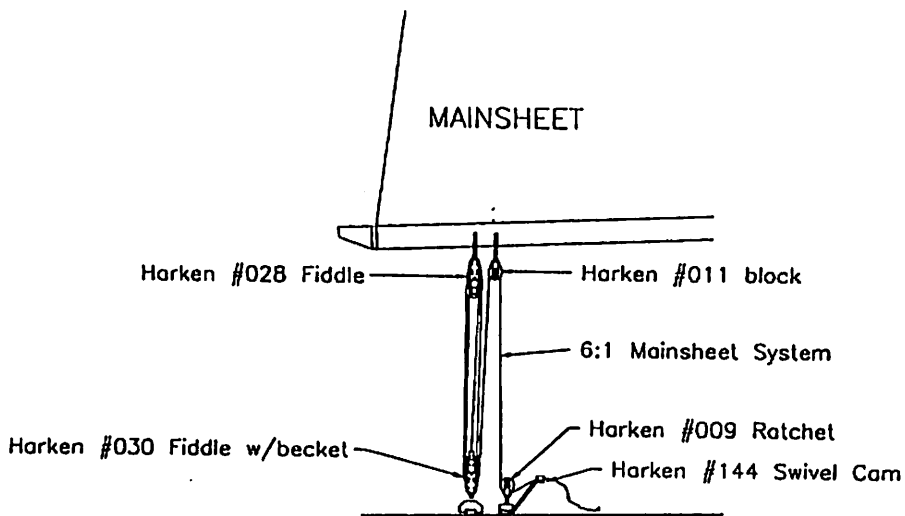


ID	PART #	QTY.	DESCRIPTION
1	10953	1	TILLER
2	21091	1	TILLER HEAD
3	17451	1	TILLER STRAP
4	21129	2	BEARING
5	50187	1	TUBE ASSEMBLY
6	17472	1	SPACER BEARING
7	100013	1	RUDDER STOCK
8	50232	1	RUDDER ASSEMBLY
9	50223	1	RUDDER COLLAR

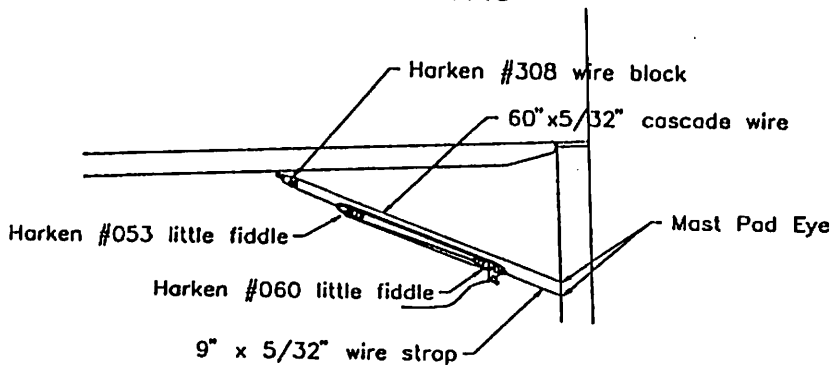


*Running Rigging*

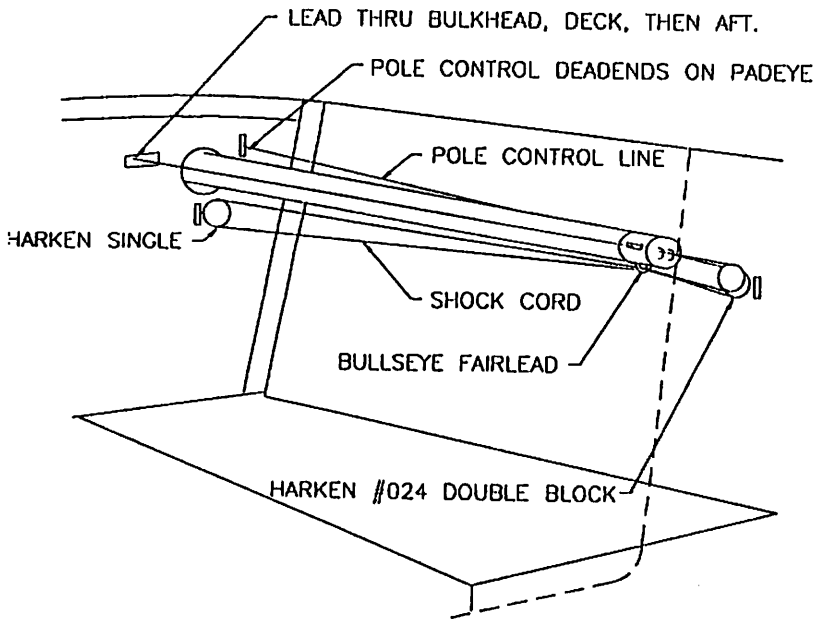
**Mainsheet & Boom Vang**



**BOOM VANG**



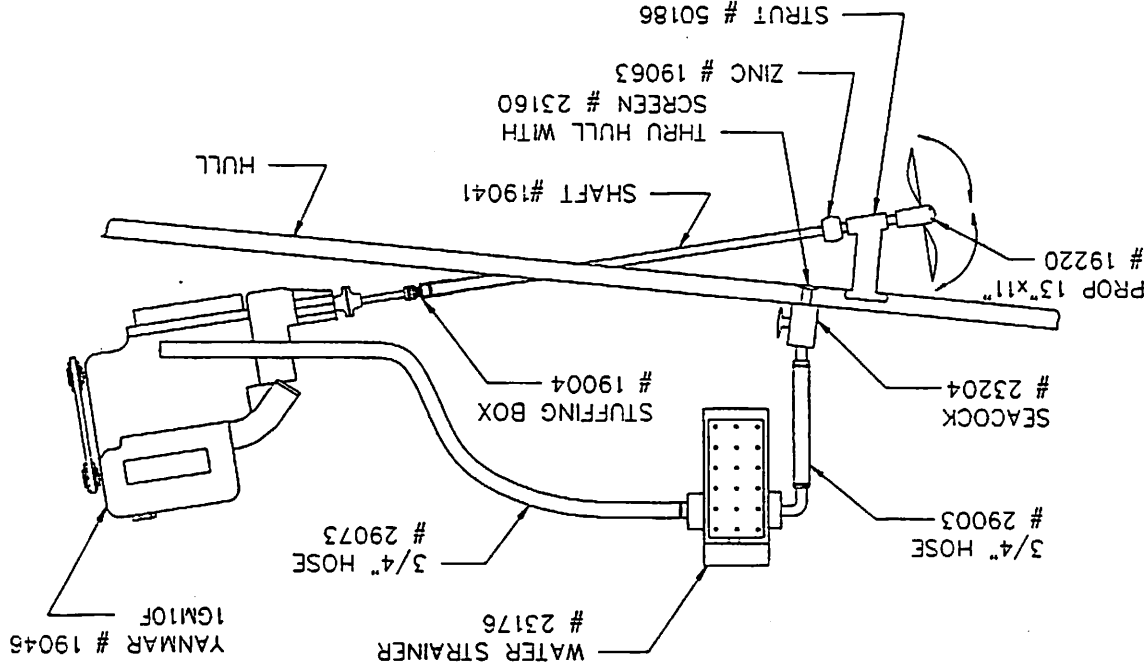
J/Sprit

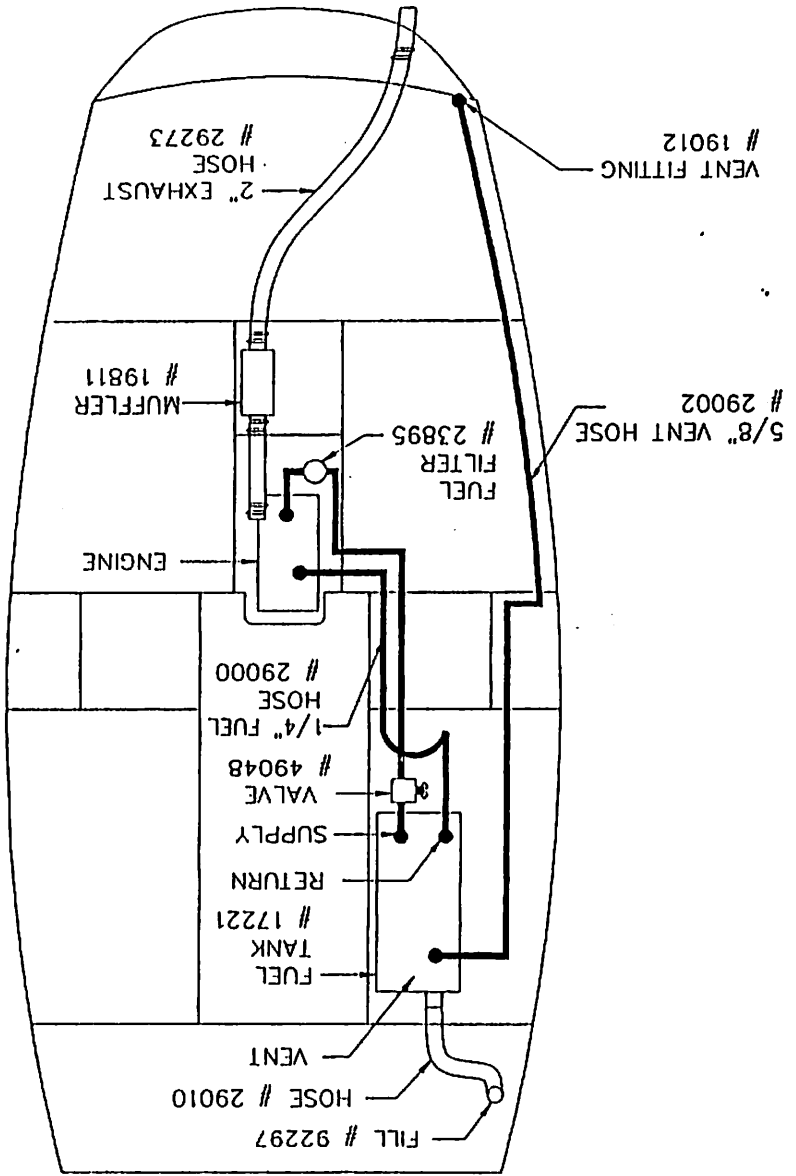


NOTE: SHOCK CORD PASSES THROUGH BULLSEYE FAIRLEAD GOING FORWARD AND AFT.



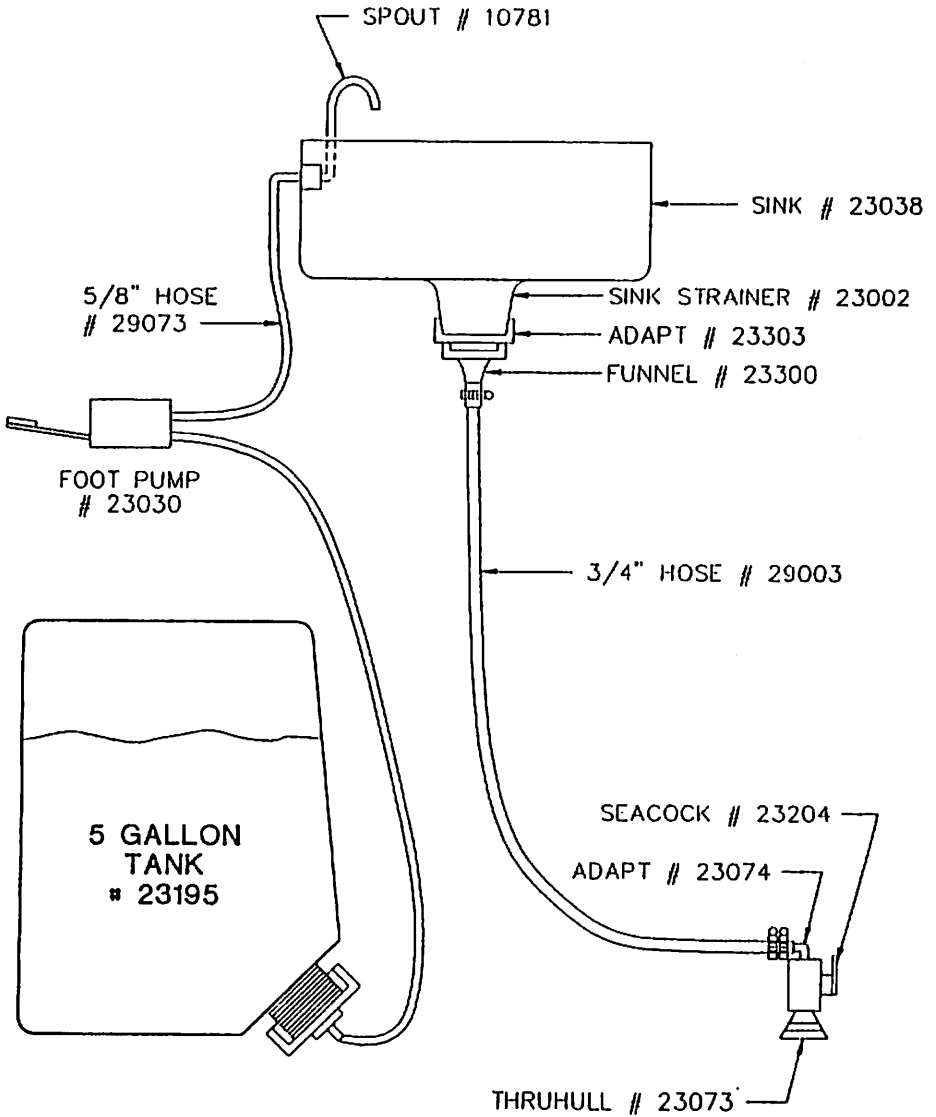
**Engine Drive Train**



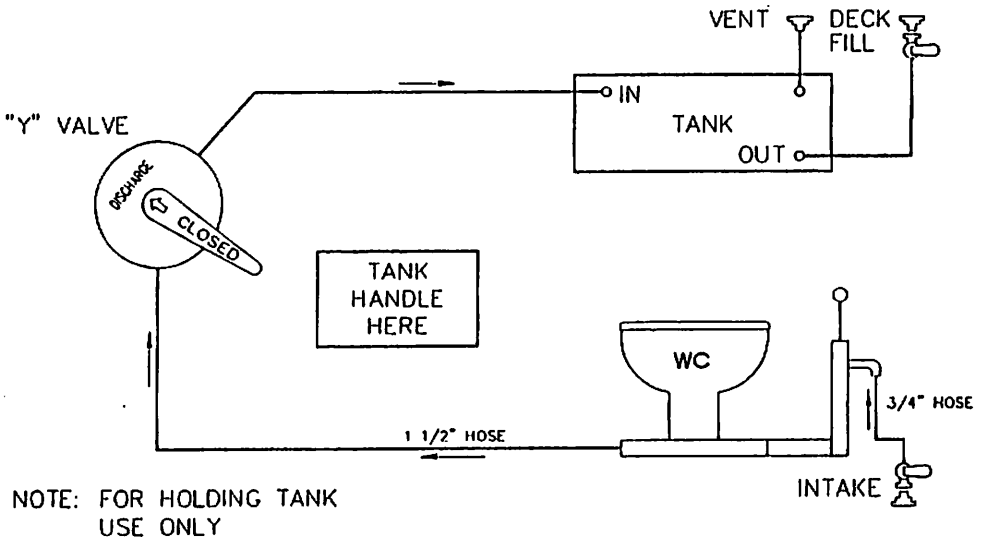
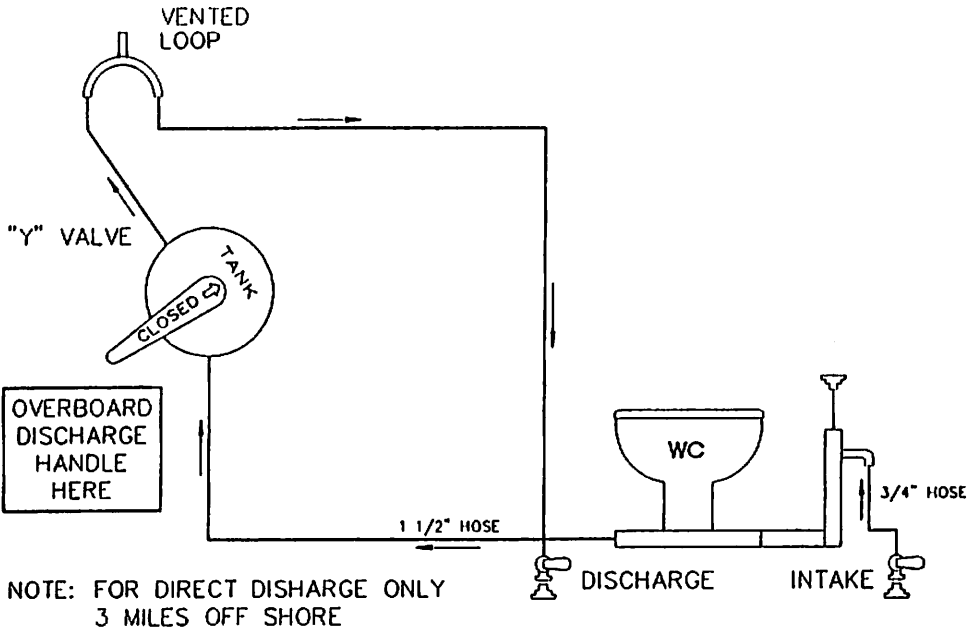


**Fuel System**

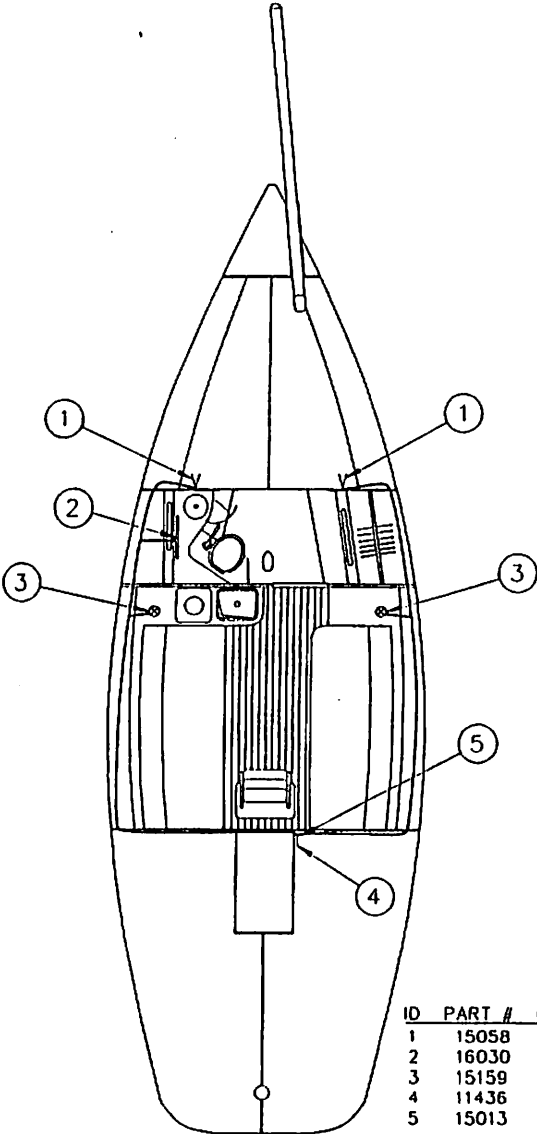
**Optional Fresh Water System**



**Optional Head System**

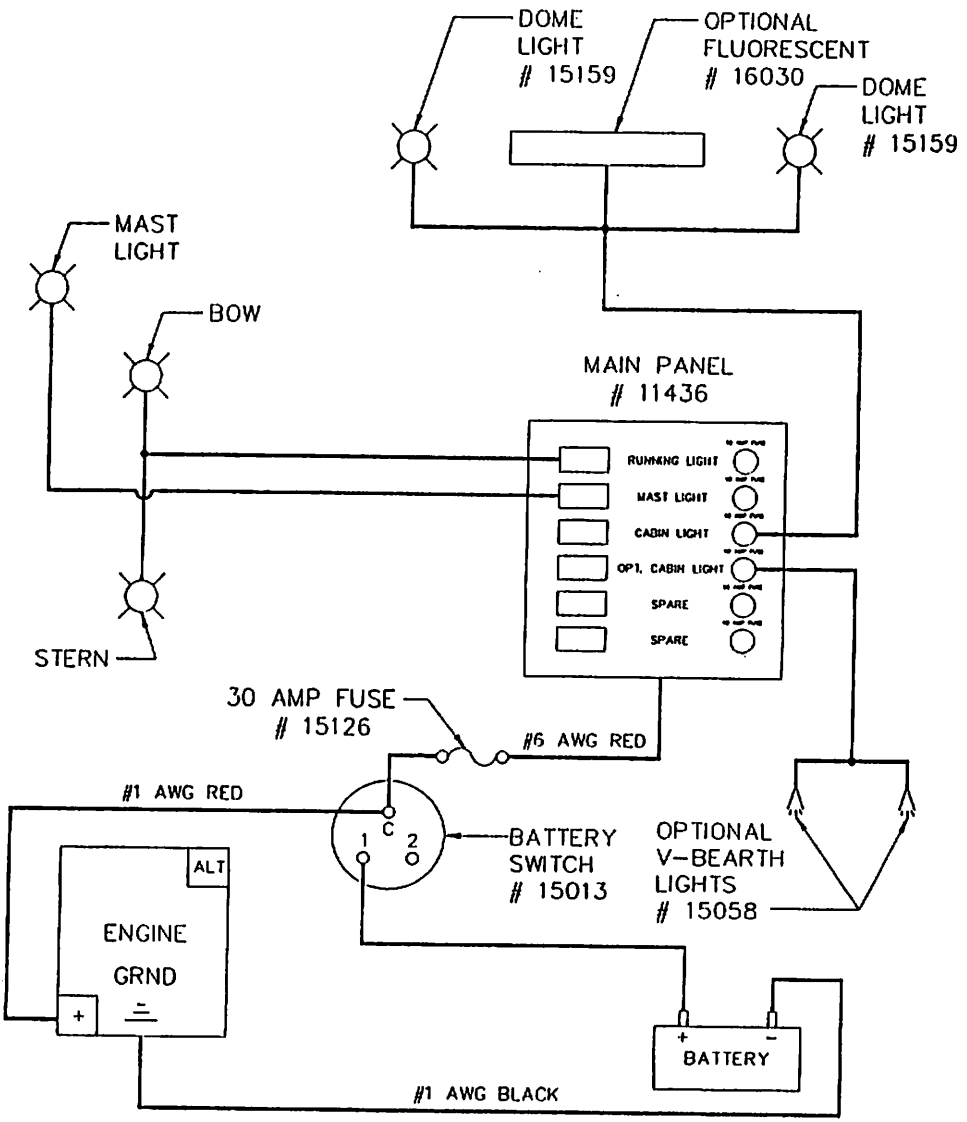


**Electrical Lighting Layout**

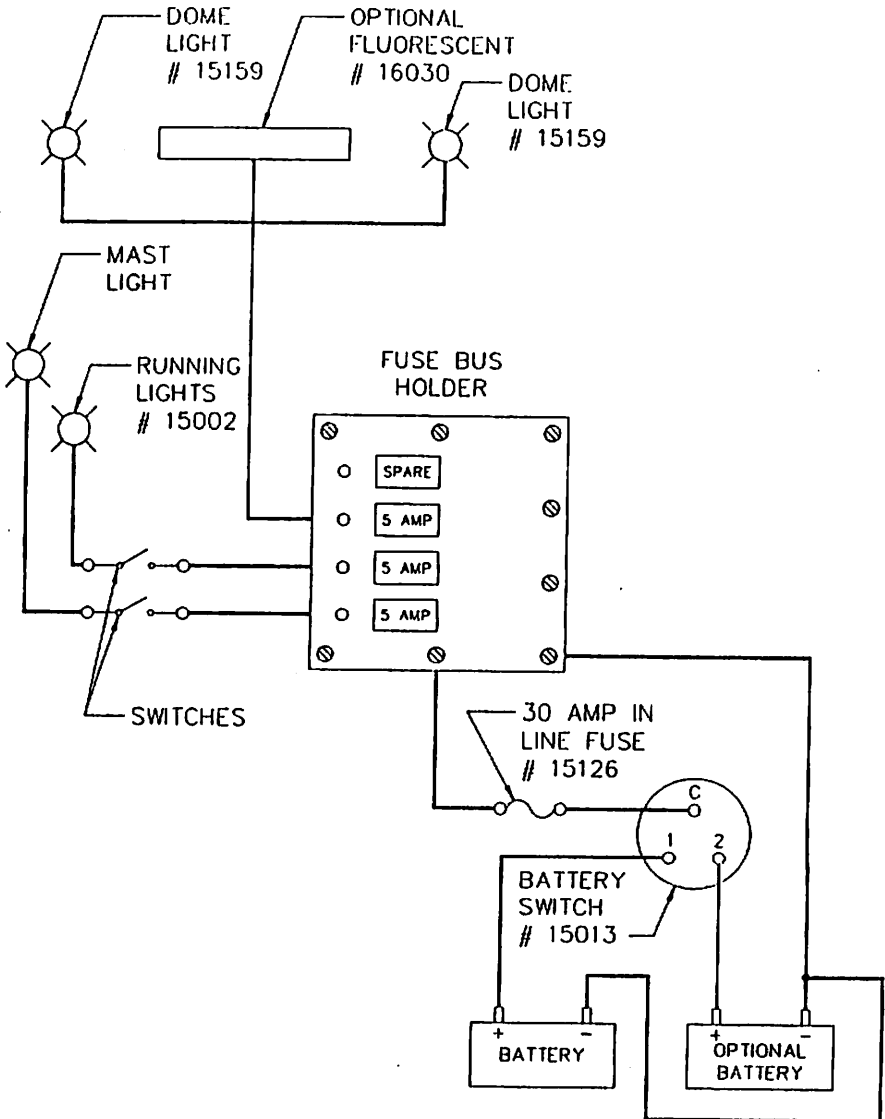


ID	PART #	QTY.	DESCRIPTION
1	15058	2	OPTIONAL SWIVEL LIGHT
2	16030	1	OPTIONAL FLUORESCENT LIGHT
3	15159	2	DOMELIGHT
4	11436	1	MAIN PANEL
5	15013	1	BATTERY SWITCH

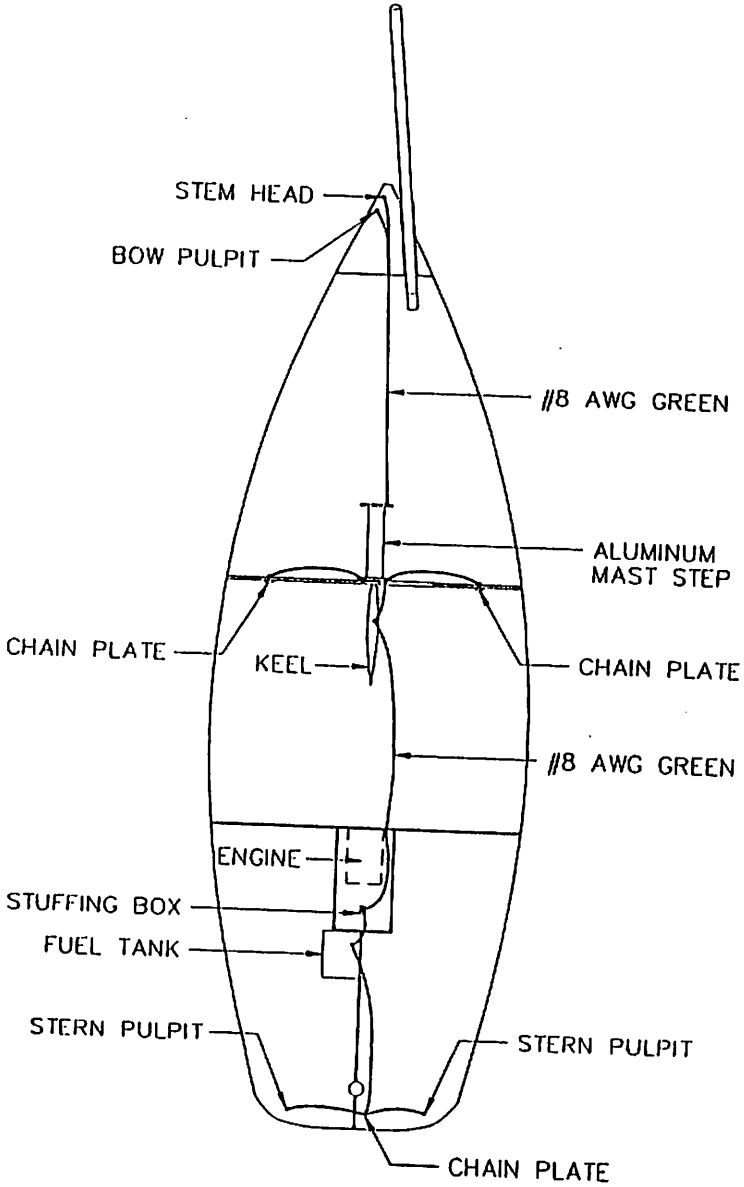
**Electrical Wiring System**



### Battery Wiring Diagram



**Lightning Bonding System**





## Tuning the J/92 Rig

The J/92 comes standard with a double spreader Hall Spars rig. Here is a starting point for rig tuning as done on Jeff and Al Johnstone's J/92 #3. As is the case with any new boat, there will be some experimentation with different tunings. We encourage your feedback.

### Tuning

- Headstay length is standard with about 2.5 inches of thread showing under the Harken Drum with no toggles. The backstay was set up with a toggle under the hydraulic cylinder to set the handle forward and the release aft. Mast step bolts are positioned in the middle of the slots. No mast wedges are installed to start. Rake from the back of the mast to a weighted main halyard is 24" on the cabin top.
- After taking up the shrouds hand-taught, center the mast using the main halyard to equalize to the rail outboard of the chainplates, apply maximum backstay to bend the mast.
- Tighten the upper and intermediate shrouds equally to port and starboard with a wrench and screw driver until you are fairly tight.
- At this point, the front of the mast will be against the forward edge of the mast hole in the deck. Run a jib sheet around the front of the mast from one turning block to the other and winch back the mast to permit insertion of the forward mast wedge. Insert the remaining mast wedges. You may have to slice the back of the mast boot (collar) for this operation.
- Tighten lowers hand-tight, being particularly sure that the mast is not inverted because the asymmetric spinnaker will make it even more so..
- To double check your handywork by look up the backside and front side of the mast to be sure that it is straight from side to side. Go sailing in 12-14 knot winds with max backstay. Take up on the leeward upper and intermediate by two full turns each with a wrench. Release backstay to intermediate position and take up on the leeward lower (hand taught). Tack and repeat the process on the new leeward side.
- Check the straightness and repeat the process making minor adjustments to leeward rigging only to correct. A Loose gauge can also be used to double check tension. We carried up to 2,200 lbs on our uppers and lowers at Block Island for the heavy conditions that week.

## Engine System

The engine and fuel systems are engineered to be conveniently accessible for repairs and general maintenance. Located behind the companionway ladder. There is access on the sides and in front of the engine from which all important functions can be reached; including water strainer, fuel injectors, fuel filter, fuel primer, expansion chamber, and alternator.

Before starting the engine read the engine manufacturer's owner's manual for proper break-in and operating procedures. Once the engine is running, inspect it for any discrepancies, like oil leaking, excessive water leaks, or anything out of the ordinary.

- **Engine Control Panel** is mounted in the cockpit. It contains the starter, warning lights, and gauges. The throttle and gearshift are mounted on the cockpit wall. Double-check all mechanical connections between engine and on-deck equipment.
- **Engine Bed:** is constructed of highly reinforced fiberglass. This provides a superior mount over wood and is also rot-proof. The engine sits on heavy duty rubber shock mounts to help isolate the engine vibration from the boat. Check to see that the engine is sitting correctly on them and the bolts tightly secured.

### Drive Train

This is the complete system which propels your boat. It includes the following components; coupling, stuffing box, shaft log, shaft, strut, and the propeller.

- **Transmission** is attached to the aft end of the engine and houses the reduction and reverse gears. These gears generally need little maintenance, but the oil level should be checked periodically.
- **Stuffing Box** is aft of the engine where the propeller shaft passes through the hull. It is a waterproof housing consisting of a rubber "jacket" attached to the tube and a brass bearing with hose clamps. When the engine is running, check to see that intermittent drips of water appear where the shaft enters the stuffing box. If the drips are a continuous stream, ie. more than one every ten seconds, you must tighten the compression nut on the forward end of the stuffing box. This requires two large pipe wrenches to tighten the forward nut over the aft "core nut." It should not get hot when running.

- **Propellor** is a MARTEC folding prop of high quality bronze alloy. Check to see that the blades on the prop open almost perpendicular to the shaft. The prop is simple to care for and can withstand years of hard use. However, there are a few easy precautions which can prolong its life:
  - Coat it with an excellent silicone grease film.
  - Check to see that the joints in the folding prop have a good coating of waterproof grease.
  - Check that all cotter pins are bent over properly.
  - Check that the blades are smooth.
- **Prop Shaft** is stainless and is supported at the inboard end by the shaft coupling and at the outboard end by the strut containing a rubber "cutlass bearing." Before launching attach a "shaft zinc" to minimize corrosion. The zinc should be replaced every time the boat is hauled. Check the "cutlass bearing" within the strut periodically for wear and tear. If it is loose, replace it.
- **Engine/Shaft alignment** is set by the dealer after the boat is launched and rigged to ensure that the engine, shaft, stuffing box, and prop are properly adjusted to minimize engine vibration. If there seems to be excessive vibration, notify your dealer and have them investigate.

### **Fuel System**

The Fuel System is located below the cockpit on the J/92. It consists of the fuel tank, fill hose and cap; fuel lines and filters and the vent. Use only Diesel fuel in the system.

- **Fuel Tank Line** run directly from tank to the fuel primer pump. From there fuel flows into the injector. The tank is polyurethane and translucent so visible inspection of fuel level is possible. Try to maintain a minimum level of 1/3 to 1/2 tank filled at all times.
- **Fuel Line Shut-Off Valve** sits atop the tank. Since many diesel engines require bleeding after they have been deprived of fuel, it's important that the shut-off valve be in the "ON" position (lever parallel to piping) anytime the engine is started.
- **Fuel Tank Access Plate** is atop the fuel tank and provides access inside to clean the tank.

## **Engine Cooling System**

The engine utilizes a closed system in which a mixture of water and anti-freeze is circulated within the engine for cooling. This liquid is cooled by a heat exchanger which uses sea water, in a similar fashion to the radiator on a car which uses air to cool the contained liquid.

- **Filler Cap** for the fresh water (closed) cooling system is located on top of the engine manifold, and looks like a radiator cap. Check the level in the manifold frequently (ensure engine is cool). If additional liquid is necessary, add only a mixture of anti-freeze/fresh water. In colder climates where freezing may occur over the winter, be sure to test the coolant anti-freeze/water mixture for freezing point and add anti-freeze as needed if the system is not drained for winter layup. Follow engine manual recommendations for proper water/anti-freeze ratios.
- **Water Strainer** is located in the engine compartment and has a two-stage design to prevent "clogging" of the cooling system. Its simple design facilitates periodical cleaning. To clean: Ensure the engine water intake thru-hull is closed. Check that the lever is perpendicular to the intake. Unscrew the nut atop the filter and remove the strainer from inside the glass case. Wash thoroughly with water or replace with a new one if badly soiled. Replace strainer into case and tightly affix lid with the nut.

## **Exhaust System**

The J/92 is equipped with a water-injected exhaust system which cools the exhaust. It is designed to both dissipate heat and act as the exhaust muffler. If the flow of cooling water is interrupted and the engine overheats severely, the rubber hose coming from the engine exhaust elbow may melt. Always check this hose after an occurrence of overheating. Water can accumulate in the bottom of the water lift "pot." In fall de-commissioning, the pot should be drained using the drain plug, or anti-freeze added to the pot so residual water doesn't freeze. If the engine does not start after a prolonged period of cranking over (starting), be sure to drain the pot or exhaust loop. Water accumulates here and may fill enough to flow back into engine manifold if engine does not start.

## **General Hints to Avoid Problems**

- 1. Monitor brightness of cabin lighting and charge batteries as required by running engine. Batteries are charged by running the engine.
- 2. Stop engine with throttle fuel cut-off, then turn ignition key "off".

- 3. **NEVER** turn battery switch to OFF position while engine is running.
- **CRUISING R.P.M.** - 3,200 at slightly less than hull speed. Vary RPM levels periodically when cruising under power for a long distance.
- Do not run engine at full throttle for sustained period, as breakdown may occur. Most importantly, find an RPM that runs smoothly. Avoid "vibrating" RPM speeds.
- Mark the shaft at the coupling where blades are vertical causing least resistance when motor is stopped and in neutral. Turn shaft by hand to "feather" prop then lock by putting gear shift in "REVERSE".
- Keep gear shift lever in "REVERSE" while sailing to prevent "free-wheeling" of shaft.

### ***Engine Safety Precautions***

Due to high temperatures it is recommended that after running the diesel for more than two hours you reduce speed to idle and allow excess heat to dissipate for five to ten minutes.

The most common cause of trouble is contaminated or dirty fuel. Your boat is equipped with a primary fuel filter located in the engine compartment and a secondary filter on the engine. The wise skipper carries replacement filter cartridges.

Familiarize yourself with the bleeding procedure for the engine and try bleeding it yourself. The procedure only takes a few minutes after you are acquainted with it, but can be exasperating to the uninitiated.

### ***Starting The Engine***

- If installed, turn VHF and LORAN "OFF."
- Transmission/ Throttle lever:

Vertical = Neutral  
 Port = Forward  
 Aft = Reverse

Pull knob on side of throttle/transmission lever out fully, then move throttle forward 1/3.

- Turn ignition key to "ON" position. Audible alarm indicates low oil pres-

sure, and will continue until engine starts. There is an oil pressure alarm test switch on the cockpit engine panel.

- Push to "START" button on panel. Release immediately after start. If it does not start in ten seconds, release button. Advance throttle slightly and after ten seconds, repeat.
- Oil pressure light and audible alarm should go out after starting. If not, stop engine.
- Once engine starts, set throttle at about 1,500 RPM. Check transom for exhaust water. If no water, shut down engine immediately, check to be sure through hull valve to engine cooling system is open, or if the sea water strainer is clogged. If indications are normal, warm up ten minutes.
- Test forward and reverse, and use of lock button for gear, at dock with docking lines in place. Shifting should be done below 850 RPM's AT ALL TIMES.
- Check for exhaust water from transom periodically. Engine is cooled by sea water via a heat exchange and the enclosed fresh water system. Water should exit from the stern at all times. Without water exhaust discharge, engine will burn up.
- The best cruising RPM is approximately 3200 RPM. Check sea water strainer for debris. Ensure thru-hull is open. If necessary, check under hull to see if intake is blocked.
- It is best to keep fuel tank 1/3 to 1/2 full (diesel #2) to avoid debris intake and air locks..

### ***Turning Engine Off***

- Place throttle lever in idle position (vertical).
- Let engine cool down.
- Pull fuel shut-off knob until engine stops.
- When audible alarm sounds, turn key off. DO NOT use key to stop engine. Do not stop engine with decompression lever except in extreme emergency. If decompression lever is used to stop engine, fuel will spray out and accumulate on top of pistons, creating danger of explo-

sion the next time engine is started.

- When under sail you may hear propeller "windmilling" underneath. After shut down put engine in reverse gear and it will stop. The folding prop will close as speed builds up!

### ***Fueling The 12 Gallon Tank***

- When preparing to take on fuel, the following safety precautions should be followed at all times: Properly secure the boat to the dock using bow, stern and spring lines.
- Shut off all equipment: Engine, Battery Switch, Radios, Lights, ETC.
- Remove fuel fill plug and clean threads of both plug and deck plate carefully so no dirt falls into filler opening. Place the fuel hose nozzle into the fill pipe.
- Fill slowly. **DO NOT OVERFILL**. Marine fuel expands with an increase in temperature. Thus, fill only to 95% capacity. If you cannot see the fuel pump, ask the attendant or a crew member to call out the total gallons.
- If fuel tank is overfilled, fuel will leak out the tank vent located on the transom. This spillage should be cleaned up immediately.
- After fueling, replace fill plate and wash up any spillage. Go below deck and check for fumes or leakage. Check bilge. **IF EITHER FUMES OR LIQUID FUEL ARE PRESENT, CORRECT THE SITUATION BEFORE PROCEEDING.** Open all hatches and ports to facilitate ventilation.
- Only after you are totally satisfied that no potentially dangerous condition exists, leave the fuel dock. Be considerate of fellow yachtsmen.
- In the event of a serious spillage, **STOP FUELING IMMEDIATELY.** Replace fill plate, notify attendant so he may warn others and wash down thoroughly all traces of fuel or source of fumes.

### ***Engine Maintenance***

Check the engine, batteries, and engine mounts once a month. Ensure the engine is fastened securely to the engine mount frames and look for any problems, such as fuel or oil spillage. If you need help, consult a professional marine mechanic or the engine manufacturer's licensed mechanics.

Run the engine frequently and at occasional high speeds, even if it is not in gear. One reason why sailboat engines may burn out within a few years is that they are run infrequently and lubricating oil is not thoroughly and evenly distributed on all moving parts. Be sure to check oil and coolant levels often. If you have any doubts about the purity of the fuel you are buying, use a strainer to filter out water and dirt.

If there is excessive vibration, in other than specific RPM points, loosen the coupling and insert a feeler guage all the way around to determine if the engine is properly aligned. If aligned and vibration persists, check prop for proper balance and uniform opening/closing and be sure that strut mounting is secure. If there is still a problem, contact your nearest Yanmar Service Representative.



## Construction

Your J/92 is manufactured by TILLOTSON-PEARSON, INC (TPI) in the Warren, Rhode Island. TPI is renowned throughout the industry as the pioneer and expert in quality fiberglass yacht construction. Their extensive staff of craftsmen, engineers, production specialists, and quality control inspectors ensure that your J/92 has been carefully built and thoroughly inspected.

The technology developed by TPI for constructing sailboats is the most advanced in the marine industry. Only the highest quality materials are utilized and they undergo constant testing in TPI laboratories to ensure they meet stringent construction and material specifications.

### Materials

- **Gelcoat:** All J/BOATS have an *neo pentyl glycol (NPG) isophthalic gelcoat*. NPG iso gelcoats yield a denser, more frequently branched molecular network which inhibits migration of water molecules. Because of their structure, these gelcoats offer superior resistance to moisture penetration, blistering, and fading. They're formulated to "yield" more than other gelcoats and this "flexibility" improves cracking resistance. Testing also indicates that NPG ISO GELCOATS produce the highest gloss and the best color retention under harsh exposure.
- **Glass fabrics:** High performance unidirectional, biaxial, and triaxial fibers are used throughout the hull and deck. Their use in the sandwich laminate offers superior strength and stiffness to conventional cloth and woven roving laminates. These unidirectional fibers are oriented in the laminate structures along lines of stress for greatly improved hull/deck strength and stiffness. These specially woven fabrics also require less resin for lamination than low cost fabric matrixes; producing stronger, lighter structures without excess weight.
- **Resins:** Resins are chemically formulated to TPI's exacting specifications to incorporate the best balance of properties based on extensive testing. For the hull, a special vinylester resin is used as a barrier coat behind the gelcoat to prevent moisture penetration. This reduces the likelihood of blistering within the laminate structure. It is also formulated, like the gelcoat, to reduce "cracking." The combination of this vinylester resin with NPG ISO gelcoats and properly specified glass fibers yields the most blister resistant hull in the industry. A high quality polyester is used to complete inside and deck laminates. Again, a superior chemi-

cal formulation is specified to assure resistance to "cracking" and "fatigue." Furthermore, its properties also assure high strength and stiffness for the life of the boat.

- **Sandwich Construction:** is used in all J/BOAT hulls and decks to produce lighter, stronger, and faster performing boats. A fiberglass sandwich functions similarly to an "I" beam. "I" beams are used for construction because they make the most efficient structural use of materials. The inner and outer skins of the sandwich function in much the same way as the horizontal top and bottom flanges of the "I" beam, and the core works similarly to the vertical support of the "I" beam. This means consistently lighter hulls and decks can be produced which are stiff and stronger than conventional solid glass hulls or decks. Many different cores are available for sandwich construction. TPI uses LLOYD'S OF LONDON approved CONTOURKORE end-grain balsa core manufactured by BALTEK CORPORATION. It has superior physical properties in performance over any other type, plus excellent "thermal stability" in warm climates or direct sunlight. Fatigue properties of the
- end-grain balsa core are far superior to foam cores, assuring greater longevity and higher resale value. Balsa also provides excellent impact and puncture resistance.

### ***Structural Components***

- **Bulkheads:** The major structural framing and bulkheads on the J/92 are glassed both to the hull and deck using non-woven biaxial glass fabric. This provides an incredibly strong bond between the hull, deck, and frames.
- **Hull/Deck Joints:** Extremely strong and watertight hull-to-deck joints are created chemically with aerospace elastomer adhesives, and 3M 5200 high strength urethane adhesive sealant. The hull and deck flanges have extra glass laminates and are designed to withstand high local area stresses.
- **Hardware:** To make your sailing as enjoyable and trouble-free as possible, equipment is chosen from the best suppliers in the business, such as HARKEN, BARIENT, SCHAEFFER, HALL SPARS & RIGGING, LEWMAR, ORIGO, and EDSON. All internal and external hardware fastenings are engineered or specified for longevity and durability. Backing plates and additional laminates are incorporated when necessary to ensure reliable fastening of high load hardware.

- **Thru-Hull Fittings:** are high quality bronze or glass-reinforced nylon fittings. The metal fittings are individually grounded to protect against galvanic corrosion. All are sealed with 5200 sealant to ensure watertightness. The hull core terminates several inches from the thru-hull fittings and is replaced with solid glass to prevent water contact with the core.
- **Keel Stub/Sump:** This critical hull area is designed using multi-layered solid glass laminates to accommodate the locally high loads induced by the keel. The keel is seated in epoxy and thru-bolted to the keel stub. A specially formulated epoxy which adheres well to lead is used to bed the keel. It's highly resistant to water permeation and cracking due to "thermal cycling". The keel is manufactured to factory specified templates and molds. It is cast of lead, reinforced with antimony (for strength) and high-strength monel stainless J-bolts. Keels made in this manner are far superior to other configurations.
- **Electrical System:** has a pre-assembled wiring harness and breaker protected central panel to ensure safety and organization. The wiring follows the industry accepted coloring codes of the A.B.Y.C.

## Plumbing Systems

The plumbing systems in your J/92 consist of a manual bilge pump, optional fresh water, and an optional Raritan head system. This section will describe their locations and how they operate.

### Optional Fresh Water

- **Water Tank:** is made of polypropylene, is collapsible, and is simple to install. Simply attach the hose from the foot pump to the tank. The sink drains overboard with a separate thru-hull/seacock.

### Thru-Hulls

All thru-hull fittings are made of brass or glass reinforced nylon. For safety reasons, we recommend that you tape a soft wooden plug adjacent to all thru-hull fittings in the event of a hose or valve failure. These fittings each have valve-handles. To reduce confusion, remember the long end of the handle indicates the direction of flow.

### Pump System

Pumps are easy to maintain and just as easily forgotten...they always happen to seize up when you need them most. Consequently, take care to keep their screens clean and rubber gaskets/bellows working correctly.

- **Manual Bilge Pump:** The manual Henderson bilge pump is installed in the cockpit and is operated by opening the plastic cover, inserting the pump handle (shipped loose) into the socket and vigorously pumping with up and down strokes.
- **Suggestion:** Carry a small plastic dinghy handpump to get the bilge completely dry and to pump cooler water into the sink without having to lift cooler to drain.

### Optional Head System

The J/92 can be equipped with an optional certified marine head which is capable of discharging effluents into a holding tank or overboard (in compliance with U.S.C.G. regulations). It is easy to operate and with correct usage and proper maintenance, will provide many years of use. If it is not taken care of you will most certainly have trouble.

Before operating the HEAD, ensure you have read its manual thoroughly and understand the proper procedures. Silly mistakes can cause severe

"head"-aches at the worst possible time! And a word to the wise:

**PLEASE TRAIN YOUR GUESTS ON HEAD OPERATION. NEVER, NEVER ASSUME THEY KNOW HOW TO USE IT!**

The head is a large pump which takes in seawater and flushes waste into the holding tank or overboard. Both the salt-water intake and the discharge thru-hulls are in the head area. Remember open/closed positions on these thru-hulls. It is good seamanship to close the intake and discharge seacock for the head when not in use.

- **Y-Valve:** is installed to give you the option to pump effluents overboard when the vessel is operated outside U.S. territorial waters. Some waters prohibit the existence of a "y" valve, so the device should be removed (or bolted to the holding tank position) for navigation in these areas. Conformance with sanitation laws is an owner responsibility.
- **Holding Tank:** is attached to the head system to satisfy federal regulations. It is for the retention of sewage.

When seawater and effluent are pumped through the head, they're pumped into the holding tank by the action of pumping the toilet handle. The waste discharge fitting on deck is provided so a shoreside pump-out station (ie. vacuum cleaner) can empty the tank. With the standard holding tank, it is not necessary to "pre-charge" the tank by adding water before using the system. Care should be taken not to overfill the holding tank as effluent can block the vent hose and may damage the tank... or worse, burst the hose. If the toilet is difficult to pump, check to see if the holding tank is overfilled. "When in doubt, pump it out!"

The holding tank must be pumped out before winter storage. Pumping a quart of anti-freeze through the head will prevent the seals and equipment from cracking. For your information, the following hoses are connected to the tank:

- Waste Discharge Hose from the head
- Pump-out Hose leading to the deck fitting
- Vent Hose to vent the tank overboard.

### ***The Final Word!***

**Be certain the pump on the toilet is pumped 15 to 20 strokes after waste is emptied from the toilet bowl to insure the waste is pumped fully through the hoses.**

## Electrical System

The following section describes the electrical system aboard your J/92, how it operates, where it leads, and how not to get yourself in trouble. Please read this section over more than once. For wiring code information please refer to the color code diagram.

### DC Electrical System

A 12 Volt D.C. electrical system is used throughout for lighting and operation of various accessories. The J/92 is standard with one 12 volt 60 amp deep cycle battery.

- **Electrical Panel:** is the "nerve center" of the system as it controls distribution and contains all circuit breakers and switches. The J/92 is equipped with a Vetus electrical panel with six breaker switches. The wiring harness runs from the back of this panel to all electrical components in the boat. The battery delivers power to the panel with its power replenished by the engine alternator each time the engine is run. For a 12 volt current to be delivered to a component, the following criteria must be met:
  - Charge in the battery
  - Battery switch switched to "Both" position.
  - Circuit breaker for the component switched "on" (cabin lights, running lights, etc.).
  - Local switch on the component itself switched "on".
- **Mast Wiring Terminal Strip:** is located on the upper portion of the bulkhead just forward of the main bulkhead. The mast wiring harness exits the mast just beneath the deck, and is wired directly into the D.C. system.
- **Battery Switch:** The battery switch turns access to the battery ON or OFF to the main panel and the engine. The standard J/92 comes configured with one battery so select "BOTH" on the switch. The optional second battery enables full use of the switch and allows one battery to be reserved exclusively for the engine and the ability to double up the cranking amps for cold starting in the "BOTH" position. The engine alternator will only charge the battery selected by the switch, so it is wise to have the switch set to "BOTH" should you have the additional battery.
- **Alternator:** is attached to the engine and will create a charging current only when the engine is running. The output is connected directly to the battery switch to distribute the current to the batteries.

- **Accessories:** such as navigation instruments, stereos, radars, lorans can be added to the electrical panel and the 12 volt DC system. Extreme care and forethought should be taken in their installation as these are, in general, sensitive instruments and require some measure of protection. Such work should be performed by a marine electrician. Be sure all sensitive accessories are not only grounded properly but that "fast blow" fuses are run off the panel for extra insurance against damage to their components.

## **Safety**

### **Lightning Protection**

The J/92 is completely grounded in accordance with industry practice. The mast, shroud chainplates, stemhead fitting, backstay fitting, engine, and electrical system are grounded to the keel. In spite of this grounding, there can be no assurance that personnel or the boat will not suffer injury if the boat is hit by lightning. The following are suggestions only and in no way guarantee safety in the event of a lightning strike.

- If possible, remain inside a closed boat during a lightning storm. Do not contact any metallic objects inside or outside the boat.
- Avoid contact with any items connected to the lightning conductive system (mast, shrouds, etc) and especially in a manner to act as a bridge between them (mast to shroud, etc).
- Avoid swimming during a lightning storm.

If the boat is mildly struck by lightning, check all compasses and electrical gear to determine that no damage or change in calibration has taken place.

### **Optional Galley Stove**

A non-pressurized alcohol stove is part of the Galley Group Option and is in "ready-to-use" condition. Engineered with high quality stainless steel, it will last for years with proper care. Be sure to read the stove manufacturer's instructions on use and the filling of its cannisters. You will find it easy to use as long as you follow proper precautions.

To begin stove operation, you must first fill the cannister with alcohol fuel. Inside the cannister is a "wick-like" material which absorbs alcohol which once filled will last four hours or more.

### **Safety Equipment**

You can never be prepared enough for emergencies which may arise at sea. Current ORC guidelines may help you in your preparation, as will up to date USCG safety requirements. The ORC Offshore Regulations booklet is available by calling US Sailing at (401) 849-5200.

**IT IS THE OWNER'S RESPONSIBILITY TO COMPLY WITH ALL FEDERAL AND STATE REGULATIONS WITH RESPECT TO SAFETY EQUIPMENT; OPERATION OF THEIR VESSEL; AND SAFETY OF ALL PASSENGERS**



## *Taking Care of Your J/92*

Even though modern construction has helped reduce upkeep, regular attention should be given to the maintenance of your boat. This includes the fiberglass exterior surfaces, interior surfaces, and the mechanical and electrical systems.

A well maintained boat will not only bring you years of enjoyment, but most importantly, will bring you greater personal pride and joy.

### *Fiberglass/Gelcoat*

Apply a marine wax at least twice annually to preserve the "factory fresh" appearance for many years. Be sure fiberglass surfaces are clean and free of salt before waxing. Abrasive cleansers should never be used for general cleaning as they can severely mar the shiny gelcoat finish. On areas difficult to wax, like nonskid, a coating such as "Armor All" will restore its original luster.

### *Bottom Paint*

Keeping your bottom clean is of paramount importance as it not only keeps off bottom growth, but maintains passage-making speed. Even though you have applied anti-fouling paint, take a swim once a month or so (or hire a diver) and scrub the bottom and propeller with a scrub brush or abrasive sponge pad.

### *Zincs*

The shaft zinc should be inspected for electrolysis. If it is severely pitted, replace it. Remember, it is a sacrificial anode to protect the propeller and shaft from electrolysis. It can deteriorate quickly, so inspect it frequently.

### *Deck Hardware/Running Rigging*

Wash deck hardware frequently with fresh water to remove accumulated salt and grime. Wash down the genoa sheets, spinnaker sheets, and other lines in fresh water. Check for chafe and turn sheets end-for-end once a year to more equally distribute wear.

Check the blocks and also wash them with fresh water. Most ball-bearing blocks need only hot water to cleanse them, then spray with a dry teflon lubricant. On conventional sheave/pin blocks, wash off, dis-assemble, clean, rub a light waterproof lubricant on the center pin, then reassemble.

Furthermore, check and lubricate the sheaves and blocks on the mast. Also, ensure the turnbuckles are clean and well lubricated. Without proper care they can "freeze up" and not turn. Apply an anhydrous lanolin (from a local pharmacy) or a dry lubricant.

In general, it is handy to keep a spray can of a light lubricant, such as TRI-FLON, in your tool kit for frequent squirts of blocks, shackles, mainsheet travelers, and other moving fittings.

### **Winches**

Read the manufacturer's manuals on winch repair and maintenance. Winches are fine pieces of machinery which take little effort to maintain. However, all too frequently, they suffer neglect because no one can see how much they wear down or get dirty.

**Clean and lubricate them!** It takes little time to disassemble and put back together. Note that the gears and bearings are lubricated with special winch grease and pawls. Pawl springs need only a light oil. Keep spare pawls and springs in a kit for replacement.

### **Deck Hatch**

Hatches need lubrication of their hinges with a silicone grease once a year. Also check the seals to see they are not unduly cracked, or are losing their ability to seal correctly. To increase traction on foredeck hatch covers, apply a black non-skid tape fore and aft.

### **Cabin Ports**

The ports are made of "Lexan" and are highly impact resistant. However, avoid highly abrasive cleansers which can scratch them. Instead, use mild soap and water to clean ports. Avoid chemical solvents, notably acetone, which can "melt" the ports...ie. smear its smooth finish.

**DO NOT PERMIT ACETONE OR TEAK CLEANER TO GET ON PORTS OR HATCHES AS THEY WILL DISINTEGRATE AND "BLUR."**

### **Stainless/Chrome**

Hardware above and below decks, stanchions, bow/stern pulpits, and galley sink can be treated with "Neverdull" or other light abrasive cleansers, even toothpaste works well. After applying cleanser, polish to a gleam with a clean cotton rag.

**Fiberglass/Gelcoat/Formica**

Interior gelcoat surfaces should be cleaned periodically with non-abrasive cleansers and smooth areas should be waxed. Use a coating like "Armor All" to maintain non-skid areas. Formica should be cleansed with non-abrasive cleaners.

**Wood**

On unfinished teak, scrub off the grey weathered look and any dirt with water and a scurb brush and apply one of the many available teak cleaners. It is best to remove the companionway ladder to perform this operation.

On oiled surfaces, additional coats can be easily applied with a foam brush or sponge. For an even finish the oil should be rubbed with a rag shortly after application. If desired, an oiled finish can be varnished.

On varnished surfaces, consult your dealer or a professional as to the best procedures. It takes great care, time, and patience to do the job correctly.

**Bilge**

The bilge is painted with air-dry gelcoat to prevent water permeation and the accumulation of mildew. They should be washed regularly with strong solvents to keep them smelling clean and to prevent the fouling of bilge pumps.

## **Annual Maintenance Checklist**

### **Running Rigging**

- Check running rigging lines for wear at splice, turning blocks, etc.
- Inspect blocks and shackles for wear. Clean and lubricate or replace as necessary.
- Service winches, check for free spinning operation and ratchet stop action (pawls).

### **Deck Hardware**

- Check lifeline integrity, stanchion, and rail attachment to deck.
- Check all cleats for signs of fatigue. Tighten fasteners or replace as required.

### **Steering System**

- Check rudder for impact damage or cracks.

### **Thru Hull & Seacocks**

- Check seacock integrity, operation, and watertightness.
- Check hose attachment and clamps.
- Disconnect power source when making repairs or adjustments to electrical systems.
- Check battery charge, terminal connections.
- Check electrical panel, breakers, and switches; tightness of wire connections.
- Check running light operation.
- Check ground wire attachment to keel, mast step, thru hulls, and engine.

### **Engine & System**

- Read engine owner's manual maintenance guide.
- Check engine fluid levels and systems for leaks- shut-off controls.
- Check throttle action- start and stop controls, cable clamps, and locknut.
- Check shifter cable clamps and locknuts.
- Check exhaust system soundness, hose clamps.
- Chk coolant system, hose clamps, intake, and filters.
- Check transmission shift lever, control cables, clamps, locknut; fluid level & alignment.
- Check alignment of shaft, coupling, and prop attachment- key, nuts, and cotter pin.
- Check shaft log tube integrity, packing, hoses, and clamps.
- Check strut bolt attachment, cutlass bearing, and shaft bolts.
- Check all engine wire connections.

### **Fuel System**

- Check fuel tank, hoses, and clamps.
- Check fuel fill hose and connections.
- Check fuel filter.

### **Keel**

- Check keel bolt nuts for tightness. Do not arbitrarily tighten bolts.

### **Plumbing**

- Check bilge pump function, electrical wiring, hose clamps, and strainer.
- Check optional head and holding tank hoses, clamps, connections, and valves.

### **Water System**

- Check optional water tank hoses, clamps, valves, connections.

## *Storage Tips*

Many of the maintenance problems surrounding boats can be pin pointed during the end-of-season haul-out. This is the time when a careful inspection will reveal the ravages of a long summer. If you live in colder climates, it is also the time to prepare the boat for what might be an even more brutal winter ashore.

First, clean your boat as thoroughly as possible. Get the yard to use a high-powered hose to clean off most of the growth before it dries onto the bottom paint. You may have to use a scrub brush and putty knife for heavy growth, like barnacles, and for areas around the propeller and shaft and underneath the keel.

### *Rigging*

Sails and lines should be removed at the end of each season, rinsed thoroughly in fresh water and stored in a warm, dry place. This will prolong their useful life as mildew can affect even today's synthetic materials.

### *Engine*

Check the engine owner's manual for maintenance guidance during the season and for the specific haul out procedures necessary to winterize the engine.

Fill fuel tank to minimize condensation and add an anti-bacterial agent.

In the exhaust system, water can accumulate in the bottom of the water lift "pot." The pot should be drained using the drain plug, or anti-freeze added to the pot so residual water doesn't freeze.

### *Batteries*

It is preferable to remove the batteries and store in a heated area, recharging periodically to maintain full charge status. If you are in warmer climates, it is possible to leave the batteries aboard. Simply check them once a month to ensure they remain charged.

### *Optional Head*

Read the Raritan Owner's Manual for specific maintenance procedures. Generally, you will want to drain all water and replace with an anti-freeze agent. To maintain the lubrication of its internal seals, flush through a light

oil. Again, follow the manufacturer's recommendations for winter maintenance.

### ***Bilge***

Pump bilge completely dry and use a strong cleaning solvent to eliminate all odors and bacteria.

### ***Electronics***

Remove as many of them as you can as they are sensitive to condensation caused by the extreme rise and fall of temperature and humidity.

### ***Interior & Ventilation***

Clean the cabin thoroughly with a damp rag, for any salt left behind will breed mildew. Clean out the head and sinks. Any paper items- books, toilet paper, notepads- should be taken off so they don't mildew and rot.

If a winter cover is used, it is good to leave the hatches cracked open to enhance air circulation. This helps prevent mildew. Also, remove boat cushions and store indoors.

### ***Exterior***

If storing outdoors, a winter cover is recommended. It can be a simple piece of canvas forming a tent over the entire boat or heat-shrunk plastic. In either case, a tent-like support structure is necessary to prevent pools of water and to assure proper air circulation. Ensure the entire deck is covered to prevent uneven discoloration of the gelcoat.

### ***Cradle***

It is critical the boat is adequately supported. The keel must rest solidly on the main beam and the vertical risers merely stabilize the boat. If it appears the boat is supported too much by the vertical risers, correct the problem as it could structurally damage the hull.

### ***Mast Storage***

Store masts on well padded supports and do not place any weights on them. Avoid tape on its surface as it leaves a difficult to remove residue. Wash all surfaces, sheaves, standing rigging with fresh water. If possible, remove all standing rigging, halyards and mast instruments and store indoors.