Box 8, Newport RI 02840
Tel 401-862-4367 Fax 401-6191939

August 2014

Dear 36z Owner:

Congratulations on becoming Captain and Owner of the world's best built and most fuel efficient yacht of its size. The enclosed copy of the 36z Owner's Manual should further contribute to your enjoyment and proficiency afloat.

This manual was created jointly with Zurn Yacht Design, Boston BoatWorks and MJM Yachts. Our experience with the 172 boats (40z's, 34z's and 29z's included) built to date has been incorporated to make this manual as useful and relevant as possible. Keep in mind there maybe some variances such as location of the breakers on the panel. And, from time-to-time we will change specifications to keep pace with changes made to improve the boat.

When addressing a problem with a specific piece of equipment, this 36z Owner's Manual is to be regarded only as a preliminary source of information. The equipment manufacturer's own manual with trouble-shooting procedures, etc. is the primary source and authority.

An ISO CE Mark "Owner's Manual" accompanies, and forms part of, this MJM produced 36z Owner Manual. This booklet has many universal handling and operating tips worth reviewing.

This Owner's Manual is designed to be a living document, not only for builder updates but for your own use and record. Each boat is provided with a copy of the current Manual organized in a STAPLES "Mini-Ring" type binder that allows you to add pages as needed.

One of the great advantages of purchasing a series-built or semi-custom design is that owners have the benefit of learning from one another. So, with your continued input and comments we can keep adding useful information and helpful hints to this manual.

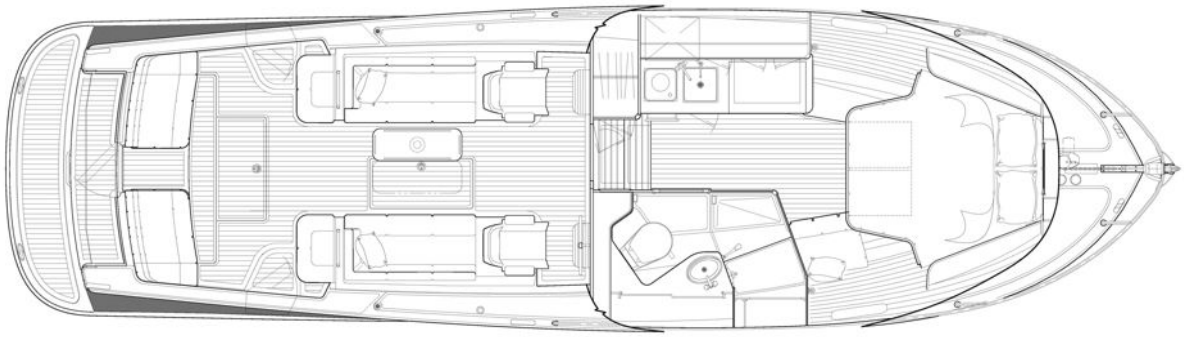
Part of the ISO CE Mark Certification Program is confirmation by the owner that the manual has been received. Please sign the extra page No. 3 included in the Manual as a receipt and return it in the stamped envelope provided.

Best wishes for fair winds and sunny skies. On behalf of the builder and designer, we are most appreciative, and I am particularly honored, that you have chosen the 36z.

Robert L. Johnstone
CEO & Founder

Note: This manual is published in accordance with ISO standard 10240:1995E Small Craft - Owner's Manual

36z



Length Overall	39.3’	12.0m
Length on Deck	36.0’	11.0m
Length Waterline	33.3’	10.2m
Beam	11.0’	3.4m
Hull Draft/Max Draft with Drives Down	2.5’	.8m
Displacement (1/2 load)	13,100 lbs	5.9 mt
Fuel Tanks (combined)	200 gals	756 ltrs
Fresh Water Tank	100 gals	378 ltrs
Air Heiight (w/ radar)	9.0’	2.8m

BOAT INFORMATION

MODEL	36z DE Down East
HIN NUMBER	**EOU36Z29H415**
DESIGN PATENT	US D475 338S (3 June 2003)
DELIVERY DATE	June 2014
REGISTRATION NO.	_____
ENGINES	Yanmar
MODEL	Twin 6BY3-260Z
SERIAL NOs.	10179061-004914 & 1271051-005014
MACK BORING SERVICE	508-946-9200
YANMAR MJM CONTACT	Rick Mahoney 508-995-1028
DRIVE UNITS	Yanmar
MODEL	ZT370-E 1.78:1
PROPELLORS ZT350/ZT370s	**370-196350-09720 22RH** **370-196350-09420 22LH**
MJM YACHTS LLC	Robert L. Johnstone
PHONE	401-862-4367 Mobile
EMAIL	mjmyachts@verizon.net
ADDRESS	Box 8, Newport RI 02840
ZURN YACHT DESIGN	Doug Zurn
PHONE	781-639-0678
ADDRESS	89 Front St., Marblehead MA 01945
BOSTON BOATWORKS LLC	Scott Smith & Mark Lindsay
PHONES	207-252-7190 617-561-9111
EMAIL	scotts@bostonboatworks.com
ADDRESS	256 Marginal St., E. Boston MA 02128
BBW SERVICE CENTRAL	Erik Rochelle
PHONE	207-400-7182
EMAIL	erikr@bostonboatworks.com
DEALER	East Coast Yacht Sales
BROKER	Ben Knowles 207-939-0154

AUTHORITY:	International Marine Certification Institute
ADDRESS:	Rue Abbe Cuypers 3 B-1040 Bruxelles, Belgique
PHONE:	+32-2-741-2418
WEBSITE:	www.imci.org
CLASSIFICATION:	ISO CE Mark Design *Category B Offshore* (EC Directive 94/25/EC) for craft designed for offshore voyages (1) where the vessel is correctly handled in the sense of good seamanship and operated at a speed appropriate to the prevailing sea state and (2) Designed for waves of up to 4m significant height and a wind of Beaufort force 8 or less. Such conditions may be encountered on offshore voyages of sufficient length or on coasts where shelter may not always be immediately available. Such conditions may also be experienced on inland seas of sufficient size for the wave height to be generated.
CAPACITY	
PERSONS:	Maximum 12 Persons

RECEIPT BY OWNER In compliance with ISO 10240:1995(E) the owner hereby certifies receipt of this manual and has read and agrees to the terms of the Builder's Limited Warranty included herein.

Signature

Date

Printed Name

Hull #

Boat Name

Address

City, State, Zip

Tel.

Email

NOTE: PLEASE SIGN ONE OF THE TWO COPIES OF THIS PAGE AND RETURN IT IN THE ATTACHED STAMPED ENVELOPE TO: MJM YACHTS at 39 Washington St. Newport RI 02840.

⚠DANGER Denotes an extreme intrinsic hazard exits which would result in high probability of death or irreparable injury if proper precautions are not taken.

⚠WARNING Denotes a hazard exists which can result in injury or death if proper precautions are not taken.

⚠CAUTION Denotes a reminder of safety practices or directs attention to unsafe practices which could result in personal injury or damage to the craft or components.

TABLE OF CONTENTS

1.0 GENERAL

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

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

PLEASE KEEP THIS MANUAL IN A SECURE PLACE ON THE BOAT, AND HAND IT OVER TO THE NEW OWNER IF YOU EVER SELL THE CRAFT.

This Owner's Manual is not intended to be a course in boating safety, boat handling, navigation or general boating skills. It is the responsibility of the user to independently gain these skills. Instead, this manual will serve as a reference for matters specific to the 36z. Standard options are included in the manual with which your particular yacht may or may not be fitted. Custom options may be addressed in an addendum.

1.1 QUICK START GUIDE (See CHAPTER 16)

A separate "Quick Start Guide" is included that briefly reviews the key items to check before departure. Please review the topics in this manual before relying on the checklist – it is simply an "at-a-glance" sheet to insure that you don't overlook anything important.

1.2 OPERATING PROCEDURES – ENGINE INSPECTION

To access the propulsion system, the cockpit engine hatch must be raised. The procedure is as follows:

⚠ CAUTION Make sure personnel and equipment are clear of any moving parts before operating.

- Turn ON house battery switch (located in top right of DC electrical panel)
- Turn ON DC main disconnect breaker & engine hatch breaker at the DC panel
- Activate the lift with the small black rubber toggle switch located in the starboard cockpit seat locker.

1.3 NAVIGATION

The optional builder installed navigation system includes autopilot w/compass, depth-sounder, chart-plotter, and radar. Modern marine electronics are a subject unto themselves and you should refer to the manuals that came with the equipment you purchased. However, here are a few points to consider:

- If you are unfamiliar with navigation, educate yourself before using the boat. *Electronic equipment is NOT a substitute for dead-reckoning navigation skills.*
- It is not recommended to rely solely on electronic charts- bring paper chart back-ups.
- It is prudent to check (or have checked) your compass alignment once the boat is in your primary area of operation. See the Ritchie instructions for compensation.
- Check that all equipment is functioning, even if you intend not to use it.
- Radar and its overlay projection on the plotter should be properly aligned (Double-check when underway) See manual to adjust, tune and operate.

Compass Heading & Calibration

There are 3 heading references for navigation on the 36z: (1) The compass on the dash, (2) Autopilot digital compass, and (3) GPS COG (Course Over Ground). All of these headings should be within a degree or so of each other when underway. If not, it is recommended that differences be recorded on a deviation card after following the calibration method outlined below or employing the services of a compass adjuster. Use COG as the primary reference at a time when you are not influenced by wind/wave/tidal set. The digital compass sensor is located on a stringer outboard to port under the cabin sole. It is accessible by opening the cabin sole hatch and looking aft and to port.

⚠CAUTION Avoid storing steel or iron items such as tools next to it.

Ritchie Ship's Compass Calibration Method

1) With the compass in its intended position, but not finally secured, select a course on your chart using two identifiable marks, buoys or landmarks that are within ten degrees (10°) of the north/south line. Try to select this course so that you can maneuver your boat "down range" of the marks selected.
2) From a position down range of the North/South marks, and keeping the marks lined up, run the boat visually along the northerly course selected. Turn the port/starboard compensator until the compass reads correctly.
3) Reversing direction, run the boat southerly, again keeping the marks lined up. If the compass is not correct at this time, there is an alignment error. To correct, rotate the compass itself to remove one half of this error. Repeat Steps 1 and 2 and then recheck this Step 3.
4) Simply repeat the procedures of Steps 1, 2 and 3, except this time, using an east/west course and the fore/aft compensator, although at this time any alignment error should have been eliminated.
5) Upon completing the procedure, secure the compass in its final position.

Boat Speed Rather than a paddle-wheel or sonic device, the Raymarine C120 plotter is used to generate SOG (Speed Over Ground) that is displayed by the chart-plotter and may also be shown in larger digits on the Autopilot display. Eventually, you will learn to approximate boat speed through the water by relating it to RPM on the tachometer.

1.4 TOWING Refer to the included ISO Owner's Manual or to a book on seamanship and boat handling for
towing guidelines.

1.5 HAULING OUT A facility that is unfamiliar with the 36z may require information before hauling the boat with a Travel-Lift or crane & straps. Refer to the illustration included at the back of this manual. The keel (centerline of the boat) and chines (edges) should be used to position weight bearing supports. You will note that the fore and aft lift points are located approximately at either end of the pilot house... e.g. abeam of the windshield and the aft end of the hard top.

⚠CAUTION Point loading flat areas other than centerline and chine or setting the weight of the hull on supports of insufficient area may result in damage to the hull.

CHAPTER 2 SAFETY EQUIPMENT

2.0 GENERAL

Spend time reviewing where your safety equipment is and how it functions BEFORE you need it. Remember, the best way to protect yourself and others from accidents is to eliminate potential causes of accidents before they occur. Good seamanship and common sense go a long way in this endeavor. [See Figure 14.1]

Here is a safety checklist derived in part from the USCG Vessel Check List. State Regulations may vary:

PFD's
A wearable USCG approved personal flotation device (life-jacket) must be provided for each person aboard. On the 36z, these can be types I, II, III or V. Also, one type IV throwable PFD must be immediately available for use. Children under 13 years of age are required to wear a USCG life jacket that fits when underway unless they are in an enclosed cabin or belowdecks.

Visual Distress Signals (VDS)
You must carry VDS's aboard. If operating between sunset and sunrise, they must be suitable for night use and be within the age dates marked on the side of the flares. A minimum of 3 day/night use combination pyrotechnic flares are required. For a list of USCG approved devices, see the USCG recreational checklist.

Fire Extinguisher
In addition to the automatic fire suppression system fitted in the engine space, you are required to carry at least one type B-1 extinguisher aboard. This should be checked regularly.

EPIRB
If operating offshore, an EPIRB (electronic position indicating radio beacon) is recommended.

Ships Papers & Registration
You should carry the vessel's registration papers and number plate.

Pollution Regulation Plaques
5"x8" Oil Discharge Plaque and a 4"x9" Waste Discharge Placard should be fixed were visible.

Charts & Light Lists
Charts, light lists and a USCG required copy of the Inland "Rules of the Road" Navigation Rules

Horn or Whistle
Recommended to signal intentions or signal position. For instance, when in a narrow channel or the Intracoastal Waterway: To signal which side of another boat you will pass on, blow **1 blast** if you are passing to their starboard side and **2 blasts** if passing on their port side.

Life Raft
If you plan to be coastal cruising out of sight of land, it is prudent to carry a Coastal Life Raft which come in compact sizes that can be stored in one of the aft cockpit lockers.

Heaving Line
These floating lines are available and handy to have ready in case of emergency or to simply trail behind the boat when swimming, .with the end attached to one of the stern cleats.

First Aid Kit
Not a place to scrimp. It is advisable to carry a good, comprehensive, and well-organized (by injury) marine first-aid kit with manual. We recommend that it be stored in the head and that everyone onboard be informed of its location. (Remember, you may be the one in need of it!)

CHAPTER 2 SAFETY EQUIPMENT

2.1 FUEL SHUT-OFF VALVES

The fuel shut-off valves are located on top of the fuel tanks and are accessible through pilothouse settee lockers. Make sure you know how to shut off the fuel valve. (When the handle is perpendicular to the hose, the valve is closed.) In case of a fuel fire, STOP any machinery and close the valve to cut the supply of fuel to the fire/engine. If you should ever see fuel in the bilges, turn off the valve, clean the bilges, and find the source of the leak immediately. Also note that there are fuel shut off valves, normally left closed to designate one tank for each engine, on the lower inboard aft corner of the fuel tanks, which connect the two tanks together at the bottom for self leveling. There is only one fuel level sensor and that is on the starboard tank.

2.2 FIRE

Fire aboard a boat is a serious matter, and fire safety begins with fire prevention. You can reduce the risk of fire by following common sense guidelines:

- Do not allow debris or oily rags to collect in bilges or machinery spaces.
- Understand your electrical system, allow only qualified marine electricians to work on it, and shut down as many circuits as practical when leaving the boat. Do not leave appliances running while unattended.
- Have your fire suppression equipment inspected regularly and learn how to use it.

An automatic fire suppression system is installed on every boat in the engine and generator space. It is heat activated. Read the information that comes with the equipment. The system can also be manually activated at the helm station. [*See Helm Console Section*] Because a diesel engine would evacuate the suppression agent from the affected space, the system will shut down the engine (and generator) when it discharges. If manually activating the system, the engine should be shut down first. After the situation has stabilized, the shut-down feature can be over-ridden to restart the engine. A loud warning alarm will sound when the system has been activated.

The hand-held fire extinguisher is rated to fight type A, B & C fires.

To extinguish a fire, the most effective method is to cut the source of fuel to the fire. In the case of a diesel fuel fire, the fuel tank valves should be closed. In the case of an electrical fire, the main battery switches or main disconnect breakers should be turned off. Fire needs oxygen to burn, so if a fire should occur in an enclosed area, the best course of action may be to exit the area and seal it from the outside by closing all means of air inta

INTRO - THE TOP 9 CAUSES OF DIESEL ENGINE FAILURE (*Motorboating Magazine* - 2006).

1. NO FUEL: This is probably less of a problem on a fuel-efficient MJM than on other boats, but don't think that it will never run out! Lack of owner attention to fuel consumption is the primary culprit for engine failure. A boat's fuel tank can be nearly dry as a bone – even when the guage claims there's a 1/8th of a tank left. Remember that at cruising speed, the gauge shows the tanks reading more than when the boat is at rest. A good rule of thumb is to never pass a fuel dock if your gauge is showing under 1/3 full.

1b. AIR IN FUEL LINE: If air gets drawn into the fuel lines because of either a small leak in a fuel line connection or the Racor Filter lid gasket/filter basket tabs have interfered with the lid being secured fully, you may find the engine will turn over, but won't start. Check the Racor to insure the fuel level is within an inch of the top. Check the Yanmar owner manual for the location of a manual primer pump.

2. DIRTY FUEL: Engine problems are caused by dirt and water in the fuel. Debris, stirred up from the bottom of the tank by wave action, is drawn into the fuel line and clogs the fuel filter element. Starved for fuel, the engine begins to run poorly, and then not at all. Moisture condenses out of the highly humid air on the inside walls of a fuel tank, then runs down into the fuel. Water can also be introduced at the fuel dock from a contaminated fuel supply. Fuel floats on top of water and the fuel pick ups are near the bottom of the tank. A fuel/water separator protects against this by handily extracting the water. Check the bowl daily and drain off the accumulated water. For severe contamination, use a fuel drying additive.

3. FUEL BUGS: Diesel engines suffer from microbial bugs growing in the fuel. If left unchecked, these critters clog filters. If you leave the same diesel fuel in the tank for any length of time, a fuel conditioner similar to that supplied with your boat by the builder will kill the bugs and break up any hydrocarbon residue into particles that will burn completely in the combustion process.

4. TIRED PUMP: As boats age, a worn-out circulating water pump is another engine killer. Impeller blades are commonly made of nitrile that stiffens over time and can break off entirely, reducing coolant flow. Periodic engine maintenance procedures can prevent this problem. A spare is provided in the Yanmar Spares Kit.

5. HARD HOSE: As water intake hoses age, they lose their resiliency and collapse under suction, causing a restriction in the flow of engine coolant. This results in over-heating. Prevention is easy: Visually inspect cooling hoses and squeeze them to be sure they retain shape and set.

6. CLOGGED INTAKE: Floating debris in the water is another culprit. Things like discarded plastic baggies, weeds, etc. can plug up the raw-water intake. You can avoid this problem by frequentl inspecting the strainer basket. When removing debris, be sure to properly replace the seal, otherwise the pump will either lose suction or spray salt water onto the air intake, depending on the strainer location. Smearing the seal with Vaseline or other marine-grade grease helps and firmly securing the top is important.

7. HARD KNOCKS: Collision with an underwater obstacle that damages the propulsion system. Often you can still operate the boat at low RPM to return to port, being careful to avoid excessive vibration that might otherwise compound the damage by damaging the transmission. The problem may be corrected in a day or so without hauling by an experienced diver who has access to a prop shop where the blades can be repaired and the prop re-balanced, then re-installed.

8. BAD BATTERY: Marine starting batteries die from old age and neglect. Keep the terminals and posts clean from that green corrosion that builds up, restricting the flow of current – preventing the cless from fully charging. Periodically have your batteries tested to determine their condition and expected longevity. The 36z is equipped with a "parallel" switch which can be turned on to employ the 400 ampere-hour house bank in starting the engine.

9. SAGGING BELT: As V-belts wear, they stretch and begin to slip. Consequently, alternators and water pumps don't spin to their full speed. Batteries may not fully charge and coolant circulates sluggishly. The solution is to check belt tension regularly and tighten belts when necessary. Drive belts

What Diesel Mechanics Wish Every Boat Owner Knew

To run well, a diesel engine requires only clean fuel, clean lubricating oil, coolant, and lots of air. Below are ten important maintenance issues that diesel mechanics wish their customers knew:

1. Don't baby the engine. Diesels don't like to idle in neutral, or even in gear at low speeds; they do like to work hard under load. What's cruising RPM? Generally, 75-80% of the maximum RPM. Excessive idling leads to gradual build-up of detrimental varnish on the cylinders, and deposits soot and carbon on the engine's valves and in the exhaust system, particularly at the manifold injection elbow where raw cooling water exiting the engine mates with the exhaust gases. Run it hard. However...after running at cruising RPM for several hours, a brief cool-down at idle speed, with no load, is beneficial. A few minutes is enough.

2. Give your engine clean fuel. Fuel is "contaminated" when it contains water, sediment, other solids, or biological organisms, some of which thrive in diesel fuel. To minimize contamination, don't store your boat for the winter or let it sit around for weeks at a time with fuel tanks only partly full. A full tank minimizes condensation of water vapor on the tank's interior and the growth of micro-organisms. Fuel filters trap sediment, sludge, water and organic material and should be changed at periodic intervals.

3. Be conservative in your estimate of fuel consumption. When under way, do not delay re-fueling to the point where you have expended nearly all the fuel in the tank. The last 20% should be held in reserve. To suck up the last few gallons is to chance sucking up water (tank condensate), sludge, and other contaminants - perhaps even air - into your fuel lines.

4. Know how to vent ("bleed") the air out of your fuel system. Air locks in diesel fuel systems are a fact of life. The typical diesel fuel system operates with a lift pump (a vacuum pump) that lifts or sucks fuel out of the tank, draws it through the pump, then sends it to the filters and injectors, where the injector pump sends fuel to the individual cylinders for combustion. Whenever you open the fuel line between the tank and the engine (for example, to change a filter element) air enters the line. Air may also be sucked into the fuel line through cracked seals and gaskets, poorly fitted connectors and clamps, via the pick-up tube in the fuel tank, etc. This air must be removed, because even a tiny air bubble in the fuel line will block the flow of fuel, and without fuel, the engine will not start; if running, air in the fuel line will cause it to stop.

To clear your fuel line of air, you must vent or "bleed" it out. Consult your engine's manual to identify the bleeding nuts; paint them with white nail polish so you can easily find them again, in the dark, at sea. Given decent access to the engine, bleeding or venting air is a simple procedure that everyone should be able to perform. Using the engine manual, teach yourself how to do this.

5. Be diligent about checking your lube oil and oil filter. Diesel engines are rough on oil and usually require more frequent oil and oil filter changes than comparable gasoline engines. Follow the engine manual's recommendation for service intervals. Carry spares on board. Between oil changes, use the dipstick to check the oil level. Top it off as necessary from your on-board lube oil inventory, but do not exceed the "full" mark on the dipstick; more is NOT better.

6. Minimize risk of fire. Diesel engines vibrate a lot, and the typical marine diesel has a lot of wiring and hoses attached to it, crossing it, behind it and near it. Over time, as the engine vibrates, the fasteners may loosen and fail, the wiring and hoses droop or fall. One hates to see a loose hose or wire (such as the primary wiring harness, or the power supply to your fuel pump, or a hose to the hydraulic pump) cross and contact a hot exhaust manifold, for example; this could be a prescription for fire due to abrasion of insulation around wire, or chafing through the wall of a hose. From time to time, inspect your engine compartment for these potential risks. Add chafing protection, replace worn insulation, and supplement the fasteners if necessary. Consider re-routing wires and hoses where appropriate.

7. Know how to trouble-shoot the cooling system. Since overheating is a common problem familiarize yourself with engine's cooling systems: the raw water (sea-water) system, as well as the fresh water (internal circulating coolant) system. **The most likely causes of overheating are:**

* Raw-water valve closed.

* Raw-water through-hull blocked externally. Check for a plastic bag, or a clump of sea grass or other material, covering or plugging the inlet.

* Raw-water filter / strainer clogged with sediment, sand, goo, grass, or living critters such as barnacles, jelly fish, and algae.

* Defective or destroyed impeller in raw water pump. The impeller should be replaced every year or two, as the rubber vanes become brittle with age and may snap off.

* Heat exchanger dirty or clogged up with sediment and other deposits. The entire raw water cooling system should be flushed periodically to remove salt and sediment deposits.

* Exhaust elbow restricted by carbon deposits or other solids, reducing discharge of cooling water and exhaust gases. Routinely run the boat at high RPM for several minutes to clear.

* Thermostat stuck closed; likely will require removal or replacement. (Note: Some diesel engines operate OK - temporarily - without a thermostat.) Coolant temperature of 170-180o F is normal.

* Low level of coolant (50-50 mix of antifreeze-water). Coolant levels should be checked routinely at the expansion tank, adding more as needed.

* Broken or slipping V-belt, which drives the water pumps and the alternator. Even a new belt deserves re-tensioning and inspection. Suspect slippage or wear if you see dark "belt dust" settling at the engine's base. Belt tension is OK if pressure deflects the belt by about 1/2 inch.

* Overloading of the engine: Rope wrapped around propeller shaft, dirty bottom, fouled propeller, or air leaks in the raw water cooling system. Cracked or collapsed hose? Hose clamps tight?

8. Know your fuel additives. When crude oil is refined as diesel fuel, it acquires additives to reduce smoke, prevent pre-ignition ("knocking"), improve its cetane rating, etc. Few additives further enhance fuel. Some diesel mechanics actually recommend: Biocides, such as Killem and Biobor, lubricants, such as Lubricity and Stanadyne Performance Formula, and fuel stabilizers, such as Sta-Bil and Pri-D. BUT 1) Follow the instructions on the container. 2) Routinely, a little bit is better than a lot.and 3) Be guided by your mechanic's advice.

9. Monitor for exhaust leaks. From time to time, when the engine is operating, inspect the complete exhaust system from the engine to the through-hull and overboard discharge. Look for leaks, both exhaust (air) and water. Major leaks will be obvious, but early signs of leaks due to hairline cracks in hoses and water pot muffler systems may not be. Diesel exhaust contains acidic sulfur and other gasses that may poison the air within the boat. To detect air leaks, look for tell-tale traces of black soot. Water leaks should also be immediately repaired. Leaks never resolve spontaneously; they must be addressed as quickly as possible.

10. Properly dispose of hazardous waste. Be sure to properly dispose of used coolant, used engine oil and transmission fluid, contaminated fuel, old filters soaked with fuel and oil, etc. These fluids are generally poisonous to people, pets, wildlife, and the environment, and some of them can be recycled.

Edited from an article by *Captain Bernie Weiss at www.AtlanticYachtDelivery.com.*

YANMAR
Solutioneering Together

MARINE DIESEL ENGINES

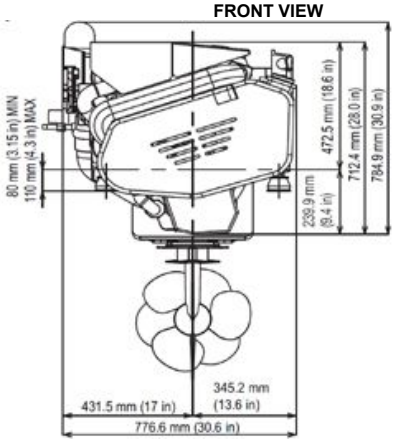
6BY3-220Z / 6BY3-260Z

Configuration	4-stroke, water-cooled diesel engine		
Maximum output at crankshaft	162 kW@4000 rpm	[220 mhp@4000 rpm]	
	191 kW@4000 rpm	[260 mhp@4000 rpm]	
Displacement	2.993 ltr	[183 cu in]	
Bore x stroke	84 mm x 90 mm	[3.31 in x 3.54 in]	
Cylinders	6 in line		
Combustion system	Direct injection with Bosch Common Rail System		
Aspiration	Turbocharger + charge air cooler		
Low Idle rpm	650 - 950 rpm	[adjustable]	
Electric system	12V		
Alternator	12V - 150A		
Start-assist	Glow-plug system		
Cooling system	Fresh water cooling by centrifugal fresh water pump		
	Sea water cooling by rubber impeller seawater pump		
Lubrication system	Enclosed, forced lubricating system		
Direction of rotation [crankshaft]	Counterclockwise viewed from flywheel side		
Dry weight without gear	328 kg	[723 lbs]	
Environmental	EU: RCD	BSO II	EMC
	US: EPA Tier3		
	IMO: MARPOL 73/78 Annex VI		
Engine mounting	Rubber type flexible mounting		

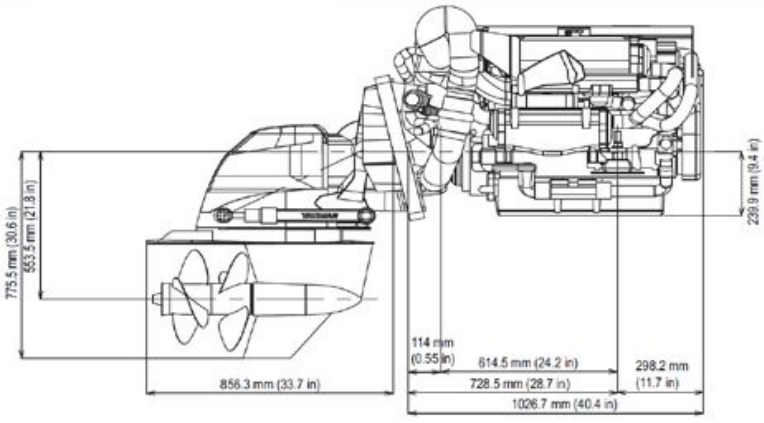
NOTE:
Fuel condition: Density at 15°C = 0.84 g/cm³
Fuel temperature 40°C at the inlet of the fuel injection pump [ISO 8665: 2006]
Technical data is according to ISO 8665: 2006/3046-1

DIMENSIONS

FRONT VIEW



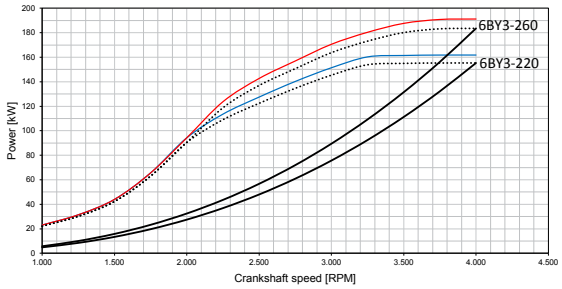
RIGHT SIDE VIEW

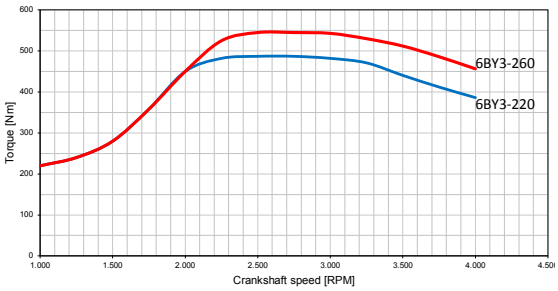


6BY3-260Z with ZT370 Sterndrive

EN_DS6BY3Z_0113

PERFORMANCE CURVES





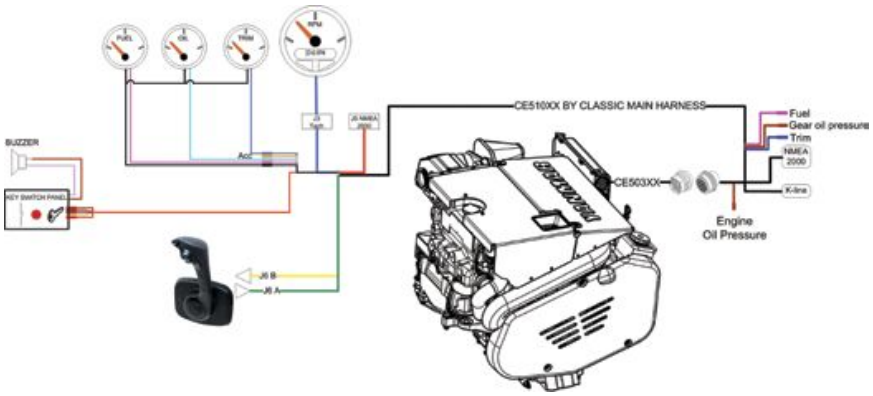
DRIVE SYSTEMS

Model	**ZT370 Steerable Z-drive with duo-propeller**			
Type	Hydraulic Actuated Multi-friction disc Sterndrive			
Dry weight	69 kg [drive]/46 kg [Transom + trim-pump]/15 kg [Propellers]			
Reduction ratio [fwd/asn]	1.65	1.78	1.65	2.18
Propeller speed [fwd/asn]	2424	2247	2424	1835
Direction of rotation	Clockwise [rear propeller]/Counter clockwise [front propeller]			
Lub oil specifications	API class: GL5 SAE grade #80W90 or QuickSilver High Performance Gearlube			
Dry weight - engine & gear	445 kg			

Model	**Mercruiser Bravo 1 Steerable Z-drive with single propeller**		
Type	Mechanical cone-clutch type Sterndrive		
Dry weight	59 kg [drive]/48 kg [Transom + trim-pump]/8 kg [Propeller]		
Reduction ratio [fwd/asn]	1.36	1.5	1.65
Propeller speed [fwd/asn]	2424	2667	2424
Direction of rotation	Clockwise & Counterclockwise viewed from the stern		
Lub oil specifications	Mercury High Performance Gearlube		
Dry weight - engine & gear	430 kg		

1 - Inner and outer transom surface must be parallel within 3 mm in area covered by transom plates and remain within transom thickness limits.
2 - Area covered by gimbal housing assembly must be flat to within 1.6 mm.
3 - Area covered by inner transom plate must be flat to within 3.2 mm.
4 - Transom angle: 13° to 16°.
5 - Also available with Bravo X-2 drive's, please contact your local supplier for support.

CONTROL SYSTEM "CLASSIC"



ENGINE ACCESORIES

Standard engine package
- Single pole, 150A alternator
- High-riser mixing exhaust elbow
- Automatic glow-plug controller
- Flexible engine mounting
- Analogue throttle with redundancy function

Optional accesories
- Through transom exhaust
- Exhaust-side 2nd dipstick
- Electric gearshift
- NMEA2000 digital display
- Various monitoring gauges
- Full NMEA2000 electronic control system [CAN-bus]

Propellers
- Propeller size
  20" - 22" - 24" - 26" - 28"
- Propellers with cup
  24"- 26"

NOTE: All data subject to change without notice. Text and illustrations are not binding.

can also snap. The only way to avoid this malady is to replace them once they begin to show wear. Spare belts are provided in the Yanmar spares kit

3.0 GENERAL Your 36z is propelled by twin Yanmar diesel engines turning duo-prop propellors. The dual-lever electronic control acts as a combination throttle and gear selector. Care should be taken when shifting. Always allow the transmission to engage the new gear before throttling up. Push the SYNCH button to synchronize the engines, permitting the port throttle to control both engines… or you can use both at the same time, although the starboard throttle does nothing.

⚠ WARNING **The engine should never be running when swimmers are near the boat.**

Engines are accessed by raising the cockpit hatch using the electric lift.

3.1 COOLING Your engine passes seawater (raw water) through an intake in the sterndrive unit under the swim platform to the impeller (pump) then through the raw water intake strainer then through a heat exchanger where it cools the engine's coolant. This coolant is circulated through the engine and returns to the heat exchanger. For the engine to keep cool, it must have an adequate supply of raw water and coolant.

If you get a high water temperature alarm, most likely the raw water strainer has become clogged. Check to be sure it's clean first. Best to check the coolant level before embarking on your journey by opening the caps on top of the engine. Coolant should be visible (reach it with you finger when the engine isn't hot) of the reservoir which is on top of the front starboard corner of the engines.

⚠CAUTION Do not attempt to remove the coolant cap of a hot engine.

For details on what type of coolant to use it is very important to, consult the Yanmar operator manual. As the water and exhaust exit out the hub of the props, it is not as easy to check raw water flow. It is recommended to pay close attention to water temperature (167°-180° F is normal) at the outset. It's a good idea to have a container of spare coolant aboard at all times.

3.2 NEW ENGINE BREAK-IN

⚠CAUTION While running the engine for the first time and after shut-down, check for proper engine oil pressure, diesel fuel leaks, engine oil leaks, coolant leaks, proper operation of the indicators and gauges, proper exhaust color, engine vibrations and sounds, If coolant or oil temperature is high (a) Is the raw water intake seacock open at the base of the IPS drives? (b) Are the raw water strainers clogged?

⚠WARNING The engine may seize if it is operated when seawater intake is restricted or if load is applied without allowing the water temperature (engine) to warm up.

During the first 10 hours of operation, full load should only be applied for short periods. Never run the engine for a long period at a constant RPM during this period. Higher oil consumption is typical at this time, so carefully observe oil pressure, oil temperature and coolant temperature, exhaust color and check engine oil and coolant levels frequently... ie daily.

3.3 LUBRICATION

Both the engine and sterndrive gears use oil for lubrication. The gears will tend to use less oil than the engine, but both should be checked frequently. For the proper type of oils to use (which may depend on the service area and conditions) consult the engine manual.

The engine oil may be checked on the starboard side of the engines by pulling up the red dipsticks, at least ! hour after running of the engines to allow the oil to drain down from the upper part of the engine.

The gear oil levels can be seen in the reservoirs on the transom.

3.4 ZINCS

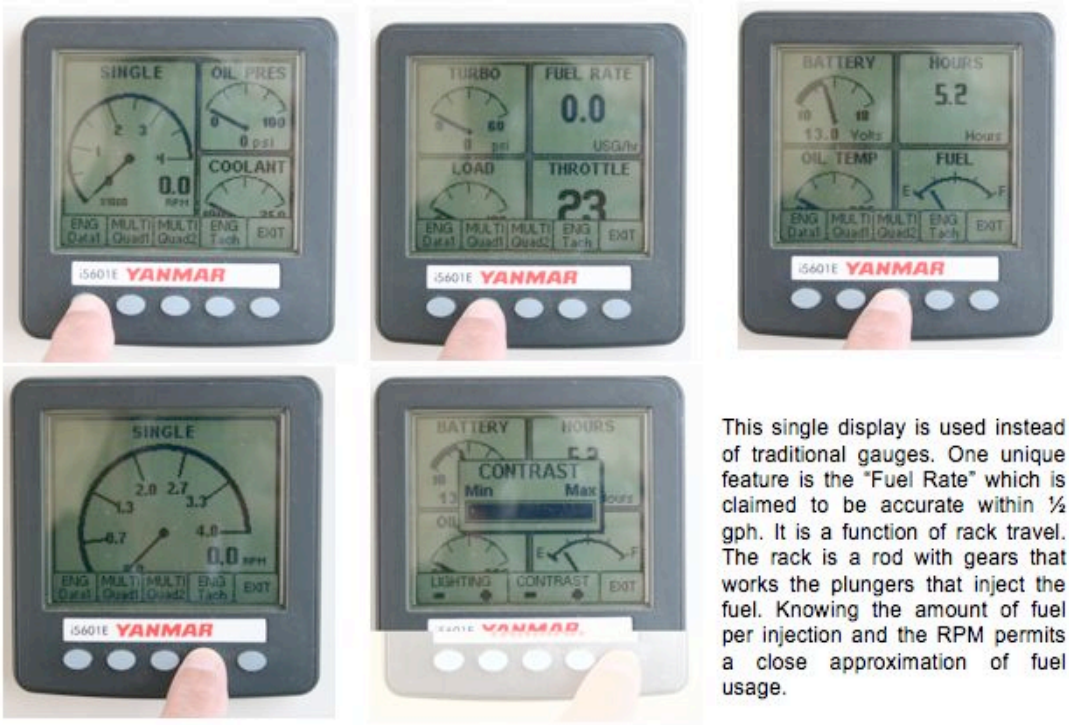
Read the Yanmar Operators Manual carefully. In addition to a transom zinc, there are zincs on the sterndrive and engine. Pay close attention to these zincs, inspecting them with a diver at least monthly…a good frequency for cleaning the bottom of optimum performance as well. You'll find that the timing for replacing zincs varies depending on the type of bottom paint used, the characteristics of the seawater, the amount of electrical current in marinas, or could indicate (if excessive wear is noted) an electrical short on the boat, etc. Inspect engine zincs periodically at the time of oil changes and remove the corroded area on the surface, replacing them when deteriorated to less than 50% of original size. Otherwise corrosion in the cooling system will occur and water leakage or parts breakage will result. Be sure to close raw water intakes at before removing a plug to replace a zinc.

3.5 ENGINE AIR INTAKES

Diesel engines use a large quantity of air for combustion. The engine of the 36z gets this air thru grills under the cockpit coaming, both port and starboard.

3.6 ENGINE CONTROL DISPLAYS

These twin panels display all the engine data, fuel usage, etc. Please read the Yanmar-Penta Owner's Manual to understand its operation and versatility.



This single display is used instead of traditional gauges. One unique feature is the "Fuel Rate" which is claimed to be accurate within ½ gph. It is a function of rack travel. The rack is a rod with gears that works the plungers that inject the fuel. Knowing the amount of fuel per injection and the RPM permits a close approximation of fuel usage.

Hold DOWN the 5th key to display the Main Menu. Main Menu commands are listed in Appendix B of the Control System Manual.

3.7 YANMAR ENGINE CONTROLS

See the Yanmar Owner's Manual for operating details.

The "N" buttons allow you to disengage the gears to permit racing the engines in neutral.

The "Take Command" button is pushed to engage the control if the boat is in Docking Mode with the joystick.

The "SYNC" button synchronizes the two engines, allowing the port handle to control both engines.

SUDDEN MOVEMENT HAZARD This control lever governs both throttle and shifting functions. The boat may start to move abruptly when the marine gear is engaged: Ensure the boat is clear of all obstacles forward and aft. Cautiously shift to the IDLE FORWARD position then quickly back to NEUTRAL position. Observe whether the boat moves as you expect.

CHAPTER 3

3.8 START ENGINE

Before starting the engine, make sure (1) the raw water strainers are clean (2) the engine has sufficient oil and coolant (3) gear oil is at the proper level (4) there are no restrictions to the air intake grills (5) the fuel valve over both fuel tanks are OPEN (6) the HOUSE and BOTH ENGINE battery bank rocker switches are ON (7) the throttle is in the neutral position (8) no one is in the water near the boat and (9) all machinery space hatches are closed.

TURN ON ENGINE
Turn the Ignition Keys ON

START ENGINES by holding one then the second Ignition Key to the right with for several seconds until the engine starts. Then release the key. The engine will not start unless the shift levers are in NEUTRAL. If repeated start attempts are needed, the key must be turned back to position **0** first.

⚠CAUTION Never engage the starter motor (turning key hard to the right) while the engine is running. This may damage the pinion and/or ring gear.

IF BATTERY VOLTAGE is low and you have difficulty turning over the engine, a momentary Parallel Rocker Switch is located between the two Engine Start Battery Switches on the AC electrical panel belowdecks. By turning this switch on, you add the capacity of the house bank to the start battery. Once started, turn OFF the Parallel Switch. It is for emergency use only.

3.9 ALARM DISPLAY

When the ignition key is first turned ON to position I, you may hear an audible alarm signal and See a warning sign, indicating that the diagnostic function has registered a malfunction.

Please refer to Yanmar Operator's Manual chapters for detailed information about FAULTS and recommended action should you hear an engine alarm.

3.10 STOP ENGINE

Put both engine controls in NEUTRAL. Turn & hold Ignition Key OFF until the engine stops. If unsuccessful, there's a clearly labeled "Emergency STOP" button on the side of the engine.

Make sure to turn OFF Engine Battery Switches under the electrical panel when leaving the boat.

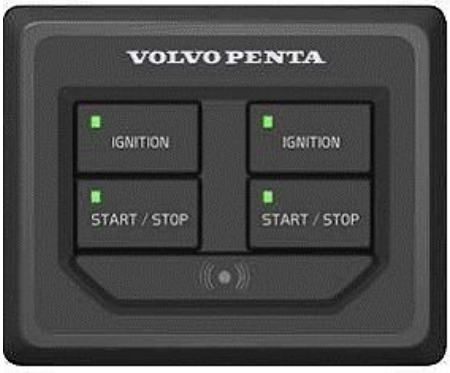
,

ELECTRONIC CONTROL ISSUES – KEYLESS IGNITION & JOYSTICKS

Recently, there were two IPS Joystick and DPS malfunction incidents on 40z's: ZING #25 here in Newport and on BATEAU RELAXEAU #30 in Maine. Here are the lessons you can learn.

1) KEYLESS IGNITION SHUTDOWN SEQUENCE

I am guilty of this, because it seems one saves a step by pushing the Engine STOP button to shutdown the engines and then going below to push Engine Battery switches OFF. WRONG!



To STOP the engines, press START/STOP buttons. Then for Volvo, press the "IGNITION" button to turn the panel OFF causing its light to go out (On Yanmar, push the lower power symbol). Only then do you go below and turn the Engine Battery Switches OFF. *Note: This must be some Swedish language thing, because the word "Ignition" is misleading. It infers just igniting. I've recommended that they adopt the universal power symbol as on the Yanmar and my MacBook. I would have also advised Volvo Penta to put the primary START/STOP in the upper operating position, not at the bottom secondary position as these switches are usually mounted low down to the side of the wheel.*

The engine control system needs to be SHUT DOWN before the power source is removed by turning off the battery switches. This will shut down the system properly, and should prevent problems with either the Joystick or Dynamic Positioning System (DPS).

Shown below are the Volvo Penta (Left) and twin Yanmar (right) keyless engine control switches. NOTE: on the Yanmar switches DO NOT PUSH THE RED EMERGENCY STOP to turn the engines off. If you do, see the Owner Manual for restarting procedure.

2) REBOOT!

This can solve any number of mysterious engine control issues. Electronic engine controls are not much different than your computer, iPhone or other electronic devices. 90% of the problems are probably caused by an unusual switching sequence (e.g. *random, unanticipated operator button pushing*) and can be rectified by a "reboot". After pushing STOP to shutdown the engines: Turn the Engine Ignition Panel Switches OFF. Then, go below to turn the Engine Battery switches OFF. Be sure the Engine Emergency Parallel (EEP) battery combiner switch is OFF. Also, turn the house battery switch OFF. In other words, shut down the entire boat.

Wait at least 10 seconds for the system to sort itself out (*My printer and router called for 25 seconds*). Then turn House and Engine Battery switches ON… but not the EPP. Go on deck. Turn Ignition switches ON next to the helm. WAIT until the engine display is showing data numbers and has gone through it's initial warm up. Then START the engines and check the Joystick Control functions (IPS & DPS).

3) USE BATTERY COMBINERS TO OVERCOME LOW VOLTAGE

Upon turning ON the engine ignition switches next to the helm. Check the voltage on each engine. In the case of #30, the Port Engine had only 10 volts instead of 12.5 volts. This creates alarms, particularly when trying to start it, because Volvo Penta electronics don't function below 10 Volts. The starter, when activated, draws lots of current and will pull down the voltage even lower and won't start.

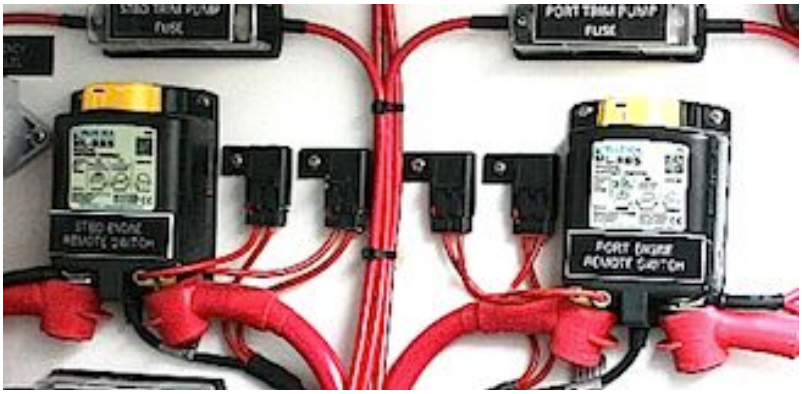
You might think that it's a simple matter of turning on the EEP switch (that combines the two engine batteries) between the Engine Battery switches. And, it would be if there were only a small voltage differential reading on the engine displays. But in this case, with the port engine battery as low as 10 volts, combing them gets to a an inadequate 11 volts.

BUT, there are other 3 ways to get going again in the above extreme case. In each method below, start with House and Engine battery switches OFF and the EEP Switch OFF. Then after turning the House Battery Switch ON:

A. Boost the port engine battery with the starboard engine alternator & battery.
Turn the Starboard Engine battery switch ON (Not the Port Engine or EEP switch). Up on deck, turn the Starboard Engine ignition switch ON. Wait until the engine display shows data. Then START the Starboard Engine. With that alternator now charging batteries as evidenced by voltage climbing, go belowdecks and first push the EEP switch ON. Then turn the Port Engine Battery Switch ON. Then up on deck, turn the Port Engine Ignition Switch ON. Check to see that the voltage on each engine display is reading above 12 volts and climbing. If so, START the Port Engine.

B. Charge with the Genset
Turn the Genset ON and be sure it's showing a charge by rising voltage over the House DC Panel. Turn the EEP switch ON. Turn both Engine Battery switches ON. Turn Engine Ignition switches ON. Insure good voltage readings on the Engine Data Displays. Start engines. With the engines now charging through alternators, you can shutdown the Generator.

C. Combine the House Battery with the Port Engine Battery
On recent boats (see below) use the yellow rotating knob with a push button center labelled "Port Engine Remote (PER) Switch" on top of a small black box. On the 40z it is located on the starboard bulkhead inside the systems compartment under the pilothouse hatch. See below.



Starting with all ignition and battery switches OFF again. Turn the House Battery and Engine Battery switches ON (not the EEP switch). Then go into the central pilothouse hatch and push the yellow button on top of the PER switch down until it clicks in place. Proceed with turning the Engine Ignition switches ON. Check for equal, good voltage on the Engine Displays. START the engines.

WARNING: The above procedures may get you going for a short run, but don't be complacent about it. Too much on the boat depends on both batteries functioning properly. Lower voltage in one engine start battery than the other indicates a problem with the charging system or a bad battery. Monitor closely and rectify immediately if the problem persists.

3.11 OPERATIONAL LIMITS

Engine trouble can arise if the engine is operated for a long time under overloaded conditions at max RPM. Recommended “Max Cruising Speed” is at least 10% below full throttle of 3800 RPM. While running, pay attention to the engine gauges on the EVC display. A significant change in temperature, oil pressure, or voltage should be investigated immediately, before the engine is damaged.

OIL PRESSURE – tba

COOLANT TEMPERATURE – Normally between 167 and 180 degrees F.

⚠WARNING OIL TEMPERATURE – This should normally be less than 230 degrees F, or 110 degrees Celsius.

CHARGING – Normally about 14 Volts when underway.

Depending on hull structure and engine installation, engine and hull resonance may be greater at some speeds than others. This is normal and you will learn to pick the sweet spots. If you hear any abnormal sounds, stop the engine and inspect.

⚠WARNING

If any warning lights or buzzers activate, stop the engine immediately.
Determine the cause and repair the problem before continuing to operate.

CHAPTER 4 STEERING CONTROL SYSTEM

4.0 STEERING SYSTEM

The 36z has an integrated, electronically controlled power steering system, which through electric motors rotate the two sterndrive units mounted on the transom. When running, the 36z is steered as with outboards. Thrust of the propellers is directed more immediately and precisely from side to side through a 26° arc to steer the boat.... rather than bouncing the prop wash pf a conventional straight shaft propulsion unit off a rudder.

When the throttle/shift levers are put in (N) neutral and the left-hand button pushed to activate the joystick: Control of the pod drives is transferred from the throttle/shift levers to the joystick that controls the steering computer. When the joystick is activated, the steering wheel is inoperative.

Emergency Alignment If a fault occurs which prevents one or both of the sterndrives from being operated with the steering wheel, it is possible to align the faulty propulsion unit(s) so that its aimed straight ahead (and won't act like a rudder), so as not to impair operation of either the remaining propulsion unit or the steering of the boat with the two engines. See the Yanmar Owner's Operating Manual.

Emergency Steering These controls are attached to the engine with cables, so if the electronic steering ever failed on both propulsion units, a steering method using the two engines can be employed.

Emergency Shifting In an emergency, you should be able to shift the drives manually. There is a shift actuator that normally shifts the mechanical drive, if that is not functioning, you may be able to remove the cable from the shift actuator and manual push/pull the cable to shift into gear.

4.1 JOYSTICK DOCKING CONTROL

This control is used only for docking and maneuvering at slow speed. Learn to handle the joystick in a safe and correct manner before you start using the function in tight quarters.

⚠ CAUTION When the joystick is active, the normal engine controls are Neutral and inactive. A computer operates the drives and shifting. Rotation of the wheel is frozen and it should not be turned, as damage may occur.

To **Activate**: Both engines must be running and the engine control handles must be IN NEUTRAL. Press the "Take Command" button. A beep confirms it is active and the **light above** will go on.

To **DeActivate**: Press the "Take Command" button on the engine controls.

Boost Function In windy weather or current when you need more oomph, push the BOOST button. A beep will confirm it's engaged.

Maneuvering with Joystick Lean the joystick post in the direction you'd like to go. Release and the thrust stops. The boat may keep moving, so you may have to tap it in the opposite direction to stop it. The top of the joystick is rotated (twisted) to orient the bow and stern, or to spin the boat completely around on its own axis. Pretty simple Takes some practice until it becomes completely intuitive.

Joystick Calibration When moving the boat sideways if it seems that the bow or stern moves more than the other, see the Yanmar Operator's Manual to make adjustments.

4.2 HELM STATION

The helm station console is where most of the operational controls of the boat are located. Become familiar with these before you need to use them. In addition, make sure that when you are using the boat, even if you are not using a specific piece of equipment, that the circuit breakers are on for any equipment you *might* need.

BILGE PUMPS

GENSET PANEL

ALARM

ENGINE SWITCHES

WINDLASS CONTROL

FIREBOY CONTROL

4" HIGH WATER

4.3 CONSOLE SWITCH PANEL

With the exception of the Anchor Washdown which is activated along with the “Windlass” breaker (and must have the “Water Pressure” switch ON as does the washer function of the “Wiper” switch) funcitons of this panel on the console are activated by turning on their respective breaker switches on the DC Electrical Panel in the main saloon.

Functions of the panel rocker switches are described below the corresponding switch:

Sound HORN	NAV LTS FWD Underway AFT At Anchor	WIPER WASHERS Read Instr Booklet.	Press when Raising Rode, Chain & Anchor to Wash with Fresh Water

POWER TRIM

4.4 Activate by turning on the ignition. The current position (angle) of the drivea can be shown on the Engine Display.

To move both drives simultaneously, RAISE or LOWER the Bow, PRESS the rocker switch on the port engine control handle.

To move just one drive at a time, consult the Yanmar Owners Manual.

Emergency Trimming. If a fault prevents the trim panel from working, PRESS & HOLD the BACK button (--) on the EVC Control Panel then trim the drive using the Trim Panel. This action over-rides preset automatic trim limits.

To determine the best trim angle and ranges, familiarize yourself with the characteristics of the boat, recording the RPMs and trim position at various speeds and in various wave conditions.

Beach Range – Used for running in shallow water *at reduced speed of not greater than 1500 rpm. Make sure the drive’s raw water intake is never trimmed out of the water.*

STEERING CONTROL SYSTEM

Lift Range – When the drive is tilted to maximum height, but not when running, for trailing. Power trim has an automatic stop that cuts power when the preset end limit has been reached. The stop is reset automatically when activating down trimming. Never run the engine when the drive is in "Lift Range".

Auto Kick Up – Releases the drive if hits bottom or an object in the water. This feature only protects the drive when going forward. There's no protection in reverse. If the function has been tripped and drive released, it must be trimmed back to the original position using the control buttons.

Check after any contact that the dirve or propeller are not damaged, or if there are vibrations from the drive. If this is the case, then the boat (if possible) can be run at slow speed to harbor to haul and inspect. Or turn off the and raise the damaged drive and run on the good drive. Check the oil level in the drive. If colored gray, water has entered. If this is the case or other damage exists, contact an authorized Yanmar workshop. If only the propeller is damaged, it must be replaced then the boat run to be sure there is no other damage.

4.5 BOW-THRUSTER (Optional)

Normally, with the joystick control, one does not need a bow thruster. If one elects not to install the joystick control system, then the boat can be operated like a conventional twin screw sterndrive. In which case the bpw thruster can be used to increase the maneuverability of the boat at slow speeds in tight quarters around docks and slips.

⚠CAUTION **Passengers on the foredeck are at risk if the bow thruster is engaged without their prior knowledge.**

Consult the user's manual for specifics about your thruster. In general, thrusters are best used in short bursts. Prolonged use may damage the motor, or at least trip the breaker. When not in a situation where the thruster may be necessary, leave it turned OFF to avoid damage. Consider the fact that your thruster gets DC power from the engine start battery, which is charged by the engine's alternator. If the engine is not running, has not warmed up for 7-8 minutes to the point that the alternator is charging the start battery, or running at idle, the thruster can consume more energy than the alternator can provide. *It is possible to discharge the battery or burn out a thruster motor by over-use of the thruster.*

The thruster automatically turns OFF after 6 minutes with no use.

Turn on the thruster(s) by holding down the two left buttons (or turning the switch to ON with some models) until the activation light appears. (You will hear the breaker click) If the light does not appear, check to see that the large red knob for the bow-thruster circuit breaker (below ignition panel) is pulled out.

⚠CAUTION **When operating the thrusters, allow a second or two for the propeller to come to complete stop before reversing direction to avoid damage to either the prop or internal coupling sheer pins (Extras in holder on motor housing under accessed through seat or berth forward hatch..**

Thruster zincs should be checked periodically and replaced if significantly worn.

CHAPTER 4 STEERING CONTROL SYSTEM

4.6 TRIM TABS

At low or high speeds, it's not necessary to trim the bow up or down, but will need tab applied to level the boat from side to side due to loading or to counteract wind pressure. The boat leans into a breeze. Tabs are useful for lowering the bow for better visibility or for slicing through waves to avoid pounding. At higher speeds when the boat naturally runs flatter and when running downsea into the back of waves, it's advisable to raise the bow for dry running and control, allowing the bow to lift.

The trim tab breaker on the DC panel must be ON. By pushing STBD bow down, the bow leans down to starboard and the lights show,the port tab is going down to apply pressure to lift the port aft corner and side of the boat. Generally push the PORT and STBD switches together, except to trim side to side.

4.7 **AUTOPILOT** (Optional)

The Electronics breaker (on the DC panel) must be ON for the autopilot to function. Check the autopilot display and note the rudder angle indicator which helps in maneuvering the boat. When the compass heading is displayed on the autopilot it is operational and can be activated by pushing AUTO. The boat will then maintain the displayed heading. Push +1 or -1 for one degree course corrections or +10 or –10 for ten degree increments. When not activated, the Autopilot display maybe configured to show BOATSPEED (SOG from the GPS). See the Raymarine manual.

The Autopilot has been calibrated specifically for 36z operation. If you notice "hunting" rather than steady course keeping, see the Raymarine Manual to check Configuration parameters applied to your device or Contact Erik Rochelle at Boston BoatWorka**.**

4.8 WINDSHIELD WIPERS

The 36z is fitted with two windshield wipers. For specific instructions, refer to the user manual. The wash feature is connected to your boat's freshwater system and requires that the system be pressurized (i.e. that the freshwater pump is ON). If the wipers are to be used in sub-freezing temperatures, a separate system must be installed which utilizes anti-freeze.

5.0 GENERAL

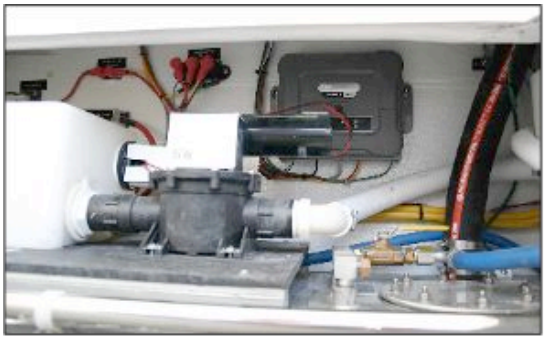
It is important to understand the fuel system aboard your boat. Diesel fuel is different than gasoline. In most respects it is safer, however precautions need to be taken to maintain the safety of your boat. Please study the safety precautions in the NMMA publication “Sportfish, Cruisers, Yachts – Owner’s Manual.”

Diesel engines need to intake more fuel than they burn, and so they differ from gasoline engines in that they return excess fuel to the tank. Both feed & return of port and starboard engines are their respective 175 gallon fuel tanks. The two fuel tanks are connected at the bottom by a “compensating” fuel line with isolating shut-off valves at both aft inboard corners.

5.1 FUEL SHUT-OFF VALVES

These valves are located on top of the fuel tanks aft and are accessed through pilothouse seat lockers. In the photos below they are shown in the open postion, parallel with the fuel lines.

⚠CAUTION These valves should be shut down if inspecting a Racor filter, in an emergency or in case of a fire in the engine compartment.



STARBOARD TANK showing fuel shut-off , VacuFlush Tank & Pump and Raymarine Autopilot Interface Box

PORT TANK showing fuel shut-off for port engine as well as AC Compressor.

A fuel line connects the two fuel tanks with shut off valves in the lower, inboard aft corners of the two tanks, underneath the mesh organizer bags in pilothouse settee lockers. The port valve is shown in this picture. Generally, It’s a good idea to keep these closed, allowing each engine to draw from its own tank and to make filling the tanks easier. With valves closed, fuel tanks can also be used to correct static trim. If you have more gear stored on one side of the boat than the other, add less fuel to the heavier side.to equalize.

5.2 FILLING THE TANKS

Deck fills are mounted on the side decks, port & starboard, and are labeled “DIESEL.” Each one services only its respective tank, although with the connecting fuel line valve open, you will get some transfer to the opposite tank. As the tank is filled, vapor escapes the tank thru the vent. Overflow is prevented by an in-line fuel/air separator that will not allow fuel to pass.

⚠CAUTION should be taken while filling. Check the fuel level gauges and listen for the rise in pitch at the deck fill, as fuel reaches the top. Shut off the nozzle immediately. *Do not attempt* to “top off” the tanks. Have an absorbent cloth handy to prevent any overboard spillage. Variations in temperature as well as trim angle could cause overflow or vent-line blockage.

5.3 RACOR PRIMARY FUEL FILTERS

Racor Filters are your first line of defense against bad fuel and are installed on the bulkhead just forward of the engines and accessed by opening the aft seat engine hatch. Check these filters regularly for any accumulation of water or contamination. Water will appear as a dirty gray, cloudy substance in the clear bowl. You should be able to see thru the pink fuel in the bowl at all times. Also, you should not see bubbles passing through the filter while running. This would indicate a leak on the suction side of the fuel system.

FILTER ACCESS LID – Be sure to close fuel shut-off valve before opening. Be careful to seal properly without pinching gasket.

FUEL LINES from tank and to engine

CLEAR GLASS INSPECTION BOWL

WATER DRAIN PETCOCK – If water seen in bowl, hold a paper cup under the petcock and drain until clear fuel seen.

5.4 FUEL CONSUMPTION

The chart below is prepared from the first seatrial in Boston Harbor, September 2010. Fuel efficiency is expected to improve marginally as the engine breaks in.

Range of Efficient Operation It’s interesting to note that it doesn’t matter whether you are going 11 knots or 30 knots on a 36z, nautical miles per gallon remain fairly constant.

Cruising Speed Yanmar suggest that given suitable conditions, 10% below wide open throttle, or about 3600 RPM at close to knots is an acceptable cruising speed.

	FUEL EFFICIENCY			RANGE
RPM	GPH	KTS	NMPG	NMrng*
670	.7	4.5	6.4	1152
1000	1.5	6.6	4.4	792
1500	4.0	9.5	2.4	432
2000	7.4	14.1	1.9	342
2500	11,0	20.4	1.9	342
3000	17.3	25.4	1.5	270
3200	18,5	27.2	1.5	270
3400	22.0	29.8	1.4	252
3600	25,5	31,5	1.2	252
3800	26,7	34.2	1.3	234
3950	28.9	36.0	1.2	216

*Range based on 90% of 200 gallon capacity

⚠ CAUTION Remember that fuel level readings when underway, with the fuel pushing back in the tank where the fuel level sensor is located, could be reading " tank more than what's really there. So, when you get down to 1/3 tank, it's time to top off.... not roll the dice on finding another fuel dock open later in the day.

MJM FUEL CONSUMPTION LOG

DATE	LOCATION	ENG HRS	HRS since LAST FILL	GALS to FILL	GPH	COMMENTS

6.0 GENERAL

The 36z's electrical system may be more advanced than what you are accustomed to as it combines DC and AC power in several ways.

Most of the electrical components on your boat use 12 volt DC power from 4-5 batteries totaling nearly 700 Ampere Hours of capacity. This battery capacity is recharged in 3 ways:(1) Alternator output from the engines when running; (2) From 110V 60cyle AC shorepower through the Mastervolt Charger or (3) From the Northern Lights Generator which outputs 110V 60 cycle power to the charger.

120 volt AC power, typically found in homes, is supplied to the boat in 3 ways: (1) via 1 or 2 shore-power cords plugged into a shoreside receptacle (2) by an optional generator or (3) by inverting DC power from a battery into AC power through the Mastervolt Inverter. The AC components aboard your boat include the cooktop, microwave, some TV components, the air-conditioning, water heater, inverter, and receptacles (to plug in your own AC equipment).

⚠DANGER Both AC and DC electrical power sources are potentially dangerous. Do not attempt to work on any part of your boat's electrical system if you are not a qualified marine electrician.

6.1 12 VOLT DC

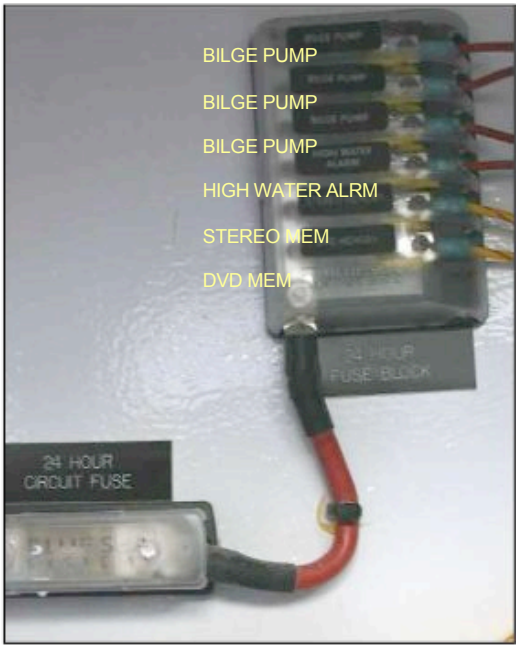
There are two battery banks on your boat. The house bank consists of (2) 200Ah, absorbed-glass mat (D4 AGM) batteries. The engine bank consists of two 105Ah Group 31 AGM start batteries which are also used to run the windlass. Whenever a charging source is present (either from the battery charger or an engine-driven alternator) *both* banks are automatically charged. AGM batteries are essentially no-maintenance.

⚠CAUTION *Do not attempt to open the batteries*. Other than keeping them properly charged, stored, and clean (especially between the terminals), there is virtually nothing you need to do to them. The battery charger is factory set specifically for AGMs.

If the engine is not running, the batteries can be charged via the battery charger, which is powered by AC electricity either from your generator or shore-power. It is important to read and understand the inverter/charger manual to be sure that the unit is functioning as you expect.

⚠CAUTION Never allow your DC system's voltage to fall below 11.2 volts. Sensitive electronics may fail to function. For this reason, it is advisable when leaving the boat to turn off all loads, turn off their respective circuit breakers, and turn off the main DC battery switches.

24 Hour Circuits The only load that remains on when the battery switches are in the OFF position are the "24 Hour" circuits (shown at right) which by-pass the panel circuit breakers and are connected directly to the batteries. These are located to port, outboard and forward in the cockpit sole locker.



House and Generator battery switches
These rocker switches with sliding cover are located on the upper right side of the DC panel with a Battery Combiner between. When the battery combiner switch is pushed DOWN, it is OFF. Pushed in UP it is ON. It is recommended to leave it in the middle AUTO position where it stays active at over 13.6 volts and deactivates below 12.7 volts.

DC Breaker Panel This custom MJM panel Includes digital readouts for voltage and amperage drain of the House Bank in Position 1 of the display and reads condition of the generator battery in Position 2.

To use DC components, the HOUSE battery bank Rocker switch must be ON, the top main DC disconnect breaker on the panel must be ON, and the component's respective breaker must be ON.

Windlass Operation The windlasss uses Engine Batteries, so it is necessary to have the Engine Battery switches turned ON and ideally have the engines operating when using the windlass.

The GENERATOR battery switch must remain on when running.

Engine Battery Switches The two Engine Battery Switches are located on the top right corner of the AC Panel. To start the engines or use the windlass, the engine START battery switches must remain ON. The Combiner switch between, manually in the UP position combines the two engine start batteries should one of them fail. The DOWN position is OFF and the MIDDLE position is AUTOMATIC combining of the two engine batteries and also the house bank if voltage is under 12.7 volts…deactivating when over 13.7 volts.

Freshwater Tank Level Guage

6.2 AC PANEL

Breaker Panel The main AC disconnect breakers for AC #1 and AC #2 are located in the middle of the AC Panel. They must be ON for shore-power to supply the boat's AC power.

AC Shore 1 (left half) includes breakers for those items which can be handled by the Mastervolt Inverter. To use the inverter, (1) the house battery selector switch must be ON and (2) the inverter breaker on the AC panel must be ON. Refer to the inverter/charger manual for more information.

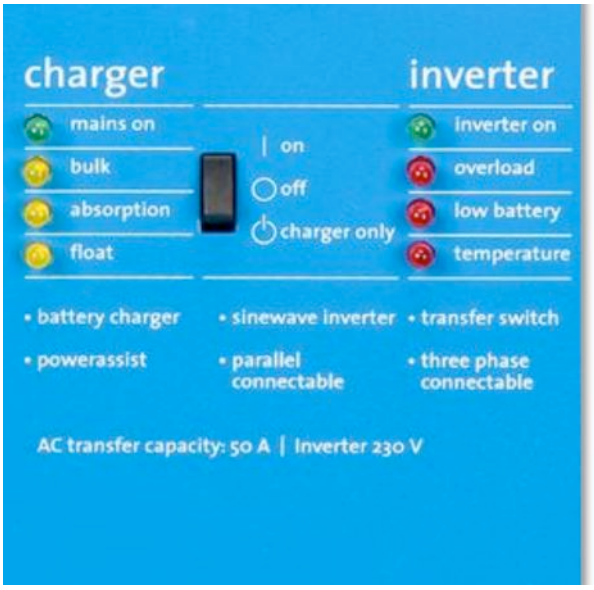
When the Shore 1 shore-power cable is attached and the Shore 1 select breaker is ON, Shore 1 will supply AC power to AC Panel #1.

The AC **Transfer** switch allows either Shore 1 or generator to power the AC Panel #2 circuits. If this function is utilized, be aware that using too many AC appliances at once will cause a shorepower breaker to blow.

AC Panel #2 (aft or right half of panel) is designed for those items having too much load for the batteries and inverter, thus requiring either shorepower or the generator to supply AC power. The high amperage water heater and air-conditioning systems are best supplied with a shorepower cord to stern INLET #2 which by-passes the inverter and goes right to AC Panel #2. However, they can also be powered from shorepower Inlet #1 using the TRANSFER feature of the panel so long as one doesn't try to use the Microwave and/or Cooktop or both the Water Heater and AC at the same time.

CHARGING The main HOUSE battery switch can be switched OFF when the boat is not used, and the batteries will still accept a charge from 120V SHOREPOWER through the battery charger. Obviously, to keep the Refrigerator going, you'd have to leave the main HOUSE battery switch ON as well as the DC Refrigeration breaker switch ON.

If present on your AC Panel 1, leave "Inverter/Charger" breaker ON. If you are leaving the boat plugged into shore-power and you wish to turn off all DC loads but still be able charge batteries. Turn off the top Main DC rocker switch above the DC panel.



6.3 VICTRON INVERTER/CHARGER

The Victron 12/3000/120-50 3KW QUATTRO Inverter Charger is fully automatic. Under normal circumstances there is no need for adjustment or operation besides switching on and off.

Disconnecting shore power with INVERTER switch left ON may cause discharge of the house battery bank. Best to leave the switch shown at right in the middle OFF position when leaving the boat on a mooring or stored without a shorepower hookup. The panel is the face of the Victron unit on top of the fuel tank in the starboard pilothouse settee locker.

The **DIGITAL MULTI CONTROL** shown at right in the "Charge" mode, is a digital remote panel switches on and off the unit. (See Victron Operators Manual.

The 36z uses a combination inverter/charger (in a single unit). When AC power is sourced from Shorepower or the Generator the unit can charge both the house battery bank and the engine start batteries with the toggle switch UP.

INVERTING See Victron Operators Manual

6.4 AC SHOREPOWER

The first of three ways to supply AC power to boat appliances/systems is through Shorepower #1 and #2 30A 125V connections in the transom. These are shown Left to Right with the 3rd Inlet for a TV cable hook-up The cover lid springs open by pushing in at the bottom,

If two 30A 125V sockets are not available on the dock, very often you will find a 50A 225V socket to which you can connect a "Y" pigtail (West Marine 410373 or 12998415).

If you overload, an AC circuit, one of two AC shorepower breakers may trip. To reset, locate the shorepower breaker box (shown at right) in the aft starboard corner of cockpit locker. Be sure both switches are ON.

Hot Water If a second shore-power receptacle is not available and you have not operated the boat in the past day, there won't be any hot water from the engine's heat exchanger. Simply shift the single cord from the Shore 1 receptacle aft to the Shore 2, flick the Hot Water Breaker on, wait 15 minutes and your shower will be ready.

6.5 AC GENERATOR (Optional)

The generator, used to create AC electrical power, is located in the aft cockpit sole locker.
To operate, The generator battery selector switch at the top of the DC Panel must be ON and the generator must be selected on the AC panel.

Pre-Start Checks [refer to labeled diagram that follows)

(1) Check that cooling water is 1" below filler cap (2) Check the oil at dipstick
(3) Open fuel line lever over starboard fuel tank.
(4) Close the raw water seacock, check & clean sea strainer & reopen the seacock (cockpit locker)
(5) Reach behind the Generator Control Box [13] and be sure that the AC Circuit Breaker and AVR Circuit Breaker are both in the "Up" position
(5) Turn ON battery switch for Generator. Note the battery switch must always be kept ON while the generator is running. If the switch is turned OFF with genset running, the battery charging regulator could be ruined.
(6) Turn OFF all AC Panel 1&2 switches/breakers, including Generator double-handled switches on top of AC Panels 1 & 2 and AC Breakers below.

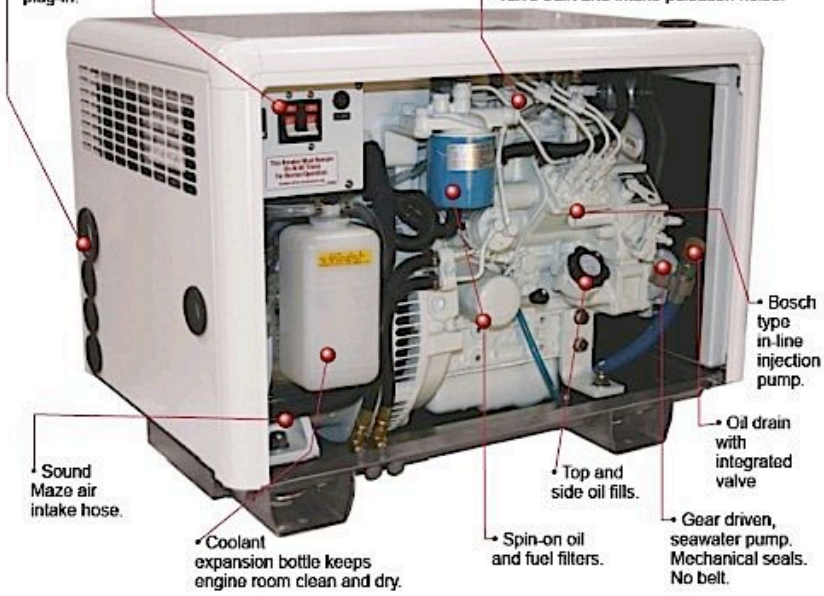
PREHEAT: On the Control Panel, depress PREHEAT switch ON for 10-20 seconds to activate control system

START: Then, depress START switch while continuing to depress PREHEAT switch. When generator starts, release both switches. Do not crank for more than 20 seconds at a time. Allow the generator to run for about 15 seconds until LED green light appears next to "Generator" on AC 1 Panel below (forward most) indicating that the panel is receiving electric current.

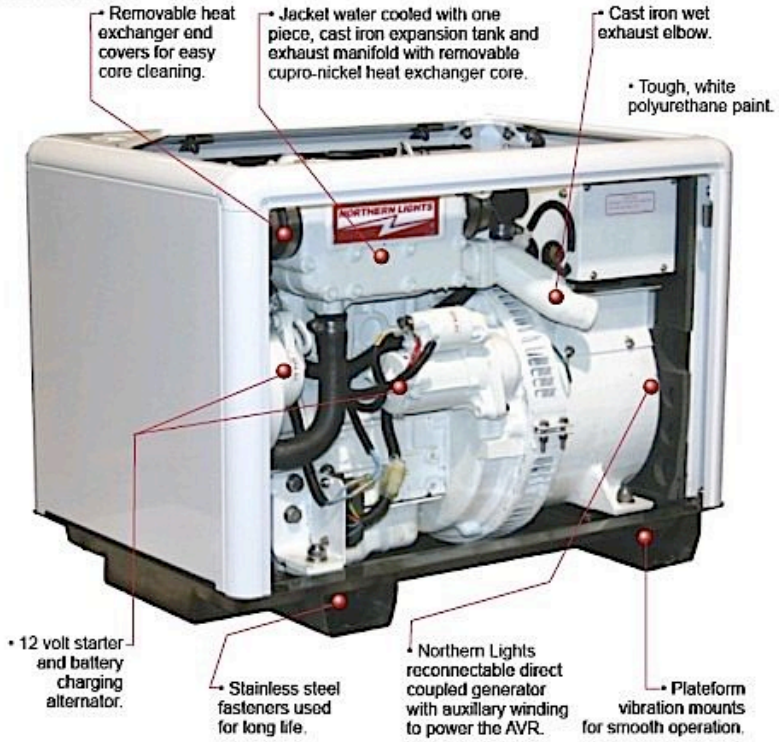
NORTHERN LIGHTS

M673L3

Service Side
(Shown with Optional Sound Enclosure)



Non-Service Side



6 kW
60 Hz / 1800 RPM

5 kW
50 Hz / 1500 RPM

The ideal 6kW generator set is small and lightweight. The M673L3 certainly qualifies. But it stands apart through its remarkable long-life reliability. The reason? The M673L3 runs at 1800 rpm (1500 rpm for 50 Hz), instead of 3600 rpm.

Consider that during only 2000 hours of operation the 1800 rpm M673L3 will turn 216 million fewer revolutions than a 3600 rpm set. Its pistons will travel 38,522 fewer miles. Its cylinders will withstand 108 million fewer detonations. Which engine do you think will give more years of reliable service? We couldn't agree more.

The M673L3 has a balanced Lugger three cylinder diesel instead of a rough two banger. Four plateform isolation mounts reduce vibration transmission even more.

For maximum comfort afloat the new M673L3 has a Sound Maze air intake system. Air enters through a molded rubber hose and an acoustic dampening chamber. Air goes in but much less noise gets out. For maximum sound attenuation, specify a sound enclosure. It is constructed of electrogalvanized steel panels with a powder-coated aluminum extruded framework, and creates a 23% smaller overall package than previous versions.

SOUND MAZE

The generator's automatic voltage regulator is powered by an auxiliary AC stator winding that isolates it from the main windings. The AVR always has clean power to provide excitation for faster load response and better motor starting. Your air conditioner and other motor driven equipment will love being matched with the 673.

A 30 amp AC circuit breaker in the junction box protects your wiring. Safety shutdowns for low oil pressure, high coolant temperature and high exhaust temperature protect your engine.

The M673L3 meets US EPA Tier III emission standards. You, your moorage neighbors and the environment will all benefit.

TIER 3

1800 rpm reliability, low emissions, quiet operation and strong motor starting. Good things do come in small packages.

NORTHERN LIGHTS

ACTIVATE AC PANEL 1: When the green LED light appears on AC 1 Panel, turn ON double Generator Selector switch for AC 1 ONLY. There is a delay until Volts (about 115) register in the digital display over AC-1.

ACTIVATE AC PANEL 2: Select “CHARGE” on the Xantrex Panel and when the light comes on Green, the double-Generator Selector switch for AC 2 can be turned ON.

See that AC volts are now reading on the digital meter over AC Panel 2.

TURN BREAKERS ON for the items you wish to operate.

Note: if the generator starts, but no AC voltage is seen at the panel, check first that the selector switches (sliding interlocks) at the top of the AC panel are ON. If so and still no voltage reading, there is a possibility the generator was overloaded and the AC breaker on the generator itself) has tripped due to a momentary overload. Open the generator cover and reset (pull up) the AC Output Circuit Breaker.

STOP: First, remove any electrical load from the generator Allow the engine to run for a 3-5 minute cool-down period. Depress STOP momentarily on the lower part of the rocker switch.

Break-In Period Change engine oil and filter at 50 hours and again at 100 hours. Oil consumption is greater until piston rings are seated. Maintain at least a 75% load on the generator for the first 100 hours, varying the load to help seat the rings.

6.6 REVERSE POLARITY

⚠ WARNING As a safety precaution, your AC panel is fitted with reverse polarity indicators. If an AC supply were wired incorrectly, either aboard your boat or shoreside, a dangerous shock situation could exist. Normally, the reverse polarity lights should not be illuminated. If they are, disconnect that source of power and alert the appropriate person.

6.7 ELECTROLYSIS & GALVANIC CORROSION

⚠ WARNING Metallic fittings, particularly the aluminum sterndrives, that are exposed to saltwater are subject to electrolysis and galvanic corrosion. To minimize potential damage, your boat is fitted with a sacrificial zinc on the transom, on the drives themselves (2), on the top of the trim tabs and on the bow thruster if this option is fitted. This transom zinc is connected to the bonding system of your boat. That zinc and others should be visually inspected at least monthly or and replaced before 1/2 of the zinc has been eroded. Pay special attention to its condition, with even more frequent visual inspection when in new waters and marinas, as environmental conditions affect the rate of deterioration. If the zinc erodes rapidly, current meters can be used to assess possible causes and remedies. The zincs on top of the cavitation plates of the stern drives can be easily inspected idaily. The forward zinc underneath each drive (shown at right) most be inspected by a diver.

5 Zincs are seen in this photo of Volvo Drives: Trim Tab (2), Drive (2) and Transom Zinc (1) . The Yanmar Drives have zincs on the lifter arms as well as under the Drives.

6.8 BONDING

The bonding system of your boat connects all underwater metallic fittings to the sacrificial zinc and the boat's negative bus bar. In order for the zinc to protect an underwater part, the connection must be clean and secure. The green wires that make up this system are not normally current carrying.

6.9 ELECTRICAL SAFETY

Please read and understand the important safety precautions included in the included ISO CE Mark approved Owner's Manual" concerning electrical safety.

6.10 BREAKER & FUSE LOCATIONS & SPECIFICATIONS

CIRCUIT	TYPE	MFG	PN	AMPS	LOCATION
HOUSE BANK	ANL	ANCHOR	606250	250	PORT BULKHEAD
MAIN DC PANEL	ANL	ANCHOR	606100	100	STARBOARD HULL over Fuel Tank
XANTREX INVERTER	T TYPE	BLUE SEA	5120	350	STARBOARD HULL BEHIND INVERTER
SIDEPOWER THRUSTER	ANL	IMTRA	SMAN_250	250	STARBOARD HULL BEHIND INVERTER
BATTERY SENSE	AGC	ANCHOR	601030	3	TERMINAL STRIP STARBOARD HOUSE BATTERY
SEALAND VACUFLUSH	AGC	ANCHOR	601030	3	VACUFLUSH HOLDING TANK
RADIO MEMORY	AGC	ANCHOR	301200	20	TERMINAL STRIP STARBOARD HOUSE BATTERY
BILGE PUMPS	AGC	ANCHOR	601075	7.5	ON HELM DASHBOARD

6.11 RAYMARINE FUSE LIST (Includes Options)

Chart Plotter	7 Amps
Autopilot X-Can	10 Amps
SeaTalk ng	3 Amps
SeaTalk	3 Amps
Network Switch	1 Amp
RD424D Digital Radar	15 Amps (10A breaker)
RS125 GPS	1 Amp
DSM 300 Fishfinder	8 Amps
Ray55 VHF radio	10 Amps
SR100 Sirius Receiver	2 Amps
SR6 Sirius Receiver / Network Switch	2 Amps
AIS 500 Transceiver	5 Amps

6.12 IN-LINE and ANL FUSE LIST/LOCATION

	Item / Fuse Label	Size	Type	Location
1	Bilge Pump 1	5 amp	AGC	In the Bilge Pump Switch at the Dash
2	Bilge Pump 2	5 amp	AGC	In the Bilge Pump Switch at the Dash
3	Bilge Pump 3	5 amp	AGC	In the Bilge Pump Switch at the Dash
4	Bilge Pump 1	7.5 amp	ATC	Fuse Block next to House Battery 1 (Stbd Settee Hatch)
5	Bilge Pump 2	7.5 amp	ATC	Fuse Block next to House Battery 1 (Stbd Settee Hatch)
6	Bilge Pump 3	7.5 amp	ATC	Fuse Block next to House Battery 1 (Stbd Settee Hatch)
7	Stereo Memory	15 amp	ATC	Fuse Block next to House Battery 1 (Stbd Settee Hatch)
8	DVD Memory	15 amp	ATC	Fuse Block next to House Battery 1 (Stbd Settee Hatch)

9	Emergency Parallel Supply	15 amp	ATC	Fuse Block next to House Battery 1 (Stbd Settee Hatch)
10	High Water Alarm	20 amp	ATC	Fuse Block next to House Battery 1 (Stbd Settee Hatch)
11	Sea Fire Supply	10 amp	AGC	House Bus at the Fuse Board (Stbd Settee Hatch)
12	House Switch Supply	15 amp	AGC	Remote Battery Switch next to House Battery 2 (Port Settee Hatch)
13	House Remote Supply	5 amp	AGC	Remote Battery Switch next to House Battery 2 (Port Settee Hatch)
14	Start 1 Switch Supply	15 amp	AGC	Remote Battery Switch next to Start Battery 1 (Stbd Settee Hatch)
15	Start 1 Remote Supply	5 amp	AGC	Remote Battery Switch next to Start Battery 1 (Stbd Settee Hatch)
16	Start 2 Switch Supply	15 amp	AGC	Remote Battery Switch next to Start Battery 2 (Stbd Settee Hatch)
17	Start 2 Remote Supply	5 amp	AGC	Remote Battery Switch next to Start Battery 2 (Stbd Settee Hatch)
18	Generator Switch Supply	15 amp	AGC	Remote Battery Switch next to Generator Battery (Port Settee Hatch)
19	Generator Remote Supply	5 amp	AGC	Remote Battery Switch next to Generator Battery (Port Settee Hatch)
20	Combiner 1 Negative	15 amp	AGC	Battery Combiner next to Air Conditioner Control (Bridge Deck Hatch)
21	Combiner 2 Negative	15 amp	AGC	Battery Combiner next to Air Conditioner Control (Bridge Deck Hatch)
22	Engine Room Blower	30 amp	AGC	Start Battery (Stbd Settee Hatch)
23	VacuFlush	3 amp	AGC	Top of the Holding Tank (Port Aft Hatch)
24	Trim Tab Retract Wire	30 amp	AGC	Inside Electrical Panel (line side of the DC Panel)
25	House Battery Voltage Sense	15 amp	ATC	Fuse Block next to House Battery 1 (Stbd Settee Hatch)
26	Generator Voltage Sense	2 amp	AGC	Generator Battery (Aft Hatch)

ATC - Plastic Fuse / AGC - Glass Fuse

1	Windlass Fuse	100 amps	ANL	Stbd Setee Hatch (next to the inverter/charger)
2	24H Fuse Block	100 amps	ANL	Stbd Setee Hatch (next to the house battery)
3	Main Panel Fuse	100 amps	ANL	Stbd Setee Hatch (next to inverter/charger)
4	Start Battery 1 Fuse	200 amps	ANL	Aft Deck Hatch (behind start battery)
5	House Battery 1 Fuse	200 amps	ANL	Stbd Setee Hatch (next to the house battery)
6	Start Battery 2 Fuse	200 amps	ANL	Aft Deck Hatch (behind start battery)
7	House Battery 2 Fuse	200 amps	ANL	Port Setee Hatch (next to the house battery)
8	House Bank Fuse	250 amps	ANL	Port Setee Hatch (next to the house battery)
9	House Parallel Fuse Stbd	250 amps	ANL	Stbd Setee Hatch (next to the house battery)
10	House Parallel Fuse Port	250 amps	ANL	Port Setee Hatch (next to the house battery)
11	Inverter Charger Fuse	250 amps	ANL	Stbd Setee Hatch (next to the inverter/charger))
12	Inverter Fuse	250 amps	ANL	Stbd Setee Hatch (next to the house battery)
13	Emergency Parallel Generator Battery	200 amps	ANL	Port Setee Hatch (next to the house battery)

CHAPTER 7 FRESHWATER SYSTEM

7.0 GENERAL

Your boat incorporates a pressurized freshwater system. A single 100-gallon tank supplies a pump which maintains a constant pressure in the system.

7.1 FILLING

A deck fill is provided on the starboard side and is labeled WATER. As the tank is filled, air escapes thru the vent.

7.2 USING & MAINTAINING

The freshwater pump is turned on at the DC breaker panel. If the pump is heard running continually, check that no faucet has been left open. If this is not the case, turn off the pump and check that the tank has not been emptied. The freshwater system is not a perfectly sealed circuit and it is not uncommon to hear the pump cycle, but if this short cycling occurs more than once per hour, the system and/or pump should be checked for leaks. Some users will want to turn the pump off at night to avoid hearing it cycle.

The pump is protected from sediment by an in-line strainer mounted adjacent to the pump. The strainer should be checked periodically and cleaned if necessary.

7.3 DOCK INLET

A dock inlet is installed to permit hooking up with a standard hose. When hooked up to dock water, be sure to turn OFF the Fresh Water breaker on the DC Panel, because pressure is then from the city supply and it's possible that should boat pressure exceed city water pressure, you could empty your tanks, donating boat water to the city water supply.

7.4 HOT WATER

Water in the 13-gallon hot water tank is heated in one of 2 ways:

(1) By the engine through the heat exchanger whenever the engine is running or for as long as 24 hours after then engine has stopped run and the Water Heater is turned OFF.

(2) When the Water Heater breaker on AC Panel #2 is turned ON and the boat is connected to shorepower or the generator is running.

The hot water tank is part of the freshwater system and does not need to be filled separately. There is virtually no need for maintenance, but the connections at the tank should be visually inspected occasionally.

The coolant lines from one engine to the tank have shut-off valves, located in the forward port side of the engine compartment. These need to be open in order for the engine to heat the water in the tank. For service, or in case or a ruptured line, these valves can be closed to stop this water loop.

7.5 GENERAL ECOLOGY SEAGULL WATER PURIFIER (Option)

[*See also Seagull owner's manual*] The galley is fitted with the best available water purifier in the world. It is used on 85 airlines. This purifier has a cartridge (in stainless pressure vessel under sink) that should be replaced annually or when reduced water flow indicates that it has become plugged with sediment. It is best to clear the pressure water system of any winter anti-freeze before running water through the cartridge. The filter is rated for 1000 gallons, which is approximately 15 water tanks' worth. Replace it at least once per year.

CHAPTER 8 RAW WATER COOLING SYSTEM

8.1 GENERAL

Raw water (seawater) is used to cool the engine and the generator. It is also used in air-conditioning options.

8.2 ENGINE RAW WATER

The Yanmar D3 engines have integral raw water intakes without seacocks, but with strainers on the forward starboard top of the engines.

The generator (if fitted) has a raw water intake seacocks and strainers. Before using the make sure its seacock is in the INTAKE position.

In either case, it's good practice to visually inspect the strainers daily to insure that they are not fouled. *Using an engine with restricted raw water flow can cause over-heating and damage to the engine.* When you start an engine, it is advisable to check the exhaust as it exits the boat to make sure water is being mixed into the exhaust gas. You should see a surge of water every few seconds. (It may take more than a few seconds for the first surge.)

8.3 ADDITIONAL RAW WATER USERS

In addition to the engines and generator, the air-conditioning system will use raw water and have a seacock(s) and a strainer that needs to be open and clear for the proper operation of equipment.

9.1 MARINE VACUFLUSH HEAD SYSTEM

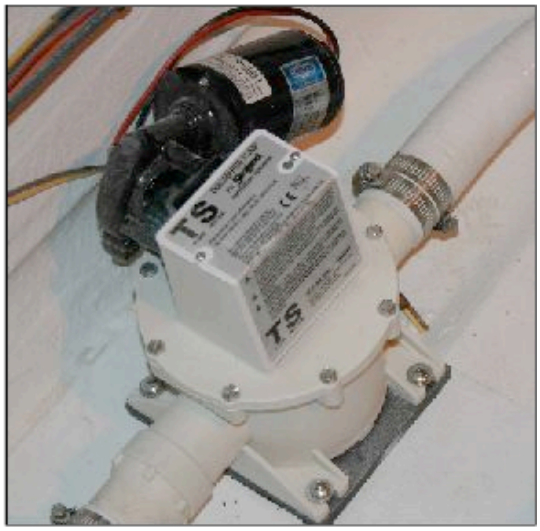
WARNING Waste discharge regulations vary by location. Check with local authorities.

The waste system aboard your boat employs freshwater and a vacuum generator. The Fresh Water pump breaker and Head breaker must both be on (DC panel) for the system to work. Further controls are located on a panel in the head (shown).

When the foot-pedal of the toilet is depressed for about 3 seconds, waste is drawn through the vacuum generator to the waste tank. Tank capacity is 18 gallons, which may seem small, but since each flush requires about a cup full of fresh water compared to the several quarts of sea-water using a conventional marine pump-head, the capacity is more than adequate and there's no odor.

Waste can be discharged two ways:

(a) Dock Pump Out via the shore-side pump-out fitting on deck labeled WASTE using marina facilities. To effectively remove all the waste from the holding tank using, be sure to first turn OFF the vacuum pump system and step on the head flush pedal to remove all vacuum.



(b) Overboard Discharge beyond restricted waste disposal zones by (1) OPENING (if not already) the large waste thru-Hull discharge valve, accessible to starboard and aft in the engine compartment locker then (2) TURN & HOLD the switch in the Head to the right to activate overboard pumping using the macerator pump. The control panel lights indicate the level of waste in the holding tank. The level can be double-checked by viewing the dark waste line through the side of the semi-transparent holding tank from the starboard aft cockpit locker.

WARNING *Before activating this discharge, check to insure compliance with local regulations.*

Refer to the manufacturer's manual for more details.

CHAPTER 10 GRAY WATER SYSTEM

10.1 GENERAL

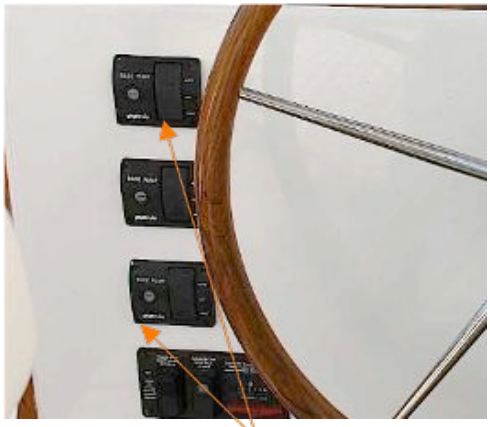
Gray water is liquid that can legally be pumped overboard, generally from sink drains, shower drains, and bilges. Your boat also directs deck run-off to of all gray water through common drains (port & starboard) in the transom.

10.2 GRAY WATER TANK

The gray water sump box aboard your boat is located in the bilge under the panel below the bottom companionway step. This collects water from the shower drain, the refrigerator drain, and the air-conditioning condensation (if fitted). The sump pump switch on the DC panel operates a bilge pump with normal float switch to empty the tank when any of the above systems are in use. Periodically, the cover of the tank can be removed and the contents cleaned.

10.3 BILGE PUMPS

There are three bilge pumps fitted on your boat, and an emergency engine driven system.



BILGE PUMP SWITCHES

The manual bilge pump under the helm station is operated by opening the plastic cover, inserting the handle, and pumping up and down. There is a noticeable difference when the bilge has run dry. This pump is most often used as a back-up system to the three automatic pumps. Its capacity is 15 gal/min.

The automatic pumps, located aft in the engine compartment, in the cockpit locker and under the companionway steps, are wired directly to the 24 hours house battery bank. This means that even when the main battery switches are OFF, the bilge pump can continue to function properly. A three-way switch controls the pumps. When held in the manual position, you can check pump operation as the pump will work regardless of whether there is water in the bilge or not. In the OFF position, the pump will not turn on. In the AUTO position, the pump operates if the water level rises. If water is detected, the pump continues to run until the water is gone. Generally, the pump should be left in the AUTO position.

10.4 HIGH WATER ALARM

A high water alarm is fitted to the boat with the sensor located aft in the engine compartment and the control panel on the bulkhead to starboard of the wheel.

10.5 COMMON DRAINS

To eliminate unnecessary thruhull penetrations in the topsides, a common drain system is utilized on both port and starboard. [See Figure 14.7] Make sure, especially when air-conditioning is running, that the outlets for these drains, located in the transom under the swim platform, are not obstructed. Items that drain into the common drains include: hatch gutters, galley and head sinks, deck drains, sump tank and air-conditioning discharge.

CHAPTER 11 OPTIONAL EQUIPMENT

11.1 GENERAL

Although all the exterior equipment on your boat was selected with marine service in mind, it is helpful to rinse the boat with freshwater after exposure to saltwater.

11.2 ANCHOR WINDLASS (Optional)

Refer to the manual that came with your windlass for specific operating instructions.

The windlass draws lots of power from the house bank. It's advisable to only use the windlass when the engine is running, and to allow time for the battery to recharge after windlass use. Never try to move the boat forward with the windlass- it is sized to retrieve the anchoring gear, not to pull the boat forward. If the windlass bogs down, use the boat's engine to move directly over the anchor. If the anchor has become firmly lodged, use the boat's engine to free it, then commence retrieval with the windlass. Note: always let the windlass come to a stop before reversing direction; otherwise, the windlass fuse/breaker may blow.

To use the windlass, the engine start battery switch and house battery switch must both be ON and the windlass breaker on the panel must be ON.

If the windlass is allowing the chain or rode to slip, tighten the break with the windlass handle provided by inserting it into the socket on top.

⚠CAUTION To avoid chafe on the anchor rode when anchoring, it is advisable to remove the rode from the anchor roller by grabbing it below the roller, then pulling it up directly from the anchor, feeding it through a bow chock to a mooring cleat. Never rely on the windlass itself to hold the anchor rode- a chain stopper or a cleat should be used to take the load so as to avoid damaging the windlass' gears or having it run out unexpectedly.

⚠CAUTION When not using the windlass or when underway, we recommend securing the anchor and chain with a spare fender warp to one of the mooring cleats. This prevents the anchor and rode from inadvertently running free underway and fouling the prop.

Anchor Washer By holding down the switch on the console for the Anchor Washer, when the Fresh Water breaker on the DC Panel is ON, you are able wash the anchor rode and chain with a spray of fresh water as it is being retrieved. The anchor washer is a spray nozzle located on the stem of the boat under the anchor roller.

11.3 PILOTHOUSE CURTAINS

There are 3 options with aft curtains (1) the most common is to roll up the center section with screen/window and secure with 2 straps, leaving the side aft curtains in place. (2) roll up all 3 aft curtains by keeping all 3 zipped together and rolled up as a single unit. (3) roll up just the clear window of the center section, leaving the screen in place.

Do not use any chemicals or brushes to clean, only mild soap. If the curtains become scratched a mild polishing compound (a white cream similar to what is used on Awlgrip) can be applied by hand to remove them. Test a small, unobtrusive area first.

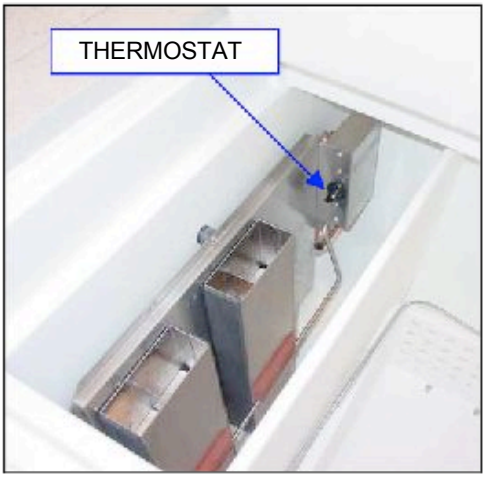
These curtains are easier to snap on when they expand in the heat than when they shrink in the cold. So, it's best to secure them when it's still reasonably warm. Always store curtains rolled (usually several together and not folded) in a dry place to prevent creasing or shrinking.

11.4 PRIVACY/SUNSCREEN CURTAINS (OPTION)

Fine white mesh allows you to see out but makes it difficult to see in. When installed at night, these curtains convert the Pilothouse (34z Shown) into an additional stateroom. The 7 Curtain set comes rolled up in its own carry bag. Curtains attach to the inside of the windshields with Velcro and on fixed side windows on openings with shock cord retainers. The best way to store the curtains is to lay them all on top of each other on the pilothouse table, lining up the edges nearest to you and letting the tails accumulate on the far port side of the table and on top the the port settee. Then roll them all up together and slide them into the tubular storage bag.

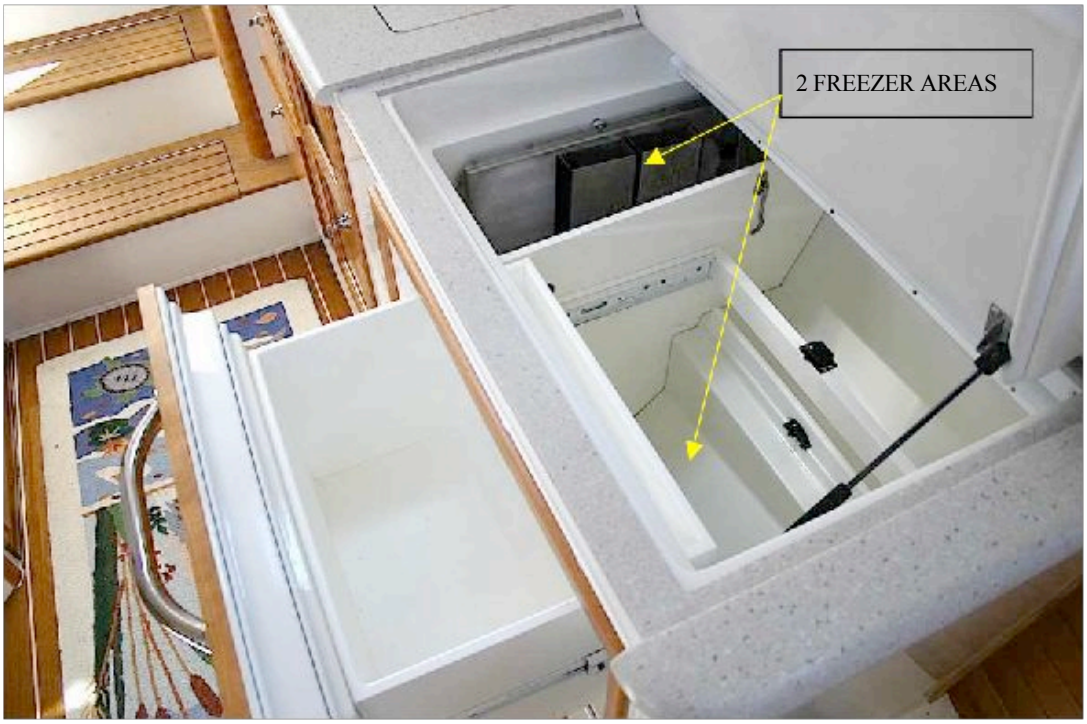
11.5 DC REFRIGERATION (Optional)

The top-opening refrigeration unit utilizes a cold-plate within the refrigerator enclosure which is chilled by a DC powered unit mounted on top the port fuel tank. The refrigerator breaker on the DC panel must be ON for the unit to work. The thermostat for the system is located in the icebox. Once on, the unit will self-regulate. For further information and troubleshooting procedures, refer to the Seafrost operating manual.



The partitions in the refrigerator are designed to create freezing temperatures next to the cold plate where the ice-trays are located and under the sliding drawer where 10 lb. bags of ice cubes may be stored.

A drain into the gray water sump is located in the aft inboard corner of the icebox. It's a good idea to put a cork in this when using refrigeration, so that warm air cannot enter.



11.6 COOKTOP (Optional)

The galley cooktop aboard your boat is powered by AC electricity. To use it, make sure the cooktop breaker on the AC panel is ON and that either the inverter, generator or shorepower is supplying AC power.

⚠CAUTION Do not leave the cooktop ON while unattended.

11.7 MICROWAVE OVEN (Optional)

This 5 way convection oven/microwave unit offers multiple cooking modes which maybe operated witho or without shorepower or generator by utilizing the inverter for AC power and turning ON the switch on AC Panel #1. Please refer to the Users Manual for operating instructions and precautions. The manual is stored inside the oven when the boat is initially delivered.

11.8 MARINE-AIR AIR-CONDITIONING (Optional)

If installed, the 16,000 BTU air-conditioning system can help keep the interior of the boat cool. It also has reverse cycle to act as a heater. For a full explanation of the A/C controls, see the manufacturer's user's manual.

Adjustable louvers are located in the duct outlets to direct more or less air into the main cabin or into the pilothouse. With the curtains lowered, the pilothouse air temperature can be reasonably controlled. The capacity of the unit is designed to efficiently cool interior cabin and can help make the pilothouse cooler in very hot weather, particularly in harbor when the privacy/sunscreen curtains are installed. The heat works particularly well to warm both the interior and pilothouse if the sea temperature is above 40 degrees.

To adjust fan speed range to the lowest setting “1” so that the fan is operating softly and hardly noticable, while leaving the high-speed setting “6” has good volume:

Push the Fan Control button until “P1” shows. Then Press Star to select “P2” .Press Up or Down Arrow until reading “65”. Press Star to get to “P3”. Press Up or Down Arrow until reading “40”

The A/C system uses raw water, much like the engine, for heat exchange. There is an intake seacock, strainer & pump located in the port pilothouse locker. These should be checked frequently, and are the first things to check if the unit fails to deliver cold air or displays HPL fault. If the boat has been stored on a lift or pulled out of the water, very often an airlock will form. This can be solved by closing the seacock, removing the top of the raw water filter, filling it with a cup of water, then restarting the AC. Another was is to shoot a dock hose into the hull outlet.

WARNING When operating the Air Conditioning System, be sure the SUMP PUMP is ON at the DC panel so that air conditioning condensate is pumped overboard.

11.9 WALLAS 40D DIESEL HEATER (Optional)

This heater is DC powered, controlled by a thermostat on the forward side of the entertainment Center and draws diesel fuel from the starboard fuel tank. Please read the manual for instructions

CAUTION Do not use the Circuit Breaker Switch to Turn off the Heater when it is operating. Before turning off the breaker switch, be sure to turn the control panel from heat to vent until the heating element has a chance to cool off.

11.10 FUSION 700 PLAYER (Optional)

This multi-media unit operates on DC power. The STEREO breaker on the DC panel must be ON. See the instruction manual for operating details.

11.11 SIRIUS SATELLITE RADIO ACTIVATION (Optional)

To activate Sirius Satellite Radio services on the Clarion XMD4, you will need the serial number: (1) Push the "MENU" button in the upper right set.. (2) Using the right or left arrow scroll to "SID DISP". (3) The first 6 digits of the serial number will be displayed. (4) Turn the rotary dialing know counter-clockwise to display the last 6 digits of the SID (5) Call Sirius at 1-888-539-7474 to activate, conveying the 12 digits of the Serial Number..

11.12 LED TELEVISION AND DVD

(Optional)

The TV operates on AC power and the DVD player on DC. To operate the TV turn ON the "Stereo" and "TV/DVD" Breakers on the DC Panel and turn ON the "TV" Breaker on AC Panel 1. AC power for the TV may be produced by the Inverter from the House DC Batteries, from AC Shore Power 1 or from the Generator.

Video signals maybe acquired from the DVD, from a dockside cable TV outlet, from a conventional local TV antenna or from the optional KVH satellite dish system.

The face of the TV is secured in place by two push-button latches. The support arm will secure the face at the ideal viewing angle. No storage is lost. One has access to the wine rack, DVD player, a CD Changer (rare these days of the iPod or iPhone) and bookshelf.

The TV maybe interfaced with the Raymarine E120 Navigational Plotter to play video on deck or to serve as a Nav Repeater below.

Surround-Sound may be achieved using the "AUX" function on the Clarion Stereo Receiver to integrate both TV Audio and the 4 Speaker Stereo Audio.

Or, Kids can watch TV with dedicated TV Audio belowdecks while parents are listening to jazz from their iPhone using the AUX with the "Fade" function directing all sound to the 2 cockpit speakers.

11.13 FLIR INFRARED NIGHT VISION (Optional)

This new technology for the marine industry takes away the guesswork in terms of depth perception when looking at running lights of boats ahead or in being able to spot crab or lobster pots. It is particularly useful when entering a crowded harbor at night.

The FLIR can be controlled either through the Raymarine e165 Display (See those instructions) or through a separate control panel shown hrere.

Power/DIM Push to turn ON or STANDBY. Press to select 4 levels of brightness

Menu Access screen menu and navigate with Puck

User Programmable to allow user to access favorite settings. See Operating Manual.

Scene Toggles through preconfigured images

Color Selects gray sale through color & red night vision

Home Usually set straight ahead and levlel

PUCK (Joystick) FUNCTIONS

Pan Twist the knob

Raise/Lower Tilt knob forward/aft to lower/raise.

Zoom Push down on knob for 1 sec for 2X…..2 sec for 4X. Pull up to return to 2x, up again for no zoom.

Freeze Frame Press down twice quickly. Any other action on panel unfreezes.

CHAPTER 12 ROUTINE MAINTENANCE

12.1 Refer to the following chart as a general guide but not the gosple for routine maintenance actions on the engines installed in your boat. **Refer to the engine manual** for the complete instructions on each item. Perform all maintenance once a year even if hour levels have not been reached. Some of the items you may choose to leave to professionals, but many you can do yourself. In particular, it is a good idea to have a certified mechanic perform check-ups from time to time on the engine, generator, and any other key equipment installed onboard. Yanmar & Northern Lights engines are assumed – check your manuals if your brands differ.

ITEM FREQUENCY ACTION	
ENGINE	
Oil Level **Daily** Check Change after 1st 50 hrs, then ea. 200 hrs	
Lube Oil Filters Replace after 1st 50 hrs, then ea. 200 hrs	
Air Cleaner Check ea. 50 hrs Clean if necessary and replace oil.	
V-Belt Tension Check ea. 50 hrs Tension if necessary.	
Remove Zincs & Check Every 100 hrs At each oil change or 6 months	
Check Valve Clearances Check after 1st 50 then ea. 500 hrs	
Turbo Charger Every 200 hrs Clean Blower	
Mounts Annually Tighten	
Exhaust Elbow Weekly Check Check for leaks.	
Transmission Oil **Daily** Check Add if necessary	
Valve Clearance & Injectors Check 500 hrs.	
Oil in Bilge **Daily** Identify source, Correct, Clean-Up	
FUEL SYSTEM	
Tanks/Valves/Connections Monthly Inspect for leaks and ease of valve operation	
Racor Primary Fuel Filter **Daily** Clean if necessary. Change ea. 200 hrs.	
Secondary Engine Filter Change ea. 200 hrs. or when necessary.	
Fuel System When necessary Bleed	
Injectors Check ea. 500 hrs	
Fuel Injection Pump Check Every 2400 hrs.	
GENERATOR	
Oil Level **Daily** or ea 8 hrs. Check and add if necessary	
Oil Ea. 100 hrs. Change (1st time after 50 hrs.)	
Fuel Filter/Water Separator **Daily** or ea 8 hrs. Check for contamination and clean	
Fuel Filter Ea 100 hrs.	Check Drain and replace filter ea 100 hrs.
Engine Hoses Weekly	Check that they are hard & tightly secured
Exhaust System Weekly	Inspect for leaks. Check ant-siphon.
RAW WATER COOLINGSYSTEM	
Coolant Reservoir **Daily Check**	Add coolant if necessary
Heat Exchanger Every 2400 hrs	Check & clean
Raw Water Strainer **Daily Check**	Clean screen & bowl if necessary
Cooling System Every 500 hrs.	Check & Flush
FRESH WATER SYSTEM	
Water Tank Annually	Flush clean & disinfect.
Water Pump Strainer Monthly or Less	Remove & clean
Hoses & Valves **Daily**	Observe leaks or note recycling of pressure system
Seagull Purifier Cartridge Annually	Replace cartridge more frequently if reduced flow)
GRAY WATER SYSTEM	

Sump Annually		Under Companionway – Open & Clean
Automatic Bilge Pump **Daily Check**		Test with manual switch
Manual Bilge Pump Monthly		Check operation
Bilge Area **Daily Check**		Inspect and clean as needed
ELECTRICAL SYSTEM		
Batteries Monthly		Remove Lids, check for loose cables, clean
House & Engine Batteries **Daily Check**		Voltage
Connections Annually		Inspect all connections
Transom, Trim Tab & Drive Zincs	Monthly	Inspect and replace if 50% gone
MISCELLANEOUS		
Trim Tabs **Daily** Check Operation		
Trim Tabs & Bow Thruster Monthly Inspect & remove barnacles for proper operation		
Hydraulic Steering Fluid Monthly if present Check fluid level (reservoirs) add or purge air.		
Bow Thruster Annually		See manufacturers recommendations
Bottom Paint Monthly or Less		Remove growth with diver to sustain performance
Stern Drive Lubricant **Daily**		Check Reservoirs on aft bulkhead

12.2 FLUIDS

Refer to the Engine and Drive Manuals for proper lubricants.

CHAPTER 13 SEASONAL MAINTENANCE

13.1 START OF SEASON

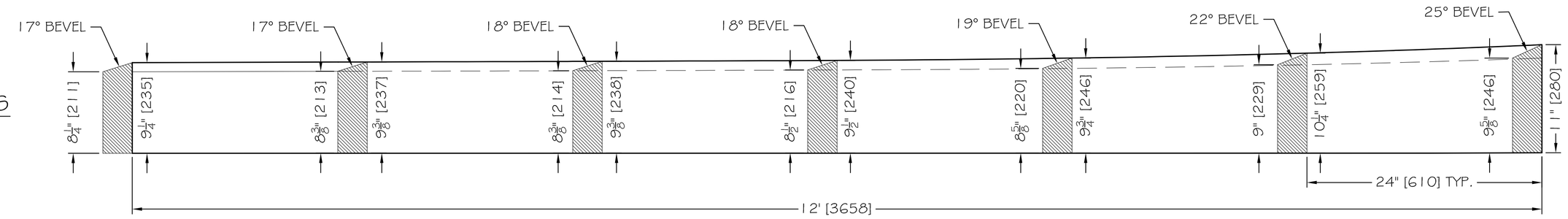
[commissioning]

13.2 END OF SEASON

Most facilities will not require additional information before hauling the boat with a Travelift or crane, but if this is the case, use the included Lifting Diagram Figure 14.10.

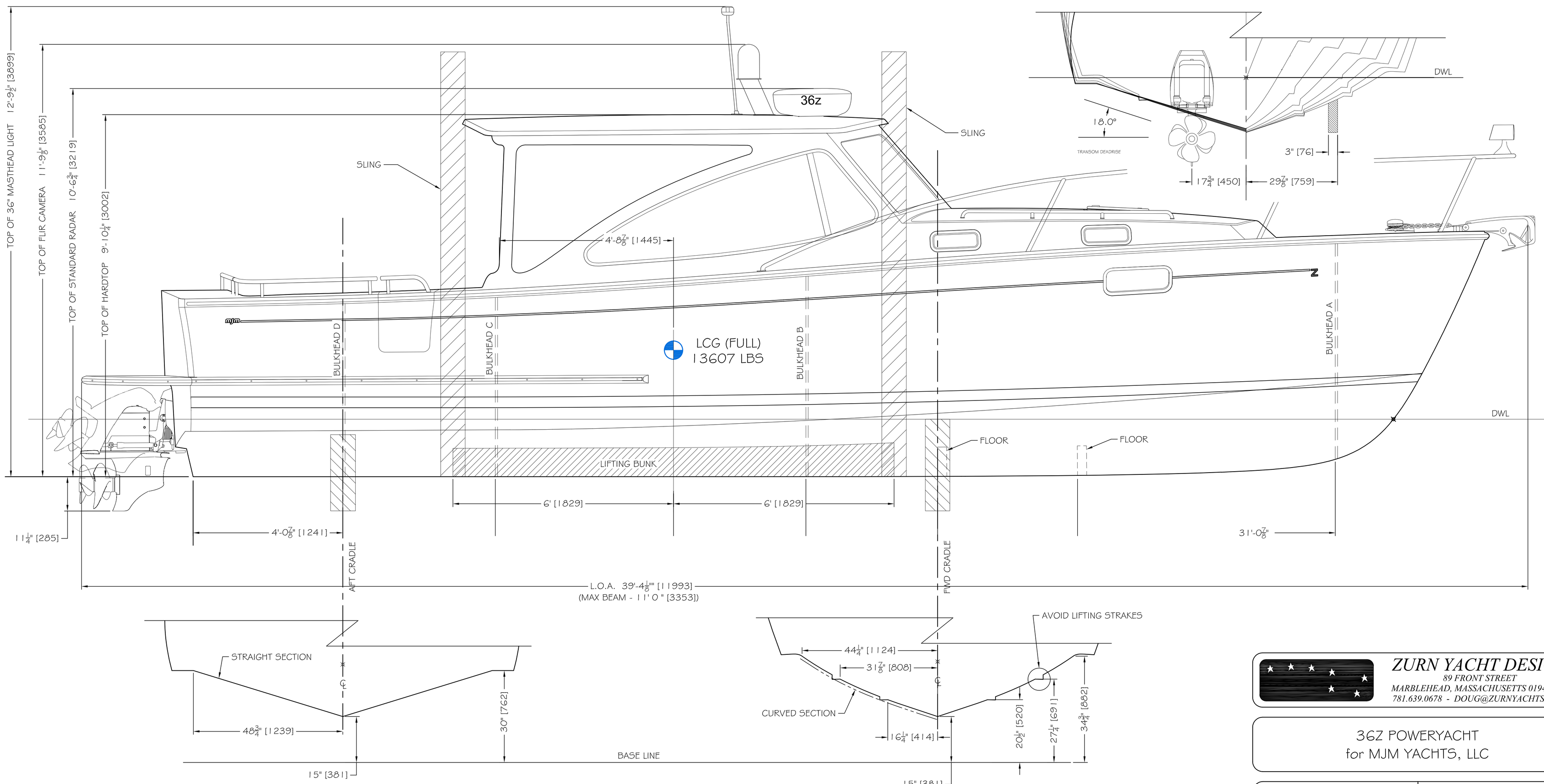
The end of the season is a good time to have the bottom power-washed and to check all thruhulls and seacocks for growth. Careful inspection of all underwater hardware at this point may avoid a potential problem in the future. This is also a good time to check the zincs of the boat and replace as necessary.

If the boat is to be stored in a place where the ambient temperature may fall below the freezing point, it must be winterized. Plumbing lines need to be emptied and anti-freeze added where applicable. Consult also the engine operator's manual.



LIFTING BUNK DIMENSIONS
SCALE 1:16

REV	DESCRIPTION	DATE
0	ORIGINAL RELEASE	11/05
A	ADDED CRADLE DETAILS; CHANGED DRAWING SCALE; CHANGED DRAWING NAME	04/06 2011



CRADLE DIMENSIONS
(WITH ENGINE DOWN)

ZURN YACHT DESIGN
89 FRONT STREET
MARBLEHEAD, MASSACHUSETTS 01945 USA
781.639.0678 - DOUG@ZURNYACHTS.COM

36Z POWERYACHT
for MJM YACHTS, LLC

DWG NO.: 10114-012	SCALE: 3/4" = 1'-0" (1:16)
DATE: NOVEMBER 5TH, 2010	DRAWN BY: DWR/DAZ

LIFTING & CRADLE DIAGRAM

TRAILER LOADING CHECKLIST

1) Check that bilges are clean and dry
2) Check that all cabinet door & drawer latches are pushed shut to the lock position.
3) Leave the bilge pump switch in ON position
4) Do not apply adhesive tape to any part of the boat, especially the Ultra leather cushions.
5) Lock all hatches and portlights
6) If radar is mounted directly to the hardtop, it's generally not necessary to remove it.
7) Secure side curtains in place (now possible for transport with new zipper track system)
8) Secure VHF antenna with wire ties to rail in "down" position.
9) Remove all-round light on hardtop and install protective cap.
10) Fuel tanks must have minimum of 20 gallons each
11) Are all systems winterized if trip is to freezing weather?
12) Check to see that all Battery Switches and Inverter Switch are OFF
13) Secure and pad all loose gear against movement in transit
14) **WARNING** Do not under any circumstances load boat stern first on trailer – You'll be cleaning for weeks.
15) Shrink wrap is not desirable and can cause more trouble to the hull paint job than it protects.
16) Be sure that the boat is properly blocked and rides level so the cockpit will drain underway.
17) Be sure that the topmost part of the boat is less than 13'6" over the road. Driver should check.
18) Have driver sign off on Bill of Lading with a notation that there is no damage (or indicate existing damage) so as to eliminate arguments upon arrival as to what damage the driver did or did not cause. Retain a copy.
19) Provide driver with detailed contact information of receiving yard and schedule for unloading.
20) Padlock installed with combo given to driver and to receiving yard.
21) Attach a copy of this check list to the BOL, marked, and signed off on.
22) Secure Anchor with rope to bow cleat if no retainer included.
23) Instead of leaving the Bimini hoop aft as shown above, remove the canvas, pull the pins on the aft supports and hinge the hoops forward against the hardtop, padding the hoops with foam and lashing them forward to the cornerpost handrails and padding/lashing the stainless supports together.

Note: In addition to aft and midship supports in the locations seen on page 55 (for Boatlifts), the boat should be supported under the bow as well to counteract the downward pressure of bow tie-downs

CHAPTER 15 BOSTON BOATWORKS LIMITED WARRANTY

Manufacturer's Sole and Limited Warranty for Pleasurecraft

A. **General.** This document sets forth the sole and limited warranty, which Boston BoatWorks ("The Manufacturer") is giving you in connection with the "Vessel" which you are acquiring. It is the only warranty being given by the Manufacturer and should be reviewed carefully together with manuals and other instructional material provided by the Manufacturer before you take delivery of the Vessel.

B. **Basic Warranty.** The Manufacturer warrants that the Vessel (except for Excluded items described below and when Properly Used, will be free of defects in material and workmanship for a period of twelve (12) months from delivery of the Vessel to you by an Authorized Dealer. If you sell the Vessel during this period, your buyer may receive the benefit of the balance of the warranty by agreeing to be bound by its terms.

C. **Extended Warranty for Structure.** In addition to the foregoing warranty, the Manufacturer warrants that the stringer systems, structural bulkheads and composite laminates of the Vessel (except for Excluded items) and when the Vessel is Properly Used, will be free of defects in material and workmanship for a period of five (5) years from delivery date by an Authorized Dealer. This warranty may be transferred to your buyer in the same manner as the Basic Warranty.

D. **Extended Warranty Against Osmotic Blistering**. In addition to the foregoing warranties, the Manufacturer warrants that any gelcoat surfaces of the Vessel below the waterline will not blister when the Vessel is Properly Used for a period of ten (10) years from delivery date by an Authorized Dealer. This warranty may be transferred to your buyer on the same manner as the Basic Warranty.

E. **Dealers.** The name and address of Authorized Dealers is available from the Manufacturer. The Manufacturer does not authorize the Dealer, or any other person, to assume for the Manufacturer any liability in connection herewith or any liability or expense incurred in the repairing of its products other than those expressly authorized by the Manufacturer in writing.

F. **Excluded Items.** The Manufacturer gives no warranty as to:

a. Paints, varnishes, gelcoats (except where included in paragraph D above)a, exterior wood, vinyls, fabrics, glass, chrome plating or anodized or other finishes or surface coatings because of the varying quality of these items manufactured by others and the effect resulting from different climactic and use conditions

b. Engines, mechanical equipment, pumps, batteries, heating, plumbing, refrigeration, electronic components, masts, or other components manufactured by other than the Manufacturer, or the cost of removal or re-installment of the part and disassembly, or reassembly of the unit of which it is a component.

c. All items not installed by the Manufacturer or altered after their installation, and items installed or altered by Authorized Dealers.

d. Other than upon first being delivered, leaks in or around hatches, companionways, deck hardware or other leaks which are above the waterline.

e. Damage to the Vessel (including, but not limited to, wet core) caused by leakage around decks, hardware or other accessories attached to, or incorporated into, the Vessel.

f. Speed, fuel consumption or other performance characteristics, because they are estimated and not guaranteed.

G. **Proper Use.** The warranties contained herein are expressly conditioned upon your Proper Use of the Vessel. This means that you must use the Vessel solely as a pleasure craft (no commercial use) and operate it as directed in and after reviewing the Manuals provided by the original equipment manufacturer and the Manufacturer, and perform maintenance to the Vessel as recommended in the Manuals and as required by periodic inspections by an Authorized Dealer or Service Center.

H. **Warranty Claims.** To make a claim under this warranty you must do the following

a. Report the defect to the Manufacturer or Authorized Dealer within thirty (30) days of discovering it, and when possible prior to incurring any expense, identifying the Vessel and submitting photographs (email digital preferred).
b. Make the Vessel available for inspection by the Manufacturer or Authorized Dealer when requested.
c. Make the vessel available for repairs, if required, by the Manufacturer or Authorized Dealer.
d. Major components, such as engines, generators, air-conditioners, electronics, appliances for example are warranted by the manufacturer of the component. They have authorized service dealers in most major boating markets. The Manufacturer or Dealer will identify such service dealers upon request.

I. **Repair or Replacement**. The manufacturer shall perform its obligations under this warranty by, at it option, repairing or replacing (at Manufacturer's expense) the defective part or component. Parts or components replaced will become the property of the Manufacturer. The replacement of parts o components will not extend the warranty but the replacement parts and components will be covered for the balance of the warranty period. You shall be responsible for returning the Vessel to Manufacturer at its plant or at a designated marina in the State of Massachusetts or to such other repair facility that the Manufacturer shall designate, at your sole expense.

J. **Specification Changes.** The manufacturer reserves the right to make changes in design, equipment, layout or construction without notice or being obligated to incorporate such changes in previous products.

K. **Registration Cards.** The Manufacturer recommends that you immediately fill out and return the Warranty Registration Card for the Vessel. The information contained on this card will enable the Manufacturer to more quickly process any warranty claims and to comply with the Federal Boating Safety Act. Should you sell the Vessel, the Manufacturer recommends that your buyer also fill or a Warranty Registration Card.

L. **Exclusion of Implied Warranties.** The foregoing warranty is intended to be in lieu of all other warranties, express or implied. In part, due to the hazardous, life-threatening environment, capable of overwhelming vessels of any size, that the Vessel will operate in, THE MANUFACTURER OR ITS DEALER DISCLAIMS ALL IMPLIED WARRRANTIES INCLUDING WARANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE. In some jurisdictions, the Manufacturer is prohibited from excluding or limiting implied warranties. In those jurisdictions, the Manufacturer expressly limits any implied warranties to the greatest extent and to the shortest duration allowed by law.

M. **Limitation of Damages.** THE MANUFACTUER OR ITS DEALER DISCLAIMS ANY LIABILITY TO YOU FOR INCIDENTAL, CONSEQUENTIAL OR INDIRECT DAMAGES TO YOU, including loss of use, loss of revenue, travel expenses, transportation charges, food or lodging charges or loss of personal property. In some jurisdictions, the Manufacturer is prohibited from excluding or limiting implied warranties. In those jurisdictions, the Manufacturer expressly limits any implied warranties to the greatest extent and to the shortest duration allowed by law.

N. **Whole Agreement.** This warranty is the sole warranty given to you by the Manufacturer. Authorized Dealers are not authorized to make changes to this warranty. Any questions about the warranty should be directed to the Manufacturer. If you do bring a claim against the Manufacturer that is related to the Vessel, you must bring it in the Courts for the State of Massachusetts.

BOSTON BOATWORKS

Pre-Approval for Warranty

Please Fax Claim to: (617) 561-9222 **Date_____**

Boat Model_____Boat Name_____Hull #_____

Dealer_____Contact Person_____

Phones_____Fax_____ Email_____

Description of Problem: _____

_____

_____

_____

Description of Resolution: _____

_____

_____

_____

_____

_____

Estimated Completion Date: _____

Labor Rate $ _____ Total Materials Cost $ _____

Total Labor Hours _____ Total Estimated Cost $ _____

AMOUNT APPROVED: $_____ APPROVED BY:_____

_____

Warranty Claim Application Form

Boston BoatWorks, LLC
256 Marginal Street, East Boston MA 02128
Phone: (617) 561-9111 Fax: (617)561-9222

Date:_____ Boats Name:_____ 36z Hull # _____

Dealer/Service_____ Boat Owner:_____

Address: _____ Address:_____

_____ _____

Phone:_____ Phone # _____

Fax:_____ Boat Location:_____

Contact Person:_____ Delivery Date:_____

Description of Defect (please include photos)

Description of Corrective Action (include invoices)	Labor Hrs:
	Labor Rate:
	Labor Cost:
	Material Cost:
Total amount of claim	**$**

All claims require prior approval by BBW Customer Service using the Pre-Approval Form

Date Approved:_____ Amount Approved:_____ Approved by:_____

CHAPTER 16 QUICK START GUIDE

1 - Disconnect Shore-side Connections

To disconnect shore power cords, turn off all AC loads on the boat and make sure the main AC breakers on the AC panel (the double breakers) are all OFF. Then disconnect the cord *at the dock end first*. Disconnect the cord at the boat and close the shore power inlet cover. Ditto for any phone/cable lines.

2 - Set Battery Switches

The battery selector switches are in the upper right of the AC (lower) electrical panel. Slide down the covers and depress rocker switches. The central Combiner parallel switch should be centered in the “automatic” mode. Slide the covers down and Push Start STBD engine switch and Start PORT engine switch, both ON. Be sure that the main breaker on the HOUSE battery switch in the DC panel is also ON. Unless running the generator underway, the GENERATOR switch should be OFF with the cover slid upwards.

Turn ON the ENGINE HATCH switch on the DC panel.

Remember to turn all switches OFF when leaving the boat, except the HOUSE battery switch, when needed to keep the Refrigeration going.

3 - Visually Inspect the Engine Room

To access the engine room, lift up and twist the two lock downs 180 degrees. Then open the starboard cockpit seat locker and lift the black toggle switch outboard up. If it seems stuck: STOP and check the lock-downs. While doing other checks, it is a good idea to take a look around the engine for loose belts, wires, oil drips or water in the bilge or anything else that may be out of order.

4 - Check Engine

It is advisable to check the engine fluid levels before starting the engine. Refer to the Owner’s Manual for checking the oil coolant and transmission levels.

5 - Raw Water

Raw water intake and outflow is integral to the OceanX sterndrives, so there’s no seacock to open or close. Nevertheless, once the engine is started, it’s wise to look over the swim platform to see a surge of water.

6 - Check DC Panel

Check the DC panel to insure that the house bank has a reasonable charge (12.2V or greater). If there is any problem, now is the time to learn of it.

7 - Turn ON Operating Equipment and Instruments

Turn on ELECTRONICS (VHR, Radar, GPS, Plotter, Autopilot, Depth), TRIM TABS, WIPERS, FRESH WATER PUMP (to operate windshield washer) and HORN.

8 - Check Lights

If the boat is to be operated after sunset or in reduced visibility or fog, TURN on NAVIGATION LTS, SEARCHLIGHT, FLIR and check that they are working.

9 - Start Engine

⚠CAUTION *See Sections 3 & 4 of this Owner's Manual for specific instructions on operating the engine and joystick control.*

10 - Check Joystick, Steering and Trim Tab Function

With the engine controls in Neutral, push the left button under the Yanmar-Penta joystick and listen for a confirming beep. Briefly test its operation with a slight tap in any direction.

⚠CAUTION Make sure that no one is on the foredeck or handling a dock-line when this test is performed. Also check that the trim tabs are working properly, and that the steering turns smoothly.

11 - Final Checks

Before departing, make sure the engine and house batteries are being charged. (Note: by design, there is a delay between starting the engine and alternator charging.) Make sure your navigation plans have been prepared and that all equipment is functioning (even that which you don't necessarily intend to use). Check your fuel and water levels. Be sure the anchor is secured with a safety tether if running at speed in waves.

12 - Casting Off

When you are confident that everything is in order, cast off all dock lines and when maneuvering with the joystick remember that a light steady touch on the joy stick is usually sufficient to move the boat in the direction desired. To apply more torque, push the righthand button after pushing the left hand button under the Joystick.

CAUTION when moving sideways, twist the knob only about halfway to the stops so that the twisting action doesn't override the sideways configuration, causing the drives to return to center.