

Congratulations on becoming an owner of a Grand Banks Yacht. You have joined a select group of proud owners who appreciate the dependability and world class craftsmanship of these fine vessels.

Before operating your Grand Banks, we recommend that you read this manual and any other manuals that have been included which cover the machinery and equipment of your new yacht. Even the most experienced boater will find information that is essential to the dependable, safe operation of this vessel.

Also, be sure to fill out the Owner Registration Card and Delivery Check List completely and return them within 14 days of your delivery. This card and check list serve as your Warranty Registration, and they must be on hand at our office in order for our dealer to proceed with any warranty service.

For your convenience, your Warranty Registration will entitle you to a free subscription of the Spray Newsletter, published three times a year. Each issue contains cruising stories, product news and technical information of special interest to Grand Banks owners.

Thank you for purchasing a Grand Banks and welcome aboard! Wherever you journey with your Grand Banks, you will discover that you're in good company with fellow owners and our dedicated dealers.



Grand Banks Yachts, Ltd.
26 Pearl Street
Norwalk, CT 06850
PH (203) 845-0023 FX (203) 845-0024

NOTE:

This manual is intended to be a general guide to the maintenance and operation of this Grand Banks and the equipment installed. Where available, the equipment supplied from other manufacturers includes an owner's manual or operator's manual. We urge you to read those manuals carefully.

The operation of this or any motorized vessel can be dangerous if operated in an unsafe manner. This manual is not intended to be a substitute for training or experience in the safe operation of this or any motorized vessel.

Nor is the manual intended to substitute for an owner's good common sense. We urge each owner not familiar and experienced in the safe operation of motorized vessels to seek training from an appropriate private or government organization. Please contact Grand Banks Yachts Limited with any questions you may have about this manual, the operation of your Grand Banks or name of an organization offering boating safety courses.

GRAND BANKS®

DEPENDABLE DIESEL CRUISERS

INTRODUCTION

Owner's Operating, Servicing & Maintenance Manual

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This form must be completed and mailed or faxed to the address below within 14 days of the delivery of your new Grand Banks. Receipt of the completed Owner Registration card will place the owner on the mailing list to receive the Spray Newsletter at no charge. In addition, each owner will receive a gift from Grand Banks after the Owner Registration card is received.

Notice: Registration lists must be maintained by the manufacturer of marine products sold in the United States should notification under the Federal Boat Safety Act be required. This owner registration form also serves as the registration for the Grand Banks Limited Warranty.



Grand Banks Yachts, Ltd.
26 Pearl Street
Norwalk, CT 06850
PH (203) 845-0023 FX (203) 845-0024

Grand Banks Model	<input type="text" value="42 Europa"/>	Hull Number	<input type="text" value="1511"/>
Type of Engine(s)	<input type="text"/>	Purchase Date	<input type="text"/>
Dealer	<input type="text"/>		
Owner's Name	<input type="text"/>		
Street	<input type="text"/>		
City / State	<input type="text"/>		
Country	<input type="text"/>	Mail Code	<input type="text"/>
Engine Serial Number	Port <input type="text"/>	Stbd	<input type="text"/>
Transmission Serial Number	Port <input type="text"/>	Stbd	<input type="text"/>

The Grand Banks Limited Warranty policy for this vessel is assured through one of the following factory locations.

GrandBanks Yachts Pte Ltd.
29 Loyang Crescent
Singapore 509015
PH 65-545-2929
FX 65-543-0029
EMAIL-gbspore@magix.com.sg

Grand Banks Yachts SDN BHD
P. O. Box 148, #1707 Pasir Gudang
Johor, Malaysia
PH 60-7-251-7488
FX 60-7-251-7388
EMAIL-gbyachts@tm.net.my

I have reviewed the Grand Banks Limited Warranty Policy enclosed within the Owner's Manual.

Owner Signature _____ Date _____

Owner's Shirt size S - XXL _____ Husband _____
Wife _____

GRAND BANKS

DEPENDABLE DIESEL CRUISERS

This Registration do not extend, transfer, or modify the Grand Banks Limited War
See Limited Warranty for details.

SEND TO:



Grand Banks Yachts, Ltd.
26 Pearl Street
Norwalk, CT 06850
PH (203) 845-0023 FX (203) 845-0024

PRE-OWNED

Name of Purchaser

Street

City

State / Country

Zip Code

Seller

Telephone

Date of Purchase

Model

Hull Number

GRAND BANKS®

DEPENDABLE DIESEL CRUISERS

General Specifications

GB42 EUROPA

Hull Number

1511

L.O.A.	43' 3"	13.17m
L.W.L.	41' 1"	12.53m
BEAM	14' 1"	4.29m
DRAFT	4' 2"	1.27m
DISPLACEMENT	34 000 lbs	15 422 kg
WATER CAPACITY	278 US gals	1052 litres
FUEL CAPACITY	600 US gals	2 271 litres
HEIGHT from D.W.L. to top of BRIDGE WINDSHIELD	14' 3"	4.34m
HEIGHT from D.W.L. to top of FLYBRIDGE without WINDSHIELD	13' 2"	4.0m
HEIGHT from D.W.L. to top of MAST	22' 8"	6.9m
A.C. VOLTAGE	110 Volts / 60 Hz	
D.C. VOLTAGE	12 Volts	

GRAND BANKS

DEPENDABLE DIESEL CRUISERS

DELIVERY CHECKLIST- DEALER TO OWNER

This checklist is to ensure owner's understand system operation aboard their new vessel. It is the commissioning dealership's responsibility to review all equipment with the owner prior to delivery.

_____ Warranty policy- Guide lines for warranty service, length of warranty and coverage, Warranty registration.

ENGINE ROOM

_____ Check fluids- engine , generator and other equipment
_____ Bow thruster
_____ Fuel system-explain manifold system and bleeding procedure
_____ Fresh water system-operation and filling tanks
_____ Electrical system-Main disconnects, battery level, charging system, review all A/C, D/C wiring diagrams
_____ Bilge system-Manual and automatic operation

MAIN CONSOLE

_____ Starting procedure
_____ Instruments-Normal readings
_____ Steering system-Explain bleeding of hydraulic if equipped and location of emergency tiller if equipped
_____ D/C panel-Operation
_____ A/C Panel-Operation
_____ Generator-Demonstrate operation and power transfer-if equipped
_____ Engine Alarms-Demonstrate operation
_____ Windlass operation and solenoid location
_____ Review operation of all dealer installed equipment

FORWARD CABIN

_____ Shower drains-operation
_____ Heads-Operation overboard and holding tank
_____ Holding tank-Pump out, deck and overboard
_____ Bow thruster location

MAIN SALOON

_____ Stove-operation
_____ Stereo-operation
_____ Table operation
_____ Extinguisher location
_____ CO monitor-location and operation
_____ Refrigeration -Operation
_____ Air-conditioning -Operation and controls

EXTERIOR

- _____ Care and cleaning of all exterior surfaces including teak decks, varnish, paint, gel-coat and all metal surfaces
- _____ Window covers
- _____ Window drains-Cleaning
- _____ Lazarette-Drain locations, water / fuel shut off, emergency tiller location and installation, trim tab level.
- _____ Mast and boom operation
- _____ Gas stove tank storage and operation
- _____ All tank fills including fuel, water and holding tank.

A copy of this checklist, properly completed and signed must be kept in the dealers boat file for each boat delivered. A copy with the Owner's Registration card must be sent to the following location within (14) fourteen days upon delivery.

**Grand Banks Yachts LTD.
26 Pearl St.
Norwalk, Ct. 06850
ATTN : Customer Service**

The Delivery checklist must be signed by the customer in addition to the dealership's representative upon delivery of the boat.

Grandbanks Yachts PTE LTD and Grand Banks Yachts SDN BHD reserves the right not to approve certain or any warranty claims if the above instructions are not compiled with.

NOTE ANY FLAWS OR UNFINISHED WORK BELOW AND REPAIR

Dealership _____

Boat _____

Owner _____

Date _____

OPERATING INSTRUCTIONS

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USEFUL HINTS BEFORE EACH OUTING

1. *Make a final weather check to determine if conditions are safe and suitable.*
2. *Check that all safety equipment is on board and is located where you can get at it in a hurry and that the safety equipment is in good condition.*
3. *Conduct a radio check to make sure the radio is working.*
4. *Check that all navigational lights are in operation.*
5. *Include somebody in the group who is able to operate the yacht in case something happen to you.*
6. *Store and secure all loose gear before you get underway.*
7. *Proceed to do the starting checks for engine(s).*
8. *Check the bilge and operation of each bilge pump installed.*

STARTING & STOPPING

This section covers recommended operating procedures. A more detailed technical description of the engine can be found in the engine manufacturer's manual.

Pre-start Check (For Twin Screw)

1. *Engine and transmission lube oil levels.*
2. *Engine coolant level. Refill if necessary leaving free space in the header tank for expansion.*
3. *Inspect the bilge for excessive water.*
4. *Visually inspect engine for any signs of loose or insecure cables, belts, fittings and hoses.*
5. *The main battery switches must be on. These switches disconnect the batteries from the boat's electrical system and should never be turned off while the engine is running. These switches should be on at all times when your boat is in the water.*
6. *Check the fuel/water separators and drain them if necessary.*
7. *Make sure the seacock in the raw water systems are wide open and their strainers are clean.*

Pre-start Checks (For Single Screw)

1. *Engine and transmission lube oil levels.*
2. *Engine coolant level. Refill if necessary leaving free space in the header tank for expansion.*
3. *Inspect the bilge for excessive water.*
4. *Visually inspect engine for any signs of loose or insecure cables, belts, fittings and hoses.*
5. *The main battery switches must be on. These switches disconnect the batteries from the boat's electrical system and should never be turned off while the engine is running. These switches should be on at all times when your boat is in the water.*
6. *Check the fuel/water separators and drain them if necessary.*
7. *Make sure the seacock in the raw water systems are wide open and their strainers are clean.*

Starting The Engine (For Twin Screw)

It is not necessary for the Battery Selector Switch to be on in order to start the engines. This switch should not be in the ALL position except under the following circumstance :

When both batteries are to be charged with just one engine running, no attempt should be made to start the engines simultaneously.

The following procedures should be followed for each engine in turn.

1. Double check the gear shift control lever to make sure that transmission is in neutral.
2. Move the throttle control approximately $\frac{1}{4}$ throttle.
3. Switch on the engine circuit breaker. This will activate the engine alarm system.
4. Press the starter button. When the engine starts, throttle back to idle speed. The alarm will stop when the oil pressure reaches a safe level. If the alarm fails to shut off within ten seconds, stop the engine and determine the cause.
5. Turn on the stop solenoid circuit breaker. This will allow you to stop the engine at any time by pressing the stop button located at the lower helm and the flybridge.
6. It is generally not necessary to run the engine room blower whilst the boat is under way.

Starting The Engine (For Single Screw)

1. Double check the gear shift control lever to make sure the transmission is in neutral.
2. Move the throttle control approximately $\frac{1}{4}$ throttle.
3. Set the battery selector switch to the 1 or 2 position (For more information on the selector switch, see the electrical section of this manual).
4. Switch on the engine circuit breaker. This will activate the engine alarm system.
5. Press the starter button. When the engine starts, throttle back to idle speed. The alarm will stop when the oil pressure reaches a safe level. If the alarm fails to shut off within ten seconds, stop the engine and determine the cause.
6. Turn on the stop solenoid circuit breaker. This will allow you to stop the engine at any time by pressing the stop button located at the lower helm and the flybridge.
7. It is generally not necessary to run the engine room blower whilst the boat is under way.

WARNING ! (Exhaust Gases)

ENGINE EXHAUST GASES CONTAIN CARBON MONOXIDE, WHICH IS COLOURLESS, ODOURLESS, BUT IS POTENTIALLY LETHAL. AVOID INHALING ENGINE EXHAUST GASES.

DO NOT IDLE ENGINES FOR OTHER THAN WARMING UP WHILE THE BOAT IS MOORED. DOING SO MAY ALLOW EXHAUST GASES TO ACCUMULATE IN THE COCKPIT AND CABIN AREA.

INSPECT YOUR EXHAUST SYSTEM REGULARLY

WARNING ! (Moving Parts)

DO NOT ATTEMPT TO SERVICE ANY ENGINE OR DRIVE UNIT WITHOUT BEING TOTALLY FAMILIAR WITH THE SAFE AND PROPER PROCEDURES. CERTAIN MOVING PARTS ARE EXPOSED AND CAN PROVE DANGEROUS TO ONE UNFAMILIAR WITH THE EQUIPMENT OPERATION AND FUNCTION.

KEEP AWAY FROM PROPULSION MACHINERY DURING ITS OPERATION OR WHENEVER THE BOAT IS IN MOTION. MOVEMENT OF WATER PAST A PROPELLER CAN CAUSE THE PROPELLER, PROPELLER SHAFT AND OTHER PROPULSION MACHINERY TO ROTATE EVEN IF THE EQUIPMENT IS NOT BEING OPERATED.

WARNING ! (Hot Coolant)

ALLOW ENGINE TO COOL AND RELEASE PRESSURE FROM COOLING SYSTEM BEFORE OPENING HEAT EXCHANGER PRESSURE CAP. TO RELEASE, COVER THE COOLED HEAT EXCHANGER CAP WITH A THICK CLOTH, THEN TURN IT SLOWLY COUNTER-CLOCKWISE TO THE FIRST STOP. AFTER PRESSURE HAS BEEN COMPLETELY RELEASED, REMOVE CAP.

CAUTION ! (Engine Mounts)

THE ENGINE AND TRANSMISSION MOUNTS HELP ISOLATE THE ENGINE'S NOISE AND VIBRATION FROM THE REST OF THE BOAT, AND BAD MOUNTS CAN GIVE THE PROPULSION UNIT THE "SHAKES" AND CAUSE IT TO GO OUT OF ALIGNMENT. THE THRUST AND TORQUE OF AN ENGINE, PROPELLER SHAFT AND WHEEL IS TRANSFERRED TO THE BOAT AT THE ENGINE MOUNTS. TO EFFECTIVELY ABSORB AND CONTAIN ALL THIS POWER, THE MOUNTS MUST BE EXTREMELY STRONG. CHECK FOR ANY LOOSE, BROKEN OR WORN RUBBERS, CRACKED BOLTS, LOOSE NUTS OR MISSING COTTER PINS. CHECK ALIGNMENT FOLLOWING EVERY HAUL-OUT OR AT LEAST ONCE PER YEAR

Cold Starting

In cold weather additional steps may have to be taken. These vary according to the make and model of the engine. Full details can be found in the engine manufacturer's manual.

After The Engines Have Started

1. *Check the engine exhaust outlets to make sure water is flowing.*
2. *Check around the boat, dock and surrounding water to be sure there are no loose lines in the water and it is safe to get underway.*
3. *Check the engine room to ensure that there are no oil or water leaks and that all loose equipment is securely stowed.*

While Under Way

1. *Under normal conditions, do not exceed 1600 rpm until the water temperature has reached 180°F (82°C). If the water temperature exceeds 212°F (100°C) the water temperature alarm will sound. If this occurs, stop the engine immediately and determine the cause.*
2. *If the oil pressure falls below 15 psi, the minimum safe level, the oil pressure alarm will sound. If this occurs, stop the engine immediately and determine the cause.*
3. *(For Ford Engine only) If the transmission overheats, the alarm system will sound. If this occurs, stop the engine immediately and determine the cause.*
4. *Maximum rpm can vary due to the condition of the bottom of the boat or the propeller. A cruising speed of at least 200 rpm below the maximum will ensure longer engine life.*
5. *Make it a habit to make periodic checks of the engine room while underway.*
6. *Always throttle back to a slow idle before engaging forward or reverse gear.*
7. *It is generally not necessary to run the engine room blower whilst the boat is under way.*
8. *Always refer to engine manufacturer's operator's manual for accurate information on warm-up procedures, operating temperatures and operating oil pressures.*

CAUTION ! (Engine Oil Pressure Too Low)

OPERATION OF AN ENGINE WITH ABNORMALLY LOW OIL PRESSURE CAN LEAD TO ENGINE DAMAGE AND POSSIBLE SEIZURE. REDUCE THROTTLE TO LOW IDLE, DISENGAGE GEAR THROTTLE THEN STOP THE ENGINE IMMEDIATELY.

ALWAYS RETURN THE THROTTLE LEVER TO THE EXTREME LOW SPEED POSITION BEFORE SHIFTING GEAR CONTROLS.

Stopping The Engines

1. *Throttle back to idle speed, shift to neutral, and when possible allow the engines to idle for a few minutes to disperse the residual heat.*
2. *For each engine in turn, activate the stop device located on the console and allow the alarm system to come on before turning off the engine circuit breaker.*
3. *It is advisable to switch on the engine room blowers run for about 10 minutes or longer after stopping the engines to help cool down the engine room.*
4. *Return to the Battery Selector Switch to 1, 2 or OFF position.*

INSTRUMENTATIONS

Ammeter

D.C. Ammeter located at the upper and lower stations. Shows the rate of charge going into the batteries from engine alternator.

Note : When batteries are fully charged, the charging rate drops back to between 3 and 5 amps.

A.C. Ammeter located at the lower station. Shows the current carried by the A.C. loads.

Voltmeter

D.C. Voltmeter located at the upper station. Shows the level of regulated voltage being produced by the battery charger and the potential of batteries.

A.C. Voltmeter located at the lower station. Shows the level of regulated voltage being produced by the generator when it is running or the dockside shore supply of A.C. power.

Oil Pressure Gauge

Located at the upper and lower stations. Consult the specifications section of the engine manufacturer manual for normal pressure readings at different speeds. If pressure drops below 15 psi, stop the engine and check for cause even if the alarm does not sound.

Water Temperature Gauge

Located at the upper and lower stations. Consult the specifications section of the engine manufacturers manual for normal operating range. When possible always warm up an engine gradually.

Hour Meter

Located at lower station. Registers engine operating hours.

Tachometer

Located at the upper and lower stations. Registers the revolutions per minutes of the engine. The instrument manufacturer guarantees these instruments for + or - 15%. (PLEASE VERIFY FROM VDO LITERATURE). For recalibration, an optical tachometer or stroboscope is required.

Alarm System

Located at the upper and lower station. The beepers or buzzers are audible from almost anywhere on the boat. The system monitors the lube-oil pressure, fresh water temperature of each engine and also for Ford Engine only the oil temperature of each transmission. Oil pressure below 15 psi, water temperature above 212°F (100°C).

CAUTION ! (Engine Ignition Circuit Breaker)

THE ALARM WILL NOT OPERATE IF THE ENGINE IGNITION CIRCUIT BREAKER IS SWITCHED OFF. THIS BREAKER SHOULD ALWAYS REMAIN 'ON' WHEN ENGINE IS RUNNING.

Battery Charger (Std)

Located at lower station. It reads the level of charge in each battery by a selector switch. A normal full charged battery should read a reading of 12.8 volts. A reading of 13 to 15 volts indicates a normal charging rate when the engine/battery charger is operating. Should the reading drops below 11 volts, the battery has to be charged up for engine starting.

WARNING ! (Electric Shock)

BATTERY CAN CAUSE ELECTRICAL BURNS AND SHOCKS. EXERCISE REASONABLE CARE WHEN WORKING NEAR THE BATTERY TO AVOID ELECTRICAL CONNECTIONS THROUGH TOOLS. REMOVE WRISTWATCH, RINGS AND ANY OTHER JEWELLERY.

WARNING ! (Dangerous Acids)

AVOID CONTACT WITH BATTERY ELECTROLYTE. IT CONTAINS ACID WHICH CAN EAT HOLES IN CLOTHING, BURN SKIN AND CAUSE PERMANENT DAMAGE TO EYES. ALWAYS WEAR SPLASH-PROOF SAFETY GOGGLES WHEN WORKING AROUND THE BATTERY. IF BATTERY ELECTROLYTE IS SPLASHED IN THE EYES OR ON SKIN, IMMEDIATELY FLUSH THE AFFECTED AREA FOR 15 MINUTES WITH LARGE QUANTITIES OF CLEAN WATER. IN THE CASE OF EYE CONTACT, SEEK IMMEDIATE MEDICAL AID. NEVER ADD ACID TO BATTERY ONCE THE BATTERY HAS BEEN PLACED IN SERVICE. DOING SO MAY RESULT IN DANGEROUS SPLATTERING OF ELECTROLYTE.

TROUBLE-SHOOTING

PROBLEMS	DIAGNOSIS	CORRECTIVE ACTION
Engine turns over but will not start.	<ol style="list-style-type: none"> 1) Out of fuel 2) Dirty fuel filter 3) Stop solenoid energised 4) Fuel supply valves shut. 	<ol style="list-style-type: none"> 1) Fill tanks and Bleed System 2) Change filters and bleed system 3) Deenergise stop solenoid. 4) Open fuel supply valves.
Engine will not crank	<ol style="list-style-type: none"> 1) Low battery charge or faulty connections 2) Gear not in neutral 	<ol style="list-style-type: none"> 1a) Checked connection for corrosion & proper tightness 1b) Charge batteries as necessary 2) Shift gear to neutral
Engine fires but will not run.	<ol style="list-style-type: none"> 1) Fuel return line blocked or fuel return selector valve closed 	<ol style="list-style-type: none"> 1) Check & adjust as necessary
Engine will not maintain cruising rpm.	<ol style="list-style-type: none"> 1) Stop lever partially on 2) Dirty fuel filter 3) Air leak in fuel supply line 4) Blocked fuel shut-off valve; blocked fuel supply line to lift pump 5) Air intake filter clogged 6) Bent or fouled prop 7) Fouled bottom 	<ol style="list-style-type: none"> 1) Free as necessary 2) Change filters 3) Check all connections for leaks 4) Remove shut-off valves & inspect; remove hose & inspect; clean as necessary 5) Inspect & clean if necessary 6) Inspect & replace or clean as necessary 7) Clean
Overheating	<ol style="list-style-type: none"> 1) Low coolant level 2) Broken belt or incorrect belt tension on sea-water pump drive 3) Intake hose to raw water pump collapsed sometimes rubber layers delaminate on the inside only, blocking the intake without any collapsing visible outside the hose 4) Raw water intake system blocked at intake screen or strainer 5) Broken raw water pump; impeller 6) Blocked heat exchanger or transmission oil cooler 7) Faulty thermostat 	<ol style="list-style-type: none"> 1) Refill with fresh water & check for cause of flow level 2) Adjust or replace 3) Inspect hose inside and out. Replace or clean as necessary 4a) Loosen butterfly nuts on top of strainer & allow lid lift due to water pressure 4b) Close intake seacocks 4c) Remove lid & take out basket strainer 4d) If strainer is clean, open seacock & check flow of water. If it appear restricted, the intake screen on outside of hull is blocked. Clean from outside of hull. 5) Remove back of pump & inspect; replace if necessary. Be sure all broken parts are removed. 6) Remove end plates of heat exchanger & check for foreign matter. 7) Remove fresh water reservoir & lift out thermostat. Place thermostat in boiling water to be sure that it is opening. If not, replace with new thermostat

MECHANICAL SYSTEMS

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<i>**Duramax Installation manual</i>	<i>1 booklet</i>

Legend: ** May vary with each boat

Steering

All Grand Banks are equipped with a mechanical steering system with the exception of the GB36 Europa, GB36 Sedan, GB46 Europa, GB49 Motoryacht and GB 58 Classics which are equipped with hydraulic steering. The sprocket on the wheel at the lower station is connected to the rudder quadrant by chain and cable. The drum on the bridge wheel is connected to the sprocket at the lower station by a stainless steel cable. If, for some reason, there is a loss of steering ability on the flybridge, the lower station should be checked before concluding that the failure affects the whole system. Periodic checking, greasing and oiling of the steering system is recommended.

Emergency Tiller Arm

(Applicable for hull prior to 42CL#1493)

An emergency tiller is provided for each Grand Banks. The emergency tiller access is via a round plastic hatch so that in the event of an emergency it is possible to smash the cover to fit the emergency tiller thereby saving valuable time in removing the cover. It may also be necessary to disconnect the steering cables at the quadrant.

On motoryachts model equipped with mechanical steering and an island berth aft, the squared off rudder post is below the island bed.

For GB 42CL model an emergency tiller arm is provided and installed inside the lazarette hatch. If needed, the starboard side hatch cover should be opened completely, and the emergency tiller arm fitted onto the square shaft off the shaft of the starboard rudder stock and steer from the centre of the boat. It may also be necessary to disconnect the steering cable at the quadrant.

Propeller Shaft Alignment

It is important to maintain the proper propeller shaft alignment all times. Please see caution note below. Engine alignment can vary during the normal use of a boat. It is strongly recommended that the alignment be checked (in water only) at each haul-up, and after each 250 hours of operation or annually whichever occurs first. The alignment should be performed by a qualified technician.

CAUTION ! (Engine Misalignment)

MISALIGNMENT CAN CAUSE DAMAGE TO SHAFT LOGS, STRUTS, SHAFTS AND THE ENGINE TRANSMISSION. CHECK AND REALIGN REGULARLY BY QUALIFIED SERVICE PERSONNEL.

Propellers

The propellers installed as original equipment on each Grand banks are designed to give all round performance. Technical information on your propellers can be found in the specifications section of this manual. On single screw boats, the propeller is usually left-handed (refer to *Equipment List*), which means it rotates counter-clockwise when viewed from aft. On twin screw boats, the port propeller is left handed and the starboard propeller is right handed (rotates clockwise when viewed from aft).

Propeller Installation

Before installing a propeller, the taper on the shaft should be lightly coated with a suitable preparation to prevent the propeller from 'seizing' onto the shaft. The propeller can also be coated with a silicone solution to help it stay clean.

It is important when installing a propeller to make sure it is not 'keybound'. To check this, slide the propeller up the taper without the key installed and mark the shaft at the forward of the propeller boss. Repeat the procedure with the key in place. The boss should reach the mark made previously. This procedure will help to reduce imbalance and vibration. Be sure the nut is locked tight and the split pin on the jam-nut is in position.

Bearing Renewal

The shaft log at the forward end of the shaft tube is the same for both single and twin screw boats. To remove the bearing from the shaft log proceed as follows :-

- 1) *Take off the shaft stuffing box and rubber hose.*
- 2) *Unscrew the locking bolts in the fibreglass shaft tube.*
- 3) *Pull the bearing out forward with a bearing puller.*

To remove the stern bearing in a single screw boat, undo the locking bolts in the casting or fibreglass tube and withdraw the bearing aft. On some boats it will be necessary to remove the fibreglass fairing by cutting through the thin laminate which attaches it to either side of the keel.

To remove the bearing from the strut, undo the setscrews in the strut casting and withdraw the bearing aft.

Details of the shaft assembly can be found in the drawing included with this manual.

CAUTION ! (When towing a single screw boat)

WHEN YOU NEED TO TOW THE BOAT, THE PROPELLER SHAFT SHOULD BE CLAMPED BY A WRENCH OR SIMILAR TOOL TO PREVENT THE SHAFT FROM ROTATING IN THE REVERSED DIRECTION. THIS IS NECESSARY TO PREVENT THE STUFFING BOX FROM OVERHEATING, DUE TO NO FLOW OF WATER FROM THE ENGINE RAW WATER PUMP WHICH IS CONNECTED TO THE STUFFING BOX BY WAY OF A WATER COOLING HOSE, AND TO PREVENT DAMAGE TO SOME MODELS OF TRANSMISSIONS WHICH REQUIRE INTERNALLY DRIVEN LUBRICATION.

ALWAYS KEEP AN EYE ON THE SHAFT/STUFFING BOX WHEN BOAT IS BEING TOWED.

CAUTION ! (When towing a twin screw boat)

AS ABOVE METHOD IF BOTH ENGINES CANNOT BE STARTED OR WHEN BOAT IS BEING TOWED. IF EITHER ONE ENGINE IS OPERATIVE, YOU NEED TO CLAMP THE FAILED ENGINE ONLY.

Teleflex Hydraulic Steering

Hydraulic steering system is standard on GB 36 Sedan, 42 Europa, 46 Europa, 49 Motoryachts and 58 Classics and optional on other models. Except 58 Classics, these models use Teleflex system.

Purging Procedure.

To fill and purge the system, proceed as follows :

STEP 1

Unscrew fill and vent plug labelled remote fill and vent at flybridge console top. Fill helm pump full with oil (upper helm on multi station system). As the system fills with oil and air bubbles rise up into the funnel or filling container add more oil as required.

NOTE : *Each helm pump reservoir has an approximate oil capacity of 3/4 quarts (75 litres).
Open lazarette hatch to locate cylinder.
Slide vinyl bleed tubes onto cylinder bleed fitting nipples and place other end of bleed tube into a container. Container should be large enough to hold at least one gallon (4 litres).
Now open all cylinder bleed fitting nipples by turning bleed nipple hex 1½ turns anti clockwise.*

CAUTION ! (Purging Of Hydraulic Steering)

BEFORE PROCEEDING, MAKE CERTAIN THAT STEERING HELM PUMPS ARE SET AT THEIR HIGHEST DISPLACEMENT. ADJUSTING KNOB BELOW HELM PUMP STEERING WHEEL SHAFT MUST BE TURNED CLOCKWISE AS FAR AS IT WILL GO.

STEP 2

Turn the steering wheel upper station helm to starboard (right) until a steady stream of oil comes out of starboard bleed hose. Then turn the steering wheel to port (left) until a steady stream of oil comes out of the port bleed tube.

NOTE : *For single station steering system proceed to step 3. For multi station steering system repeat 2 at next lower helm and again at lowest helm, if more than two helm stations are installed. An autopilot must be considered as a steering station. The autopilot hydraulic power pump must be turned on to pump oil out of cylinder bleed fitting in proper sequence depending on where the autopilot power pump is connected into the steering system.*

STEP 3

Close cylinder bleed tube nipples.

STEP 4

Starting at the upper steering station turn the steering wheel to hard over starboard (right). With as much force as possible, continue to turn the wheel to starboard and leave it in the position for one minute.

NOTE: *If the pressure build up exceeds 1,000 PSI - 70 BAR, the steering wheel will slip due to opening of the pressure relief valve. This will not harm the pump.*
When the steering wheel is force into the hard over position, air bubbles will once again rise up into the filling container.
Now force the steering wheel hard over to port (left) and leave in that position for one minute.
Alternating between port and starboard, (left and right) repeat this procedure about 6 to 10 times at the upper station helm.

STEP 5

Repeat STEP 4 at each additional helm in multi station steering systems.

STEP 6

Check the steering system for complete air removal by forcing the steering wheel into both hard over positions at upper steering station. If there is no noticeable drop and rise of the oil in the filling container, the steering system is correctly filled and purged.

A noticeable drop and rise of the oil level indicates that air is still present in the system. If so, repeat STEP 4, 5 and 6. After system have been correctly filled and purged drain off excess oil in filling container, final oil level must always be within ½" of filler hole. Any more air left in the system at completion of filling procedure will purge itself in time. Should this occur, oil level in top helm will drop and must be replenished. Oil level should be checked periodically, and topped off if needed. Best time to check oil level is before leaving dock.

CAUTION ! (Reusing Of Hydraulic Oil)

DO NOT REUSE OIL THAT HAS BEEN CIRCULATED THROUGH THE STEERING SYSTEM UNLESS IT IS PROPERLY FILTERED. AUTOMOTIVE TYPE GASOLINE, OIL TYPE FINE MESH FUNNEL FILTERS ARE ACCEPTABLE TO FILTER THE OIL.

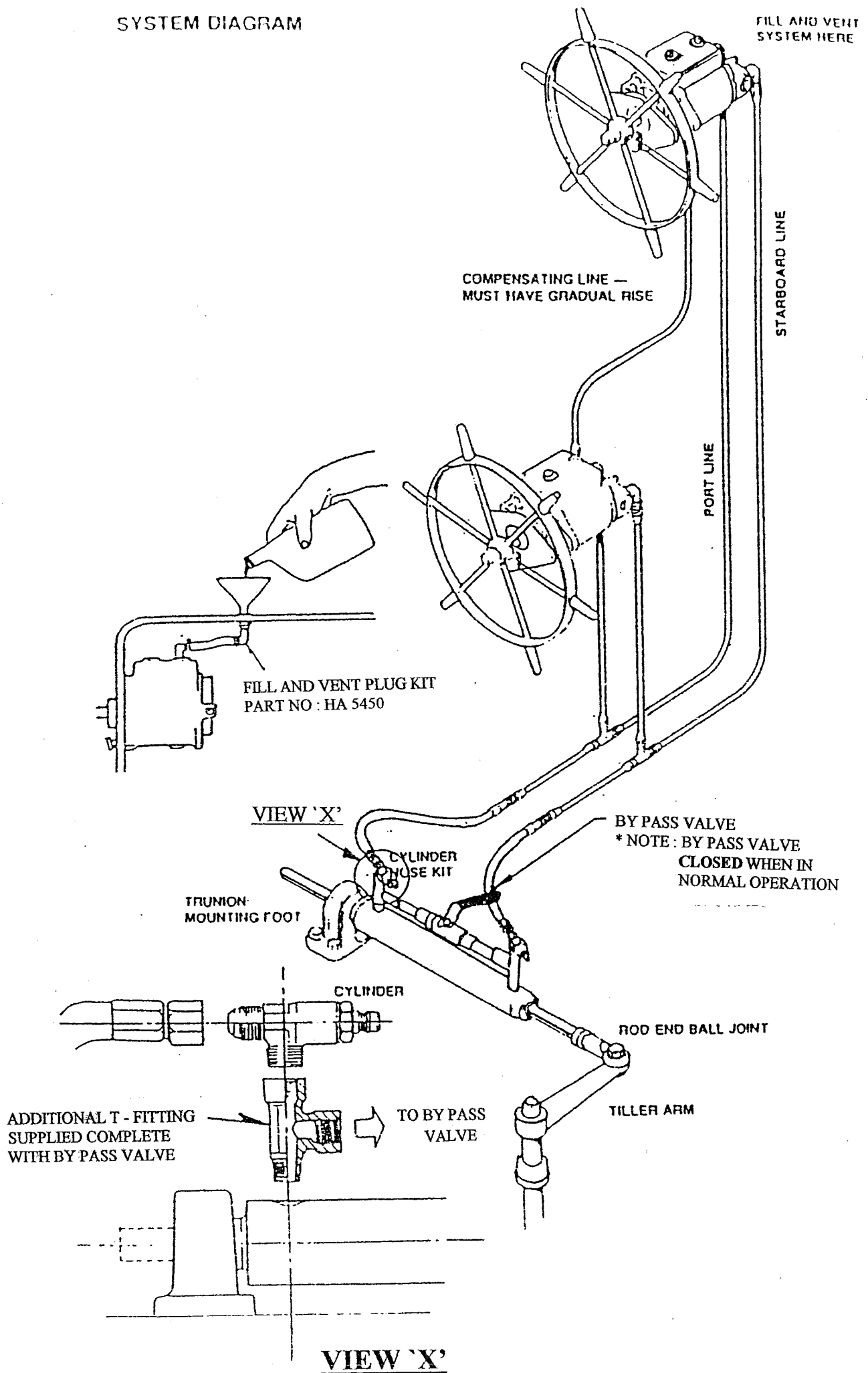
Trim Tabs (Optional)

The trim tabs are located on the transom and used to change the running angle of your boat. The trim tab control switches are located both at lower and upper helm stations. Power supply to the trim tabs are protected by circuit breaker mounted on the DC circuit breaker panel.

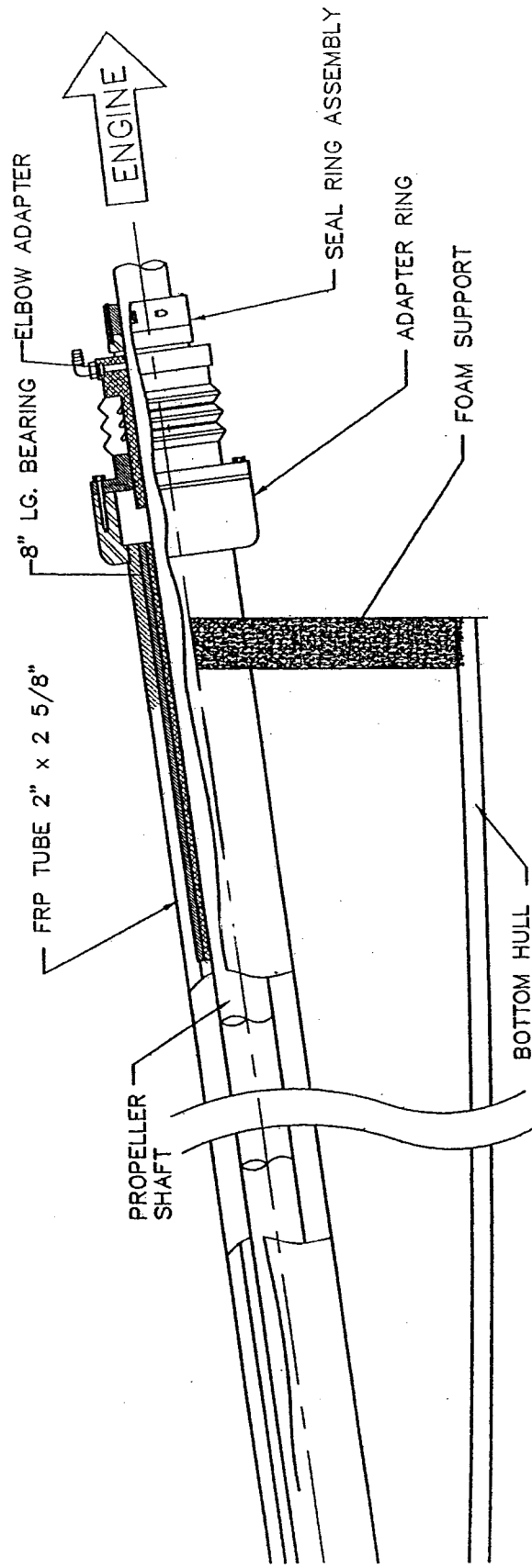
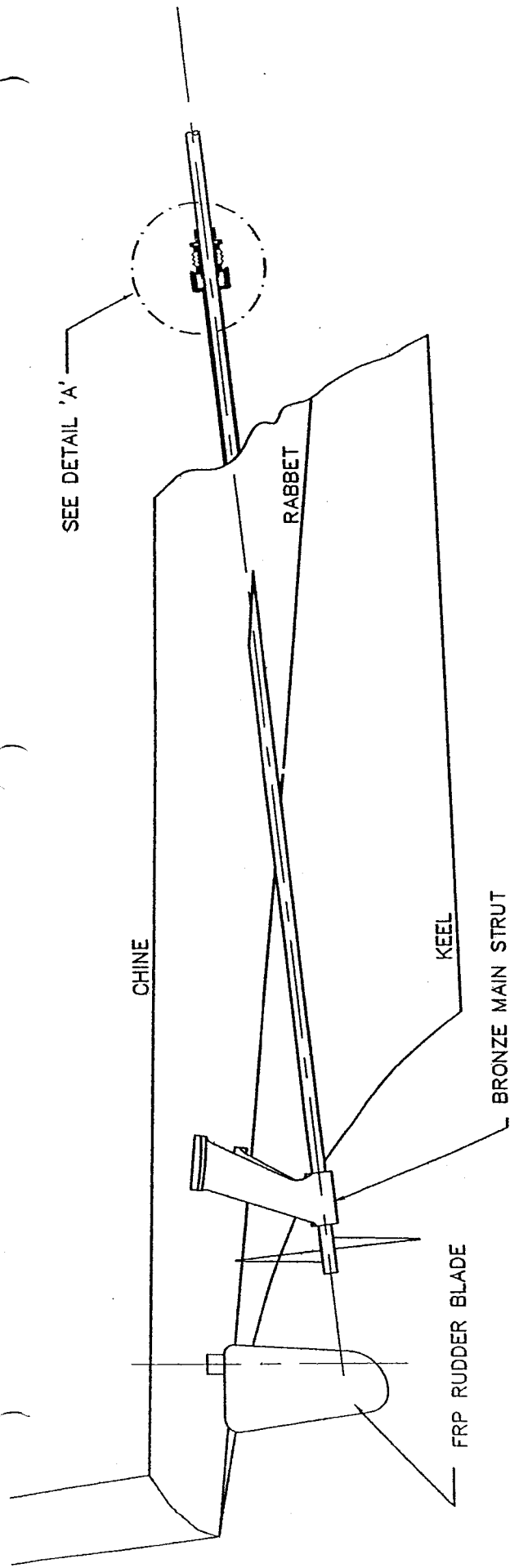
CAUTION ! (Using Trim Tabs On Following Sea)

WHEN IN FOLLOWING SEA, SET TRIM TABS FULLY UP TO AVOID POSSIBLE LOSS OF CONTROL OR BROACHING.

SYSTEM DIAGRAM



[illegible]



DETAIL 'A'

SHAFT SEAL INSTALLATION (DURAMAX SHAFT SEAL)

SCALE : NTS

ELECTRICAL SYSTEMS

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Legend: * Varies with each boat
 ** May vary with each boat

D.C. SUPPLY

The basic service and starting circuits are two wire 12 volt D.C. system with negative ground. Details of the electric circuits can be found on the schematic enclosed with this manual.

AGM Batteries

AGM (Absorption Glass Matt) sealed batteries in basically also a lead acid battery. The sulphuric acid is absorbed between the plates and immobilized by a very fine fiberglass mat. This glass mat absorbs and immobilizes the acid while still keeping the acid available to the plates. This allows a fast reaction between acid and plate material. These batteries are maintenance-free.

The AGM battery has an extremely low internal electrical resistance. This, combined with faster acid migration, allows the AGM batteries to deliver and absorb higher rates of amperage than other sealed batteries during discharging and charging. In addition, AGM technology batteries can be charged at normal lead-acid regulated charging voltages.

AGM batteries should be charged as indicated below:

Fully Automatic Systems Manual Systems
(Temperature compensation via battery sensor)

Bulk 14.38v (77F) 14.4v (Cold) <70F
14.2V (Warm) 80F
14.0V (Hot) >100F
14.6V (Extreme Cold) <32F

Acceptance 14.38 - 13.9 Same as Bulk or slightly lower

Float : 13.38v (77F) 13.5V (Cold) < 70F
13.2V (Warm) 80F
13.0V (Hot) >100F
13.8V (Extreme Cold) <32F

WARNING ! No battery will survive at gel charge settings but a gel battery.

D.C. WIRE NUMBERING CODES

<u>NO.</u>	<u>DESCRIPTION</u>		
01.	STARTING (SINGLE ENGINE)	55.	INTERFACE
	PORT STARTING	56.	TRIM TAB
02.	STBD STARTING	57.	WIND-SPEED
03.	ALTERNATOR (SINGLE ENGINE)	58.	OIL CHANGE PUMP
	PORT ALTERNATOR	59.	WEATHER FAX
04.	STBD ALTERNATOR	60.	INSTRUMENT LIGHTS
05.	VENT (ENGINE BLOWER)	61.	HALON
06.	STOP SOL (SINGLE ENGINE)	62.	CIGARETTE LIGHT
	PORT STOP SOLENOID	63.	BAIT TANK PUMP
07.	STBD STOP SOLENOID	64.	STEP LIGHTS
08.	WIPER / WINDSCREEN WASH	65.	LAZARETTE LIGHTS
09.	HORN	66.	ICE-MAKER
10.	NAVIGATION LIGHTS	67.	TDX SYSTEM
11.	ANCHOR LIGHT	68.	HEATER / ESPAR
12.	FWD CABIN LIGHTS	69.	SEA TEMP
A12.	AFT CABIN LIGHTS	70.	FMV DISPLAY
13.	SALOON LIGHTS	71.	INSTRUMENT
14.	BILGE PUMP	72.	HULL LIGHTS
15.	DRAIN PUMP	73.	WATER-MAKER
16.	FRESH WATER PUMP	74.	PYROMETER
17.	SPREADER LIGHT	75.	COURTESY LIGHTS
18.	GALLEY VENT	76.	TV. ANTENNA
19.	ENGINE ROOM LIGHT	77.	PLOTTER
20.	WINDLASS	78.	GPS
21.	BATTERY CHARGER	79.	STABILIZER
22.	STEREO OR STEREO SUPPLY	80.	DART
23.	ELECTRIC HEAD	81.	CHART LIGHT
24.	WASTE TREATMENT SYSTEM	82.	SUPERVISOR
	(TOILET TANK, LECTRA-SAN,	83.	FUEL
	GALLEY MAID)	84.	ENG RM OUTLET
25.	RADIO VHF	85.	SALOON F/B OUTLET
26.	RADAR	86.	AFT OUTLET
27.	AUTO PILOT	87.	FWD OUTLET
28.	DEPTH SOUNDER, RECORDER	88.	SPARS
29.	SPEEDOMETER (SUM LOG)	89.	ELECT ENG CONTROL
30.	SEA WATER PUMP OR DECK WASH PUMP	90.	COMPUTER
31.	GEN. STARTING SYSTEM	91.	LEVEL INDICATOR
32.	D.C. FRIDGE	92.	INVERTER
33.	HEAD VENT	93.	AUTOBAR
34.	SPOT LIGHT	94.	EBERSPACHER
35.	LORAN (SATELLITE NAVIGATOR)	95.	CARBON MONOXIDE DETECTOR
36.	S.S.B. RADIO	96.	DECK LIGHT / BRIDGE LIGHT
37.	RUDDER INDICATOR	97.	BOW THRUSTER
38.	INTERCOM	98.	WATER PRESSURE
39.	TASWIRELESS TELEPHONE	99.	WATER TANK GAUGES
40.	FLYBRIDGE D.C. SUPPLY	100.	FUEL TANK GAUGES
41.	DAVIT (HOIST DINGHY)	101.	SPARE
42.	A.D.F.	102.	PORT MMC
43.	HAILER	103.	STBD MMC
44.	SATELLITE NAVIGATOR	104.	HIGH BILGE PUMP
45.	D.C. OUTLET	105.	FISHING ACCESSORIES
46.	GAS CONTROL	106.	LAZARETTE HATCH
47.	FIRE EXTINGUISHER	107.	ACTIVE AERIAL
48.	COMPASS	108.	STROBE LIGHT
49.	FAN	109.	ALARM SYSTEM
50.	SYNCHRONIZER	110.	HI-LO PUMP
51.	GEN. VENT	111.	CELL - TEL
52.	SEA GUARD	112.	CABLE MASTER
53.	ELECTRONICS	*	D.C. Ground wires-numbers are the
54.	FISH FINDER		same as the positive(+) wire except
			the colour.

Battery Selector Switch (For Twin Screw)

The battery selector switch on the DC panel enables power for the service system to be drawn from either or both batteries. Power from the switch is distributed to all DC circuits through circuit breakers.

It is not necessary for the Batteries Selector Switch to be 'ON' in order to start the engines.

CAUTION ! (Position of battery selector switch)

THE SWITCH SHOULD NOT BE IN THE ALL POSITION EXCEPT UNDER THE FOLLOWING CIRCUMSTANCE. WHEN BOTH BATTERIES ARE TO BE CHARGED WITH JUST ONE ENGINE RUNNING.

After tying up or anchoring for the evening, the selector switch should be placed in the 1 or 2 position. This will prevent both batteries from being drained if a 12 volt piece of equipment is inadvertently left on. When on an extended cruise or when living on board without shore power, a good system is to set the switch in the 1 position on odd-numbered days and in the 2 position on even-numbered days when the engine is not in use.

When leaving the boat the selector switch should be turned to the OFF position. This will isolate all circuits from the batteries except for the electric bilge pump and circuit which are not connected through the Battery Selector Switch. Turn the bilge circuit breaker on and select to Auto.

The battery selector switch does not affect the use of the battery charger. The charger automatically charges all batteries when supplied with AC power. But the battery Master Disconnect Switches in the engine room must always be in 'ON' position when starting the engine, or when the engine is running.

CAUTION ! (Master Disconnect Switches)

TO AVOID SERIOUS DAMAGE TO THE ALTERNATORS, OR LOSS OF CONTROL CIRCUIT FUNCTIONS, INCLUDING SHUTDOWN, DO NOT TURN THE BATTERY MASTER-DISCONNECT-SWITCH TO THE 'OFF' POSITION WHILE THE ENGINE(S) IS/ARE RUNNING OR WHEN THE BATTERY CHARGER IS IN OPERATION.

Battery Selector Switch (For Single Screw)

The battery selector switch on the DC panel enables power for the service system to be drawn from either or both batteries. Power from the switch is distributed to all DC circuits through circuit breakers.

CAUTION ! (Battery Selector Switch)

TO AVOID SERIOUS DAMAGE TO THE ALTERNATOR OR LOSS OF CONTROL CIRCUIT FUNCTIONS INCLUDING SHUTDOWN, DO NOT TURN THE BATTERY MASTER DISCONNECT SWITCH TO THE 'OFF' POSITION WHILE THE ENGINE IS RUNNING.

After tying up or anchoring for the evening, the selector switch should be moved to the 1 or 2 position. This will prevent both batteries from being drained if a 12 volt piece of equipment is inadvertently left on. When on an extended cruise or when living on board without shore power, a good system is to set the switch in the 1 position on odd-numbered days and in the 2 position on even-numbered days when the engine is not in use.

When leaving the boat the selector switch should be turned to the OFF position. This will isolate all circuits from the batteries except for the electric bilge pump which is the only item on the service panel not connected through the Battery Selector Switch. With this switch off, the pump will operate automatically provided that the bilge pump circuit breaker and the battery Master Disconnect Switches are on and that the bilge pump function switch is set to 'auto'. It is recommended that these switches normally be left in these positions. The pump can, however, be started at any time by setting the function switch to 'manual'.

The battery selector switch does not affect the use of the battery charger. The charger automatically charges all batteries when supplied with AC power.

Windlass**Windlass operation**

The standard windlass installation on all GB's (if fitted) includes 3 station controls. The main breaker, on/off switch and up/down controls are fitted on one panel at the lower helm. Up/down foot switches are located at the bow and flybridge helm.

To operate the windlass the on/off switch must be on and the circuit breaker closed or re-set.

CAUTION ! (Safe Operation)

THE SAFE OPERATION OF AN ELECTRIC WINDLASS REQUIRES EXTREME CAUTION. KEEP CLEAR OF MOVING PARTS AT ALL TIMES. REFER TO THE MANUFACTURER'S OWNER'S MANUAL FOR INSTRUCTIONS ON THE SAFE AND PROPER OPERATION OF THE WINDLASS.

CAUTION ! (Anchoring in Heavy Weather)

NEVER ALLOW THE CHAIN LOAD TO BE TAKEN ON THE WINDLASS WITHOUT HAVING THE PAWL OR CHAIN STOPPER ENGAGED. IN HEAVY WEATHER OR STRONG TIDAL CONDITIONS AVOID ALLOWING THE LOAD TO BE TAKEN BY THE ANCHOR ROLLER PLATFORM. WE STRONGLY RECOMMEND THE USE OF A NYLON SNUBBER LEAD FROM THE CHAIN THROUGH THE BOW CHOCKS TO THE MOORING CLEATS.

The operation of an electric windlass is very dangerous unless proper safety precautions are followed. These include but are not limited to:

CAUTION ! (Safety Precautions)

NEVER HANDLE CHAIN OR RODE ON THE WINDLASS WITH ELECTRIC POWER SUPPLIED TO THE WINDLASS. TO CLEAR FOULED CHAIN OR RODE, ALWAYS DISCONNECT ELECTRIC POWER FIRST.

NEVER ALLOW MORE THAN ONE PERSON TO OPERATE THE ELECTRIC CONTROLS OF THE WINDLASS AT THE SAME TIME
STAND CLEAR OF WINDLASS WHEN RAISING OR LOWERING CHAIN OR RODE

USE A SUITABLY SIZED NYLON LINE SNUBBER RIGGED FROM THE PORT AND STARBOARD CHOCK AND CLEAT TO THE CHAIN OR BRING THE ANCHOR RODE THROUGH THE BOW CHOCK TO A CLEAT. THE ANCHOR PLATFORM IS NOT INTENDED TO TAKE EXCESSIVE STRESSES SUCH AS THOSE EXPERIENCED DURING STRONG CURRENTS, HIGH WINDS AND HEAVY WEATHER.

Windlass Maintenance

To maintain your windlass in like new condition, we recommend that you rinse liberally with fresh water often. Polish the case and all exterior parts periodically. A fitted canvas cover will help minimize exposure to salt water corrosion.

Periodically check the oil level of the Lofrans windlass (if fitted) and fill as needed. Please refer to the manufacturer's owner's manual for complete maintenance guidelines.

A.C. SUPPLY

The AC supply is provided either from the shore via the shore connector or from a generator. The selector switch mounted on the AC panel near the lower helm allows you to choose your supply source if a generator is installed on your boat.

Connecting AC shore power.

1. *Begin with the master breaker(s) in the off position and the power selector switch in the off position.*
2. *Select an AC shore that can be reached with your power cord either from the bow or stern shore inlet. Connect the boat side of the shore power cord first.*
3. *Ensure the breaker at the shore power source is off. Connect the shore end of the cord to the shore source.*
4. *Secure the code in a safe manner.*
5. *Turn the shore source breaker on.*
6. *View the indicating fuse holders. A small amber light will indicate if power is being supplied but the fuse is blown.*
7. *Select the shore power source via the AC power selector switch on the AC panel.*

CAUTION ! (Shore Power Selector Switch)

NEVER ROTATE THE SHORE POWER SELECTOR SWITCH UNDER LOAD (WITH THE MASTER BREAKERS ON AND POWER BEING CONSUMED).

8. *Operate the reverse polarity test circuit according to the instructions below "Checking reverse polarity." If reverse polarity exists, rotate the AC power selector switch to the off position, turn off the shore source breaker and request the shore power to be checked by a qualified technician.*
9. *If reverse polarity does not exist, turn on the master breaker(s) one at a time.*
10. *Turn individual AC breakers on or off as required.*

Disconnecting AC shore power

1. *Turn off the master breaker(s) on the boat's main AC panel.*
Note: For best results, turn each AC breaker off prior to turning the master breaker off.
2. *Turn the shore power selector switch to the off position.*
Note: Never rotate the shore power selector switch under load (with the master breakers(s) on the power being consumed).
3. *Turn the shore power source breaker off.*
4. *Disconnect shore power cord and secure cover on shore power inlet fitting.*

Operating Generator

Before operating generator become familiar with the procedures and instructions in the generator manufacturer's owner's manual.

1. Follow the pre-start checks as outlined in the generator owner's manual
2. Ensure master breakers are off and AC power selector switch in the off position.
3. The start and stop buttons are located on the boat's main AC panel.
4. Switch the generator circuit breaker to the on position.
5. Depress the button marked "heater" (if fitted) according to the generator owner's manual.
6. Push the start button.
7. Allow the generator to run for a few minutes before switching to a load.
8. Make a visual inspection of generator and listen for any unusual sounds.

Note: Keep clear of any moving parts on this or any machinery while it is operating.

9. Rotate AC power selector switch to generator position.

Note: Never rotate the shore power selector switch under load (with the master breakers on and power being consumed).

10. Check reverse polarity light as indicated below. "Checking reverse polarity". If reverse polarity exists, rotate the AC power source to the off position, turn off the shore source breaker and request the shore power source to be checked by a qualified technician.

Note: Once this is confirmed to be correct it should not require checking unless the generator or boat's wiring has been modified.

11. Turn the master breaker(s) one at a time.
12. Turn individual AC breakers on or off as required.

Shutting down Generator

1. Turn off all AC breakers.
2. Turn off master AC breaker(s).
3. Rotate AC selector switch to the off position.
4. Depress "stop" button until generator ceases to run.
5. Turn off "generator" circuit breaker.

WARNING ! (When Servicing A System)

110/220V ELECTRICAL POWER CAN BE DANGEROUS. DO NOT ATTEMPT TO SERVICE A SYSTEM UNLESS YOU ARE THOROUGHLY FAMILIAR WITH AND EXPERIENCED IN PERFORMING SUCH SERVICES. DO NOT FORGET TO TURN OFF ALL 110/220V POWER SOURCE BEFORE ATTEMPTING REPAIR OR ALTERATIONS.

PLUMBING SYSTEMS

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Legend: * Varies with each boat

BILGE AND SANITARY

Bilge Pumps

The electrical bilge pumps are located inside the engine room under the sole. It is an automatic pump that can be controlled manually through the use of the switch on the main breaker panel.

- * A hand operated bilge pump is also provided

Shower Drain Pump

A shower drain pump is located in a drainage well in each shower. There is a circuit breaker on the main panel and an on-off switch in the head. Both must be in the 'ON' position. The pump is activated by a float switch. Water must be present for it to operate.

In order to prevent clogging of the shower drain pump system, care must be taken to clean the drain and pump screen often. In addition, liquid not bar soaps are recommended to prevent soap from solidifying in the pump or discharge hoses.

Shower Drains

Each shower compartment whether forward or aft has a recessed sump . For fwd shower, there is a sump pump inside recessed sump, while for the aft shower the recessed sump is connected via hose to another sump box, located below sole. For both locations, the recessed sump, sump pump and sump box should be inspected regularly to see if they need cleaning and removal of accumulations of hair and soap curd.

Sump box and shower drain pump is fitted with an automatic switch which will turn the pump off when water is emptied. If the pump runs continuously but the water level does not go down, there may be an air lock in the discharge line. Turn pump off and restart this on-off operation several times to get rid of the air. If the pump does not turn off automatically when shower sump is emptied, check function of the float switch.

CAUTION ! (Keep It Switched Off After Using)

DO REMEMBER TO TURN OFF THE SHOWER DRAIN PUMP SWITCH AFTER USING. THIS CAN PREVENT ANY MALFUNCTIONING FLOAT SWITCH FROM DAMAGING YOUR DRAIN PUMP OR DISCHARGING

Heads

Always be sure to pump the head completely clear especially when leaving your boat. Do not dispose of matches, cigarettes or other debris in the head. Some heads are fitted with a waste treatment system. More information and detailed instructions on both the head and treatment cycle can be found in the relevant manufacturer's manual.

If electric head and Tankwatch IV level indicators are installed, both electric heads plus level indicators circuit breakers must be turned ON for the electric head to work.

Starting with HIN 2002 boats, only discharge to holding tank is available for all heads. Direct overboard discharge is no longer available directly from head and can only be achieved through holding tank overboard discharge.

CAUTION ! (Keep Anti-siphon Valve Clear)

THE ANTI-SIPHON VALVE PREVENTS THE SEA WATER BEING PUMPED INTO THE HEAD TO FLUSH THE BOWL FROM CONTINUING TO RUN IN AFTER PUMPING HAS STOPPED. THE OPENING IN THE VALVE CAN EASILY BE COME CLOGGED WITH ENCRUSTED SALT DEPOSITS OR OTHER DEBRIS. VISUALLY CHECK THIS VALVE OFTEN AND REMOVE AND CLEAN AT LEAST ANNUALLY. NEVER ELIMINATE THE ANTI-SIPHON VALVE FROM THE SYSTEM.

Seacocks

Seacocks and other underwater fittings must be cleaned and lubricated regularly, if not the corrosion caused by contact with salt water can, over time, cause moving parts to become very stiff. In extreme cases, seacocks can become virtually unmovable,. Since the seacock is designed to provide watertight integrity to an opening in the hull, properly functioning seacocks are vital to the safety of the boat and its crew. This problem is more prevalent in warm climates where haul-outs are infrequent.

Many hardware manufacturers recommend periodic inspection and cleaning of all underwater hardware. Prudent owners are well advised to check the operation of every seacock regularly. For most owners that probably means a hands-on inspection once a month or before every cruise. There is no substitute for periodically disassembling the seacock for a thorough cleaning, inspection and lubrication. Many boat yards call this 'overhauling' the seacocks and recommend the procedure during annual haul-out or spring commissioning. Cleaning the dirt and corrosion from the housing and working parts of a seacock should not require much more than a soap, freshwater and bronze wool or synthetic scrubbing pads.

Following a good cleaning, all metal parts should be inspected for signs of wear on the effects of electrolysis. Any damaged or defective parts should be replaced and if evidence of electrolysis is suspected, a qualified electrolysis technician should be consulted to remedy the problem. The moving parts of the seacock should be lubricated to maintain ease of operation. Groco seacocks are lubricated with #4000 Drydene lubricant during initial assembly. Proper periodic maintenance of the seacocks and all underwater marine hardware should provide you not only with many years of trouble free operation but the confidence that you will be able to depend on them if you need to.

CAUTION ! (Seacock)

THE SEACOCK AND THRU-HULL FITTING FOR THE HEAD AS ALL THRU-HULL FITTINGS SHOULD BE CLOSED WHEN NOT IN USE FOR EXTENDED PERIODS. CLOSING THE SEACOCK WILL PREVENT THE INGRESS OF WATER IN THE EVENT A HOSE, CLAMP OR OTHER DEVICE SHOULD FAIL. TO ENSURE PROPER AND SAFE OPERATION IT IS IMPORTANT THAT THIS AND ALL SEACOCKS SHOULD BE INSPECTED, CLEANED AND RE-LUBRICATED BY A QUALIFIED TECHNICIAN AS REQUIRED BUT AT LEAST ANNUALLY.

CAUTION ! (Discharge of Waste Water)

MANY LOCALITIES SEVERELY RESTRICT THE DISCHARGE OF WASTE WATER AND IMPOSE SUBSTANTIAL FINES TO VIOLATORS. THE RESPONSIBILITY FOR COMPLIANCE WITH APPLICABLE REGULATIONS LIES WITH THE OPERATORS OF THE VESSEL. YOUR GB DEALER CAN ASSIST YOU WITH FURTHER INFORMATION.

WARNING ! (No Dumping At Sea)

IT IS ILLEGAL FOR ANY VESSEL TO DUMP TRASH ANYWHERE IN THE OCEAN OR NAVIGATIONAL WATERS. LOCAL REGULATIONS MAY FURTHER RESTRICT THE DISPOSAL OF GARBAGE.

A DUMPING WARNING LABEL IS SUPPLIED LOOSE FOR EACH GRAND BANKS SHIPPED AFTER MID APRIL 1992. IT SHOULD BE PLACED AT A PROMINENT LOCATION IN THE BOAT. THE ACTUAL LOCATION IS THEN LEFT TO THE DISCRETION OF THE BOAT OWNERS.

Holding Tank

Holding tanks are necessary in some parts of the world to comply with laws concerning the disposal of waste. Boats with holding tanks are provided with a macerator pump to facilitate the pumping of waste. Please refer to the diagram enclosed with this manual for details of this system.

The holding tank can be pumped out either via the on-deck fitting or by the use of an overboard discharge via a macerator pump. To operate the macerator pump turn the circuit breaker "on" located on the main DC breaker panel. The amount of time required to pump out the tank will vary.

FRESH WATER SYSTEM

Water Tanks

The location of the water tanks are shown on the engine room layout diagram included with the manual. Each tank is fully baffled and has a shut-off valve. Each tank is labelled as to material, capacity and manufacturer. Tanks should be drained completely during extended periods of non-use to minimise the opportunity for mineral deposits to form on the inside of tanks and to prevent freezing in cold climates. The use of potable antifreeze in water lines and through the fresh water system by a qualified technician is highly recommended for cold climates.

CAUTION ! (Labelled Water Or Fuel Fill)

DO NOT CONFUSE WATER DECK FILL WITH FUEL OR WASTE DECK FILL. THESE PLATES ARE CORRESPONDINGLY LABELLED.

Fresh Water Pump

The fresh water pump location is shown on the enclosed diagram. Technical information on the pump can be found in the Equipment list and manufacturer's owner's manual..

Water Heater

Water is heated either by waste heat from the engine's cooling system or by an electric element connected to the A.C. electric system. A pressure relief

valve protects the heater from excessive pressure build up. The engine will not generate enough heat when idling to produce really hot water.

CAUTION ! (A.C. Power to Water Heater)

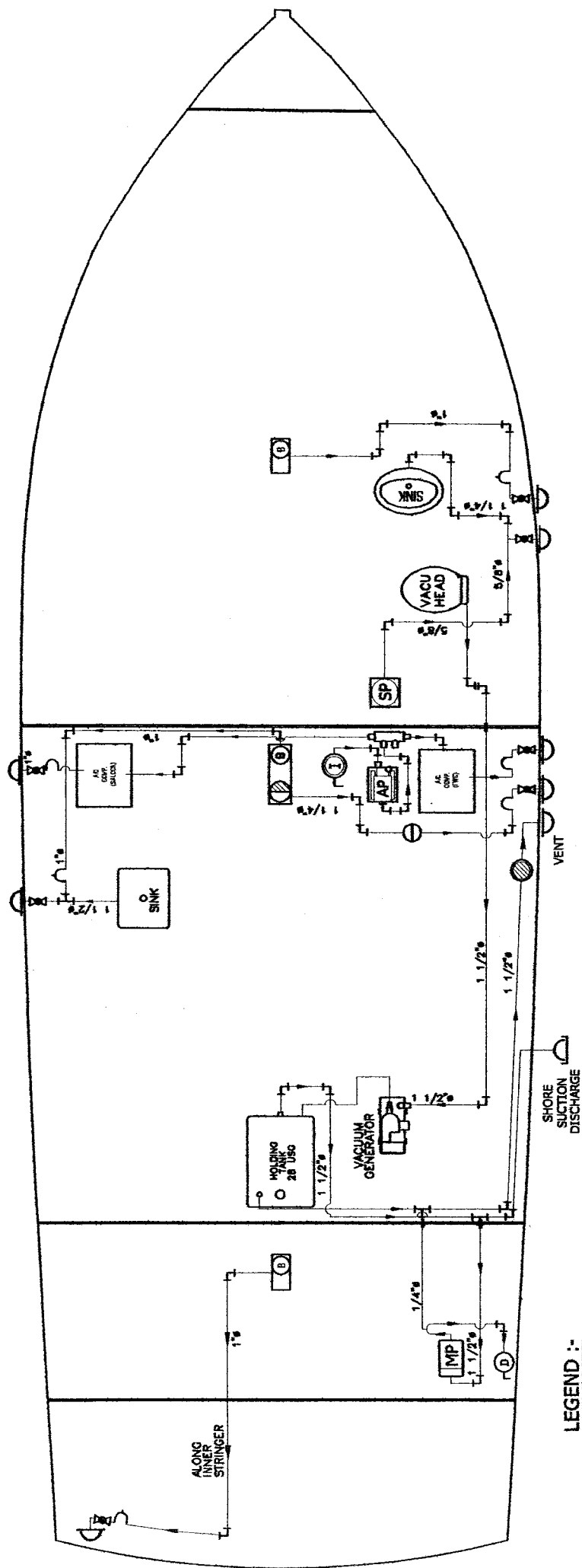
DO NOT SUPPLY A.C. POWER TO AN EMPTY HOT WATER HEATER. BE SURE THERE IS SUBSTANTIAL WATER SUPPLY AND SYSTEM IS PRIMED BEFORE SUPPLYING POWER TO THE WATER HEATER OTHERWISE WATER HEATER ELEMENT WILL BE DAMAGED.

Windscreen Wash

The windscreen wash is electrically operated and is hooked up to the fresh water system. To activate the screen wash, the wind-shield wiper circuit breaker has to be turned on, then press any of the wiper switch and water will flow out as long as the wiper switch is pressed. The valve will make a click sound when opening & closing.

There must be a pressurised supply of fresh water for the windscreen washer to operate. Ensure the "fresh water pump" breaker is "on" and the system is operating normally before using the windscreen wash.

BILGE & SANITARY LAYOUT



LEGEND :-

	BALL VALVE		CROSSING PIPE/HOSE		VACUUM GENERATOR
	DISCHARGE SEACOCK		BULKHEAD CROSSING, WATERTIGHT		ELECT. BILGE PUMP
	INTAKE SEACOCK		90° STRAIGHT ELBOW		SUMP PUMP
	INTAKE SEACOCK W/STRAINER		TEE CROSS		MACERATOR PUMP
	FILTER		TEE JOINT		AIR-COND PUMP
	HAND BILGE PUMP		U-LOOP WITH VENT		SHOWER SUMP
	BILGE SUCTION STRAINER		U-LOOP		ACCUMULATOR TANK
	SHORE SUCTION DISCHARGE		SEA WATER FAUCET		AIRCOND MANIFOLD
			THRU - HULL		

	BALL VALVE		COLD WATER		ACCUMULATOR TANK
	NON-RETURN VALVE		HOT WATER		WATER TANK AIR VENT
	SOLENOID VALVE		PUMP SUCTION LINE 3/4"Ø		WATER HEATER
	REDUCER		CROSSING PIPE/HOSE		FRESH WATER PUMP
	OUTLET FOR WINDSCREEN WASH		BULKHEAD CROSSING, WATERTIGHT		SHOWER
	PRESSURE GAUGE		90° STRAIGHT ELBOW		FRESH/COLD WATER TAP
	FILTER/STRAINER		TEE CROSS		PLUG COLD WATER OUTLET
	DECK FILL INLET		TEE JOINT		COLD WATER FAUCET

Boats with Air-conditioning

Single inlet fwd and aft

Boats with air-conditioning have a 4 wire 50 amp 125/250 vac system which is separated into a "ship's service" circuit and an "air-conditioning" circuit. This is a four wire (double "L") shore power cord fitting. Power to each circuit on the main panel is supplied via the AC power selector switch, master breakers for the "ship's service" and "air-conditioning" circuits and individual circuit breakers as appropriate.

Dual shore power inlets forward and aft

Some models are built with two shore power inlets forward and two aft by special request. In the event the boat service includes dual 50 amp 3 wire 125vac service or dual 30 amp 3 wire 125vac service each of the dual inlets will supply a circuit as described above "boats without air-conditioning" but one inlet will supply power to the "ship's service" circuit and one will supply power to the "air-conditioning circuit".

Boats without Air-conditioning

Single inlet fwd and aft

Boats without air-conditioning have a 3 wire 50 amp 125 vac service which supplies the "ship's service" circuit. Power to the "ship's service" circuit on the main panel is supplied via the AC power selector switch, a master breaker for the "ship's service" and individual circuit breakers as appropriate.

Generator

Before using the generator, check the oil and water levels and make a visual check of the fittings and hoses. The generator 'START' and 'STOP' buttons are located on the AC panel. The generator circuit breaker must be switched on before the unit can be started. To start the generator first depress the button marked HEATER for about 15 seconds. This will aid in starting, especially in cooler weather. Next push the start button.

After the unit has started, allow it to warm up for a few minutes before switching on the electrical load. This is also a good time to make a visual check and listen for any unusual sounds.

A separate battery is provided for starting the generator. This battery is charged by a charging circuit built into the generator. It is also connected to the battery charger so that it may be kept fully charged when the boat is connected to the shore supply.

See the generator owners manual for further information.

CAUTION ! (Generator)

BE SURE TO SHUT DOWN THE GENERATOR OR DISCONNECT SHORE POWER BEFORE ANY ELECTRICAL WORK IS PERFORMED. BE SURE TO SWITCH OFF THE BATTERY MASTER DISCONNECT SWITCHES IN THE ENGINE ROOM OR BELOW FORWARD COMPANIONWAY STAIRS BEFORE ATTEMPTING ANY ENGINE REPAIR WORKS.

ELECTRIC SHOCK WILL RESULT IN SERIOUS DAMAGE AND/OR LOSS OF LIFE!

FOR YOUR SAFETY, USE ONLY EQUIPMENT WITH APPROVED THREE WIRE ELECTRICAL PLUG CONNECTIONS. MAKE SURE EACH ITEM IS FREE OF ELECTRICAL SHORTS AND GROUND FAULT.

DO NOT ALLOW CORROSION TO BUILD UP OR CONNECTIONS SHORTS OR GROUND FAULT MAY RESULT.

WARNING ! (When The Boat Is Hauled Up)

TO AVOID ELECTRICAL SHOCK HAZARD WHEN THE YACHT IS OUT OF THE WATER AND IT IS NECESSARY TO USE THE ELECTRICAL POWER ON BOARD A CONNECTION FROM THE BOAT YARD GROUNDING SYSTEM TO THE SHIP'S BATTERY NEGATIVE BUS MUST BE MADE BY A QUALIFIED TECHNICIAN. A MINIMUM OF NO. 8 AWG WIRE SIZE MUST BE USED FOR THE CONDUCTOR AND SHOULD PREFERABLY BE GREEN IN COLOUR FOR EASY IDENTIFICATION.

A.C. WIRE NUMBERING CODESNO. DESCRIPTION

01.	GENERATOR	27.	DAVIT
02.	SHORE	28.	TV
03.	PORT OUTLETS	29.	SSB
04.	STBD OUTLETS	30.	HEATER / ESPAR
05.	HOT WATER	31.	FLYBRIDGE FREEZER
06.	CHARGER	32.	VACUUM CLEANER
07.	COOKER	33.	DISPOSAL
08.	FRIDGE	34.	WEATHER FAX
09.	FREEZER	35.	INTERCOM
10.	ICE MAKER	36.	STEREO
11.	AIR CON	37.	FLYBRIDGE OUTLET
12.	AIR CON PUMP	38.	DISH WASHER
13.	MICROWAVE	39.	COMPUTER
14.	AC ENG RM LIGHTS	40.	INVERTER
15.	WASHER	41.	FOOD CENTRE
16.	DRYER	42.	TOASTER
17.	AIR COMPRESSOR	43.	AC VENT
18.	TRASH COMPACTOR	44.	LAZARETTE OUTLET
19.	DECK WASH PUMP OR SEA	45.	AFT CABIN OUTLET
	WATER PUMP	46.	AFT FLOOD
20.	DEHUMIDIFIER	47.	GALLEY OUTLET
21.	STAGE-TYPE LIGHTING OR THE	48.	COFFEE MAKER
	ATRICAL LIGHTING	49.	AFT SALOON OUTLET
22.	AC LIGHTS	50.	HEAD OUTLET
23.	AC SPREADER LIGHT	51.	DESK OUTLET
24.	WATER MAKER	52.	NUTONE MIXER
25.	TYPE WRITER / PRINTER	53.	FLYBRIDGE OUTLET
26.	AC ENG RM OUTLET	54.	TELESCOPIC

* A/C NEUTRAL wires numbering are the same as the live wire except the colour

Bonding System

All thru-hull fittings at or below the water line (sea-cox, propellers, shafts, rudder, etc.) are interconnected on the inside of hull with a copper strip. This strip is connected to the engine frame and negative battery terminals to the two sacrificial zinc anode plates at transom.

Its purpose is to help guard against shock hazard and minimizing the effect of corrosion which is caused by electrical stray currents produced by dissimilar metal being submerged in an electrolyte (salt-water). Do not paint the zinc plates and replace when zinc anodes is no more than half deteriorated. If excessive corrosion or deterioration is noted, a qualified technician should be consulted to conduct a survey of the entire bonding system.

As an added safety precaution, the fuel fills, fuel tanks, flybridge rails, mast and windlass are also grounded through this system.

GROUND FAULT CIRCUIT INTERRUPTION (GFCI)

Ground fault protection for the receptacles is provided by the first receptacle in the port and starboard receptacle circuits. It is a ground fault circuit interrupter (GFCI) receptacle with the reset and test buttons.

The locations for the GFCI are :

- (a) *Forward cabin starboard head*
 - (b) *Port side galley area (up or down) outlet nearest to sink*
- Grand Banks equipped with 110VAC-60 Hz power typically use only two GFCI outlets to protect all outlets on board. Some models may have a third or fourth GFCI circuit depending on layout and customer specifications.

Wiring Procedure

GB32 and GB36

The GFCI receptacles at the forward cabin and galley are the first outlets wired to the circuit breaker in the main panel.

- (a) *The forward cabin GFCI is used to protect all AC outlets in the forward cabin, engine room and flybridge.*
- (b) *The port GFCI receptacle at galley will protect all AC outlets in the saloon and aft cabin*

GB42, GB46 and GB49

- (a) *The GFCI receptacle at forward cabin head must be the first outlet wired to the starboard AC outlets circuit breaker. It is then used to protect all starboard AC outlets throughout the cabins, engine room and flybridge.*
- (b) *The GFCI at the galley (up or down) must be the first outlet wired to the port AC outlets circuit breaker. It is used to protect all AC outlets at the port side.*

GB58

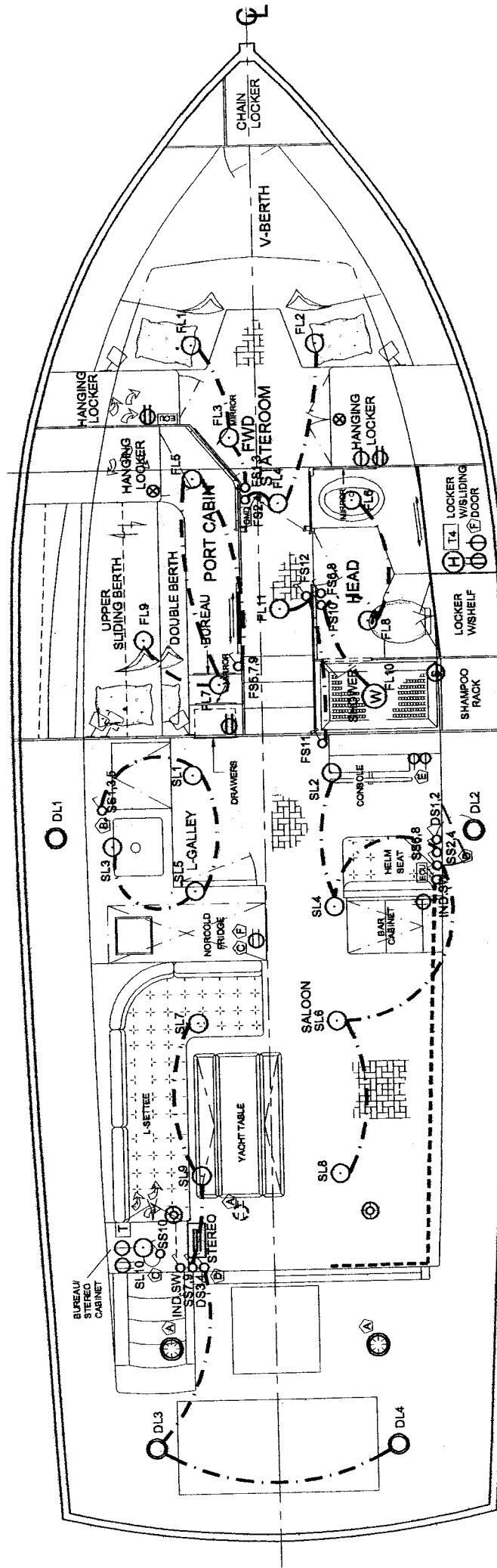
- (a) *One GFCI is connected to every A.C. outlet in the galley (three in all) & one each in forward head & aft head*

CHECKING OF REVERSE POLARITY

After you have plugged in shore power plug and turned on shore supply, select forward or aft shore on selector switch. Flip the toggle switch up to check polarity before turning on the main A.C. circuit breaker. For boats with two shore inlets at forward and two shore inlets at aft, flipping up the "two pole" toggle switch will read both the circuit 1 and 2 polarity.

Reverse polarity is permanently hooked up to the system. After you have plugged in the shore power and energised supply, put the selector switch to forward or aft shore supply corresponding to your shore power. If there is reverse polarity, the light will automatically come on. If the reverse polarity light is off, you can flip the toggle switch to test bulb - the light of the reverse polarity should come on, indicating the light bulb is in functioning order. If the light does not come on, that means you have a burnt bulb. Turn off the shore supply and replace the light bulb if it is bad before proceeding. After checking polarity, turn the main circuit breaker on. Now the 'power on' bulb should emit light, indicating that power supply is available. Then turn on whichever circuit that you need for power supply.

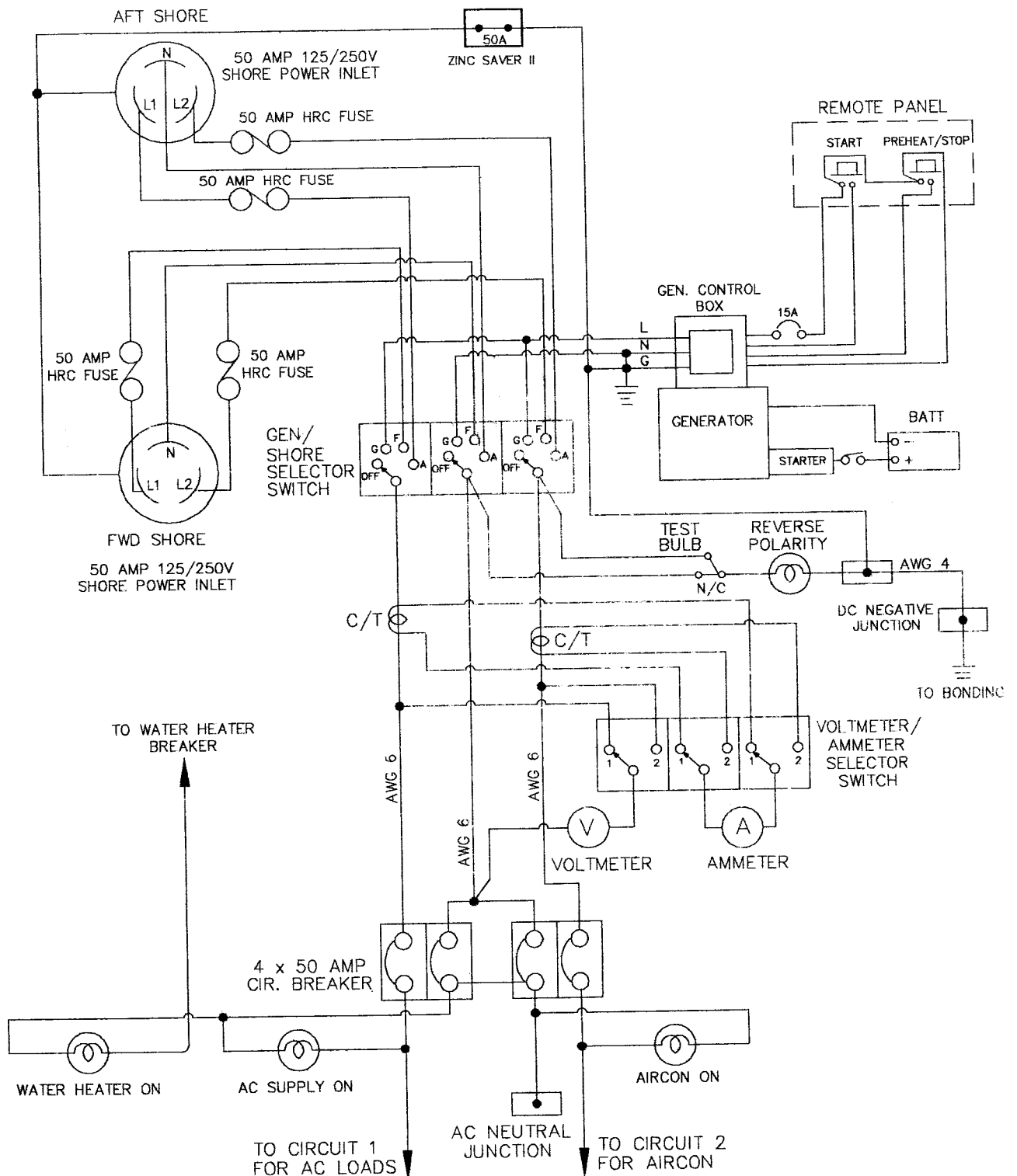
42EU#15111 LIGHTING RECEPTACLES LAYOUT



LEGEND:

	SINGLE WAY SWITCH		INDIRECT LIGHT		15A 120/240V 60/50HZ		SHOWER DRAIN SWITCH
	TWO WAY SWITCH		AT ENGINE ROOM		AC RECEPTACLE OUTLET		STEREO
	OCEAN STAINLESS READING LIGHT		GALLEY VENT		12V DC OUTLET		SPEAKER (OVERHEAD)
	15W 12V BERTH READING LIGHT		UNDER/INSIDE LOCKER		5W 12V HANGING LOCKER		CTV OUTLET
	LIGHT W/SWITCH		ON DOOR POST		AUTO ON/OFF PERKO LIGHT		TEL OUTLET
	ALUM W/T GUARD DECK		AT F/B		PERKO COURTESY LIGHT (CAT. NO. 946-001)		AIR-COND. OUTLET
	LIGHT #1226		GFCI OUTLET		CARBON MONOXIDE DETECTOR		TANKWATCH 4 PANEL ENVIRONMENTAL CONTROL UNIT
	CANTALUPI LIGHT		VACUUM/ELECT. HEAD SWITCH		CANTALUPI LIGHT		
	DAVID SERIES 2001						
	DECK LIGHT						

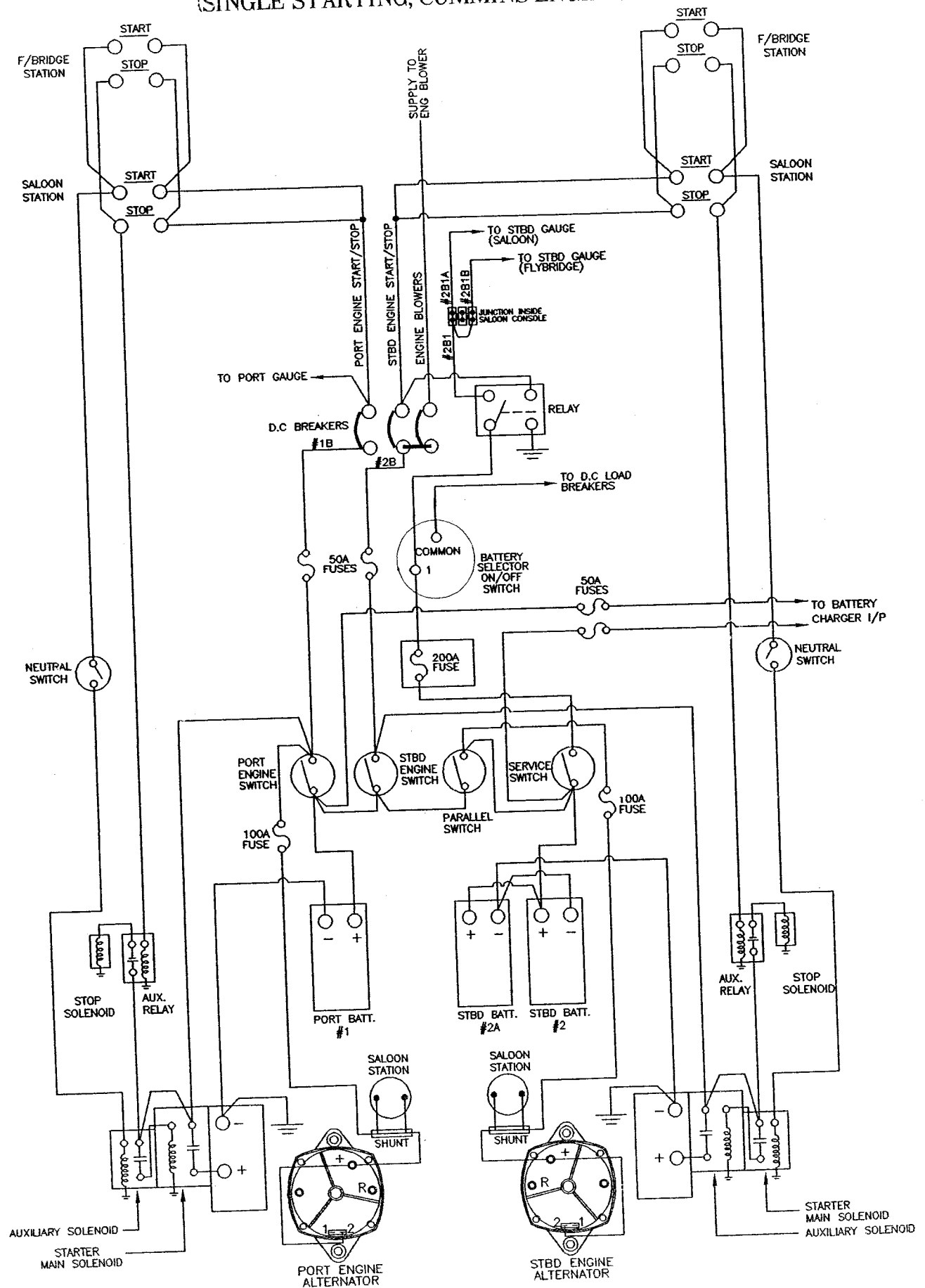
110V AC SUPPLY SCHEMATIC GENERATOR & SHORE WITH AIR-CONDITIONER



THE POLARITY SWITCH IS SPRING RETURN TO NORMALLY CLOSE POSITION

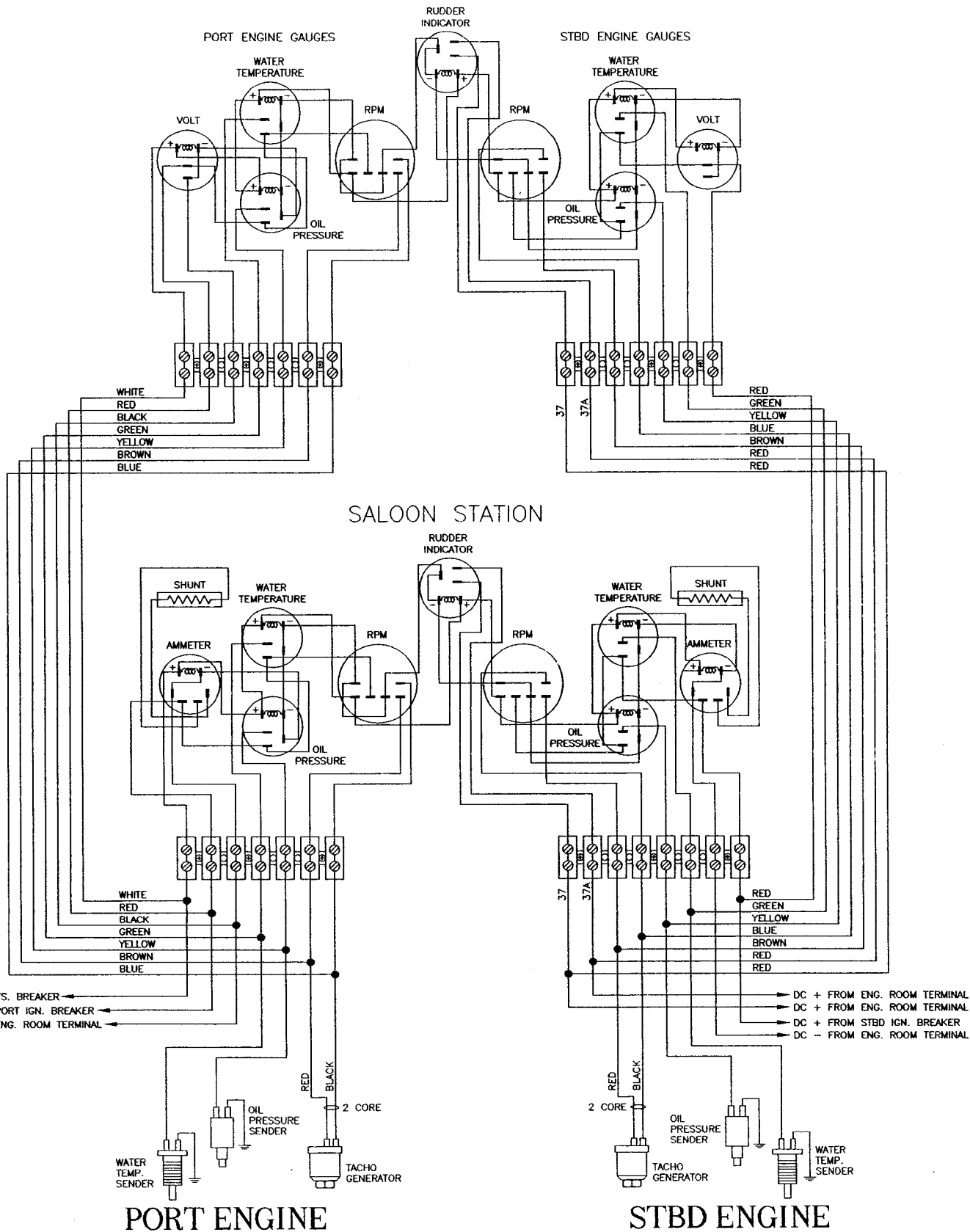
D.C SCHEMATIC FOR TWIN ENGINES

(SINGLE STARTING, CUMMINS ENGINE)



ENGINE INSTRUMENT WIRING DIAGRAM FOR TWIN ENGINES

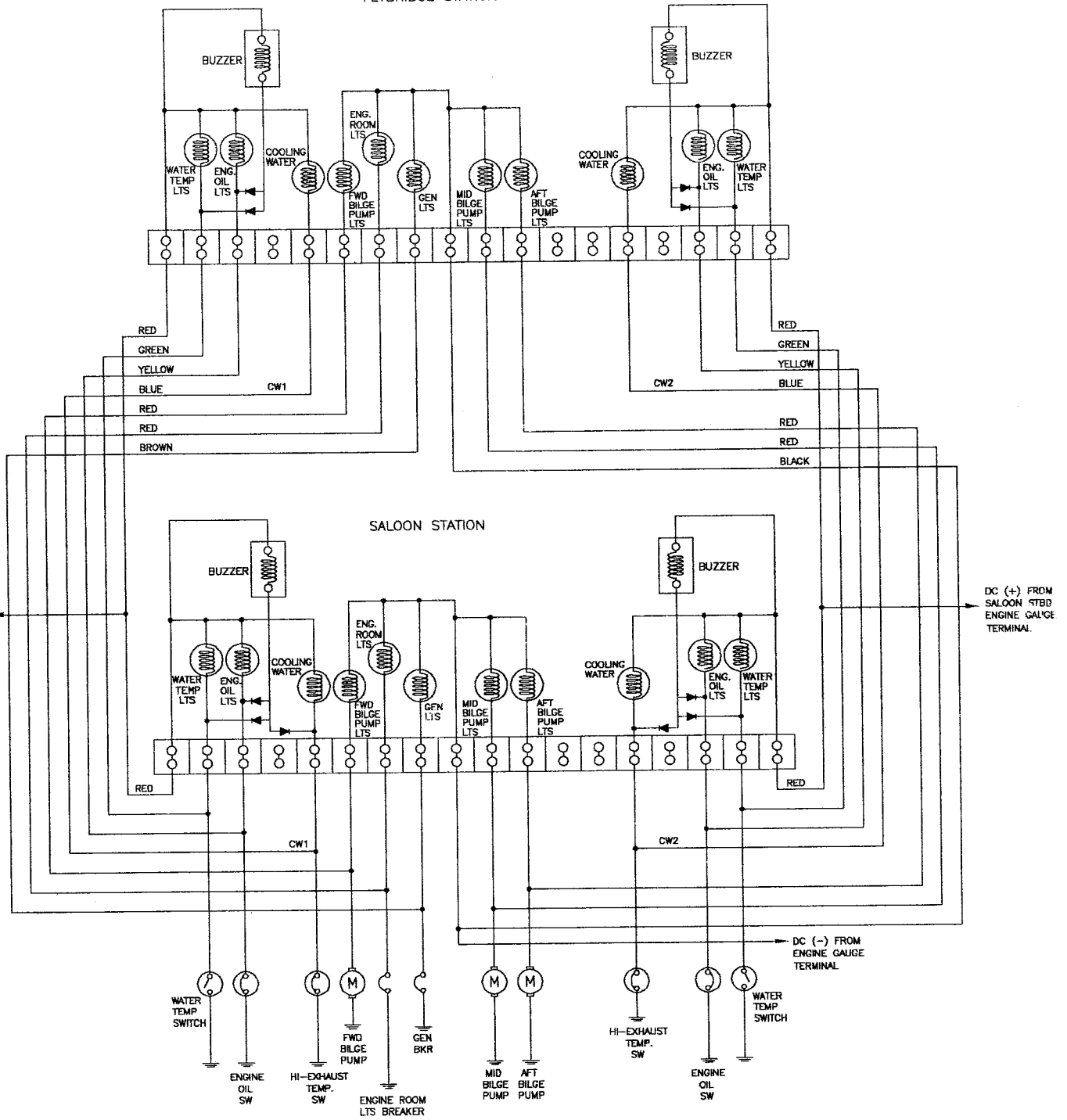
FLYBRIDGE STATION



ENGINE ALARM WIRING DIAGRAM

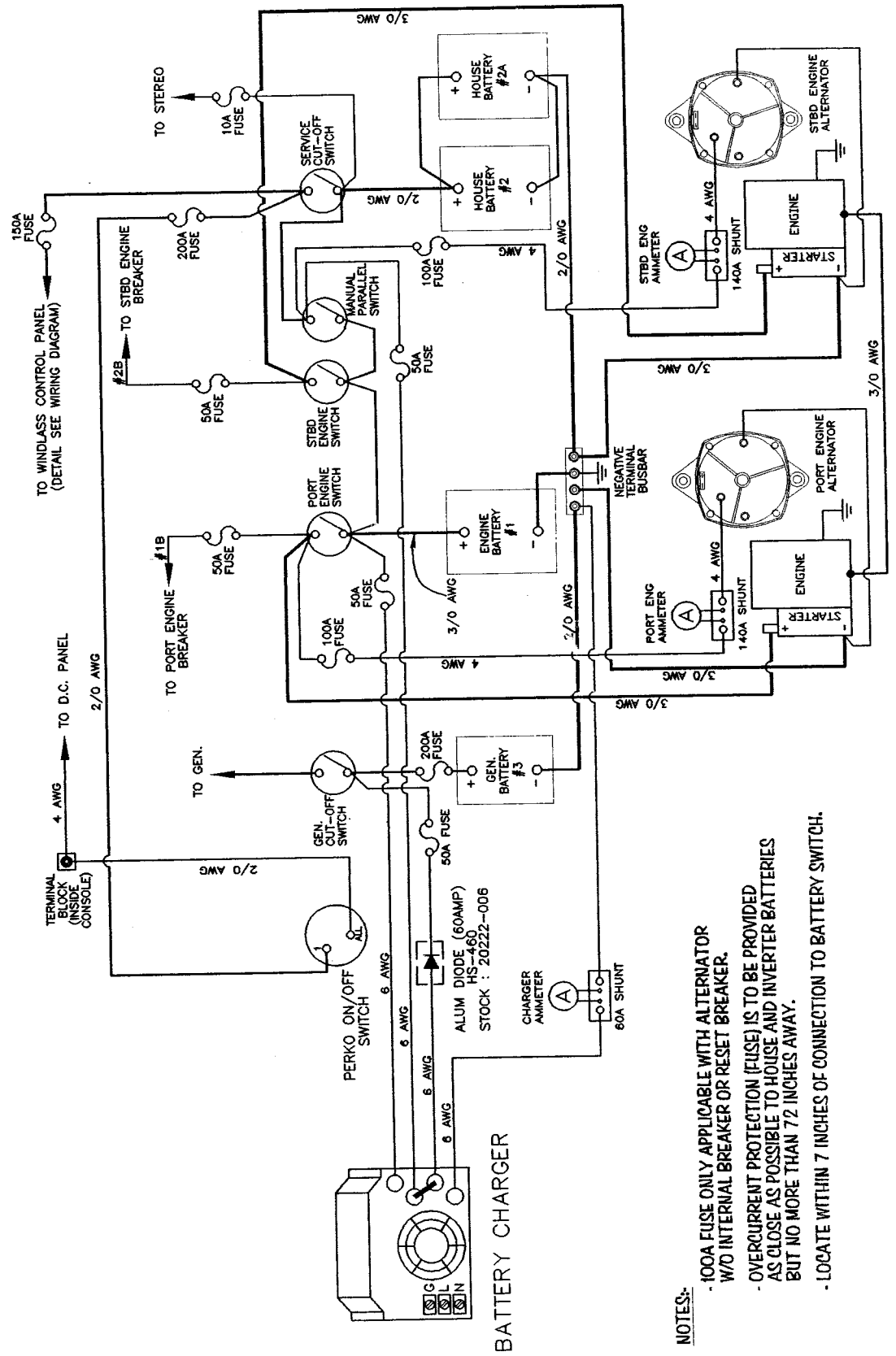
FOR TWIN ENGINES

FLYBRIDGE STATION



GRAND BANKS

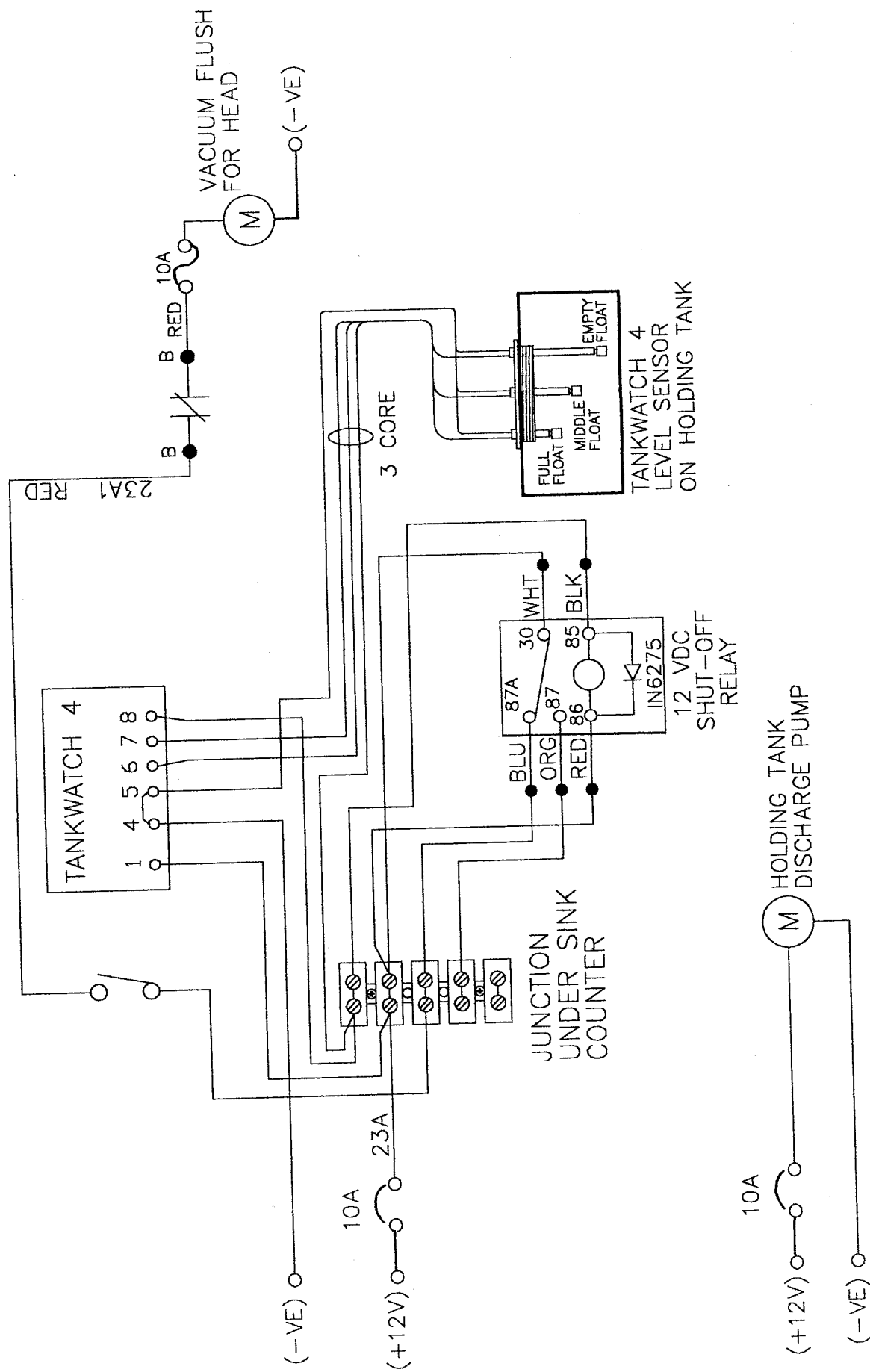
SINGLE STARTING BATTERY WIRING AND CHARGING CIRCUIT FOR TWIN ENGINES WITH GENERATOR



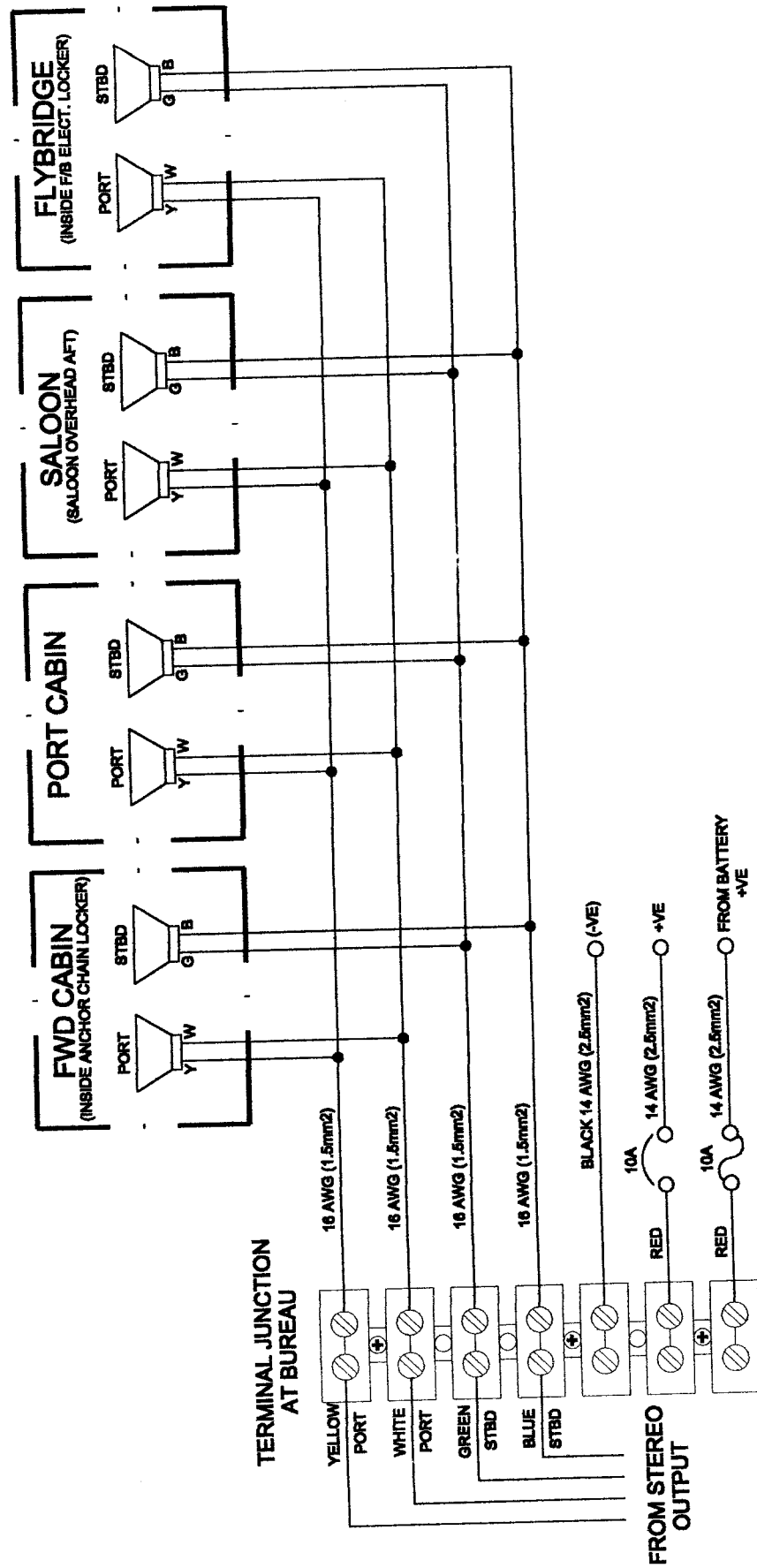
NOTES:-

- 100A FUSE ONLY APPLICABLE WITH ALTERNATOR W/O INTERNAL BREAKER OR RESET BREAKER.
- OVERCURRENT PROTECTION (FUSE) IS TO BE PROVIDED AS CLOSE AS POSSIBLE TO HOUSE AND INVERTER BATTERIES BUT NO MORE THAN 72 INCHES AWAY.
- LOCATE WITHIN 7 INCHES OF CONNECTION TO BATTERY SWITCH.

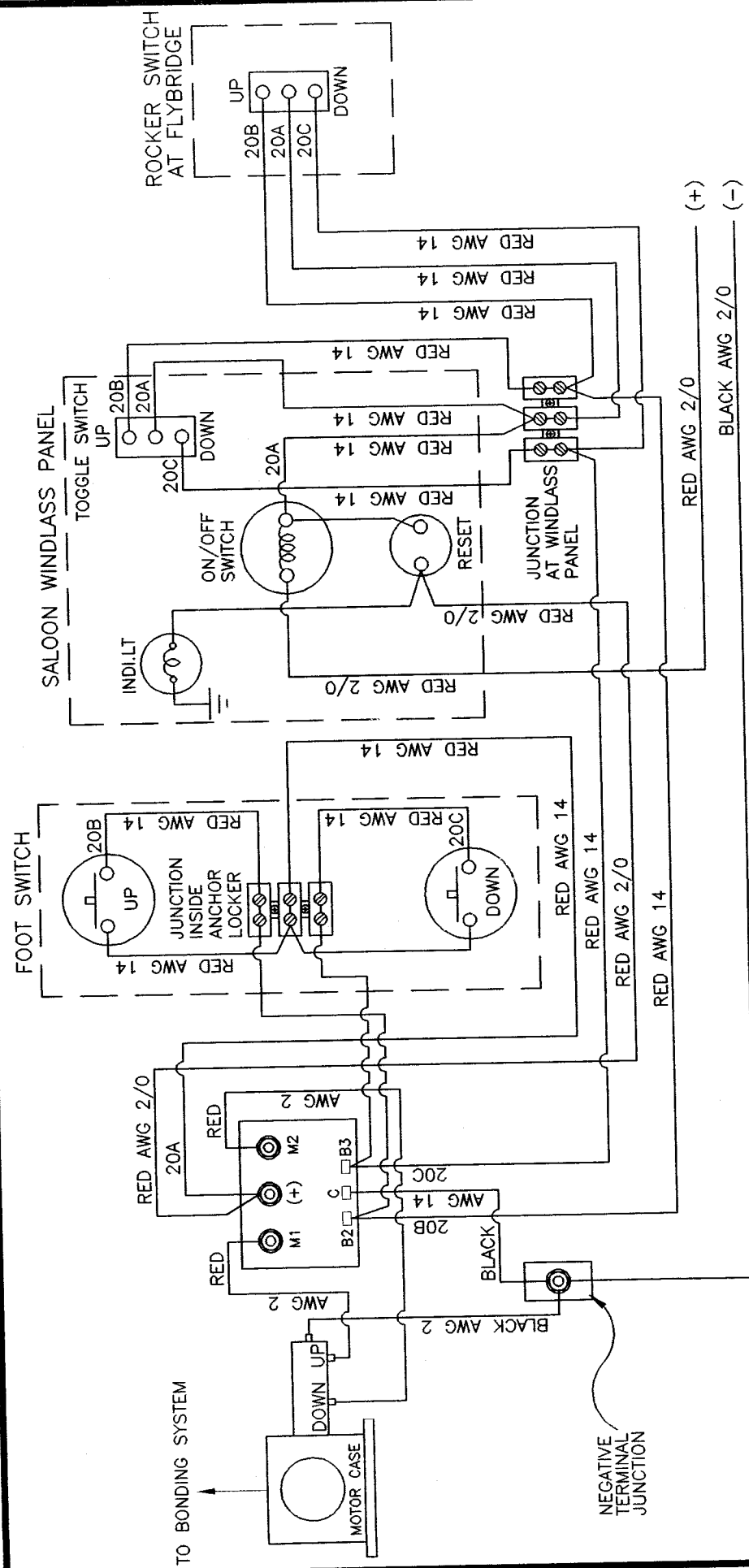
TANKWATCH 4 TANK LEVEL MONITOR WITH VACUUM FLUSH HEAD



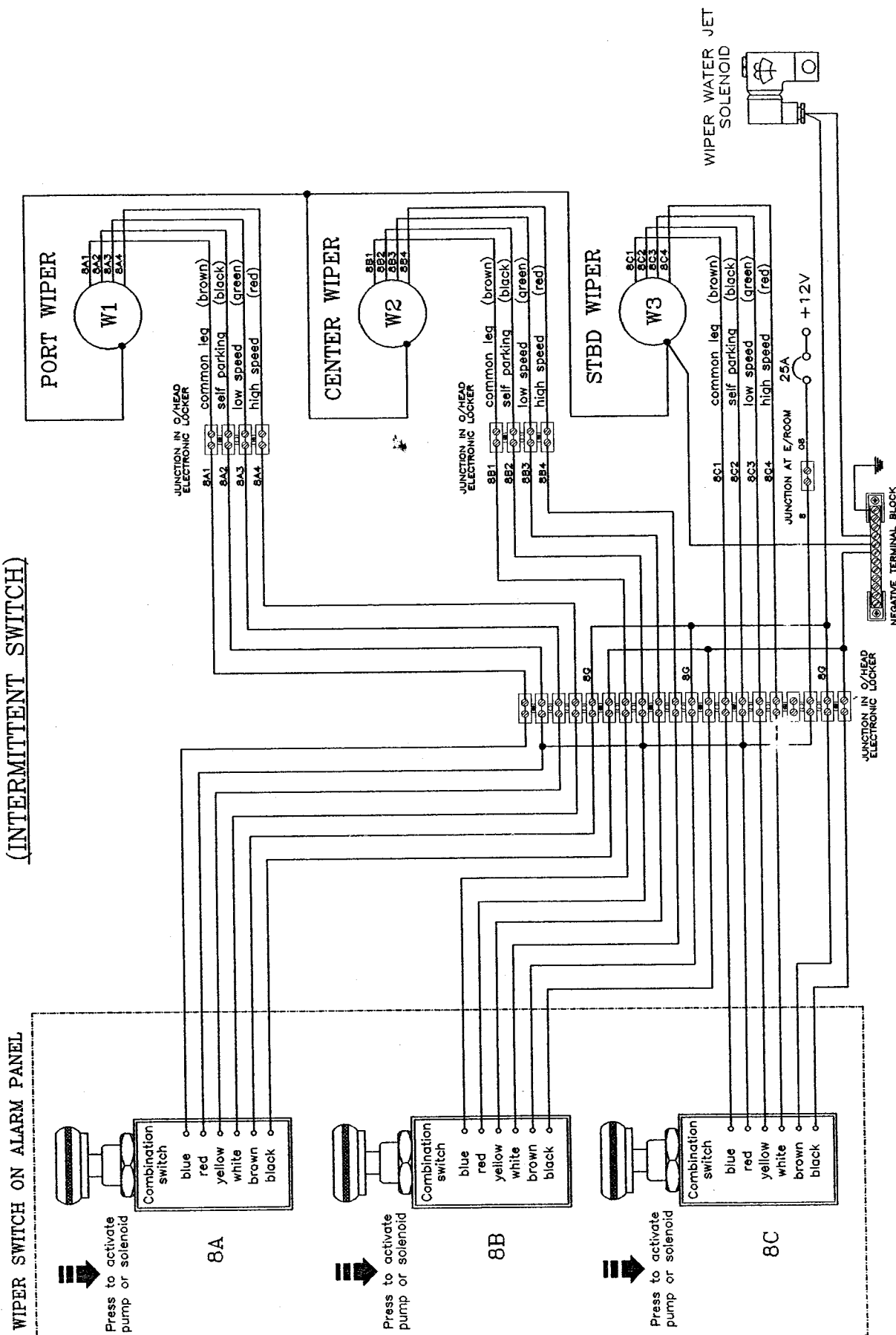
GRAND BANKS 42 EUROPA STEREO WIRING SCHEMATIC



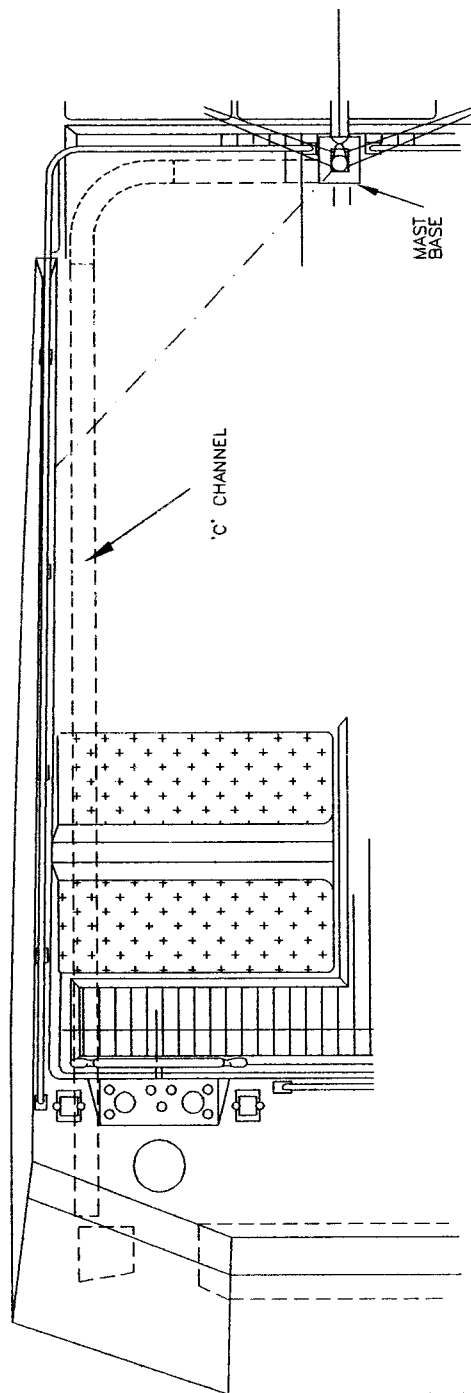
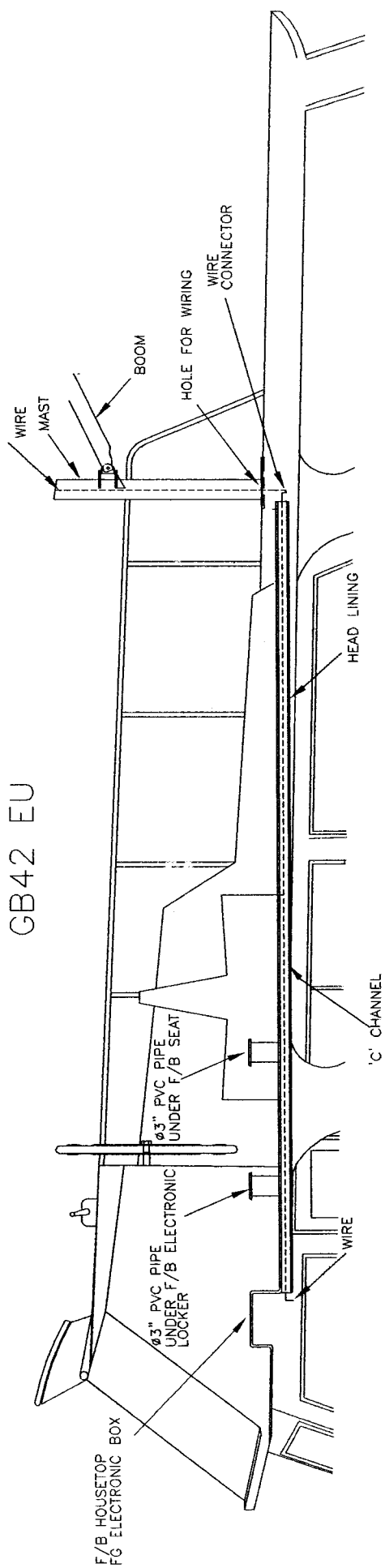
WINDLASS WIRING DIAGRAM 1000 WATTS



WIRING DIAGRAM FOR EXALTO MARINE WIPER (INTERMITTENT SWITCH)



HOUSE TOP WIRING CONDUIT GB42 EU



EQUIPMENT LIST

Contents

APPENDICES:

<i>*Equipment List</i>	<i>4 pages</i>
<i>List of Manufacturer's Addresses</i>	<i>4 pages</i>

Legend: * Varies with each boat

GRAND BANKS**EQUIPMENT LIST**Hull No: **42EU-1511**

EQUIPMENT		MANUFACTURER SPECIFICATIONS OR MODEL	SERIAL NO. OR PART NO.
ENGINE	PORT	TWIN CUMMINS 6BT5.9-M 210 HP	46114298
	STBD		46114265
TRANSMISSION	PORT	ZF MARINE 220PL RATIO 2.478 : 1	20019738
	STBD		20019743
PROPELLER	PORT	KCA SERIES FASTER PROPELLER DIA 26" x PITCH 24.5" x BLADE 4	9020
	STBD		9019
SHAFT		AQUALOY 22 STAINLESS STEEL DIA 2" x LENGTH 153 1/4"	
SHAFT BEARING		CUTLESS RUBBER 8" x 2" ID 8" x 2 5/8" OD	
SHAFT COUPLING		SOUNDOWN COUPLING RD 103	
SHAFTSEAL		DURAMAX MARINE LLC 841003009	
ENGINE FUEL FILTER		RACOR INDUSTRIES INC. MODEL : 900 MA	A 31460 A 31462
ENGINE SEA STRAINER		GROCO INDUSTRIES INC. MODEL: BVS 1250	
ENGINE BATTERY		AGM LIFELINE 4D 210AH x 1 UNIT	
ENGINE MUFFLER		TWO STAGE AQUALIFT MUFFLER 6" IN 6" OUT, CENTEK INDUSTRIES	
FRESH WATER HEATER		SEAWARD , MODEL: S1900 L-01 20USG	F 813254
FRESH WATER PUMP		PARAGON JUNIOR, MODEL : PJR-A	020101
ACCUMULATOR TANK		GROCO, MODEL : PST-1	
ELECTRIC BILGE PUMP		RULE INDUSTRIES, INC. MODEL: 2000GPH x 3 UNITS	
MANUAL BILGE PUMP		WHALE GUSHER 10 MK3	
SHOWER DRAIN PUMP		RULE INDUSTRIES, INC. MODEL: RULE 500GPH	
TOILET HEAD		SEALAND VACUFLUSH VG12VDC MODEL : #506	1181279
MACERATOR PUMP		SEALAND TECHNOLOGY INC-T12VDC	70122

GRAND BANKS**EQUIPMENT LIST**Hull No: **42EU-1511**

EQUIPMENT	MANUFACTURER SPECIFICATIONS OR MODEL	SERIAL NO. OR PART NO.
TACHOMETER GAUGE	VDO OCEANLINE AG SWITZERLAND	N.02.012.014
TACHOMETER SENDER	VDO ADOLF SCHINDLING AG GERMANY	340.808/001/004
OIL PRESSURE GAUGE	VDO OCEANLINE AG SWITZERLAND	N.02.124.013
OIL PRESSURE SENDER	VDO ADOLF SCHINDLING AG GERMANY	362.081/001/002
TEMPERATURE GAUGE	VDO OCEANLINE AG SWITZERLAND	N.02.320.701
TEMPERATURE SENDER	VDO ADOLF SCHINDLING AG GERMANY	325.805/001/002
DC VOLTMETER GAUGE	VDO OCEANLINE AG SWITZERLAND	N..02.410.504
DC AMMETER GAUGE	VDO OCEANLINE AG SWITZERLAND	N.02.420.603
RUDDER ANGLE SENDER	VDO ADOLF SCHINDLING AG GERMANY	102/1/1
RUDDER ANGLE GAUGE	VDO OCEANLINE AG SWITZERLAND	N.03.210.801
AC VOLTMETER	CROMPTON INSTRUMENTS MODEL : T01602VAPZPZ VOLT : 0-150V	
AC AMMETER	CROMPTON INSTRUMENTS AMM : T01602AALSNW AMM: 0-100 AMP	
BATT. CHARGER	PROFESSIONAL MARINE, PROMATIC 50-3	A 064686
HOUSE BATTERY	AGM LIFELINE 4D 210AH x 2 UNITS	
ZINC SAVER II	GALVANIC ISOLATOR	15785
CO DETECTOR	MARINE XINTEX CMD-2M	
GAS STOVE	SEAWARD PRINCESS 3372-1002 B-02	0026810
MICROWAVE OVEN	SHARP CONVECTION OVEN ,MODEL: R-820BK	22467
REFRIGERATOR	NORCOLD, MODEL : DE 441	995719 HD
AIR COND	MARINE AIR SYSTEM, SALOON: CSP16K FWD : CSP16K	I 1- M 10315 J 1- M 05998
AIR COND HANDLER	MARINE AIR SYSTEM, SALOON: E16FD-LP7MR FWD : EI6FD-LP7MR	A2 - M 10032 A2 - M 10029
AIR COND PUMP	MARINE AIR REVERSE, MODEL : PMA 1000	L 01 00282

GRAND BANKS**EQUIPMENT LIST**Hull No: **42EU-1511**

EQUIPMENT	MANUFACTURED SPECIFICATION OR MODEL	SERIAL NO. OR PART NO.
GENERATOR	ONAN GENSET MDKAL 5002932 9KW	J 010295069
GEN. SEA WATER STRAINER	GROCO, MODEL : BVS 1000	
GEN. BATTERY	AGM LIFELINE 24 80AH 12V	
GEN. MUFFLER	AQUALIFT MUFFLER AND WATER SEPARATOR VERNAY GAS CENTEK INC	
GEN. FUEL FILTER	RACOR INDUSTRIES INC MODEL:500MA	A 50933
AIR HORN	KAHLENBERG MODEL:315CDC50/121 TRUMPET – S-OA TANK BRISKIN MFG. CO.	1000 00009408 27988
WIPER	EXALTO 223 BD 90 /2165.35	
ENGINE ROOM BLOWER	GALLAY (PECK) 4"	PV 44142
GALLEY BLOWER	ITT JABSCO PRODUCT MODEL:PAR 35115-0020(3")	
WATER TANK	TALSCO ENGG. 180 USG AND 98 USG MATERIAL : STAINLESS STEEL	200320021003 S 200320021002 S
FUEL TANK	TALSCO ENGG.300USG x 2 UNITS MATERIAL:MILD STEEL	P- 20032002818 S- 20032002817
HOLDING TANK	SEALAND TECHNOLOGY , 28USG MATERIAL:PLASTIC	
HOLDING TANK INDICATOR	TANK WATCH 4 LEVEL MONITOR SYSTEM , SEALAND TECHNOLOGY	
STEERING SYSTEM	HYDRAULIC SYSTEM, TELEFLEX CAPILANO 1275V	
TRIM TAB	BENNETT TRIM TAB MODEL :4809	
ZINC ANODE	B-2 ZAP	
ENGINE ROOM LTS	SIMPSON LAWRENCE 1615900	
CABIN LTS	CANTALUPI ITALY MODEL:DAVID FG SERIES 2001	
DECK LTS	AQUA SIGNAL GERMANY	3107010000

Hull No: 42EU-1511

EQUIPMENT	MANUFACTURED SPECIFICATION OR MODEL	SERIAL NO. OR PART NO.
STEREO & CD PLAYER	CLARION , MODEL : XMD1	0032907
SALOON SPEAKER	CLARION, MODEL: SRR 1624 COAXIAL	
FLYBRIDGE SPEAKER	CLARION, MODEL: CM 1622 COAXIAL	
COMPASS	RITCHIE SS 5000 (FLYBRIDGE) RITCHIE SP 5B (SALOON)	
WINDLASS	LOFRANS TIGRESS 1000WATT,12V	TG 004412
HULL UNDERCOAT	EPIGLASS EPIGUARD 199 (SQUALL BLUE AND WHITE) PIGMENT EPOXY PRIMER SURFACE	
PAINT - BOOT STRIPE	AWLCRAFT 2000 F5014 FLAG BLUE	
- EXTERIOR	AWLCRAFT F8233 GB WHITE	
- INTERIOR	INT. WHITE EGG SHELL YQA 300	
-ALUMINIUM	AWLCRAFT F8233 GB WHITE	
VARNISH – PARQUET	AKZO NOBEL,MALAYSIA PU 40 SHEEN LACQUER 97121/1466	
- EXTERIOR	Z-SPAR 1015,CAPTAIN VARNISH	
- INTERIOR	TIMBERTONE VARNISH SEMI GLOSS EVN 907 80% GLOSS EVN 906 20%	

ABA of Sweden AB

Product: Hose Clamps
Address: Scheelegatan 28
S-112 28 Stockholm,
Sweden
Tel: +46 8-654 1400
Fax: +46 8-653 3410

A.M. Equipment Inc

Product: Windshield Wipers
Address: 530 Queen Avenue S.W.
Albany, Oregon 97321 USA
Tel: (503)928 8371
Fax: (503)928 2993

Astrup Company

Product: Sunbrellas, Awning Fittings
Address: P.O. Box 42381 Cincinnati,
OHIO 45242 USA
Tel: 513-791-0595
Fax: 513-791-0686

BF Goodrich Co. Aerospace Div.

Product: Cutlass Rubber Bearings
Address: 150 Division Drive
Wilmington, NC 28401 USA
Tel: 919-251-8000
Fax: 919-251-8005

Bennett Marine Inc.

Product: Trim Tabs
Address: 550 N.W. 12th Avenue
Deerfield Beach, FL 33442 USA
Tel: (001)954-427-1400
Fax: (001)954-480-2897
e-mail: www.BennettTrimTabs.com

BEP Marine Ltd (Ross Pratt)

Product: AC Panel, DC Panel, Alarm Panel
and Control Panel
Address: Po Box 101 739 NSMC
Auckland, 4 Titoki Place
Alobany, New Zealand
Tel: (64)(09) 415 7261
Fax: (64)(09) 415 9327
e-mail: rpratt@bep.co.nz

Burkert Contromatic (S) Pte Ltd

Product: Solenoid Valve
Address: Golden Wheel Building #02-00A
41 Kallang Pudding Road
Singapore 1334
Tel: (65)7483800

Cantalupi srl

Product: Yacht lights
Address: via Michele Coppino,
371/5-55049 Viareggio (Lu)
Italia
Tel: (0) 584-384944
Fax: (0) 584-384336

Centek Industries, Inc. (Vernay Products)

Product: Mufflers, Vernatube, FG Elbows
Address: PO Box 3028-116, Plantation Drive,
Thomasville, GA31799-3028 USA
Tel: 912-228-7653
Fax: 912-228-1270

Centroid Products Inc.

Product: Centroid senders
Address: 2104-A Hibiscus Dr., Edgewater,
Florida 32141 U.S.A.
Tel: 904-423-3574
Fax: 904-423-3709

CJR Propulsion Ltd

Product: Propeller
Address: 70-72 Quayside Road
Bitterne Manor, Southampton SO18 1AD
United Kingdom
Tel: (++44) 02380 639366
(++44) 02380 222032
Fax: (++44) 02380 211832

Duramax Marine

Product: Shaft seal
Address: 16025 Johnson St., P.O. Box 67,
Middlefield, OH 44062-0067 USA
Tel: (440) 632-1616
Fax: (440) 632-5265

Eaton Corporation

Product: Heinemann Circuits Breakers
Address: P.O. Box 13, Salisbury \ 2300
Northwood Drive MD21803-0013
USA
Tel: 410-546-9778
Fax: 410-546-2116

Edson International Corporation

Product: Lever Pumps
Address: The Edson Corporation
460 Industrial Park Road
New Bedford, MA 02745 USA
Tel: 508-995-9711
Fax: 508-995-5021

Exalto International B.V.

Product: Exalto Wipers
Address: Industrial estate "De Peulen"
Nijverheidsstraat 12-3371
XE Hardinxveld - The Netherlands
Tel: +31(0)184-615800
Fax: +31(0)184-611991
Email: exalto@tref.nl

Flojet Corporation

Product: Washdown Pumps
Address: 12 Morgan
Irvine CA 92718-2003
USA
Tel: (714)859-4945
Fax: (714)859-1254

Force 10 Marine Ltd.

Product: Stove & cooktop
Address: 23080 Hamilton Road
Richmond, B.C. Canada V6V 1C9
Tel: 604 522 0233
Fax: 604 522 9608
Email: force10@express.ca
<http://www.force10.com>

Glendinning Marine Products, Inc.

Product: Synchroniser
Address: 4753 Hwy. 90
Conway, SC 29526
USA
Tel: (803)399-6146
Fax: (803)399-5005

Gross Mechanical Laboratories

Product: Toilets, strainers, seacox,
Address: 7240 Standard Drive
Hanover, Maryland 21076
USA
Tel: 31 (0) 5980-94899
Fax: 31 (0) 5980-99611

Hale Marine Parts Co.

Product: Morse Controls & Engine Parts
Address: P.O. Box 938
Warsaw, Virginia 22572
U.S.A.
Tel: (804)333 3677
Fax: (804)333 0239

Harvey Hubbell S E Asia Pte Ltd

Product: Hubbell Wiring Device
Address: Blk 1020, Hougang Avenue 1
#01-3500/3502
Singapore 1953
Tel: (65)382 1600
Fax: (65)382 3727

Hydra Power Systems Inc.

Product: Bow Thruster
Address: 5700 S.E. Johnson Creek Blvd
Portland Oregon
97206-0696 USA
Tel: 503-777-3361
Fax: 503-777-1049

Hynautic Marine System & Products

Product: Hynautic Control
Address: 1579 Barber Road
Sarasota,
FL 34240 USA
Tel: 001-941-379-0500
Fax: 001-941-379-0496

International Coating Pte Ltd

Product: Paint
Address: 449 Tagore Industrial Avenue
#01-03 Hong Joo Industrial Building
Singapore 787820
Tel: 02 453 1981
Fax: 02 453 1778
Email: ernest.lee@uk.akzonobel.com.

J Legge & Co. Ltd

Product: Locksets
Address: Willenhall, Moat Street
West Midlands WV13 1TD
England
Tel: (44)0902-366332
Fax (44)0902-603935

Jabsco Products ITT

Product: Pumps, blowers, pressure tanks
RC light, y-valve
Address: 1485 Dale Way, Costa Mesa
CA.92626-3998
U.S.A.
Tel: 714-545-8251
Fax: 714-957-0609

Kroon BV

Product: Door Locks
Address: Zwedenweg 2, 9601 ME
Postbox 59 9600 AB Hoozezan,
Holland
Tel: 31 (0) 5980-94899
Fax: 31 (0) 5980-99611

Marine Air Systems

Product: Airconditioning, Grunert refrigeration
Address: 2000N, Andrews Ave., Ext.
Pompano Beach, FL 33069
USA
Tel: (305)973-2477
Fax: (305)979-4414

Marine Development International, Ltd

Product: Battery Charger
Address: P.O. Box 15299
Richmond, VA 23227-0699 USA
Tel: (804)746-1313
Fax: (804)746-7248

Mathers Controls Inc.

Product: Trottle controls
Address: 675 Pease Road, Burlington,
WA 98233-3103 U.S.A
Tel: 1-800-546-5455
Fax: 1-360-757-2500
Email: www.matherscontrols.com

Norcold

Product: AC/DC Refrigerator / Freezers
Address: 2655 Campbell Road
Sidney, Ohio 45365
Tel: 1-800-543-1219
Fax: 937-497-3183

Panish Controls Inc.

Product: Trottle controls
Address: 191-203 Bennett St.
Bridgeport, CT 06605
U.S.A.
Tel: 203-333-7371
Fax: 203-333-1731

Parker Hannifin Corporation**Racor Division**

Product: Filtration Systems
Address: PO Box 3208, 3400 Finch Rd,
Modesto, CA 95353 USA
Tel: 800/344-3286
209/521-7860
Fax: 209/529-3278

Perko Inc.

Product: Lighting fixtures, Nav light,
Hatch adjuster & Locks
Address: 16490 N.W. 13th Avenue
Miami, FL 33164-0414 USA
Tel: 305-621-7525
Fax: 305-620-9978

R & D Marine Ltd.

Product: Flexible shaft coupling &
half coupling
Address: Meadow Works, Clothall Road,
Baldock, Hertfordshire SG7 6PD,
England
Tel: +44 (0) 1462 892391
Fax: +44 (0) 1462 896448
Email: info@randdmarine.com
www.randdmarine.com

Rule International Division

Product: Compasses, Pumps & Switches
Address: 70 Blanchard Road
Burlington, Mass. 01803 USA
Tel: 617-221-0390
Fax: 617-221-5850
www.sealandtechnology.com

Sealand Technology, Inc.

Product: Vacuflush marine toilet system
Address: P.O. Box 38, Fourth Street,
Big Prairie, OH 44611 USA
Tel: (330) 496-3211
(800) 321-9886 (Hotline)
Fax: (330) 496-3097

Seaward Products

Product: Stoves Microwave Oven
Address: PO Box 91148, Industry
CA 91715-1148 USA
Tel: 818-968-2117
Fax: 818-330-5442

Soundown Corporation

Product: Engine coupling
Address: 17 Lime St. Suite 1,
Marblehead, MA 01945
U.S.A.
Tel: 781-631-9611
Fax: 781-631-9231

Spurs Marine Manufacturing

Product: Weed Cutter
Address: 201 S.W. 33rd Street
FT. Lauderdale,
FL 33315 U.S.A.
Tel: 305-463-2707
Fax: 305-463-0239

Sterling Plumbing Group, Inc.

Product: Sinks & Sink Strainers
Address: Polar Stainless Division
920 East Lincoln Avenue
Searcy, AR 72143, U.S.A.
Tel: 708-734-4646
Fax: 501-268-4488

Taco Supply

Product: SS. Rub Rails
Address: 7074 South 220th Street
Kent, Washington 98032
U.S.A.
Tel: 206-395-3556
Fax: 206-395-7778

Teakdecking Systems

Product: Deck Caulk, Primer
Address: 6050 Palmer Boulevard
Sarasota, Florida 34232
U.S.A.
Tel: 813-377-4100
Fax: 813-377-5727

Teignbridge Propellers (Precision Marine Eng.)

Product: Propellers
Address: 330 Madison Ave. S. Suite 201
Bainbridge Island, WA 98110
Tel: 206 780 0477
800 772 0652
Fax: 206 780 0497
Email: Cotty@teignbridge-propeller.com

Trace Engineering

Product: Inverter
Address: 5916-195th Street N.E., Arlington,
WA 98223 U.S.A.
Tel: (360) 435-8826
Fax: (360) 435-2229
Email: www.traceengineering.com

U-Line Corporation

Product: Icerette
Address: PO Box 23220
8900 North 55th Street
Milwaukee, WI 53223 U.S.A.
Tel: 414-354-0300
Fax: 414-354-7905

United Exporters Company

Product: Vacuum Flush System,
Sanitary Hose, Level Indicator
Address: 1095 Market Street, Suite 701
San Francisco, CA 94103-1630
U.S.A.
Tel: 415-255-9393
Fax: 415-255-9392

US Paint HQ

Product: Paint
Address: 831 S. 21st. Street. St. Louis
MO 63103-3092 U.S.A.
Tel: (314) 621-0525
Fax: (314) 621-0722

Van Dusen & Meyer, Inc

Product: Naiad Stabilizer
Address: 50 Parrott Drive
P.O. Box 558
Shelton, CT 06484-0558 U.S.A.
Tel: 804-399-3015
Fax: 804-399-8942

VDO Kienzle Sales & Svs Pte Ltd

Product: VDO Gauges
Address: #02-15 to #02-17
51 Ayer Rajah Crescent
Singapore 0513
Tel: (65) 778 7772
Fax: (65) 779 6979

Vimar

Product: Outlets & switches
Address: 32-36063 Marostica (Vicenza)
Italy
Tel: 39-424-488100
Fax: 39-424-488188
Email: <http://www.vimar.it>

Western Branch Metals, Inc.

Product: Aquamet Shafting
Address: 2401 Wesley Street
Portsmouth, Virginia 2370 U.S.A.
Tel: 804-399-3015
Fax: 804-399-8942

International Paint

6001 Antoine (713) 682-1711
Houston, TX 77091 U.S. 1-800-231-8044
P.O. Box 920762 TX 1-800-392-2021
Houston, TX 77292-0762 TWX: 910 881 1682

February 27, 1988

Dear Valued Customer:

If your business resides in the State of California and you use or supply International Paint products directly or indirectly into California, we are providing this information to you pursuant to the California Safe Drinking Water and Toxic Enforcement Act of 1986 (commonly known as Proposition 65).

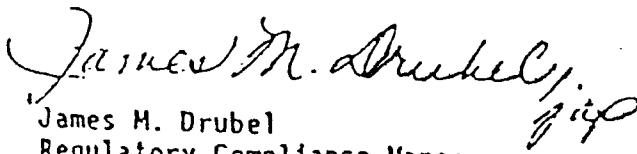
This law requires, in part, that no person in the course of doing business shall knowingly and intentionally expose any individual to a chemical known to the State of California to cause cancer, birth defects or other reproductive harm without first giving clear and reasonable warning to such individual. It has not been feasible for our suppliers or International Paint to subject all International Paint products to the detailed analysis required to determine whether each of the materials known to California to cause cancer or reproductive toxicity is present in detectable quantities.

Based on our evaluation of materials used to produce our products, all International Marine and Industrial Paints "Contain Chemicals Known to the State of California to Cause Cancer, Birth Defects or Other Reproductive Harm."

We, therefore, request to conform to the requirements of Proposition 65, you post signs to that effect in your warehouses, and locations where International Paint products will be applied.

As pertinent new information becomes available on "Proposition 65" and its relation to our products, we will keep you informed.

Very truly yours,


James M. Drubel
Regulatory Compliance Manager

JMD/jap

ANTIFOULING CHANGE OVER CHART

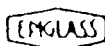
The following chart has been prepared to assist in the procedures that should be carried out in preparing and recoating antifoulings when changing from one to another.

CHANGING TO —→ FROM	BARRIER/ VCF	E TYPE	HI SPEED COPPER	LOGLIFE	PACIFIC	DRP	XL
EPIGLASS							
Barrier/VCF	D	D	D	D	D	D	D
E Type Racing	S	D	D	D	D	S	S
Hi Speed Copper	S	D	D	D	D	S	S
Longlife Cruising	S	D	D	D	D	S	D
Pacific	R	S	S	S	D	R	R
DRP	D	D	D	D	D	D	D
XL Antifouling	D	D	D	D	D	D	D
BRITISH PAINTS							
77	S	S	S	D	D	S	S
99	S	D	D	D	D	S	S
88	S	S	S	D	D	S	S
Permapoxy	S	D	D	D	D	S	S
INTERNATIONAL							
Singapore	R	S	S	S	D	R	R
Endurance	S	D	D	D	D	S	S
TBT	S	D	D	D	D	S	S
Extra Hard	D	D	D	D	D	D	D
Micron 25	D	D	D	D	D	D	D
Tropex	R	S	S	S	D	R	R
PGH							
Jet Black	R	S	S	S	D	R	R
IJAY							
161P	R	S	S	S	D	R	R
Copper X	S	S	S	S	D	S	S
UNKNOWN							
ANTIFOULING	R	S	S	S	S	R	R

IMPORTANT : Always refer to the Epiglass Antifouling Brochure for full surface preparation details.

KEY:

- D = DIRECT**
Direct application after thorough fresh water wet sanding.
- S = SEALER**
Epiglass Antifouling Sealer should be applied after thorough fresh water wet sanding.
- R = REMOVAL**
Epiglass Antifouling Sealer should be applied after total removal of existing antifouling.



Healing Industries Ltd, 606 Rongok Road, Auckland, New Zealand. Telephone: 883489. Telex: NZ 21649 Healing.
Branches: Wellington, Christchurch, Dunedin, Export Division. Telex: 63468 Healexp. Singapore. Telephone: 8614877. Telex: RN 13479 Episs.

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Astrup . . . dependable Awning Fabrics since 1876

Reflections™

Webblon™

DC™

PHIFERTEX

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Diklon 32

Coolley-Brite

Premier

Summertime™

Calabana Cloth

For Awnings, Canopies, and Patio
Covers made from Astrup Fabrics,
Call:

Important: Place in owner's manual



B L I N D S for boats

Model No:

Date:

Concealed **SKYscreen**

Fitting Instructions and Templates
Please read before beginning installation

Tel +44 (0) 1243 514411
Fax +44 (0) 1243 511133
E-mail info@oceanair.co.uk
Website <http://www.oceanair.co.uk>

Oceanair Marine Limited
119 Third Avenue
Almodington
West Sussex
PO20 7LB
England



Concealed SKYscreen

Ordering

Please use the Custom Order Form for all orders and refer to drawing on technical sheet 02

To determine the size of your unit you should consider the following points:

- Work from the inside face of the trim to determine the X and Y dimensions
 - Establish the cross sectional thickness of the trim "T" – if T is more than 20mm (3/4") speak to the factory
 - The X and Y dimensions will be used for manufacture – please note our manufacturing tolerance is +/- 1mm (1/16")
 - To calculate the overall space requirement – see diagram – add twice the trim thickness T to the width X plus 100 mm (4") – to the Y dimension add 127mm (5")
 - Work out the mounting height using the 21mm (3/4") dimension – see diagram - plus an allowance for the headlining thickness
 - Check the depth of the trim to ensure the handle position is not too low
- Trim may be wood, grp, aluminium.

Installation

- The unit is fixed into the boat using the side flanges only (Face A) – drill the fixing holes you require to suit the location of fixing pads on the underside of the deck
- Fasten up the Concealed SKYscreen frame around the upper trim.
- The side rail has a lip to set the upper trim in position - this upper trim may be fixed to the side rail vertical face from behind if the trim is wooden otherwise it may be held in place by the hatch frame spigot
- The unit must not be distorted in installation
- Ensure the upper and lower trim edges are square, level and are the correct heights
- Cut-out the recess for the handle moulding on the lower trim using the cutting template provided – note – cut-outs are off-set from the center line, left and right hand
- The handle recess moulding should be firmly screwed back to the blind housings – by design there is a 5mm (3/16") gap but it is important to ensure the moulding is hard up against the blind housings – file off the back of the screw bosses if necessary until the back flange face is firmly against the front face of the liner without a gap
- Finish the headlining and fasten up to the lower flange of the side rail (Face B) using velcro or fixings – use a packer for height adjustment if necessary
- Put up the lower trim aligning the cut-outs with the handle recess mouldings - fix as required – this covers the joint.

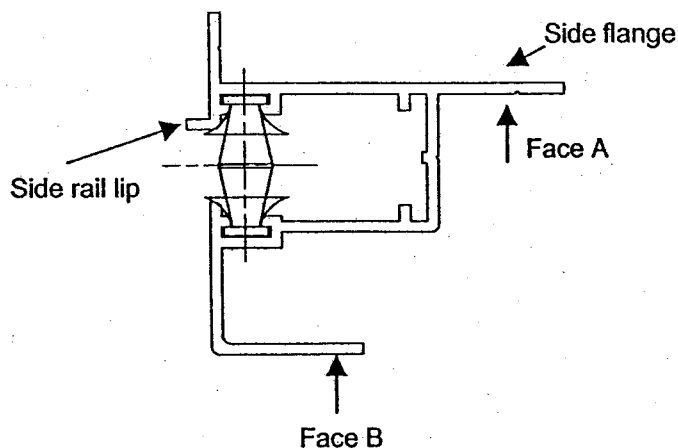
Operation

- To unlock push the button which will eject the cross-bar enabling you to operate using the handles
- Draw the blind or flyscreen to the opposite side until the magnets on the cross-bars touch and hold together
- To open a twist of the hand on the handles will force the magnets apart and enable the blind or flyscreen to be returned to its recess – should you let go of a cross-bar the springs in the ends will give a cushioned landing
- The cross-bars require pushing back into their recesses against the springs to lock them home flush

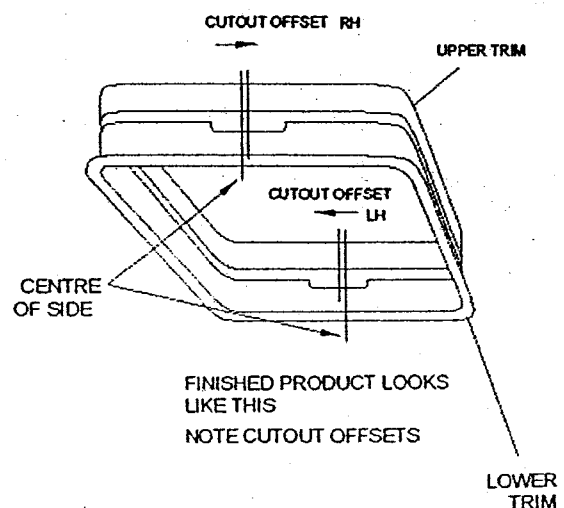
Care & Maintenance

- Light lubrication of the runners ensure a smooth operation - never use a grease or oil - a silicon spray is ideal.
- The spring systems are 316 Stainless Steel and require no servicing. It is possible that the tension can be altered to effect the recoil. To alter the tension unhook the spring and corner moulding and pull out 5mm. Place screwdriver in end and turn clockwise for more tension. Ensure tension block seats and push corner moulding back in.
- The fabric is polyester laminated to an aluminium foil. If it gets wet pull out the blind and leave to dry naturally. Small marks can be removed by using an eraser.
- In the event of either the blind or the screen being damaged either part may be replaced. For spare parts see the diagram on the reverse side.
- For further information or installation assistance, please contact your local distributor.

Side Rail Section



Upper and Lower Trim



CUSTOM CONCEALED ORDER FORM

Concealed SKYscreen

the discreet blackout and mosquito screen blind made by **OCEANair**

Page 2 of 2 (Page 1 is Concealed SKYscreen Trims Order Form)

If ordering with an Oceanair Trim - see Concealed SKYscreen Trims Order Form first

Customer:	Order No.	Date:
Customer ref:	Tel:	Fax:

Please note that despatch of units is 2/3 weeks from receipt of order.

Item	Width (X) ¹ Max 800mm	Drop (Y) ² Max 800mm	Trim Thickness ³	Qty	Plastic Handle Recess Colour	Special Requirements
1					<input type="checkbox"/> beige <input type="checkbox"/> white	
2					<input type="checkbox"/> beige <input type="checkbox"/> white	
3					<input type="checkbox"/> beige <input type="checkbox"/> white	
4					<input type="checkbox"/> beige <input type="checkbox"/> white	
5					<input type="checkbox"/> beige <input type="checkbox"/> white	

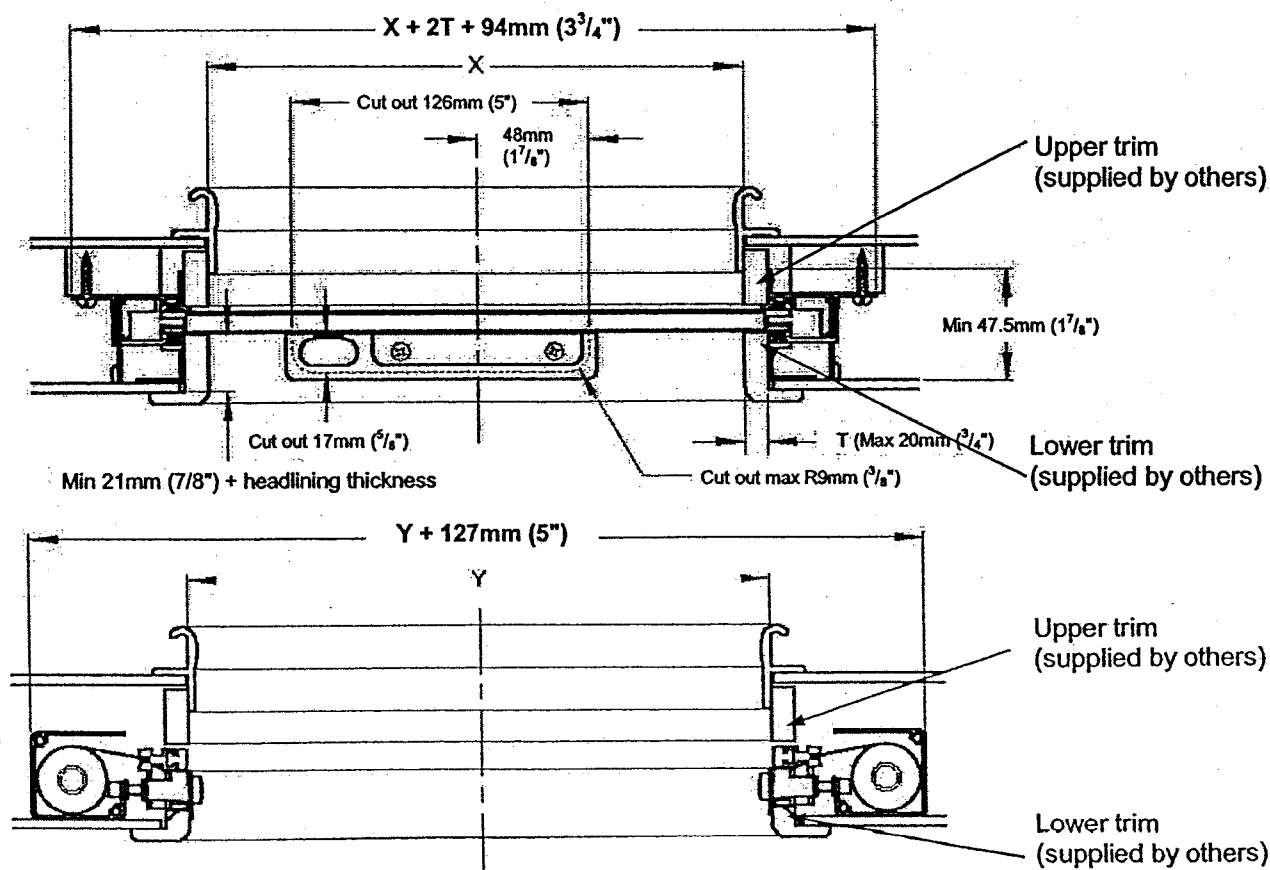
¹Width*: minimum 250mm (9⁷/₈"), maximum 800mm (31¹/₂")

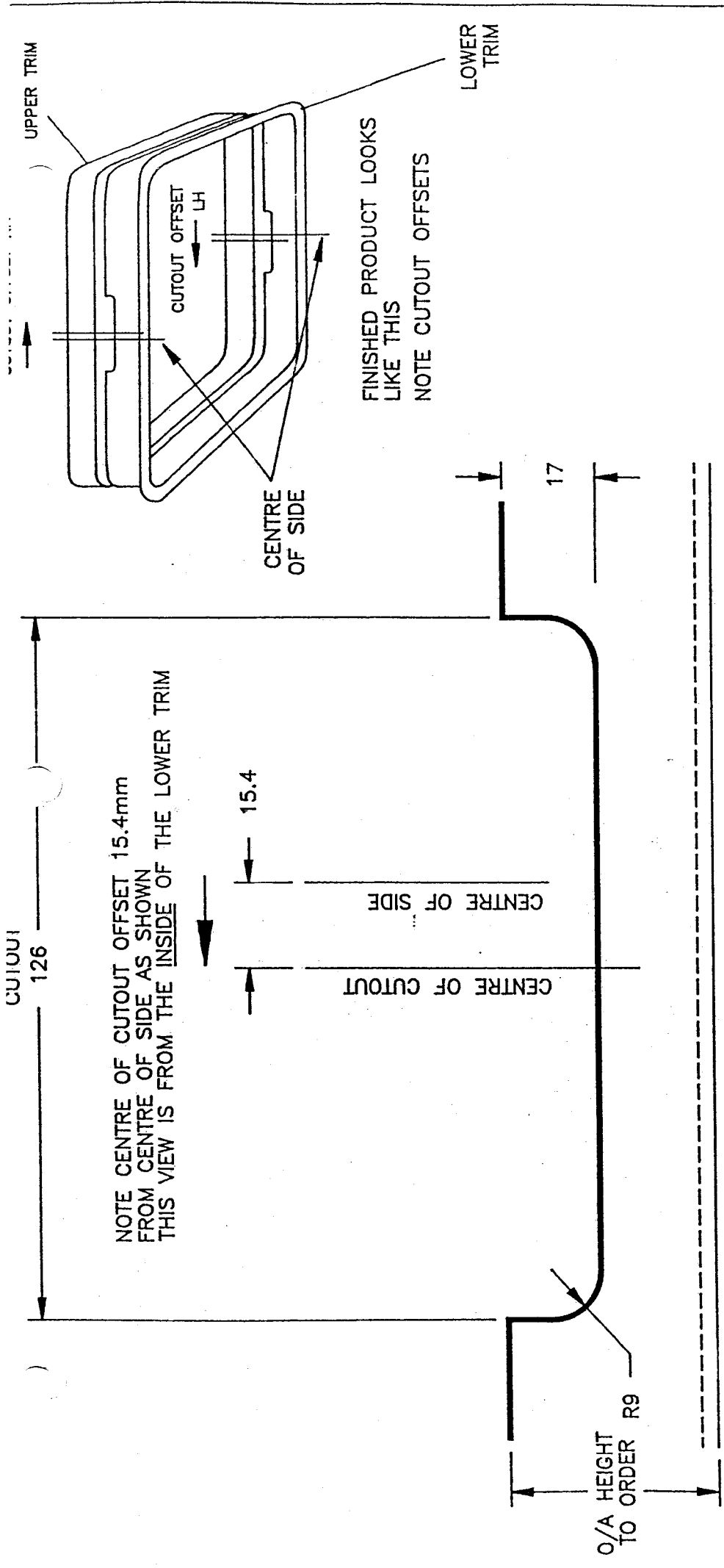
²Drop*: minimum 250mm (9⁷/₈"), maximum 800mm (31¹/₂")

³Trim thickness cannot exceed 25mm (1") unless handle resited

Trim thickness - take from Concealed Trim Order Form if OA supply

} For larger sizes contact Oceanair





WHEN TRIM IS SPLIT HEIGHTWISE LIKE THIS, THEN THE CUTOUT IS IN THE FLANGED PART (LOWER TRIM)

TOL $\pm 0.25\text{mm}$
DIMNS IN MILLIMETRES

NO	DESCRIPTION	CHKD	APD	DATE	DRAWN	TRACED	CHECKED	APPRVD	DATE	SCALE
1									15.9.99	1:1
					OCEANAIR Oceanair Marine Ltd 119, Third Ave Almodington Nr Chichester					
					UPPER AND LOWER HATCH TRIMS					
					CUTOUT DIMENSIONS					
					DRG No LIN-05/1/4					

Parts list for:

Concealed SKYscreen (CSS)

- 1 Cover extrusion
- 2 Roller extrusion
- 3 Roller bearing
- 4 Spring A (all screens)
- 5 Cloth
- 6 Double sided tape
- 7 Monofilament
- 8 End plate LH
- 9 End plate RH
- 10 X-bar
- 11 Pusher LH
- 12 Pusher RH
- 13 Magnetic extrusion
- 14 Hook
- 15 Riv-nut
- 16 Handle recess
- 17 X-bar end cap LH
- 18 X-bar end cap RH
- 19 Side rail
- 20 Hook spring
- 21 Button
- 22 Handle
- 23 Fly screen
- 24 Pusher spring
- 25 Brush strip
- 26 1/4" No. 4 screw
- 27 M4 x 20.0 mm screws
- 28 M3 x 4.5 mm screws
- 29 M4 x 6.0 mm Tapite screw

Sizes

All Special (measured in mm)

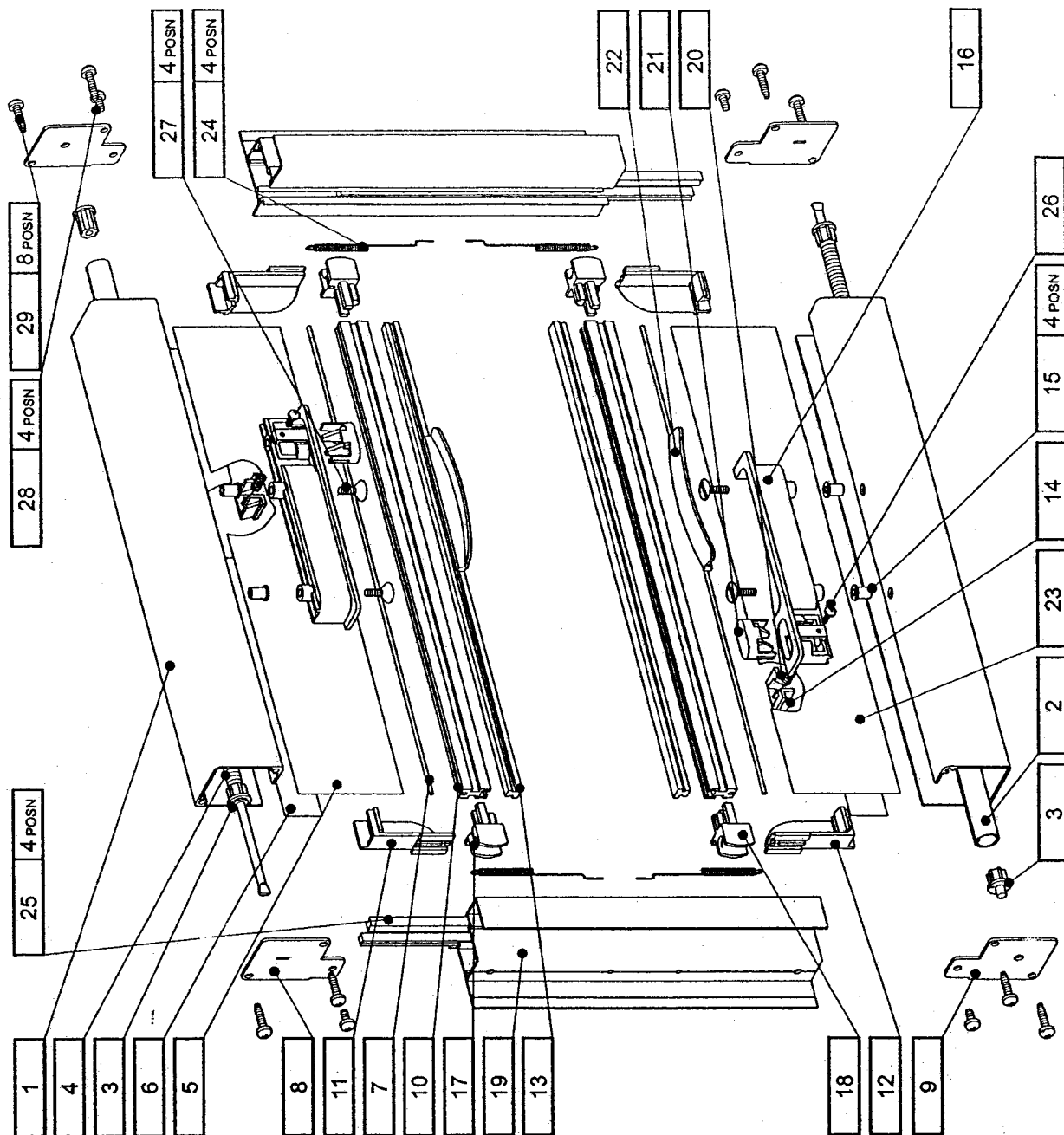
Handle/Recess
Beige or white

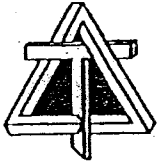
Cross Bars
Silver anodised

Fabric
Silver-Beige

OCEANair

NOTE: ALL PARTS 2 OFF UNLESS OTHERWISE STATED





DELTA "T" SYSTEMS, INC.

P.O. BOX 9159, 17133 STATE ROAD 710

JUPITER, FLORIDA 33468-9159 U.S.A.

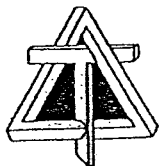
TEL: 561-694-2252 — FAX: 561-694-2214

IMPORTANT:

**DO NOT LIFT MOISTURE
ELIMINATORS BY THE MOUNTING
FLANGE. SUPPORT THE
MOISTURE ELIMINATOR BY
LIFTING THE FRAME FROM THE
UNDERSIDE ONLY!**

INSTALLATION AND HANDLING NOTES:

THIS PRODUCT IS CUSTOM FABRICATED FROM WELDED STRUCTURAL PVC SHEET. USE CAUTION WHEN HANDLING AND DO NOT USE EXCESSIVE FORCE WHEN MOUNTING OR ATTACHING FRAME AND FLANGE TO THE MOUNTING SURFACE. ALWAYS ENSURE THAT THE MOUNTING SURFACE IS FLAT BEFORE MECHANICALLY FASTENING THE FRAME VIA THE MOUNTING FLANGE. DO NOT USE HIGH STRENGTH ADHESIVES WHEN MOUNTING AND SEALING MOISTURE ELIMINATORS OR DAMAGE MAY RESULT WHEN ATTEMPTING TO REMOVE THE FRAMES. DROPPING OF A MOISTURE ELIMINATOR WILL RESULT IN SHATTERING AND BREAKAGE OF THE FRAME AND/OR PROFILES WHICH IS NOT COVERED UNDER STANDARD WARRANTY TERMS. IF NECESSARY, SMALL REPAIRS MAY BE ACCOMPLISHED BY USING STANDARD PVC CEMENT PRODUCTS. IF THERE ARE ANY QUESTIONS REGARDING THE INSTALLATION OR USE OF THIS PRODUCT, PLEASE CONTACT DELTA "T" SYSTEMS.



DELTA T SYSTEMS, INC.

P.O. BOX 9159, 17133 STATE ROAD 710
JUPITER, FLORIDA 33468-9159 U.S.A.
TEL: 561-694-2252 — FAX: 561-694-2214

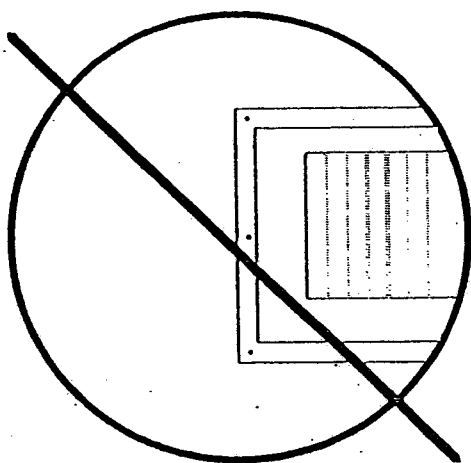
IMPORTANT!

READ ME FIRST BEFORE INSTALLING THIS PRODUCT!

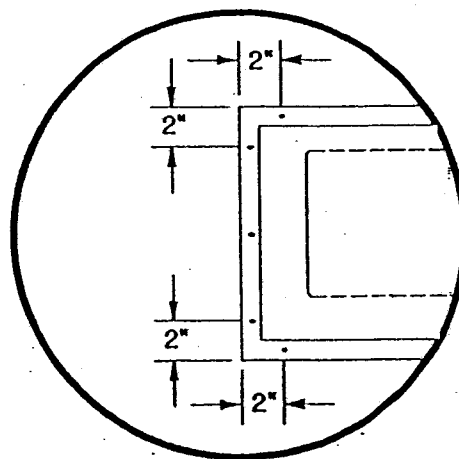
PRODUCT: FLANGE MOUNT MOISTURE ELIMINATORS

NOTICE TO INSTALLER:

Be sure that the mounting surface is **FLAT** before proceeding with installation of the moisture eliminator. Use a closed cell foam gasket or other soft compressible gasket or sealant (**Do not** use 3M 5200 or other high strength sealants or adhesives!) when fitting these units to prevent water leakage between the moisture eliminator and the plenum box.



**DO NOT PUT SCREW HOLES
IN THE CORNERS WHEN
MOUNTING FILTERS!**

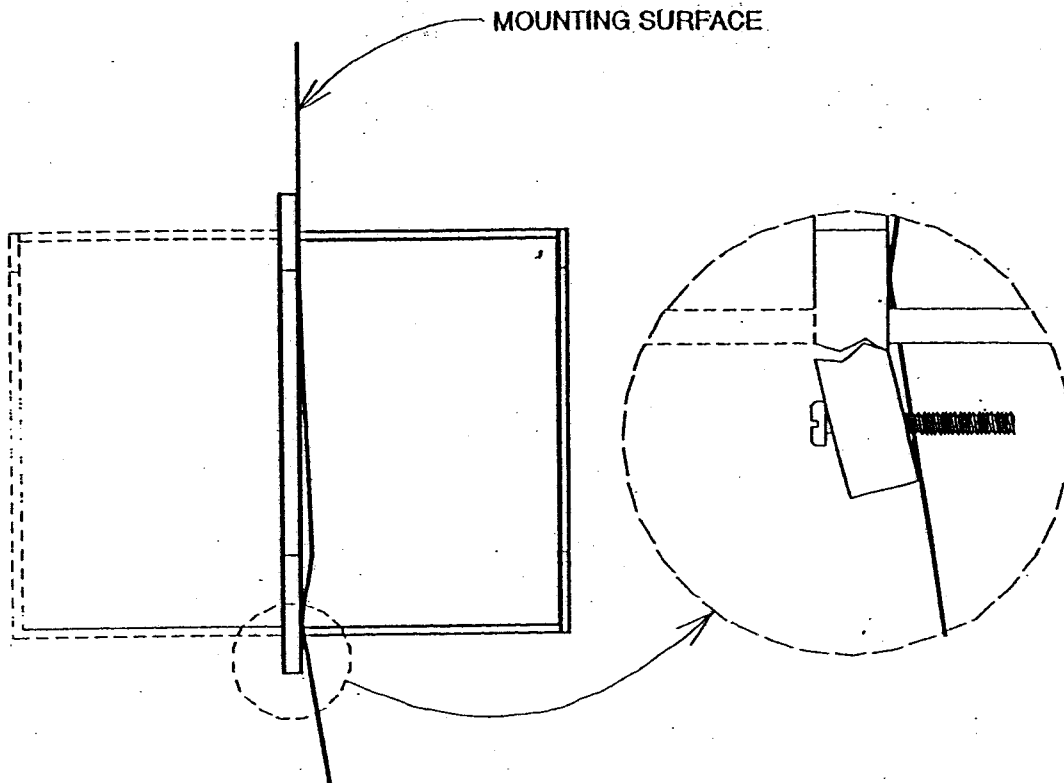


**DRILL CORNER MOUNTING HOLES AS
SHOWN ABOVE, BEING CAREFUL
NOT TO OVER TIGHTEN THE
FASTENINGS!**

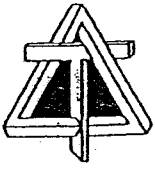
OVER.....

VENTILATION ENGINEERING, EQUIPMENT AND SYSTEMS

IME FRAME MOUNT GEN WARNING.DOT



Do not over tighten screws at the mounting frame! Mounting the moisture eliminator on an uneven surface may result in breakage of the frame as shown in the illustration above. Frame breakage due to over tightening or mounting on an irregular surface is NOT covered under STANDARD WARRANTY TERMS by Delta "T" Systems, Inc.



DELTA "T" SYSTEMS, INC.

P.O BOX 9159, 17133 STATE ROAD 710

JUPITER, FLORIDA 33468-9159 U.S.A.

TEL: 561-694-2252 — FAX: 561-694-2214

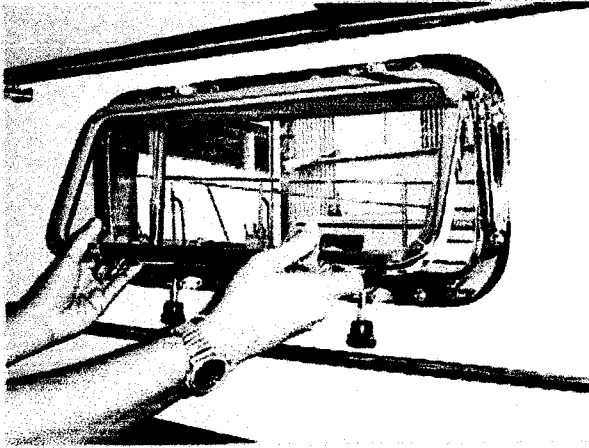
NOTICE

This shipment has been carefully inspected, checked, and properly packaged at our company. When delivered to carrier, it was in good condition and, technically, became your property at that time. For your protection, follow these important receiving procedures:

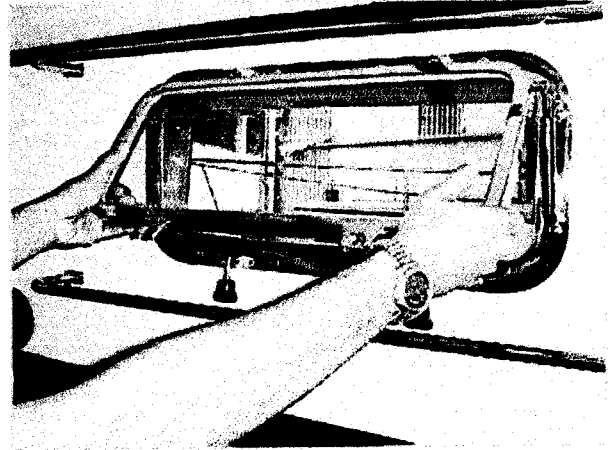
1. Before signing delivery receipt, make sure you have the correct number and type of crates, cartons, or pieces as the bill states from the same shipper. If shipment is short, specify shortage on delivery receipt and have driver sign the same specification on your copy of the bill.
2. If you discover an error after driver has left and you have signed the carrier's bill clear, immediately call carrier's OSD (over, short, damage) Department and report the error.
3. If shipment shows any indication of damage or pilferage, it should be noted on the delivery receipt in the same manner as the shortage notation.
4. If shipment shows no damage upon receipt, but after opening you discover concealed damage, immediately call carrier and request inspection. Note date of call and name of person, as well as department, contacted. Keep all packing materials and contents in same condition as when damage was discovered. Request inspection in writing and allow 5 working days for joint inspection with carrier's representative. On the sixth working day, you can make inspection, yourself and determine cause of damage to best of your ability. It is advisable to take pictures immediately after discovering damage in order to support claim.
5. When requesting an inspection from carrier, state value of damaged goods. This applies to visible or concealed damage. When shipment value is small (i.e., \$25 to \$50), most carriers will waive inspection. In this event, get name of person waiving inspection and include it when filing claim.
6. Inspection should be conducted jointly by you and carrier's representative. Do not sign anything until you have read it carefully and are sure you are not inadvertently agreeing to some item that eliminates carrier's liability (such as "damage was of a nature that could have been noted at time of delivery," "inadequate" or "no interior packing," etc.) unless this is actually the case. After completing inspection and receiving written acknowledgment of damage, notify our Customer Service Department to make any required repair arrangements.
7. Claim must be filed within 9 months of shipment date and must be supported by documents such as Original invoice, Original Bill of Lading, Original Paid Freight Bill, and Inspection Report (if any).
8. Damaged goods may be kept for an allowance. However, if damaged material is of no value and carrier liability is conclusively reflected, carrier should take possession of damaged goods within 30 days after claim is filed.
9. If carrier declines claim, immediately write and request claim be reconsidered, re-emphasizing pertinent conditions, and contact shipper for support of claim.
10. It is your responsibility to follow above instructions or carrier will not honor any claims for damage.
11. Check contents received against packing list. Claims resulting from shortage or errors must be reported within 2 weeks after receipt of material to be honored.
12. We are not responsible for any service work or backcharges without prior written authorization.

VENTILATION ENGINEERING, EQUIPMENT AND SYSTEMS

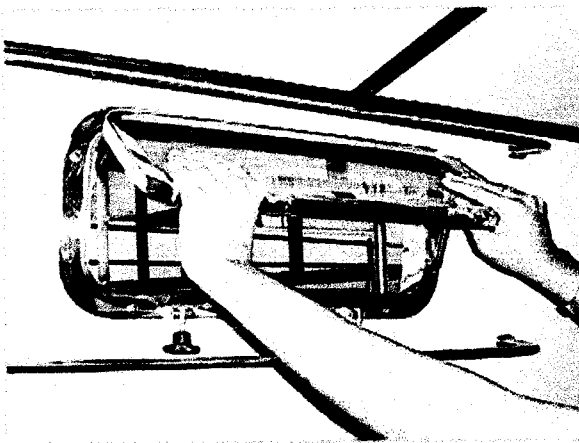
PORTHOLE OPENING OPERATION INSTRUCTION



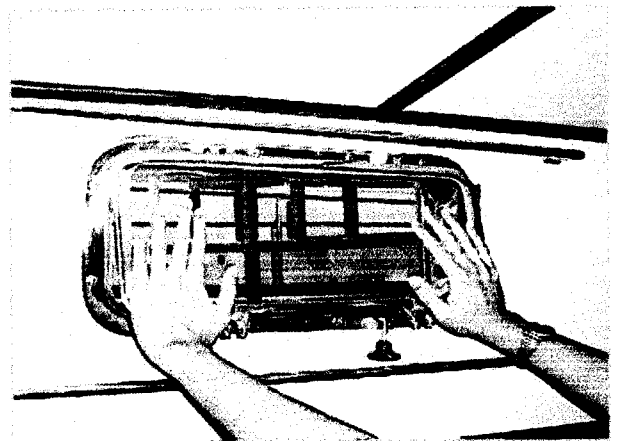
1) LOOSEN THE LOCKING DEVICES AND
LIFT THE WINDOWS USING TWO
HANDS TO OPEN



2) CONTINUE LIFTING BY MAINTAINING
PRESSURE ON BOTH SIDES UNTIL
REACHING THE DESIRED OPENING
HEIGHT



3) CLOSE THE PORTHOLE, ALSO USE
TWO HANDS TO EQUALLY PUSH THE
OPENING FRAME



4) CONTINUE PUSHING THE WINDOW
WITH TWO HANDS BEFORE LOCKING
IT IN PLACE

SERVICE BULLETIN

ITT JABSCO

International Telephone and Telegraph Corporation
1485 Dale Way, Costa Mesa, California 92626
Telephone: (714) 545-8251

7/21/82

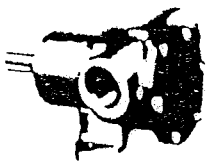
CHECK PULSATION DAMPENER WHEN REPLACING PRESSURE SWITCH ON PAR DEMAND WATER PUMPS

Whenever replacing a pressure switch on PAR diaphragm demand water pumps, the pulsation dampener inside the base should be checked for collapse or deterioration.

Making sure that the pulsation dampener is firm and resilient to properly absorb system pulsations will minimize pump cycling and provide improved switch performance and life.

Acting much like an automobile shock absorber, the pulsation dampener is subject to deterioration by the pressure exerted against it. Factors affecting pulsation dampener life include: frequency of pump use; failure to turn off pump circuit and bleed system pressure when not used for extended periods thereby leaving dampener under full compression; inadequate sealing of discharge port check valve allowing dampener to see constant compression from city water entry; loose base screws(s) allowing air to escape from under the dampener, resulting in premature collapse.

Usually, the deterioration is gradual and any change in noise level or performance goes virtually unnoticed until a system failure occurs.



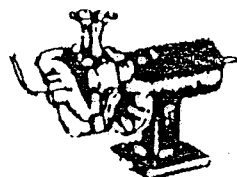
JABSCO



PAR



PAR

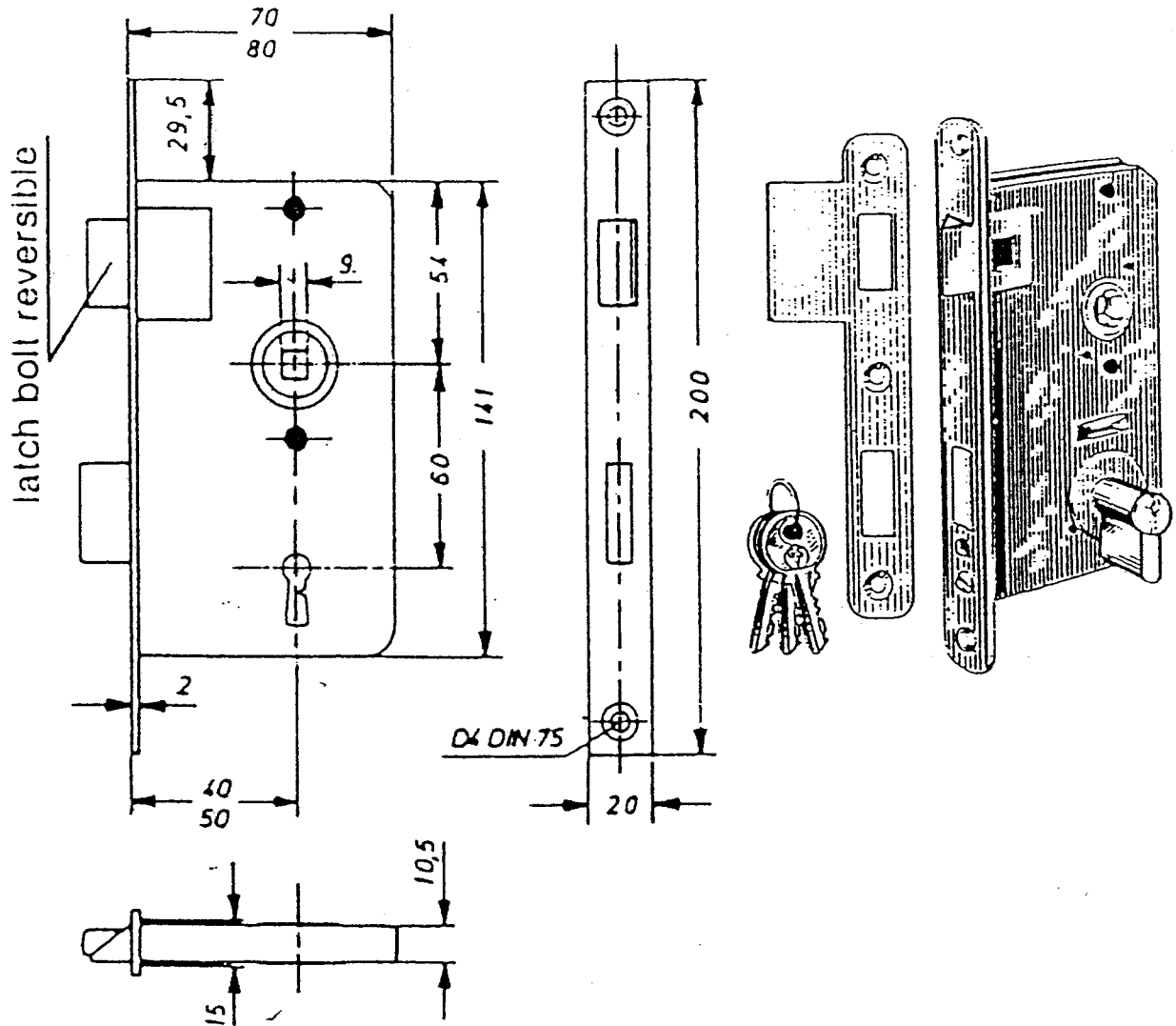


JABSCO



RAY-LINE

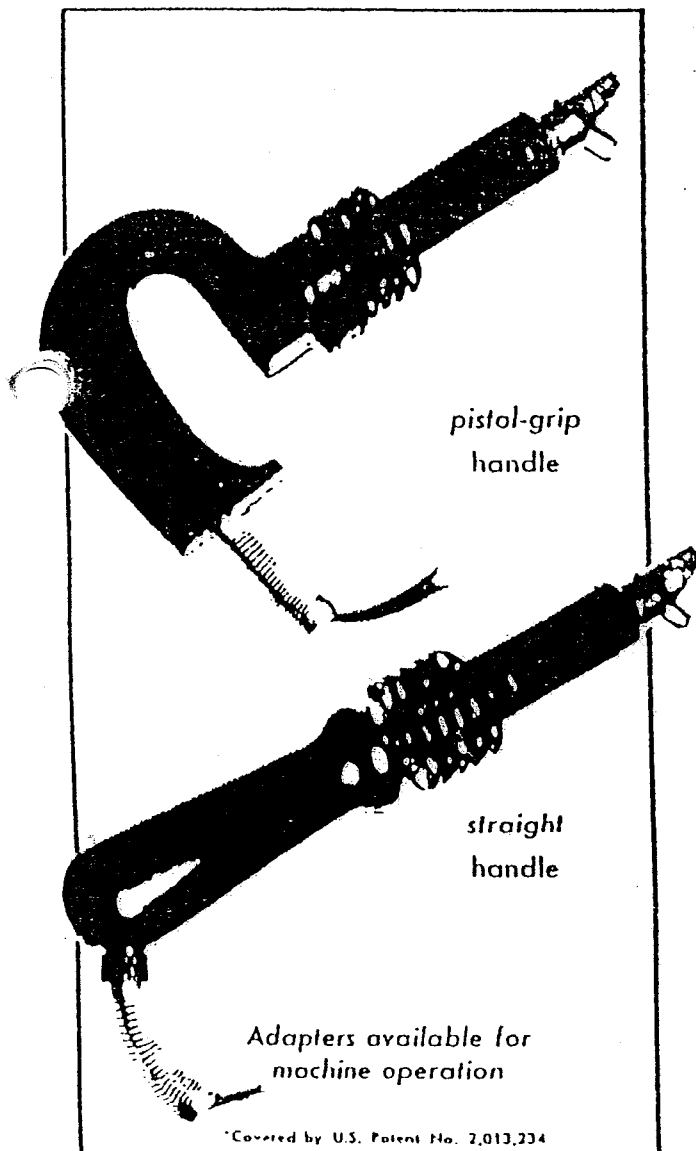
Kroon bv



IDEAL Heated Knives*

for grooving,
stripping,
cutting,
slitting:

plastic, rubber and
other heat
sensitive materials



IDEAL HEATED KNIVES are the *ideal* tool for cutting, slitting, or grooving rubber or plastics . . . and related, heat sensitive materials.

They are specially designed and constructed for long service life, as well as ease and speed of operation. Manufactured in two different handle styles . . . *straight* or *pistol-grip* . . . 7' cord . . . your choice of heating capacities — 150 or 250 watts, IDEAL HEATED KNIVES are handy in workshop or toolroom.

Uniquely Engineered Glass Reinforced Nylon Pistol Grip and Straight-Handles are light and cool for comfortable operator use.

The solid brass head keeps the heat "just ahead" of the cutting blade. This, in effect, pre-conditions the material to be cut and makes for speed, ease and accuracy. The depth of the cut is controlled by the adjustable blade. Heads are available in nine different widths ranging from .053" to .750".

Made of the finest quality steel and honed to a razor-sharp edge, blades for Ideal Heated Knives are available in nine sizes, five different strengths ranging from standard to super . . . and in a variety of tip shapes. Special blades are made to order. Submit design or complete description for prices.

Complete kits, consisting of handle (your choice of style and heating capacity), one head and twelve blades, are priced from \$130.



TEAKDECKING SYSTEMS
6050 PALMER BLVD, SARASOTA, FL 34232 USA
PHONE 813-377-4100

TEAKDECKING SYSTEMS
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WHY SEALANTS FAIL

THREE BASIC TYPES OF SEALANT FAILURE

ADHESIVE	COHESIVE	SUBSTRATE
"Loss of adhesion" is failure of the sealant to adhere along the bond line of the surface to which it is attached, causing it to break away. The possible causes are joint movement exceeding the sealant capability. Improper surface preparation, or improper beading configuration.	"Cohesive failure" occurs when the sealant fails to hold together. Cohesive failure can take the form of the splits and tears in both transverse and longitudinal directions. Usual causes include improper sealant selection, poor mixing of multi-component sealants or possible air entrapment in the sealant from mixing.	"Substrate failure" is not a failure of the sealant itself but of the surface or substrate to which it is supposed to adhere. Substrate failure results from improper surface preparation. The weak interface depicted here should have been saw cut back to prevent loose pieces of the surface material from breaking away from the joint interface.

Other Factors That Cause Sealant Failures: Poor Joint Design or Application

FAILURE OCCURS WHEN THE DESIGN OF THE JOINT EXCEEDS THE ABILITY OF THE SEALANT TO FUNCTION PROPERLY, OR WHEN THE MATERIAL IS APPLIED INCORRECTLY OR CARELESSLY. Below is a "do and don't" guideline.

SEALANT WITH NOT ENOUGH DEPTH FOR JOINT WIDTHS		SEALANT IN 3-SIDED JOINT		NARROW CORNER JOINT CAULKED AT AN ANGLE	
Failure	O. K.	Failure	O. K.	Failure	Failure
Hourglass design too thin in center causing cohesive failure.	Sufficient material depth compared with joint width should create a 2:1 ratio.	3-way adhesion - no way to expand. Sealant pulls on three sides.	Polyurethane bond breaker tape in the bottom of the joint creates 2-way adhesion, allowing for proper joint movement.	Caulking at slant - most of the material adheres to back side. Very little material adheres to the corner, causing adhesive failure.	Mass exceeds bond line.

GENERAL GUIDELINES FOR JOINT DESIGNS

Joints 1/2" to 3/4" wide	Joints 3/4" to 1" wide	Joints 3 to 4 mm	Joints 5 to 7 mm	THIN SEAMS WITH HIGH MOVEMENT	
				Replace Decks	
Foil	Foil		Bond Breaker Tape		
O.K.	O.K.	BEST	BEST	Failure	Temporary Repair
1:1 Ratio Width and depth the same.	2:1 Ratio Width twice as wide as depth.	Urethane backing glue used as bond breaker.	Polyurethane bond breaker tape in bottom of seal.	Thickness not sufficient to accommodate movement.	Bridged gap over bond breaker tape creates wider joint that will accommodate movement.

Note: For joints over 1" see manufacturer's recommendation

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<i>Z-Spar Marine Paint Finishes</i>	<i>2 pages</i>
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<i>Exalto Marine Wiper Diagram</i>	<i>2 pages</i>
<i>*AC Supply Schematics Drawing</i>	<i>1 page</i>
<i>*DC Supply Schematics Drawing</i>	<i>1 page</i>

Legend: * Varies with each boat

SERVICE & MAINTENANCE

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EXTERIOR

Antifouling

Under average conditions painting the bottom should be done twice a year. This time-period can vary depending on the amount of boat use and local weather conditions. Make sure all areas are covered. Heavy sanding or sand blasting of the bottom of the boat is not recommended. Damage to the gelcoat could result. Also remove, clean and paint the basket strainers covering the thru-hull fittings. The thru-hulls should also be cleaned out.

Haul-out Maintenance (Out-of-water Inspections)

When the boat is hauled for painting, also examine the following items :

1. *Check for wear in the water lubricated rubber shaft bearings.*
2. *Check for operation of all sea-cox.
If stiff, remove the cone for cleaning and coat with petroleum jelly before replacing.*
3. *Check propeller and propeller key on each shaft for tightness and condition. Also inspect the lock nut and split pin. It is recommended that the proper installation of propeller etc. be inspected by a qualified technician.*
4. *Check condition of all underwater fittings. After the boat has been re-launched, be sure to check the circulation of the engine raw water cooling system. If the raw water pump impellers have seen heavy service they are prone to failure during the dry out period when the boat is out of the water. Raw water impellers should be replaced annually or as required.*

CAUTION ! (To Prevent Gelcoat Blistering)

TO AID IN THE PREVENTION OF GELCOAT BLISTERING, IT IS HIGHLY RECOMMENDED TO HAVE THE BOAT KEPT OUT OF THE WATER, MINIMUM ONCE A YEAR EACH TIME FOR APPROXIMATELY ONE WEEK.

Cleaning

Wash all equipment with Epiglass Epoxy thinner/cleaning fluid. All exterior fibreglass on a Grand Banks are gelcoated. A good cleaning and waxing at regular intervals will keep the fibreglass parts looking new for a long period of time. Rinsing off all salt following each use is recommended whenever possible. After long exposure to sun or salt or to remove a stain, *very light* buffing may be necessary to restore the gloss of the gel-coat surface. Always wax the area after buffing.

Care Of Surface Of Gelcoat

Your Grand Banks is finished with a lustrous, shiny layer of gelcoat on the outside. Gelcoat is purely cosmetic and adds nothing to the structural integrity or strength of the laminate. For gelcoat to maintain its glossiness, it requires frequent washing, plus the application of a good coat of wax at least once or twice a year. Rinse with freshwater after each use. The boat's high-quality gelcoat finish is chosen not only to appeal to the owner's personal colour preferences but also to provide a maximum protection to the polyester substrates underneath. In tropical climates twice annual waxing is mandatory. Regular care and maintenance make a big contribution to your boat's resale value. A large number of environmental influences can affect the boat's gelcoat. They govern the amount of care the gelcoat needs and how often it should be attended to.

In the tropics, ultra violet radiation from the sun is very strong, the air is often very humid and temperatures can exceed 40 deg C (140 deg F) in the shade. White gelcoat finishes may heat up to 80 deg C (176 deg F). Prolonged exposure could cause the gelcoat finish to develop yellowing, particularly on horizontal surfaces. Bird droppings should also be removed without delay, or they will damage the gelcoat. It is quite easy to decide when the boat's gelcoat needs polishing or preservative treatment: water no longer forms large round droplets on the boat, this may arise as early as 3 to 4 months. *Do not fail to carry out the necessary protective treatment as soon as it becomes necessary.*

Fixing Niches & Scratches On Gelcoat Surface

Gelcoat is relatively thin coat and is susceptible to crazing and scratching. The following procedure is recommended for areas which have gelcoat damage.

01. *Rough up the surface of the damaged area using a power drill with burr bit or coarse sandpaper. Feather the edge surrounding the blemish with finer grade sandpaper. Do not undercut the edge.*

02. *Be sure that the area to be patched is clean, dry and free of wax, oil or other contaminants by cleaning with solvents such as ethyl acetate or methyl ethyl ketone.*
03. *Place ample amount of gelcoat (Pigmented and pre-promoted Iso-NPG gelcoat from American Marine) in a suitable container such as a pint can lid. And 5% by weight of 970-C-940 wax solution to gelcoat (approximately 20 drops per tablespoon of gelcoat). Thoroughly mix 1% by weight of MEKP (50% concentration) to the gelcoat (approximately 4 drops per tablespoon). This should give you a working life of 15 to 20 minutes of working time at 77 degrees F.*
04. *Work the catalysed gelcoat into the damaged area with a knife or spatula. Overfill the blemished (including area around and above) slightly to allow for shrinkage.*
05. *If no wax solution was added to the gelcoat, cover the repaired area with cellopane or waxed paper as gelcoat will not completely cure if exposed to air. If wax has been added, it will float to the surface thus acting as a barrier between the uncured gelcoat and air.*
06. *Let the patch cure thoroughly before doing anything further to it approximately 2 to 3 hours. The patch has not cured sufficiently if the thumbnail will leave an impression in the gelcoat.*
07. *Sand the patched area with 220 grid wet or dry sandpaper, then change to 400 grid, then to 600 grid and 1000 grid wet or dry sandpaper. Complete finishing process by buffing with rubbing compound to perfectly smooth surface. Then wax and buff surface to high gloss.*

Care And Cleaning Of Acrylic Parts

Do's

1. *Wash your acrylic hatches, Windshields and other acrylic components on your boat with a mild soap and plenty of lukewarm water.*
2. *Use a clean soft cloth, applying only light pressure.*
3. *Rinse with clear water and dry by blotting with a damp cloth or chamols.*
4. *Grease, oil or tar may be removed with a good grade of hexane, aliphatic naphtha or kerosene. These solvents may be obtained at a paint or hardware store and should be used in accordance with the manufacturers recommendations.*
5. *To maintain a high-luster finish on your acrylics, we recommend that after properly cleaning, apply Meguiars Mirror Glaze #10 with a soft towel. Note: If slight scratches appear on acrylics, use Meguiars Mirror Glaze #17, or brand of polishing compound approved for use on acrylic surfaces.*

Don'ts

1. *Do not subject acrylic material to high temperature when polishing.*
2. *Do not use glass cleaning sprays, scouring compounds or solvents like acetone, gasoline, benzene, carbon tetrachloride or laquer thinner, or damage can result to the acrylic surface and the sealants used to secure the lens into the frame.*
3. *Do not use masking tapes, duct tapes or packing tapes on your acrylic materials.*
4. *Do not drill holes without proper drill bits in your acrylic materials (special bits are used in acrylic material to avoid damage).*

Hardware

Hardware can be preserved from corrosion by applying protective polishes. Always rinse with fresh water after each cruise whenever possible. Grease all mechanical moving parts such as wipers, hinges, door locks etc.

Stainless Steel

Stainless steel is a common chromium / nickel alloy steel used in thousands of products from ocean-going craft to tableware. A protective chromium oxide film forms on its surface which gives stainless its superior corrosion-resistant property. When properly maintained, Stainless provides excellent lustre, strength and durability. And in most applications, stainless will not rust or stain even after many years of service.

CAUTION ! (About Stainless Steel)

STAINLESS STEEL IS NOT STAIN OR RUST PROOF. WHEN USED IN CONTACT WITH CHLORIDE SALTS, SULPHIDES OR OTHER RUSTING METALS, IT WILL DISCOLOUR, RUST OR EVEN CORRODE.

Proper care and maintenance of stainless in marine environments, polluted surroundings, salted highways, or other situations where stainless may be exposed to corrosive elements, will help keep your stainless products beautiful and functional for years to come.

01. *ALWAYS clean stainless frequently with soap and water. Any cleaner safe for glass is usually safe for stainless.*
02. *ALWAYS remove rust spots as soon as possible with a brass, silver or chrome cleaner. Irreversible pitting will develop under*

rust that remains on stainless for any period of time.

03. *ALWAYS use cleaner, like a good car wax, for added beauty and protection.*
04. *NEVER use coarse abrasive like sandpaper or steel wool on stainless. These may actually cause rusting.*
05. *NEVER clean with mineral acids or bleaches.*
06. *NEVER leave stainless in contact with iron, steel or other metals which cause contamination leading to rust or corrosion.*

Varnished Teak

Varnished teak will require periodic, usually twice a year or if left uncovered all year, light sanding and new varnish depending on climatic conditions and frequency of exposure to the ultra violet radiation. A coat of good quality wax can help reduce exposure of ultraviolet light and keep finish protected. Scratches and nicks in the varnish should be touched up as soon as they are discovered. Whenever possible rinse with fresh water after each cruise.

Re-finishing Work On Varnished Exterior

To obtain a smooth, high gloss finish free of streaks, blemishes and brush marks on the varnished handrails, hatch covers and other bright work around the outside of the boat, you are recommended to follow the following steps.

Use a good quality bristle brush. Pour off varnish from a new container through a clean paint strainer into a clean container. Pour only as much as you are likely to use. Never use varnish direct from the can as contaminants from the brush will settle into the can with each use. Do not varnish on a windy day. If working on an unpaved area, wet the soil down first to eliminate dust blowing around. After sanding, remove all dust by wiping with a tack rag. Repeat with a rag moistened with paint thinner before applying the first coat of varnish. Do not stir varnish, unless when adding thinner. Drip the brush into the varnish by no more than one-third its bristles and remove the excess by tapping against the inside rim of the can. Never wipe brush across the rim. Flow the varnish on, do not scrub it on. Brush from dry area back into the wetted area. As you finish coating each section, smooth it out and "tip-off" the finish by stroking gently at right angles to the original direction when possible. Finish off parallel to the grain, using tips of the bristles. Do not pick up more varnish when doing this. Make sure to do the final smoothing or "tipping off" before the varnish starts to get tacky.

Teak Decking/Flybridge Mouldings/Deckhouse Teak Trim

All flybridge teak mouldings are bedded with polysulphide. Similarly the teak trim for the deckhouse side and teak decking.

"Cleaning" teak decks is basically wearing them away either through abrasion like sanding, or by acid induced chemical actions or both. That quite simply, is why you should choose a mild cleaner that relies more on "soap" than acid. While it may not leave your decks looking like they have just been sanded perfectly smooth, they should come clean with a moderate amount of scrubbing and your decks and deck seams will last longer.

In general, here are some do's and don't's for the care of teak decks:

1. *Do keep your decks clean but don't over do it.*
2. *Don't use harsh acid based chemical cleaners. Generally, the less work they require, the harder they are likely to be on the teak and on the caulking.*
3. *Do use PLENTY of freshwater during ALL stages of cleaning teak decks.*
4. *Do follow cleaner manufacturer's instructions carefully.*
5. *Don't use stiff bristle brushes on decks, they dig into wood's soft grain, especially when wet.*
6. *Do use flat scrubbing pads, they don't dig into the grain, they wear it evenly.*
7. *Do strongly consider not using a teak oil or sealer, or if you choose to, do so with caution, and follow the product manufacturer's instructions carefully.*

CAUTION ! (Harmful Deck Cleaning Chemicals)

DO NOT USE DECK CLEANING THAT CONTAINS OXALIC AND / OR PHOSPHORIC ACID.

ONLY SOAP SOLUTION SHOULD BE USED FOR TEAK DECK CLEANING. ANY OTHER CHEMICAL AND/OR STRONG DETERGENT CONTAINING ACIDS SHOULD NOT BE USED OTHERWISE THE DECK SEAM WARRANTY WILL BE VOID.

Flybridge Seat Cushion

Flybridge seat cushions should never be stored wet. A mild soap or bleach solution is good for cleaning. Always rinse with fresh water after cleaning. Never leave cushions out in the rain, the foam will absorb water and is very difficult to dry out again. If foam becomes wet, remove from cover and allow to dry in a warm dry place until thoroughly dry. Do not place in a clothes dryer, do not expose to sunlight for a long periods of time or foam may become damaged.

Canvas / Snaps

The metal snaps that are used to secure boat covers often become extremely difficult to unsnap because of accumulation of dirt and salt and oxidation on the metal. The easiest way to prevent such problems and make snaps easier to take apart at all times, is to smear a small amount of vaseline (petroleum jelly) on either half of the snap a couple of times a year.

WARNING ! (No Dumping At Sea)

IT IS ILLEGAL FOR ANY VESSEL TO DUMP TRASH ANYWHERE IN THE OCEAN OR NAVIGATIONAL WATERS. LOCAL REGULATIONS MAY FURTHER RESTRICT THE DISPOSAL OF GARBAGE.

A DUMPING WARNING LABEL IS SUPPLIED LOOSE FOR EACH GRAND BANKS SHIPPED AFTER MID APRIL 1992. IT SHOULD BE PLACED AT A PROMINENT LOCATION IN THE BOAT. THE ACTUAL LOCATION IS THEN LEFT TO THE DISCRETION OF THE BOAT OWNERS.

Teak Decking Refurbishing And Cleaning Procedures

01. Repairing / Replacing Damaged Planks

- a. *To repair a small crack in the teak batten, use a razor blade knife to clean and fill the crack with 1:1 TDS Epoxy*
- b. *To repair a large crack or chip, router out the damaged area and insert a piece of teak (Dutchman). Fasten with 1:1 TDS Epoxy*

Note : TDS is 'TEAKDECKING SYSTEMS'

02. Re-seaming

CAUTION ! (The Presence Of Moisture)

UNDER NO CIRCUMSTANCES SHOULD MOISTURE OR WATER BE LET INTO THE SEAMS DURING THE PROCESS.

If the caulking is low or not adhering to the side of the deck plank, reef out the old caulk. The caulk can be removed in any of the following methods :

- a. *TDS offers an Electric Heated Knife (see enclosed information sheet) that can be used to reef the seams.*
- b. *Using a razor knife, cut the sides of the caulk and dig out the*

caulk with a reefing hook.

- c. *A router or a circular saw can also be used to cut the seam clean. (This method requires more skill).*

When finished, make sure both sides of the seam have clean wood at least 1/2" deep. Vacuum all dust from the seams and wipe the seams with acetone before applying the caulk. Use bond breaker fit in the seam. (see "Why Sealants Fail" enclosed). Re-caulk using TDS SIS 440 (Directions on the tube).

03. Plugging Repairs

Old plugs or cracked plugs can be removed using a small chisel to break them out of the bored hole; rebore the hole using a hole cutter. If sides of holes are damaged, increase the diameter of the hole saw. Insert new plug, using TDS 1:1 Epoxy completely around the new plug. Plugs and epoxy can be ordered through TDS.

04. Resurfacing Deck

Completely sand the deck using Milwaukee grinder Model #6072 and Diskitsoft pad #8051 and sanding disc. These can be ordered through TDS.

CAUTION ! (Sand Paper Grit To Be Use)

THE GRIT OF THE SAND PAPER TO BE USED DEPENDS ON THE CONDITION OF THE DECK. IF THE DECK IS IN BAD CONDITION, START WITH A 36 GRIT AND FINISH WITH AN 80 GRIT.

CAUTION ! (To Avoid Gouging The Deck)

TO AVOID GOUGING THE DECK, HOLD THE PAD FLAT TO THE DECK. VACUUM UP THE DUST.

05. Screwless Teak Deck Repair

We can choose the following options to repair damage plank(s).

- a. *Use Of Weight*
Remove the damaged plank(s) from floor/deck. Remove the old cured epoxy left behind after removal of plank(s). Get a fresh new plank and apply fitting & fairing epoxy from TDS at 1:1 ratio underneath. Insert the prepared plank(s) into existing space and place weights until epoxy has cured.
- b. *Use of hold down screws.*
Remove damaged plank(s) and also the cured epoxy left behind.

Prepare fresh plank(s) with waxed screws & clamping board in between the seam to hold down the deck.

Apply fitting and fairing epoxy at 1:1 ratio underneath the planks and on repaired area. Screw down the plank while maintaining uniform pressure.

Once epoxy has cured remove screws and fill the holes with West System glue using syringes.

06. Inspecting The Deck

Hose down the deck with water. As the deck is drying, observe wet spots that do not dry completely. These are areas that may need work, ie. new plugs, more caulk repair, etc.

07. Finish On Exterior Teak Decking

We do not recommend any finish on exterior teakdecking in the Caribbean sun, but if it is still requested, Teak Deck Sealer is available from TDS.

Note : Different woods absorb sealer at different rates. Try a small, inconspicuous area to test the colour and finish (The TEAK SEALER may be partially stripped with lacquer thinner. Be sure to shake the TEAK SEALER well) Before applying the sealer, clean teak or other wood items well with TDS TEAK CLEANER. Make sure all grease, dirt and oil is removed from the teak. After cleaning, rinse the teak thoroughly with fresh water and let it dry. Do not use sealer on a damp or wet surface or in direct sunlight during the heat of the day. Apply TEAK SEALER in the direction of the grain using a foam brush or foam or fine nap roller. Apply two coats; allow twenty minutes between coats. In areas where there is heavy traffic, touch-up is easy with teak sealer. Just blend the area and let it dry. (while the TEAK SEALER is still wet it can be removed from non-wood surfaces with a dry cloth)

(Note : Sealing will create a darker appearance)

CAUTION ! (Acid Cleaners / Rust Removers)

DO NOT USE ACID CLEANERS / RUST REMOVERS ON TEAK DECKS.

Generally, rust cleaners contain acids - either in liquid or powder forms, which can vary greatly in strengths in accordance with the application intended for the product. Acids are also classified as organic or mineral, oxalic acid being an example of organic and phosphoric acid an example of a mineral acids, both of these substances being commonly used in rust cleaners.

Acids may have the effect of softening the caulking in the seams of our panels and the resulting softening will lead to seam failure over a period of time.

Once a crack opens between the seam and the wood, it allows cleaning solutions to collect in the cracks where it cannot be easily rinsed out, and seam failure accelerates.

The "cleaning" action of acids appears to be very effective because the acid actually removes some of the material being clean -- in our case, the wood and the caulking. Over time, enough material may be removed to compromise the integrity of the wood where it meets the caulking seam, causing a crack which as described above, accelerates the failure of the adhesion of the caulk to wood.

Additionally, unless the acid cleaning solution is neutralized by rinsing with an alkaline solution after it is applied, the corrosive action of the acid may continue for some time, even after the solution is dry. Rinsing with water is not sufficient to stop this action.

As part of a regular maintenance program, TDS POWDERED TEAK CLEANER can be used on a weekly basis. This cleaner is very effective as a general purpose cleaning agent, especially when used with hot water, and is environmentally safe as well as user friendly, since it is completely biodegradable and contains no acids, caustic or bleaches.

Our recommendation is that a non-corrosive alkaline cleaner, such as TDS LIQUID TEAK CLEANER be used, which also contains a very effective degreasing agent, for cleaning teak decks. On a monthly basis, and also for very stubborn stains such as soot or grease and oil, the cleaner can be applied full strength on the areas affected and allowed to work before the entire deck is cleaned. This product is also biodegradable and non-hazardous to the environment or user when used as directed.

WARNING ! (If Acid Type Cleaners Are Used)

IN NO CASE CAN WE RECOMMEND THE USE OF ACID TYPE CLEANERS FOR CLEANING WOOD DECKS, EVEN IF MIXED WITH ALKALINE CLEANERS. USE OF ACID CLEANERS WILL INVALIDATE WARRANTIES ON OUR DECKS.

The above information is based on our years of experience in maintaining teak decks and the principles of basic chemistry. While it is not intended as a scientific study, we believe it to be accurate and solidly based.

CAUTION ! (Teak Oil on Exterior Decking)

WE DO NOT RECOMMEND THE USE OF OILS ON EXTERIOR TEAKDECKING. TEAKWOOD CONTAINS NATURAL OILS AND TO TREAT THE DECKING WITH OILS IS NOT AT ALL NECESSARY. IF THE USE OF AN OIL OR SEALER IS PREFERRED FOR COSMETIC REASONS, PLEASE DO NOT USE OILS CONTAINING KEROSENE (AS IN TEAK WONDER) OR OTHER PETROLEUM PRODUCTS WHICH WILL DAMAGE THE CALKING.

INTERIOR

The interior furniture of the Grand banks is finished with a low lustre varnish like product known as "Timbertone teak oil". With reasonable care it will provide many years of protection to the fine wood interior of your Grand Banks. To maintain the finish it is only necessary to keep the surfaces clean, avoid excessive contact with moisture or humidity and minimise the amount of direct ultraviolet light exposure. A small container of Timbertone was supplied with your new GB for touch-up purposes, additional quantities may be ordered from your Grand Banks dealer.

Some owners may prefer to maintain the lustre of the finish with furniture polishes or waxes. Such polishes keep the finish flexible and provide an aesthetically pleasing even lustre.

Drawers may need lubricating from time to time, beeswax or similar compound is recommended. Door and locker hinges may need adjusting or lubricating from time to time. See the Equipment List for information on interior paint and finishes.

Re-varnishing Cabin Sole

The parquet sole is varnished with Akzo Nobel. This is a 2-component Polyurethane system.

For a good re-varnish job, the following must be adhered to :-

- 1) *Any holes and/or worn out cavities to be filled up.*
- 2) *Sand entire parquet floor with 180 grit water proof sand paper using orbital sander.*
- 3) *Clean entire area. Apply Akzo Nobel with the following mixing ratio:*
 - a) *1 part of Pu Lacquer - 1.641.0103*
 - b) *1 part of Hardener - 19503326*
 - c) *30% Pu Thinner - 803-9930*
- 4) *Let surface dry for approximately 30 minutes.*
- 5) *Sanding with 180 grit water proof sand paper using orbital sander.*
- 6) *Repeat steps 3, 4 and 5 twice more.*
- 7) *Again, apply Akzo Nobel - same as part no. 3*
- 8) *Allow drying time of approximate 30 minutes.*
- 9) *Sand with 180 grit water proof sand paper using air orbital sander (disc-type)*
- 10) *Wet sanding with 240 grit water proof sand paper.*
- 11) *Mixing ratio of varnish for either semi-gloss final coat is as follow:*
 - a) *1 part of 40 Sheen Pu - 877-40kl-005*
 - b) *1 part of Hardener - 19503326*
 - c) *30% of Pu Thinner - 803-9930*

Akzo Nobel is manufactured in Malaysia. It is not available in many parts of the world. GB owners may order from their GB dealer. A good substitute is one part polyurethane finishes sold in hardware stores for residential hardwood floor applications. Following similar procedures as above will yield very satisfactory results. The lustre of these finishes varies, most "matte" or "semi-gloss" lustre will yield a lustre similar to the original Akzo Nobel. Some conventional one-part polyurethane also contain ultraviolet light inhibitors. Although the cabins of a typical GB receive moderate direct light the additional protection is highly desirable.

Danish Brass Cabin Lamp

As a sailor you know how aggressive sea-water is to all gear on your boat, especially to brass. To resist oxidation the brass is treated with a special lacquer - but if you want to have beautiful lamps for years, you must follow these rules :

- 1) *Do not polish the lacquer.*
- 2) *Keep sea-water away from lamps.*
- 3) *Wash lamps at intervals-using a soft cloth and fresh water. Polish very lightly with a soft cloth in order not to scratch the lacquer.*
- 4) *Never use spirits or thinner. If nevertheless, you should be so unfortunate as to have your lamps tarnished by sea-water, the lacquer may be removed from the tarnished area by the use of thinner. It is important that this should be done while the attacks are still in the form of brown spots or discolourations, as these can be polished away easily, you then have to use polish here in the future.*

When the lamps are "pitted" it is too late to maintain the lacquer finish. At this point you have two choices. You can remove the entire lacquer finish with a lacquer thinner and polish them with conventional brass polish. Or, you can have them reconditioned with a new lacquer finish. You may wish to send your lamps to the address below, where they will be factory reconditioned. For your lamps that are still in good condition, or for new lamps, we recommend that you follow the lamp manufacturers instructions as follows:

1. *Initially and once or twice a season, treat each lamp with a liquid wax. Follow the wax maker's application instructions. Do not use any wax or polish with either silicone or abrasives. One product recommended by commercial brass lamp makers is: "Polier" made by Filtz International, 821 Mohr Avenue, Waterford, Wisconsin 53185, (414) 534-5898.*
2. *Avoid opening cabin windows, ports or hatches subject to salt*

- spray that are in close proximity to brass lamps.*
3. *If seawater comes in contact with a lamp, wipe the affected area clean immediately to remove any trace of salt water. Apply the wax treatment as above to renew the lacquer protection.*
 4. *In the off season, for best results, remove the lamps and store in a clean dry place. Apply a wax treatment just prior to reinstalling the lamps.*

For lamp reconditioning :

Munster Cabin ApS
Bakkesvinget 15E
DK 6340 Krusaa, Denmark
Telefon (+45) 7467 55 38
Telefax (+45) 74 67 55 48

Saloon Door 'Kroon' Lock

A little bit of maintenance will help to make your Kroon Lock last a long way.

- 1) *Lubricate the keyhole and plunger slot in the thumb turn assembly regular with WD 40 or light machine oil or similar product at least every 6 months.*
- 2) *Grease all moving parts e.g. door handle, spring and circlip.*
- 3) *Wipe and remove salt and dirt from exterior parts. When boat is laid up or moored for lengthy periods, we would suggest the cylinders and locks be treated with a fine spray oil and cover the cylinder with protection tape.*

If you need to replace the locking cylinder, please contact American Marine (S) Pte Ltd.

To remove Cylinder From Lock Case

1. *Unscrew the cylinder retaining screw.*
2. *Remove the key from the cylinder.*
3. *Depress the small plunger in the slot underneath the thumbturn, turn the thumbturn till the two gears can be seen in line with the opening in the lock case, remove the cylinder from the thumbturn side.*
4. *Fit the lock to the mortice with clear holes for the one piece cylinder and spindle.*

To Assemble Cylinder To Lock Case

1. *Remove key from cylinder.*

2. *Depress plunger as above and turn the thumbturn till the gears are in line.*
3. *With the dead bolt in the unlocked position, insert the cylinder through the lock, holding the thumbturn end, to suit the hand of door.*
4. *Replace cylinder retaining screw. (See Attached Instructions)*

CAUTION ! (Direction Of Lock Gears)

TURN THUMBTURN TOWARDS FORE-END, UNTIL PLUNGER SHOOTS OUT AND GEAR IS ENGAGED. IF TURNED IN THE OPPOSITE DIRECTION THIS LIMITING PLUNGER WILL NOT ALLOW CORRECT ENGAGEMENT OF THE GEARS, AND LOCK WILL NOT WORK. TO CORRECT THIS DEPRESS THE PLUNGER AND TURN GEAR IN THE CORRECT DIRECTION.

CAUTION ! (Align Before Removing Cylinder)

WITH DOUBLE CYLINDER AND INDICATOR CYLINDERS IT WILL ALSO BE NECESSARY TO ALIGN THE GEARS BEFORE THE CYLINDER CAN BE REMOVED FROM THE LOCK CASE OR REPLACED.

Window Lock

Each window lock has a hexagonal knob to turned in or out for locking or unlocking purposes.

To unlock the window, turn the knob anticlockwise a few turns until the lever is free to swing up without obstruction.

To lock the window, ensure that there is no obstruction to the lever by turning the knob anticlockwise, then swing the lever to a horizontal position to block the sliding movement of the glass. Turn the knob clockwise to lock the lever in the position.

Mildew Problems

Most boat owners seems to have a constant problem with mildew developing in various parts of the boat, especially on the canvas curtain that enclose the cockpit. Mildew is an insidious fungus growth that thrives wherever dampness and a source of food is present and in a boat it is hard to avoid dampness. Steps can be taken to minimise the problem. In closed-off spaces (for example lockers, drawers, cabinet and lazarettes) provides as much ventilation as

possible. Add vents to solid doors and hatch covers and then leave doors and drawers open when the boat is unoccupied. Never stow damp clothing, boats of foul weather gear inside, and never store clothing or other items that are solid (an ideal of nourishment and mildew). Galleys, sink and ice boxes should be cleaned up promptly. Canvas curtains and covers should also be kept as clean as possible. Never fold or roll-up when they are dirty or damp. Spraying periodically with mildew remover such as X-14 or MDR MILDEW SPRAY does a great job of removing mildew, though it does not do much to prevent it from coming back. After washing canvas curtains or covers, make sure all traces of the soap are removed by through rinsing with plenty of water. Small electric dehumidifiers are helpful in minimising moisture in confined areas. Keeping adequate ventilation throughout the boat is very important in keeping mildew under control. When leaving the boat unattended for long periods, the use of a portable electric dehumidifier is very useful. Caution should be exercised when using dehumidifiers, air-conditioning or heat to avoid excessive levels which will introduce shrinking to wood finishes and joints.

TECHNICAL

The following items should be examined before each day's cruising.

- (1) *Engine lube oil level*
- (2) *Engine coolant level*
- (3) *Primary fuel filters*
- (4) *Battery fluid level*
- (5) *Transmission fluid level*
- (6) *Bilge for excessive water*
- (7) *Generator oil and coolant levels*

Service Log

It is recommended that each owner keep service log of maintenance work done on his boat. It can be an important part of an upkeep program and could be available should you ever want to sell your Grand Banks.

Preventive Maintenance

The following schedule is suggested. Service intervals are intended to serve as guidelines.

ITEM	1ST 25 HOURS	EVERY 100 HOURS	EVERY 250 HOURS
01. Check instruments for proper operation	*	*	*
02. Torque heads, injectors, all external engine bolts	*	*	*
03. Check adjustment of transmission controls	*	*	*
04. Change engine and generator oil	*	*	*
05. Check control and steering cables	*	*	*
06. Check transmission for leaks	*	*	*
07. Change engine oil and filters, check for leaks	*	*	*
08. Change all fuel filters and air filters	*	*	*
09. Check zinc in heat exchanger	*	*	*
10. Inspect all seacock for free operation	*	*	*
11. Check raw water strainers	*	*	*
12. Check drive belts	*	*	*
13. Check all engine electrical connections for tightness	*	*	*
14. Inspect exhaust system for leaks	*	*	*
15. Check stuffing boxes for leaks	*	*	*
16. Check all fire extinguishers for proper charge			*
17. Change transmission fluid Clean screen inside drain			*
18. Check raw water pump impeller		*	*
19. Lubricate steering shaft bearing at saloon & flybridge		*	*
20. Lubricate rudder shaft grease nipple		*	*
21. Check propeller shaft alignment	*		*

NOTE : See engine owners manual for additional service tips and on engine troubleshooting guide

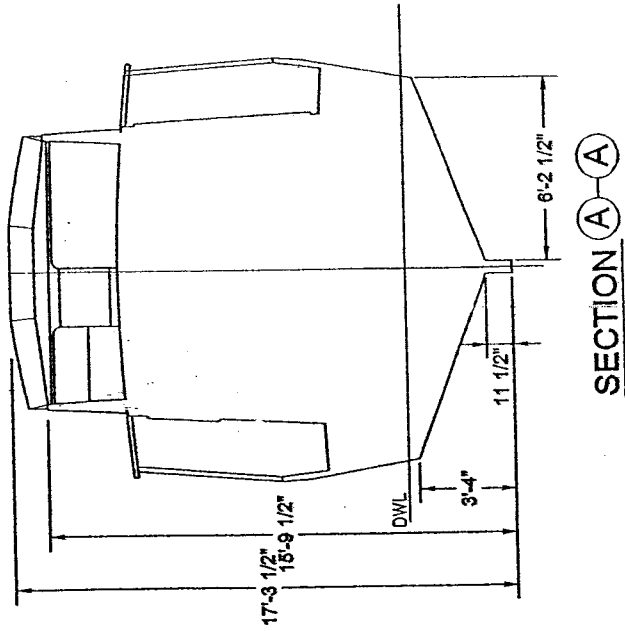
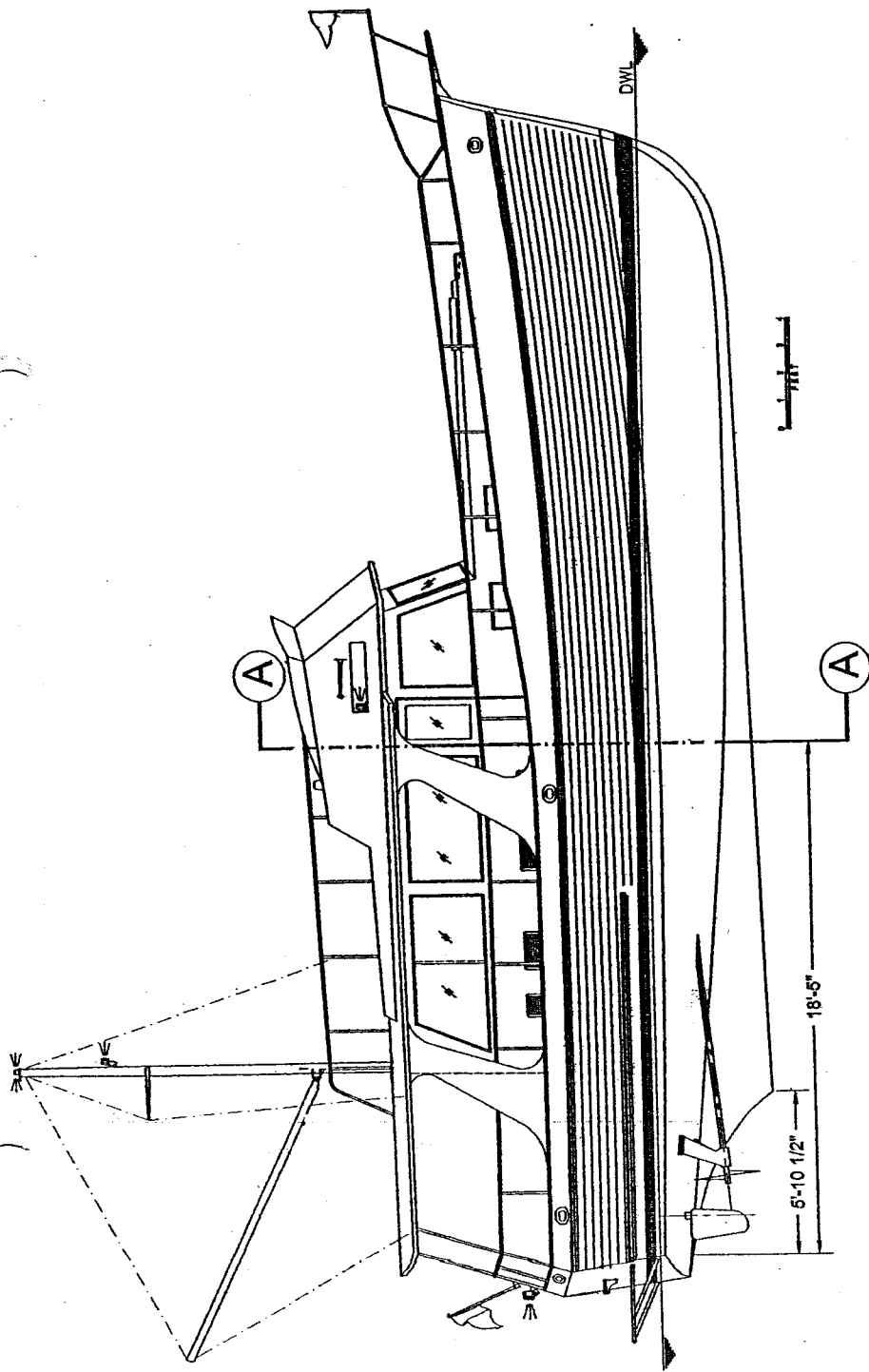
Propeller Shaft Maintenance

(see data sheet on AQUALOY attached)

- 1) *Boats that are idle for extended periods should have their shafts rotated at frequent intervals to avoid the corrosive effects of stagnant water trapped in the bearing areas. Frequency of rotation depends on water condition and temperature. Higher salt content, warmer temperatures and water pollution will necessitate more frequent shaft rotation.*
- 2) *Stuffing boxes should be permitted to leak slightly, thereby avoiding a stagnant water condition in the packing gland area and to avoid overheating during operation. Generally, seven drops per minute is adequate for small diameter shafts. Increased amounts are advisable for larger diameters exceeding two inches.*
- 3) *Common-sense usage of the throttle will help prevent undue stresses on shafts and avoid premature failures.*
- 4) *Avoid contact with floating objects and running aground since excessive stresses may bend, fracture or initiate a crack which will ultimately result in a delayed failure when least expected.*
- 5) *Zinc anodes generally require replacement about once a year. The need to replace anodes more frequently may indicate a stray current problem within the boat or at the slip or mooring. If zinc anodes do not need replacing after one year, they may not be providing anodes or low grade zinc may be the problem.*
- 6) *Do not use graphite packing in the stuffing box. Use a packing that causes the least abrasion after the lubricant wears away. Adjust the stuffing box with the gear lever in neutral position.*

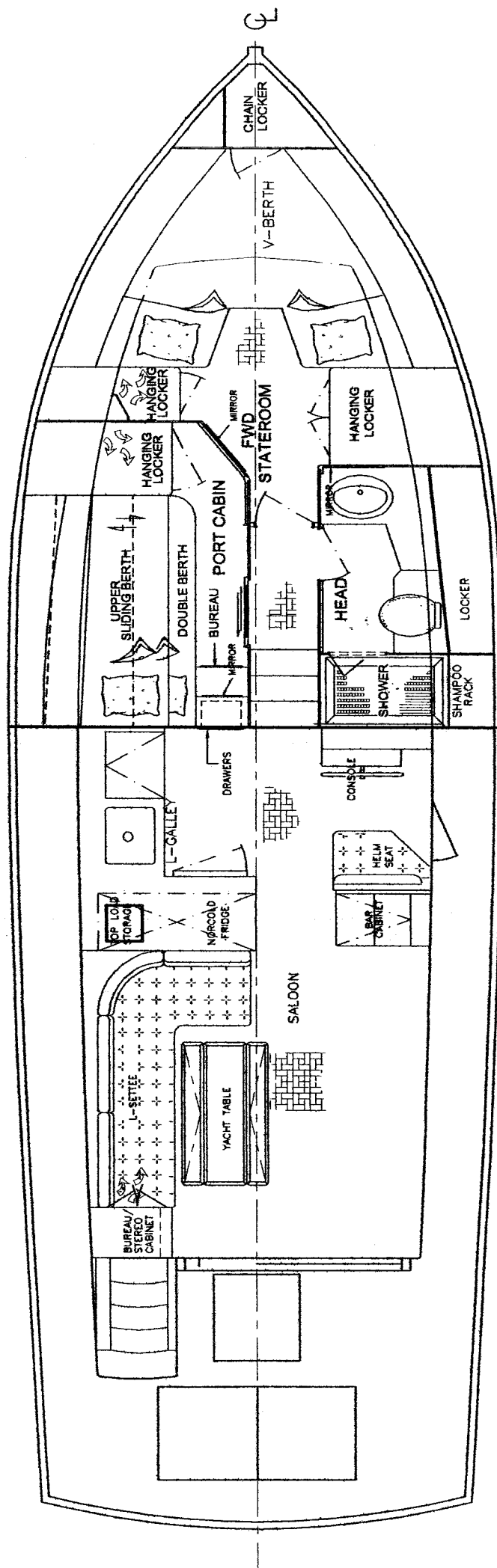
Propeller Maintenance

Check the hub for cracks. Examine the propeller blades, then mill smooth any jagged edges. If there's a significant amount of metal eroded away or chipped from the propeller, get a marine mechanic to check the propeller balancing. Make sure all of the blades are in the same plane and not bent forward or backwards. Look for mono filament fishing line wrapped around the shaft. If you find any, be certain none of it has cut into the prop shaft seal and damaged it. Never install a propeller dry on its splines or corrosion may permanently weld it into place. Instead, liberally coat the shaft and propeller bushing with marine grade grease.



GB42 EUROPA GRAVING PLAN

42EU#1511 ARRANGEMENT PLAN



This technical drawing is a detailed deck plan of the aft portion of the USS LST-1163. The plan shows the layout of the engine room, fuel tanks, and various mechanical components. Key features include:

- Engine Room:** Two Cummins 220PL 210 HP engines are shown, one on the port side and one on the starboard side. A 9 KW ONAN generator is located between the engines.
- Fuel Tanks:** A large Port Fuel Tank (300 USG) is on the left, and a large Starboard Fuel Tank (300 USG) is on the right.
- Water Systems:** Two S.S. Water Tanks are shown, one 180 USG and one 98 USG.
- Batteries:** A House Battery (ACM) is located near the port fuel tank, and an Engine Battery (ACM) is located near the starboard fuel tank.
- Mechanical Components:** Various components are labeled, including a 9 KW ONAN generator, a 20 GAL HEATER, a F.W. FILTER, a FORESPAR MERALON VALVE, and a F.W. PUMP.
- Structural Elements:** The plan shows the hull structure, including the bow and stern, and various structural members like beams and bulkheads.

The drawing is a technical illustration, likely a blueprint, showing the layout of the ship's deck and the placement of various equipment and structures. It includes labels for various components, such as tanks, engines, batteries, and pumps, and shows the overall shape of the ship's hull.

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You are encouraged to utilize the ITT Jabsco Factory Authorized Service Center in your region to provide convenient, prompt warranty and non-warranty repairs.

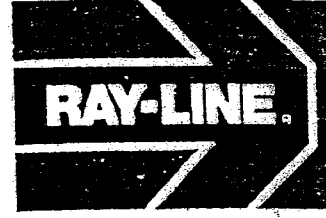
(UPS FREIGHT)
1485 Gale Way
Costa Mesa, CA 92626-3998
(MAIL)
P.O. Box 2158
Costa Mesa, CA 92628-2158
(714) 345-8251

L.B. Harvey
152 So. West 8th St.
Miami, FL 33130
(305) 356-1583

(UPS FREIGHT)
501 West Liberty Street
Springfield, OH 45506
(MAIL)
P.O. Box 129
Springfield, OH 45501-0329
(513) 325-8701

11-35 Commercial Street
New Bedford, MA 02740
(508) 992-8084

(UPS FREIGHT)
3415 Woodland Park Ave. N.W.
Seattle, WA 98103-8883
(MAIL)
P.O. Box C30314
Seattle, WA 98103-8883
(206) 633-1250



WHERE TO BUY JABSCO®, PAR®, AND RAY-LINE® MARINE PRODUCTS

Distributors stocking *ITT Jabsco* products are listed alphabetically by state and by city within that state. These distributors will either sell directly to you or refer you to a dealer in your vicinity.

ALABAMA

Coleman Marine Hardware Inc.
119 S. McKenzie Street
Foley 36535
(205) 943-6375

Mobile Ship Chandlery
210 St. Louis Street
Mobile 36602
(205) 432-3501

ALASKA

Alaska Pump & Supply, Inc.
261 East 56th Ave.
Anchorage 99518
(907) 563-3424

Wholesale Marine Supply of Alaska
201 Bragaw Street
Anchorage 99501
(907) 279-7754

Murray Pacific Supply
1050 Water Street
Ketchikan 99901
(907) 225-1296

Service Auto Parts
3806 Tongass Ave.
Ketchikan 99901
(907) 225-5115

Tongass Wholesale, Inc.
201 Dock Street
Ketchikan 99901
(907) 225-5101

Sutliff Hardware, Inc.
201 Shelikof
Kodiak 99615
(907) 486-5797

Murray Pacific Supply Corp. Alaska
475 Katlian St.
Sitka 99835
(907) 747-3171

ARIZONA

Coast Distribution System
1400 N. Fiesta Blvd.
Gilbert 85234
(602) 497-0083

CALIFORNIA

Proper-Tighe Marine
2427 Clement Ave.
Alameda 94501
(415) 523-3143

Boatswain's Locker, Inc.
931 W. 18th St.
Costa Mesa 92627
(714) 642-6800

Glenwood Marine Equipment
1627 W. El Segundo
Garden 90249
(213) 757-3141

Fox Marine Specialties
(Wholesale only)
2598 E. 28th Street
Long Beach 90807
(213) 426-7111
(714) 346-4477

Diversified Products Company
1914 Mateo St.
Los Angeles 90021
(213) 624-5595

Marine Service & Equipment
1169 Market Street
Morro Bay 93442
(805) 772-7337

Moss Landing Marine Supply
Moss Landing 95039
(408) 633-3359

Kettenburg Marine
2633 W. Coast Highway
Newport Beach 92669
(714) 722-2700

Sea Power Marine
333 Kennedy Street
Oakland 94606
(415) 533-9290

Covert Marine - Sacramento
4105 So. Market Court
Sacramento 95834
(916) 929-2528

Kettenburg Marine
4909 Pacific Highway
San Diego 92110
(619) 224-3211

San Diego Marine Exchange
2536 Shelter Island Dr.
San Diego 92106
(619) 223-7159

San Diego Marine Hardware
1660 Logan Ave.
San Diego 92116
(619) 231-8334

Coast Marine & Industrial Supply
398 Jefferson Street
San Francisco 94133
(415) 673-1923

Coast Distribution System
1705 Junction Court
San Jose 95112
(408) 436-0771

L.A. Marine Hardware
(Wholesale only)
345 N. Beacon Street
San Pedro 90731
(213) 775-6381

Mercury Marine Mart
619 Lindero Street
San Rafael 94901
(415) 457-7070

Boatswain's Locker
10 Marina Drive
Seal Beach 90740
(213) 598-6611

West Marine Products
500 Westridge Dr.
Watsonville 95076
(408) 728-7200
Wholesale (CA only) 800-621-6885
Wholesale (USA) 800-423-4864

Stoll Engine Company
2401 E. Anaheim Street
Wilmington 90748
(213) 437-0308

CONNECTICUT

Hitchcock Marine Services
40 California Street
Bridgeport 06608
(203) 334-2161

Essex Machine Works, Inc.
West Avenue
Essex 06425
(203) 767-8285

New London Marine LNS
56 Lewis Street
New London 06320
(203) 443-2016

Kellogg Marine, Inc.
Mill Rock Road
Old Saybrook 06475
(203) 388-4477

Di Pietro-Kay Company
914 Cromwell
Rocky Hill 06067
(203) 563-2167

WASHINGTON D.C.

Washington Marina Company
1300 Maine Avenue, S.W.
20024
(202) 554-0222

FLORIDA

Lyon Marine Supply, Inc.
709 Clear Lake Road
Cocoa 32922
(407) 632-8484

Standard Marine Supply Corp.
(Commercial fleet only)
North 2nd St. & Alachua St.
Fernandina Beach 32034
(904) 261-3671

Land 'N Sea Distributing
2968 A Ravenwood Road
Ft. Lauderdale 33312
(305) 792-5436

Lewis Marine Supply Co.
(Wholesale only)
220 S.W. 32nd Court
Ft. Lauderdale 33315
(305) 523-4371

Land 'N Sea West
5900 Youngquist Road
Ft. Myers 33912
(813) 433-5686

United Marine
2894 Palm Beach Blvd.
Ft. Myers 33902
(813) 332-1987

Jacksonville Marine Supply
4516 Appleton Avenue
Jacksonville 32238
(904) 387-3524

Glenn-Mar Marine Supply, Inc.
6870 142nd Ave. No.
Largo 34641
(813) 536-1955

Hopkin's-Carter Hardware Co.
3701 N.W. 21st Street
Miami 33142
(305) 635-7377

United Marine
1400 N.W. 159th St.
Miami 33169
(305) 625-0451

United Marine
451 N.W. 9th Ave.
Miami 33128
(305) 545-8445

Southern Diesel Engine Repair
(Commercial fleet only)
244 S.W. 6th Street
Miami 33130
(305) 856-4202

Panama Marine & Motor Parts
202 W. 6th Street
Panama City 32401
(904) 785-4661

Byfield Marine
175 Olive Rd.
Pensacola 32514
(904) 478-3077

Marine Supply & Oil Company
(Commercial fleet only)
150 Ribera Street
St. Augustine 32084
(904) 829-2271

J-Mar Marine Ind.
12105-B 28th St.
St. Petersburg 33702
(813) 572-0192

United Marine
2904 44th Ave. N.
St. Petersburg 33714
(813) 527-6457

Fishermens Supply Co., Inc.
(Commercial fleet only)
2603 22nd Ave. South
Tampa 33675
(813) 248-3309

Standard Marine Supply Tampa Div.
(Commercial fleet only)
120 N. 20th Street
Tampa 33605
(813) 248-4905

GEORGIA

Coast Distribution System
1795 Continental Way
Atlanta 30316
(404) 363-2920

Kraft Power Corp.
3218 Morjan Drive
Atlanta 30340
(404) 458-8991

HAWAII

Ala Wai Marine Ltd.
1651 Ala Moana
Honolulu 96815
(808) 946-4213

Kilgo's Marine Supplies
180 Sand Island Rd.
Honolulu 96819
(808) 845-3266

ILLINOIS

Barclay Marine Distributing Corp.
2323 W. Fulton Street
Chicago 60612
(312) 829-0500

INDIANA

Coast Distribution System
3002 Coast Court
Elkhart 46514
(219) 262-1551

IOWA

Lorenz & Jones Marine Distributors
1920 Delaware Ave.
Ankeny 50021
(515) 964-4205

LOUISIANA

Coastal Marine Distribution
1990 Industrial Blvd.
Harvey 70058
(504) 341-1414

Houma Machine & Marine Supply, Inc.
1521 Grand Caillou Rd.
Houma 70363
(504) 873-7731

Beecon Supply Company, Inc.
821 Industry Road
Kenner 70062
(504) 487-9200

Lake Charles Diesel Sales, Inc.
5400 Highway 90 East
Lake Charles 70601
(318) 433-8311

American Supply Co. of Morgan City, Inc.
7001 Highway 90 East
Morgan City 70380
(504) 384-3000

Morgan City Supply, Inc.
1529 Highway 90 East
Morgan City 70380
(504) 384-3650

Taylor Industrial Spec.
120 Brasher Ave.
Morgan City 70380
(504) 385-2707

Voorhies Supply
401 W. St. Peter Street
New Iberia 70560
(318) 364-2431

Donovan Marine, Inc.
400 N. Carrollton Ave.
New Orleans 70161
(504) 488-5731

MAINE

Manset Marine Supply Company
50 New County Road
Rockland 04841
(207) 596-6464

Harris Company
510 County Road
Westbrook 04092
(207) 775-5601

MARYLAND

Fawcett Boat Supplies, Inc.
100 Compromise
Annapolis 21403
(301) 224-0920

McClean Brothers
122 N. Langley Road
Glen Burnie 21061
(301) 761-9200

MASSACHUSETTS

Lady Bee Industries
360 Eastern Ave.
Malden 02148
(617) 324-7111

C.E. Beckman Company
11-35 Commercial Street
New Bedford 02740
(508) 994-9674

Marine Gear Supply Co.
289 Turnpike, Rt. 4
Rowley 01969
(508) 948-7901

W.A. Kraft Corp.
45 Sixth Rd.
Woburn 01801
(617) 338-9100

MICHIGAN

Barclay Marine Distributing Corp. of
Michigan
3513 Lousma Dr.
Grand Rapids 49508
(616) 243-6464

Covert Marine - Grand Rapids
500 Grandville Ave. S.W.
Grand Rapids 49503
(616) 456-8564

John A. Biewer Co., Inc.
2555 Busha Highway
Marysville 48040
1-800-462-2784

Barclay Marine Distributor of
Michigan
24600 Maplehurst Dr.
Mt. Clemens 48003
(313) 469-9910

Midwest Marine Supply Co.
24300 Jefferson
St. Clair Shore 48080
(313) 778-8950

MINNESOTA

Barclay Marine Distributing Corp.
1755 Buerkle Rd.
White Bear Lake 55110
(612) 770-8515

MISSISSIPPI

Pitalo Hardware & Boat Supply
116 Cedar Street
Biloxi 39533
(601) 432-0381

Pitalo Hardware & Boat Supply
619 Krebs Ave.
Pascagoula 39567
(601) 762-4644

MISSOURI

Medart Marine Supply Co.
100 Larkin Williams Ind. Ct.
Fenton 63026
(314) 343-0510

(continued)

(MISSOURI continued)

Covert Marine-Kansas City
712 E. 10th Street
Kansas City 64108
(816) 421-3100

Universal Marine Corp.
1 Venetian Drive
Portage de Sioux 63373
(314) 899-0942

NEW JERSEY

M & E Marine Supply Company
Rte 13C
Collingswood 08108
(609) 858-1010

General Marine LNS
(Wholesale only)
1602 White Horse Pike
Egg Harbor City 08215
(609) 965-2500

Marine Engine Center
568 E. Elizabeth Ave.
Linden 07036
(201) 486-5758

Atlantic Marine Distributors
35 Euclid Ave.
Manasquan 08736
(201) 223-2400

Marine Equipment and Supply Co.
(Wholesale)
1401 Metropolitan Avenue
Thorofare 08086
(609) 853-8320

Ocean Propeller Company
3340 Route 37 East
Toms River 08753
(201) 929-1100

H B Christman & Son., Inc.
4803-07 Park Blvd.
Wildwood 08260
(609) 522-5771

NEW YORK

Seacoast Distributors
105 Wartburg Ave.
Copiague 11726
(516) 842-2338

Freeport Marine Supply Co.
47 W. Merrick Rd.
Freeport 11520
(516) 379-2610

East End Marine Supply
(Wholesale)
230 Corwin Street
Greenport, L.I. 11944
(516) 477-1900

Allstate Marine Distributors, Inc.
4365 Austin Blvd.
Island Park 11558
(516) 431-0288

Defender Industries, Inc.
255 Main Street
New Rochelle 10801
(914) 632-3001

B. Sack, Inc.
159 W. Main Street
Patchogue 11772
(516) 475-4650

Morgan Recreational Supply
7263 Victor Pittsford Rd.
Victor 14564
(716) 924-7188

NORTH CAROLINA

Barbours Marine Supply, Inc.
216 West Front Street
Beaufort 28516
(919) 728-2136

Overton's Sport Center
111 Red Bank Road
Greenville 27835
(919) 355-7600

OHIO

Hern Marine Distributors
7341 Dixie Hwy.
Fairfield 45004
(513) 874-2628

Vita Plate Battery, Inc.
304 Buckeye Blvd.
Port Clinton 43452
(419) 732-3181

Bodette Distributor Co.
500 Broadway at Newton
Toledo 43693
(419) 244-4636

OREGON

Astoria Marine Supply Co.
Foot of 12th Street
Astoria 97103
(503) 325-2621

Englund Marine Supply Co.
Foot of 15th Street
Astoria 97103
(503) 325-4341

PENNSYLVANIA

See New Jersey

RHODE ISLAND

R.E. Barry Pump Inc.
415 Atwood Ave.
Cranston 02920
(401) 942-0618

Rhode Island Engine Co., Inc.
State Street
Narragansett 02882
(401) 789-1021

Rhode Island Engine Co., Inc.
State Street
Narragansett 02882
(401) 789-1021

SOUTH CAROLINA

Covert Marine-Charleston
4410 Arco Lane
Charleston 29405
(803) 747-6122

Heyward Supply Co., Inc.
212 Huger Street
Charleston 29402
(803) 723-1674

C-Mar Marine Div.
5913 Loftis
Hanahan 29406
(803) 747-0786

TENNESSEE

Delta Marine
92 West Carolina Ave.
Memphis 38102
(901) 525-2736

Covert Marine - Nashville
3710 A Vulcan Dr.
Nashville 37211
(615) 831-0034

Mid South Marine Distributors
603 Davidson Street
Nashville 38614
(615) 255-3557

TEXAS

Gulf King Marine & Ind. Supply Co.
(Commercial fleet only)
205 Bigelow Ave.
Aransas Pass 78336
(512) 758-3223

Gunderland Marine Supply, Inc.
1221 Cantwell Lane
Corpus Christi 78403
(512) 882-4231

Marine & Industrial Supplies
8330 Harry Hines Blvd.
Dallas 75235
(214) 631-2300

Coast Distribution System
7133 Burns Street
Ft. Worth 76118
(817) 284-1151

Covert Marine - Ft. Worth
6642 Baker Blvd.
Ft. Worth 76118
(817) 284-1125

Shrimp Boat Shore
(Commercial fleet only)
10 Ash Street
Freeport 77541
(409) 233-0181

NCI Diesel Service
(Commercial fleet only)
8128 Broadway
Galveston 77551
(409) 740-0291

Donovan Marine Inc.
5925 South Loop E.
Houston 77033
(713) 849-8683

Houston Propeller & Marine Supply
609 S. 80th St.
Houston 77012
(713) 921-4133

Texas Marine Supply
(Commercial fleet only)
8050 Harrisburg Blvd.
Houston 77012
(713) 923-9771

Bayport Wholesale Supply
1027 Highway 146
Kemah 77565
(713) 334-1586

Zimco Marine
400 Washington
Port Isabel 78578
(512) 943-2672

Auto Parts & Machine Co., Inc.
(Commercial fleet only)
1200 N. Main
Port Lavaca 77979
(512) 552-3764

AER Supply Inc.
2301 NASA Road #1
Seabrook 77586
(713) 474-3276

UTAH

Wilson Supply Inc.
2001 N. 900 West
Salt Lake City 84116
(801) 355-3900

VIRGINIA

Boat America
884 S. Pickett St.
Alexandria 22304
(703) 370-4202

NMD Company
(Wholesale only)
1340 Azalea Garden Rd.
Norfolk 23502
(804) 853-7658

Paxton Company
1111 Ingleside Rd.
Norfolk 23502
(804) 853-6781

Hale Marine Parts Company
6080 Historyland Hwy.
Warsaw 22572
(804) 333-3677

WASHINGTON

Lummi Fisheries Supplies
851 Coho Way
Bellingham 98225
(206) 734-3336

(continued)

(WASHINGTON continued)

Marine Sales & Equipment
1000 "C" St.
Bellingham 98225
(206) 733-2340

Redden Net Co., Inc.
2626 Harbor Loop
Bellingham 98225
(206) 733-0250

Alaska Ship Supply
4601 Shilshole Ave. N.W.
Seattle 98107
(206) 782-8977

Doc Freeman's
3415 Woodland Park Ave. N.W.
Seattle 98103
(206) 633-1500

Fisheries Supply Company
No. 10 - 1900 N. Northlake Way
Seattle 98103
(206) 632-4462

Hatch & Kirk, Inc.
5111 Leary Ave. N.W.
Seattle 98107
(206) 783-2768

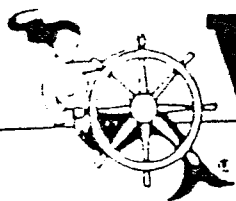
Marine Distributors Inc.
5301 Shilshole Ave. N.W.
Seattle 98107
(206) 789-1500

Marland Enterprises
2001 15th Ave. W.
Seattle 98119
(206) 284-3908

Murray Pacific Supply of Alaska 1st
1750 1st Interstate Plaza
Tacoma 98402
(206) 383-4911

Ray Marine Distributing Co.
3506 Stoneway North
Seattle 98103
(206) 633-1155

Seattle Marine & Fishing Supply Co.
2121 West Commodore Way
Seattle 98199
(206) 285-5010



Woolsey/Z-SPAR

marine paints

Distributor List

ALABAMA

Coleman Marine & Hdw.
119 So. McKenzie St.
Foley, AL 36535
(205) 943-6375

Go-Do Company
1621 Henry St.
Guntersville, AL 35976
(205) 582-3185

Turner Marine Supply
5010 Dauphin Island
Mobile, AL 36688
(205) 476-1444

ARIZONA

McCune Outboard Marine
2610 S. 21st St.
Phoenix, AZ 85034
(602) 257-1506

COLORADO

McCune Outboard Marine
2501 Blake Street
Denver, CO 80205
(303) 296-2126

CALIFORNIA

Boatswain's Locker
931 West 18th Street
Costa Mesa, CA 92627
(714) 542-6800

Burbank Paint Company
548 S. San Fernando Road
Burbank, CA 91502
(818) 845-2584

Coast R.V. & Marine
P.O. Box 26388
San Jose, CA 95159
(408) 436-0670

Covert Marine
4150 S. Market Court
Sacramento, CA 95834
(916) 929-2528

Diversified Products
1914 S. Mateo Street
Los Angeles, CA 90021
(213) 624-5595

Fox Marine Specialty, Inc.
2598 E. 29th Street
Long Beach, CA 90806
(213) 425-7111

Kettenburg Marine
4909 Pacific Highway
San Diego, CA 92110
(800) 234-8211

LLewellyn Supply Company
507 N. Figueroa Street
Wilmington, CA 90744
(213) 834-2508

Marine Hardware Company
345 N. Beacon Street
San Pedro, CA 90731
(213) 831-9261

Mercury Marine Mart
619 Lindero Street
San Rafael, CA 94901
(415) 457-7070

Moss Landing Marine Supply
3 Clam Way
Moss Landing, CA 95039
(408) 633-2133

New Atlantis Marine
697 Randolph Street
Costa Mesa, CA 92626
(714) 540-6791

Port Supply
500 Westridge Drive
Watsonville, CA 95076
(800) 621-6885

Proper Tighe Marine
2427 Clement Avenue
Alameda, CA 94501
(415) 523-3143

Sailing Supply
2822 Canon Street
San Diego, CA 92106
(619) 225-9411

San Diego Marine Exchange
2536 Shelter Island Drive
San Diego, CA 92106
(619) 223-7159

San Diego Marine Hardware
1660 Logan Avenue
San Diego, CA 92113
(619) 231-8334

Southport Marine
100 West 35th Street, Suite V
National City, CA 92020
(619) 425-7330

Svensen's Marine
1851 Clement Avenue
Alameda, CA 94501
(415) 522-7860

Ventura Wholesale Marine
3036-O Seaborg Avenue
Ventura, CA 93001
(805) 624-3038

CONNECTICUT

Kellogg Marine
Mill Rock Rd.
Old Saybrook, CT 06475
(203) 388-4277

Land & Sea-New London
56 Lewis St.
New London, CT 06320
(203) 443-2016

FLORIDA

Advance Marine Supply
9389 NW 13th St.
Miami, FL 33172
(904) 453-3471

Browns Marine
140 Anderson Ave.
Pensacola, FL 32506
(904) 453-3471

Bounty Marine
1221 N. Tamiami Trail
Ft. Meyer, FL 33903
(813) 997-5777

Byfield Marine
175 Olive Rd.
Pensacola, FL 32514
(904) 477-8011

Glen-Mar Marine
6870 142nd Ave.
Largo, FL 34649
(813) 536-1955

Gold Coast Marine
630 S.W. Flager St.
Ft. Lauderdale, FL 33302
(305) 463-8281

Land & Sea Dist.
2968 A Ravenswood Rd.
Ft. Lauderdale, FL 33312
(305) 792-5436

Land & Sea Dist. West
5900 Youngquist Rd.
Ft. Myers, FL 33912
(813) 433-5636

Lewis Marine
217 S.W. 32nd Ct.
Ft. Lauderdale, FL 33335
(305) 523-4371

Lyon Marine
709 Clearlake Rd.
Cocoa, FL 32922
(305) 632-8484

Nautical & Industrial Supp.
2536 E. Clayton
Port Salerno, FL 34992
(407) 220-0572

Neil's Paint Place
7714 Hwy. 98
Panama City, FL 32901
(904) 769-6345

United Marine
1400 N.W. 159th St.
Miami, FL 33169
(305) 620-4111

United Marine
2904 44th Ave. No.
St. Petersburg, FL
(813) 527-6457

United Marine
2894 Palm Beach Blvd.
Ft. Myers, FL 33901
(813) 527-6457

HAWAII

A.L. Kilgo
180 Sand Island Road
Honolulu, HI 96819
(808) 845-3266

ILLINOIS

Barday Marine
2323 W. Fulton St.
Chicago, IL 60612
(312) 829-3738

J.G. Peterson Co.
2247 S. Michigan Ave.
Chicago, IL 60616
(312) 842-2700

LOUISIANA

Edgar Murray Equipment
& Industrial Supplies, Inc.
931 Derbyway St.
Gretan, LA 70053
(504) 365-0481

Fisherman's Net
Wholesale Supply
4540 Downman Rd.
New Orleans, LA 70126
(504) 244-8767

Sea Chest Marine Distributors
7385 West Roadway
New Orleans, LA 70124
(504) 286-1250

Yacht Works Inc.
261 Atalin St.
Mandeville, LA 70448
(504) 625-7847

MAINE

The Harris Co.
510 Country Rd.
Westbrook, ME 04092
(207) 775-5601

Mansel Marine
New Country Rd.
Rockland, ME 04841
(207) 596-6464

MARYLAND

Easton Wholesale
500 Dover St.
Easton, MD 21601
(301) 822-0600

Fawcett Boat Supplies
110 Compromise St.
Annapolis, MD 21403
(301) 224-3920

McClellan Bros.
N. Langley St.
Glen Burnie, MD 21061
(301) 761-9200

Oceana Ltd.
Virginia Ave.
Annapolis, MD 21401
(301) 259-5022

MASSACHUSETTS

C.E. Beckman Co.
1135 Commercial St.
New Bedford, MA 02741
(617) 994-9674

Coastal Distribution
349 Lincoln St.
Hingham, MA 02043
(617) 749-7130

Franklin W. Hatch
108 Hunleston Ave.
Falmouth, MA
(508) 396-5653

MICHIGAN
Barclay Marine
3513 Louisiana Dr. S.E.
Grand Rapids, MI 49506
(616) 243-6464

Barclays Marine
24600 Maplenurst Dr.
Mt. Clemens, MI 48213
(313) 469-9910

John A. Biewer
2555 Busna Hwy.
Marysville, MI 48040
(313) 364-9744

Michigan Owens
24530 Jefferson Ave.
St. Clair MI 48080
(313) 777-9852

Painter's Supply
2040 Fort Ave.
Lincoln Park, MI 48180
(313) 389-1600

MINNESOTA
Barclay's Marine
1755 Buerkle Road
White Bear Lake, MN 55107
(612) 770-8515

MISSISSIPPI
Bankston Paint
856 Division St.
Biloxi, MS 39530
(601) 374-3870

Biloxi Hardware
1110 W. Bayview
Biloxi, MS 39530
(816) 421-3100

MISSOURI
Covert Marine
708 East 18th St.
Kansas City, MO
(601) 374-3020

NEW JERSEY
Atlantic Marine Dist.
35 Edlid Ave.
Manasquan, NJ 07836
(201) 223-2400

Land'N'Sea - Egg Harbor
1602 White Horse Pike
Egg Harbor, NJ
(609) 965-2500

Marine Equip. & Supply
1401 Metropolitan Ave.
Thorofare, NJ
(609) 853-8320

NEW MEXICO
F & P Marine Specialty, Inc.
4201 Hawkins N.E.
Albuquerque, NM 07109
(505) 345-5553

NEW YORK
Allstate Marine Dist.
4365 Austin Blvd.
Island Park, NY 11558
(516) 431-0399

H.H. Baker Co.
66 Erie St.
Buffalo, NY
(716) 354-5967

East End Marine Supply
203 Front St.
Greenport, NY 11944
(516) 477-1900

Freeport Marine Suppl.
47 W. Merrick Rd.
Freeport, NY 11520
(516) 379-2610

B. Sack Marine Dist.
159 W. Main St.
Patchogue, NY 11772
(516) 475-4650

Seacoast Dist. Inc.
105 Wartburg Ave.
Copaigue, NY 11726
(516) 842-2338

NORTH CAROLINA
W.C. Edwards
101 Stanton Rd.
Beaufort, NC 28516
(919) 728-2950

G.W. Huntley
Hwy. 70 & 101
Beaufort, NC 28516
(919) 728-3114

Jacobi Hcwr.
721-23 Surry St.
Wilmington, NC 23401
(919) 763-1644

Ray's Industrial Supply
Rt. 3
Rock Point, NC 28457
(919) 392-3323

OHIO
Samsel Supply
1285 Old River Road
Cleveland, OH 44113
(216) 241-0333

Vita Plate Battery
304 Buckeye Blvd.
Port Clinton, OH 43452
(419) 732-3181

OREGON
Astoria Marine
Fl. of 12th St.
Astoria, OR 97103
(503) 325-2621

SOUTH CAROLINA
Harold T. McGill
Hwy. 52
Kingstree, SC
(803) 354-7404

TENNESSEE
Dixie Marine
2200 McCallie Avenue
Chattanooga, TN 37404
(615) 622-2000

Travis Marine
Box 570
Powell, TN 37849
(615) 938-9057

TEXAS
Blackburn Marine
6105 England St.
Houston, TX 77221
(713) 747-8140

Drennan Boat Supply
Hwy 47
Port Arthur, TX 77640
(409) 362-8747

Gulf King Marine
205 Bigelow St.
Arkansas Pass, TX 78336
(512) 758-3223

Zimco Marine Supply
400 Washington St.
Port Isabel, TX 78578
(512) 343-2672

VIRGINIA
Hale Marine Parts
P.O. Box 938
Warsaw, VA 22572
(804) 333-3677

Norfolk Marine Dist.
1340 Azalea Rd. 23502
Norfolk, VA
(804) 853-7658

Paxton Co.
1111 Ingleside Rd.
Norfolk, VA 23502
(804) 853-6781

WASHINGTON
Doc Freemans
999 N. Northlake Way
Seattle, WA 98103
(206) 633-1500

Dunlap Indust. Hdwr.
1028 Marine
Everett, WA 98201
(206) 339-2566

Fisheries Supply
1900 Northlake Way
Seattle, WA 98103
(206) 532-4426

Kolstrand Marine Supply
4718 Ballard
Seattle, WA 98107
(206) 784-2500

Lummi Fish Supply
851 Coho Way
Bellingham, WA 98225
(206) 734-4058

Mariand Ent.
4401 23rd St.
Seattle, WA 98119
(206) 284-3506

Seattle Ship Supply
Fisherman's Terminal
Seattle, WA 98199
(206) 283-7000

Wyman's Wholesale Marine
Anacortes, WA 98221
(206) 284-3906

CANADA
Holland Marine
3008 Dundas St.
Toronto
(416) 762-3821

Intermann Marine
1660 Powell St.
Vancouver
(604) 253-4125

Mercers Marine Equip.
98 Marine Dr.
Clareville Nfld.
(709) 466-7430

Northland Marine Pro.
606 The Kingsway So.
Kaswick, Ont.
(416) 476-7731

Paynes Distributors
1173 N. Service Rd. W.
Oakville, Ont.
(416) 825-0200

Paynes Marine Supp.
1856 Cuadra St.
Victoria, BC
(604) 382-7222

MAIL ORDER CATALOGS
Boat Stuff
811 S. Causeway,
New Orleans, LA
(504) 837-2560

Boaters World
6711 Ritz Way
Beltsville, MD 20705
(800) 638-4480

Boats America
884 Pickett St.
Alexandria, VA 22304
(800) 937-2528

Defender Indust.
255 Main St.
New Rochelle, NY 10820
(914) 632-3001

E3B Marine
201 Meadow Rd.
Edison, NJ 08818
(201) 287-8100

A&E Marine Sup.
P.O. Box 501
Collingwood, NJ 08101
(800) 922-9800

West Marine
500 Westbridge Dr.
Watsonville, CA 95076
(800) 538-0775

CARIBBEAN
Paint & Decorators
Supply Box 701 Roadtown
Tortola, BVI
(809) 494-2891

Reliance Caribbean
#28 Kilometer-05 Bayamon
Puerto Rico
(809) 785-3255

BERMUDA
Pearman, Wallington
P.O. Box HM
840 Hamilton
(809) 295-3232

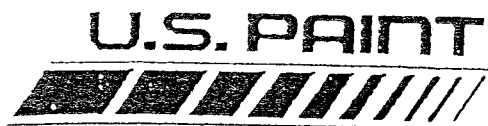
Woolsey/Z-SPAR

ROCKAWAY, NEW JERSEY 07866

LOS ANGELES, CALIFORNIA 90040

1 (800) 221-4466

FAX 201-625-8303



AWLGRIP
ALUMIGRIP
GRIPTEX™

Non Skid Additive
✓ 73012—Fine
73013—Coarse

Features

Excellent Non-Skid additive
Easily incorporated into AWLGRIP or
ALUMIGRIP coating systems

Shipping

Freight Classification: Dry paint
additive

Packaging: Qt. container
4 qt. containers/case

Shipping Weights: Approximately 4.5 lbs./case

Specification Data

Color: Translucent

Solids: 100%

Flash Point: None

Wt./Gal: 7.50 lbs. per solid gal.

Shelf Life: N/A

Mixing and Thinning

See "Application" Section

Safety

When handling GRIPTEX, it is
recommended that the user wear a
NIOSH/MSHA approved mask for
particulate matter.

10-11-82

APPLICATION INSTRUCTIONS:

IMPORTANT: Before mixing or using GRIPTEX™
read and follow all label warnings and
precautions appearing on AWLGRIP® &
ALUMIGRIP® Topcoats and Catalysts.

When handling GRIPTEX it is recommended that
the user wear a NIOSH/MSHA approved mask for
particulate matter.

Method 1: Mix 4 oz. * GRIPTEX (coarse or fine grit) to one
gallon of catalyzed mixed AWLGRIP or ALUMIGRIP Topcoats.
Reduce mixed material 25% with T0003 and spray apply with a
large orifice gun.

Method 2: If material is to be applied by brush or roller, after
paint is catalyzed and GRIPTEX is added, reduce to brushing
viscosity with T0031.

Method 3: Properly mix and reduce the AWLGRIP or
ALUMIGRIP Topcoats. Apply a tack coat to the non-skid area
and then broadcast the GRIPTEX particles (via a perforated
shaker apparatus) to the wet area. Allow 8-12 hours for drying
and then apply a final finish coat.

*NOTE:

The amount of GRIPTEX may be varied to give a heavier or
lighter texture to the finished deck. It is best to add varied
amounts and test to determine what texture is desired.

For Professional Use Only

The information presented herein, while not guaranteed, is to the best of our
knowledge true and accurate. No warranty or guarantee express or implied is made
regarding the performance of any product, since the manner of use is beyond our
control. No suggestion for product use, nor anything contained herein, shall be
construed as a recommendation for its use in infringement of any existing patent,
and Grow assumes no responsibility or liability for operations that do infringe any
such patents.

831 South 21st Street
St. Louis, Missouri
63103-3092

Telephone 314 621-0525
TWX 910 761-1209
(U.S. Paint Std.)

U.S. Paint
431 S. 21st Street
St. Louis, MO 63103
Phone Number: (314) 821-0525
Emergency Number: (314) 821-0526

MATERIAL SAFETY DATA SHEET

MSDS No.: 360 1000 0000-2
Date: 10/10/84

Supersedes MSDS No.: 360 1000 0000-1

GRIPTEX® Fine 73012, GRIPTEX® Coarse 73013

I. PRODUCT IDENTIFICATION

CAUTION! MAY FORM FLAMMABLE DUST-AIR MIXTURES.

	HMIS†	Rating
Polypropylene Texturing Pigment and Flattening Agents	Health hazard: Flammability hazard: Reactivity hazard:	0 Minimal 1 Slight 0 Minimal
Chemical and common names:	Polypropylene pigment, 1-propene homopolymer, polyolefins	
Appearance and odor:	White particulate; odorless	

II. HAZARDOUS INGREDIENTS & EXPOSURE LIMITS

Chemical & Common Names of Hazardous Ingredients	Recommended Atmosphere Levels**
Polypropylene CAS # [9003-07-0]	10 mg/m³ total 5mg/m³ respirable

Our supplier interprets the U.S. Occupational Safety and Health Act and Regulations, including the Hazard Communication Standard 29 CFR 1910.1200 dated November 25, 1983, this product should NOT be considered a health hazard material.

** Air level recommended by our supplier.

III. TYPICAL PHYSICAL & CHEMICAL CHARACTERISTICS

Boiling point:	N/A	Solubility in water:	Negligible
Vapor pressure @ 20° C:	N/A	Specific gravity:	0.9
Vapor density:	N/A	pH:	N/A
% volatile (vol.):	Negligible at 20° C	Evaporation rate:	N/A
Freezing point:	N/A		

IV. FIRE, EXPLOSION, & REACTIVITY HAZARD DATA

CAUTION! MAY FORM FLAMMABLE DUST-AIR MIXTURES.

Flash point: 276° C (530° F) COC, ASTM D57-92 Flammable limits: N/A

Autoignition temperature: Not determined.

Extinguishing media: Water spray, dry chemical, foam, carbon dioxide, or halon.

Special fire-fighting procedures: None

Unusual fire & explosion hazards: May form flammable dust-air mixtures.

Stability considerations: Stable

Incompatibility with: Avoid contact with hot or concentrated nitric and perchloric acids, fuming sulfuric acid or 98% sulfuric acid at 60° C (140° F) or above.

Hazardous decomposition products: None

Hazardous products of combustion: Combustion products depend on temperature, other materials present and air supply. They can be carbon monoxide, carbon dioxide, acrolein, formaldehyde, other aldehydes, ketones, fatty acids, methane, ethane and unsaturated hydrocarbons. Carbon monoxide is the most prominent.

Hazardous polymerization: Will not occur.

†HMIS = Hazardous Materials Identification System rating for the product as it is supplied.
N/A = Not applicable

U.S. Paint's supplier cannot anticipate all conditions under which this information and their products, or the products of other manufacturers in combination with their products, may be used. They accept no responsibility for results obtained by the application of this information or the safety and suitability of their products, either alone or in combination with other products. Users are advised to make their own tests to determine the safety and suitability of each such product or product combination for their own purposes. Unless otherwise agreed in writing, they sell the products without warranty, and buyers and users assume all responsibility and liability for loss or damage arising from the handling and use of their products, whether used alone or in combination with other products.

V. HEALTH HAZARD DATA

Signs & symptoms of overexposure in the workplace: None known.

EMERGENCY & FIRST AID PROCEDURES: Not applicable.

Medical conditions generally recognized as being aggravated by exposure: Not known.

Primary Route of Entry: Inhalation

Not evaluated for carcinogenicity by IARC (International Agency for Research on Cancer), NTP (National Toxicology Program) or the OSHA (Occupational Safety & Health Administration). There is no evidence of carcinogenicity in any animal species.

Reported Human Effects: None known.

Reported Animal Effects: None known.

VI. SPILL & LEAK PROCEDURES

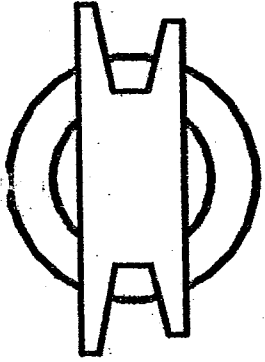
STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: If material is not contaminated, scoop into clean containers for use. If contaminated, scoop into containers for disposal.

Waste Disposal Method: Incineration of combustible waste is the preferred disposal method. Landfilling in a licensed facility in accordance with local, state, and federal regulations is a satisfactory alternative.

This product is not listed in federal hazardous waste regulations 40 CFR 261.33 paragraphs (a) or (f), i.e. chemical products that are considered hazardous if they become wastes. It does not exhibit any of the hazardous characteristics listed in 40 CFR 261 Subpart C. State or local hazardous waste regulations may apply if different from the federal.

VII. APPLICABLE CONTROL MEASURES

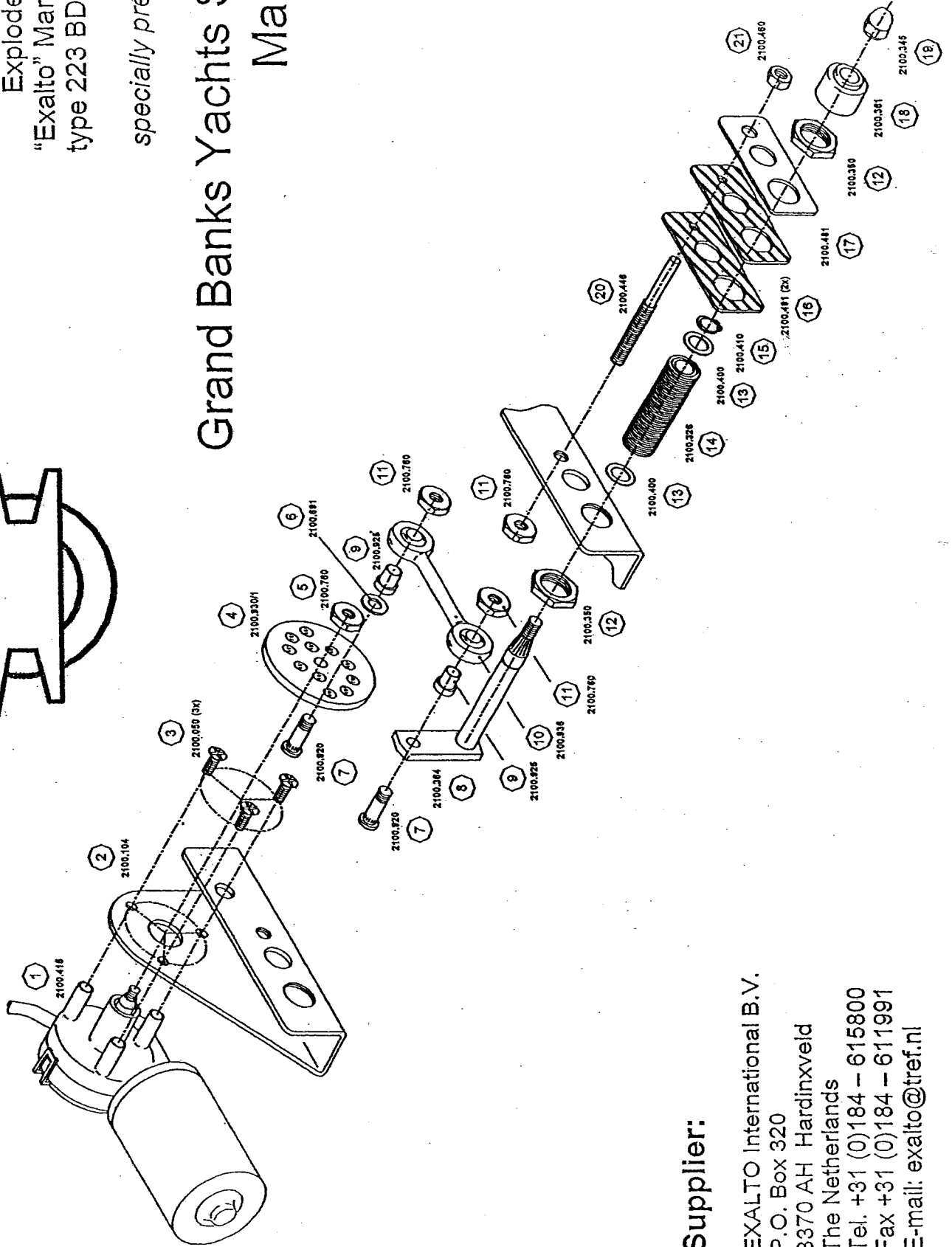
- | | |
|--|---|
| Appropriate hygienic practices: | Wash thoroughly after handling, and before eating, drinking or smoking. |
| Personal protective equipment: | Safety glasses.
Appropriate respirator selected and used in accordance with OSHA Subpart I (29 CFR 1910.134) required when exposure to airborne contaminant is likely to exceed acceptable limits. |
| Work practices: | Eyewash fountains should be easily accessible. |
| Handling and storage precautions: | Keep away from sparks and open flame.
This product may react with hot or concentrated nitric and perchloric acids, fuming sulfuric acid or 98% sulfuric acid at 50°C (140°F) or above, and should not be stored near such materials.
Avoid dust accumulations and suspending dust in air. |
| Engineering controls: | Where operations or malfunctions could result in resin temperatures exceeding 575°F ventilation should be provided, and inhalation of decomposition products should be avoided.
Adequate ventilation should be provided to keep dust concentrations below acceptable exposure limits. |
| Protective measures during repair & maintenance: | Eliminate sources of ignition. |



Exploded view of
"Exalto" Marine Wiper
type 223 BD – 12 Volt

specially prepared for

Grand Banks Yachts SDN .
Malaysia

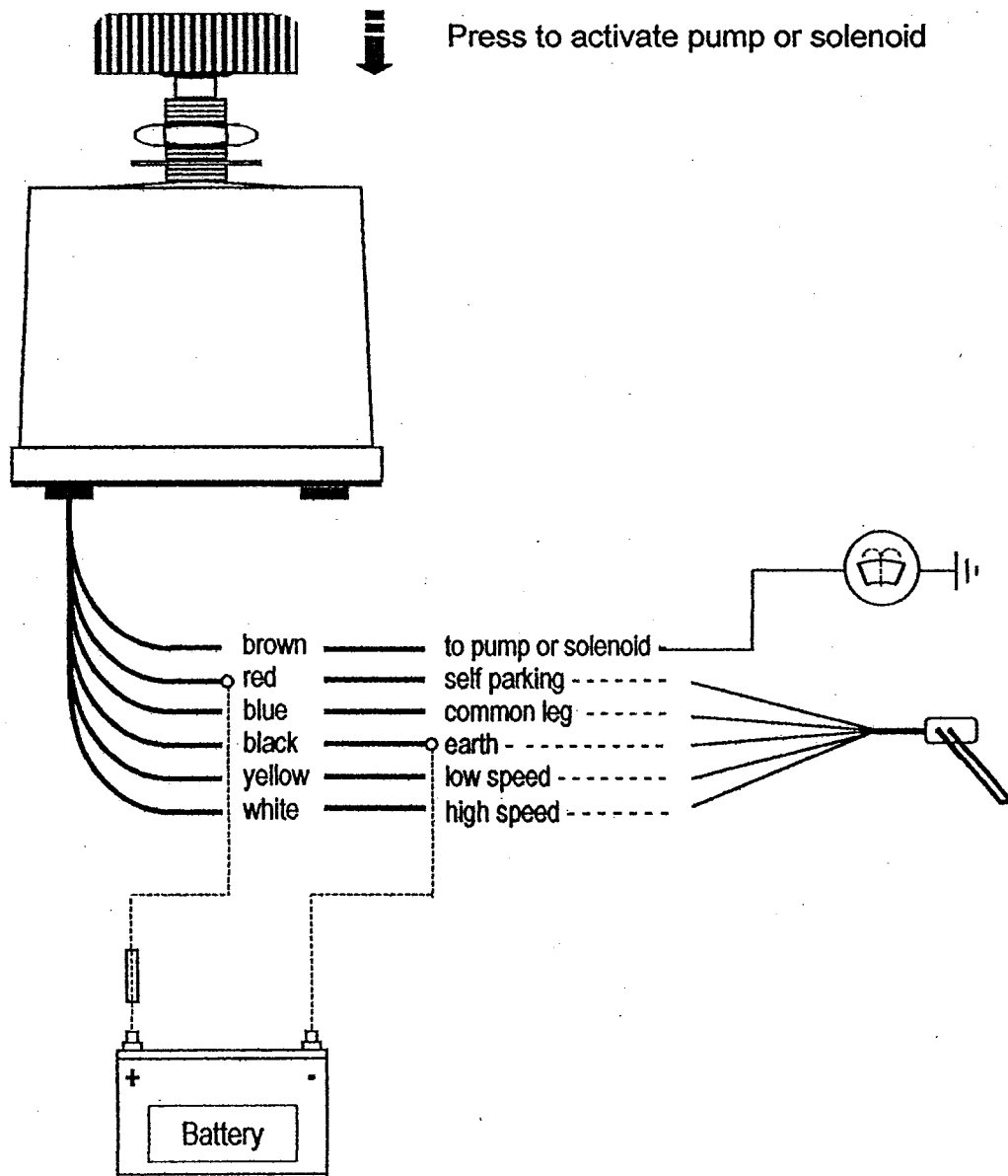


Supplier:

EXALTO International B.V.
P.O. Box 320
3370 AH Hardinxveld
The Netherlands
Tel. +31 (0)184 – 615800
Fax +31 (0)184 – 611991
E-mail: exalto@tref.nl

Wiring diagram for Windshield Wiper Switch

Switch : Cole Hersee No. 75600-04 for 12V
No. of wipers per switch : one



Please refer to the instruction manuals as supplied with the units for motor wiring.

FUEL SYSTEM

Contents

<i>Useful Hints When Fuelling</i>	2
<i>CAUTION ! (Dockside Fuel Pump Flowrate)</i>	2
<i>Fuel</i>	3
<i>Fuel Tanks</i>	3
<i>CAUTION ! (Wrong Deck Fill)</i>	3
<i>Fuel Supply System</i>	3
<i>CAUTION ! (Leaking Fuel)</i>	3
<i>CAUTION ! (Discharging of fuel)</i>	3
<i>CAUTION ! (Working Near The Tanks)</i>	3
<i>Fuel Return System</i>	4
<i>Bleeding The Fuel System</i>	4
<i>CAUTION ! (Unique Engine Stop Situation)</i>	4

APPENDICES :

<i>**Fuel System Schematics</i>	1 page
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Legend: ** May vary with each boat

USEFUL HINTS WHEN FUELLING

- 1) *Ensure that the boat is moored securely to the float or wharf.*
- 2) *Extinguish all fires including lighted cigarettes on board. Turn off all electrical motors.*
- 3) *Close doors, windows, port lights, hatches and other openings which might allow fuel fumes to enter the bilge.*
- 4) *Remove fuel filler cap and secure it so that it will not fall overboard.*
- 5) *If fuel overflows, inspect the bilge immediately to locate if there is any spilt in the bilge.*
- 6) *Fuel nozzle should not be left unattended while fuel is flowing through the hose.*

CAUTION ! (Dockside Fuel Pump Flowrate)

WHEN FILLING FUEL TANK(S) DO NOT USE FULL VOLUME OF DOCKSIDE FUEL PUMP. IN SOME CASES IT MAY BE POSSIBLE TO HAVE A FLOWRATE MORE THAN THE VENT LINE CAN RELIEVE, CAUSING TANK OR FITTING TO FAIL.

Fuel

HSD Number 2 diesel fuel is recommended. Whenever possible, check fuel for purity before filling tanks.

Fuel Tanks

Each tank has a deck fill, overboard vent, hand-hole clean-out plate and sight gauge. Located at the base of each tank is fuel shut-off valve. Construction is of mild steel and every tank is fully baffled. Each tank is epoxy under coat with P.U top coat and pressure tested prior to installation.

A discharge placard is supplied loose for each Grand Banks. It is to be fitted to the boat at a suitable location. The location of which is left for the owner to decide.

CAUTION ! (Wrong Deck Fill)

DO NOT CONFUSE FUEL DECK FILL WITH WATER OR WASTE DECK FILL. THESE PLATE ARE CORRESPONDINGLY LABELLED.

Fuel Supply System

On boats with a single engine, fuel can be drawn from either tank by opening the fuel shut-off valve on the desired tank.

On twin screw boats, each tank is piped to a common manifold. Fuel supply to individual engines and generator set is taken from the common manifold -- a common manifold is also fitted for fuel return. Fuel levels between the fuel tanks are balanced by the balancing link between the tanks. Inspect fuel lines and connections regularly for signs of wear and leakage.

CAUTION ! (Leaking Fuel)

LEAKING FUEL IN A CONFINED MACHINERY SPACE IS A VERY HAZARDOUS SITUATION. IF A LEAK IS DISCOVERED, DO NOT OPERATE MACHINERY, DISCONNECT ALL ELECTRICAL SOURCES, PREVENT BILGE PUMPS FROM DISCHARGING FUEL OVERBOARD AND REMEDY THE LEAK IMMEDIATELY.

CAUTION ! (Discharging of fuel)

DISCHARGING OF FUEL IS PROHIBITED BY INTERNATIONAL LAW. IN THE EVENT OF A SPILL OF FUEL OIL INTO THE BILGE PREVENT THE BILGE PUMPS FROM DISCHARGING OIL OVERBOARD.

CAUTION ! (Working Near The Tanks)

DO NOT ENTER OR WORK IN A CONFINED SPACE WITH A FUEL LEAK WITHOUT PROPER VENTILATION OR WEARING A FRESH AIR RESPIRATOR.

Fuel Return System

In general, the fuel pump on a diesel engine supplies more fuel than is actually required for combustion. The excess is returned to the fuel tanks by the fuel return system. The amount of fuel returned varies very considerably from one engine type to another.

Bleeding The Fuel System

If an engine runs out of fuel or loses its prime, it is necessary to bleed the air from the fuel system before the engine can be restarted. The following procedure is recommended.

- 1) *Ensure that the shut-off valves on all empty tanks are closed. Open the shut-off valve on the tank that is to be used.*
- 2) *Open the bleed screws on the top of any filters which have been installed in the fuel lines ahead of the fuel lift pump.*
- 3) *The fuel will enter the filters under gravity and will drive the air out of the top. When bubble-free fuel begins to run out of the bleed screw, close the screws.*
- 4) *Loosen the bleed screws on the top of the engine filter and also on fuel injection pump.*
- 5) *Work the lever on the fuel-lift pump until bubble-free fuel runs from the bleed screws. These should then be tightened and the engine started.*

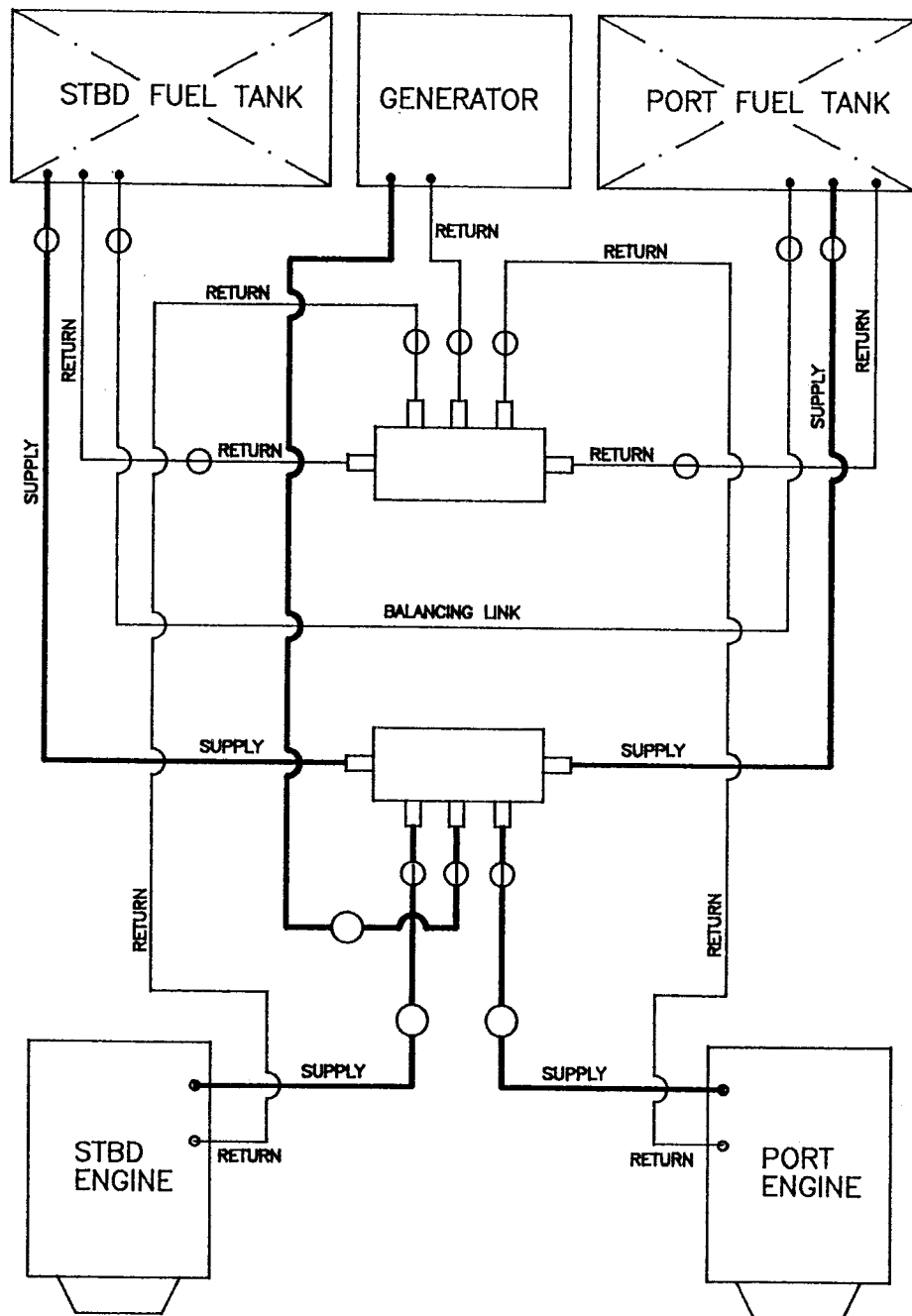
CAUTION ! (Unique Engine Stop Situation)

IF THE ENGINE HAPPENS TO HAVE STOPPED WITH THE FUEL-LIFT PUMP ON TOP OF THE LOBE OF ITS CAM, THE PUMP CANNOT BE OPERATED BY HAND. IN THIS SITUATION THE ENGINE SHOULD BE CRANKED ¼ TURN.

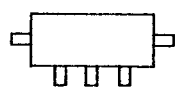
STEP 5 CAN ALSO BE ACCOMPLISHED BY TURNING THE ENGINE OVER ON THE STARTER UNTIL IT STARTS TO RUN. THE BLEED SCREWS SHOULD THEN BE CLOSED AT THAT TIME.

THE EXACT LOCATION OF THE BLEED POINTS IN THE ENGINE CAN BE FOUND IN THE MANUAL SUPPLIED BY THE ENGINE MANUFACTURER. IF A CROSSOVER FUEL SYSTEM IS INSTALLED FOR EACH ENGINE AND GENERATOR SET STEP 1 THROUGH 5 TO BE REPEATED AFTER SWITCHING OVER THE VALVES WHICH ARE LOCATED BEFORE AND AFTER THE FUEL FILTERS.

TWIN ENGINE FUEL LAYOUT



LEGEND



MANIFOLD



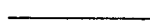
FUEL FILTER



2-WAY VALVE



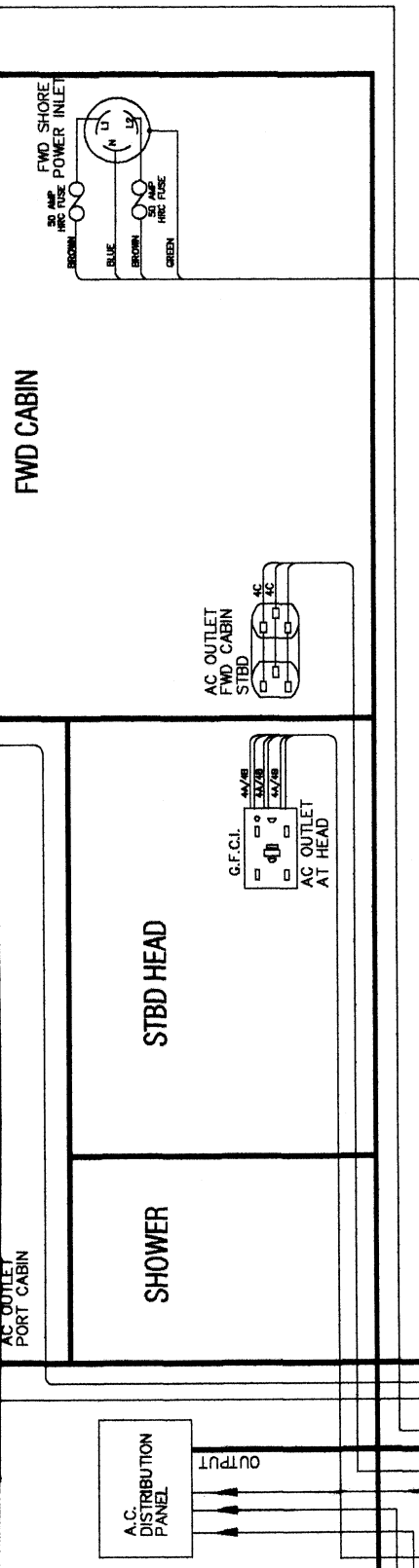
SUPPLY LINE



RETURN LINE



3-WAY VALVE

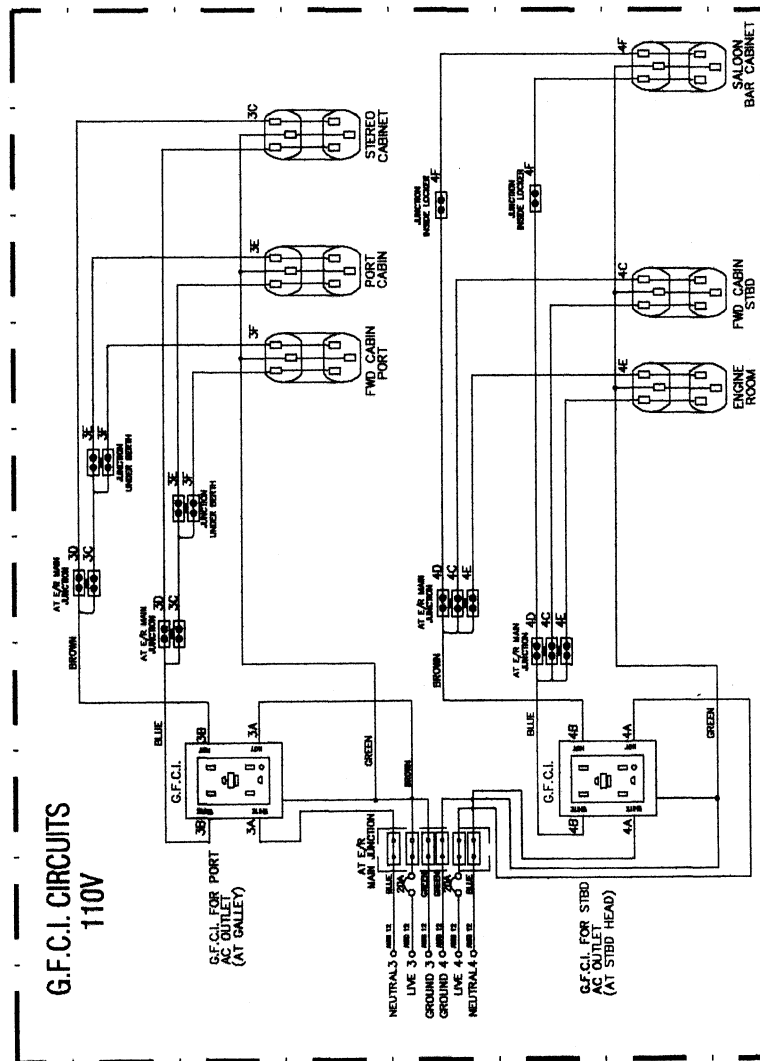


GB42EU#1511 A.C SCHEMATIC

110V SYSTEM

NOTE:-

- 1) ALL WIRES WHICH ARE LIVE IS BROWN.
- 2) ALL WIRES WHICH ARE NEUTRAL IS BLUE.
- 3) ALL WIRES WHICH ARE GROUNDING IS GREEN.
- 4) ENGINE ROOM JUNCTION IS LOCATED ON THE FWD ENGINE ROOM BULKHEAD.
- 5) VIMAR OUTLETS.



REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED

☆ GRAND BANKS YACHTS SDN BHD ☆
 ENGINEERING DEPARTMENT
 Plo 488, Jalan Suasa, Kaw. Perindustrian Pasir Gudang,
 P.O. Box 146, 81707 Pasir Gudang, Johor, Malaysia.
 Tel : 07-2517488 Fax : 07-2517388

TITLE :- 110V A.C. SCHEMATIC

DRAWN BY :	NIZAM	BOAT MODEL :	GB42EU#1511
CHECKED BY :	SUKRI	HULL NO :	1511EAD01A
APPROVED BY :	KAMAL	DATE :	05.06.2002
DEALER :	OCEANIC YACHT SALES	SYSTEM :	110V 60Hz
SCALE :	N.T.S	LAYOUT :	

AC WIRE NUMBERING CODE

NO.	DESCRIPTION	NO.	DESCRIPTION
01.	GENERATOR	39.	COMPUTER
02.	SHORE	40.	INVERTER
03.	PORT OUTLETS	41.	FOOD CENTER
04.	STBD OUTLETS	42.	TOASTER
05.	HOT WATER	43.	AC VENT
06.	CHARGER	44.	LAZARETTE OUTLET
07.	COOKER	45.	AFT CABIN OUTLET
08.	FRIDGE	46.	AFT FLOOR
09.	FREEZER	47.	GALLEY OUTLET
10.	ICE MAKER	48.	COFFEE MAKER
11.	AIR CON	49.	AFT SALOON OUTLET
12.	AIR CON PUMP	50.	HEAD OUTLET
13.	MICROWAVE	51.	DESK OUTLET
14.	AC ENG RM LIGHTS	52.	NUTONE MIXER
15.	WASHER	53.	AC SPOT LIGHT
16.	DRYER	54.	TELESCOPIC
17.	AIR COMPRESSOR		
18.	TRASH COMPACTOR		
19.	DECK WASH PUMP OR SEA WATER PUMP		

* A/C. Negative and Ground Wires

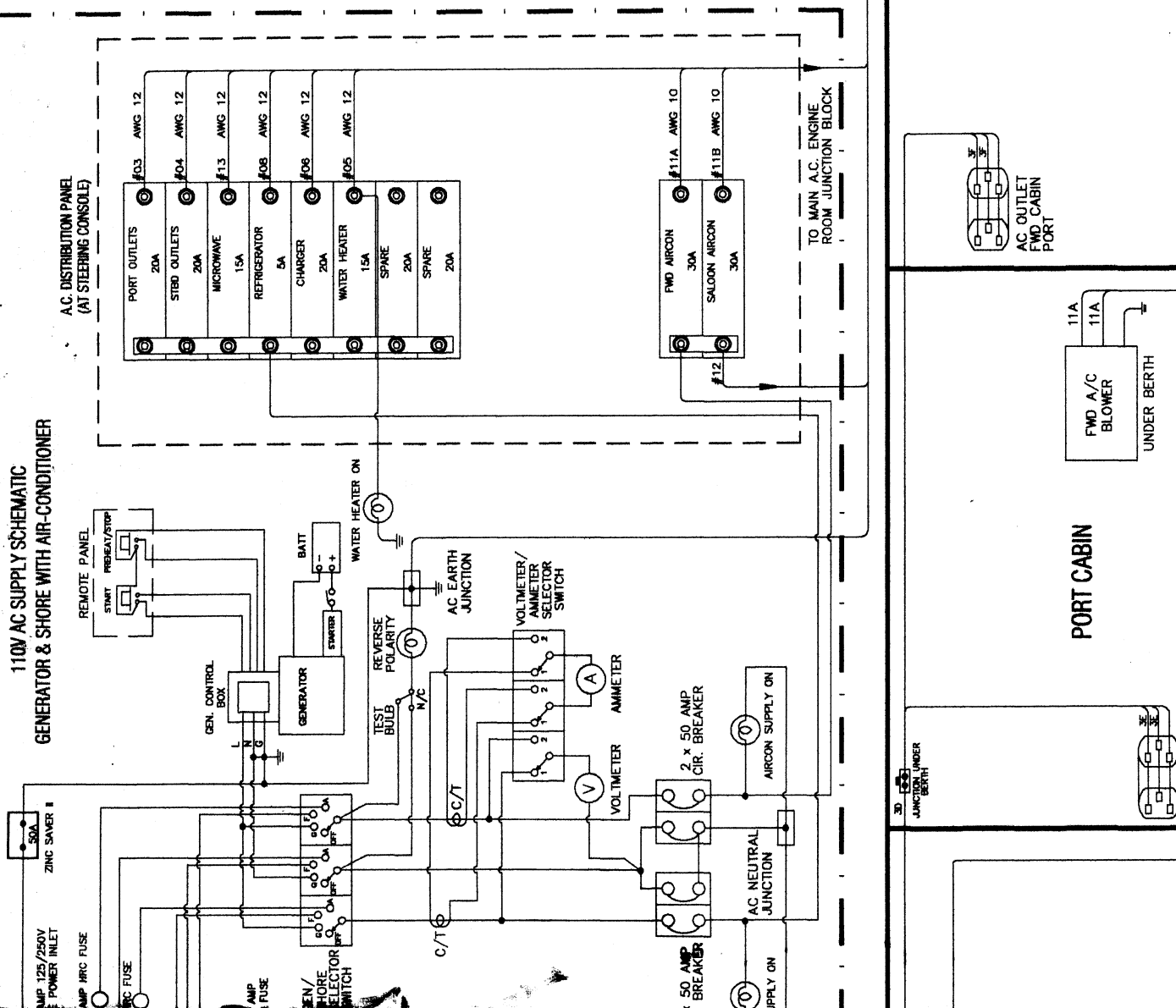
Numberings are the same as the live wire except the color

Example: Live (+) #3 (Brown colour)

Neutral (-) #3 (Blue colour)

Grounding #3 (Green colour)

110V AC SUPPLY SCHEMATIC GENERATOR & SHORE WITH AIR-CONDITIONER

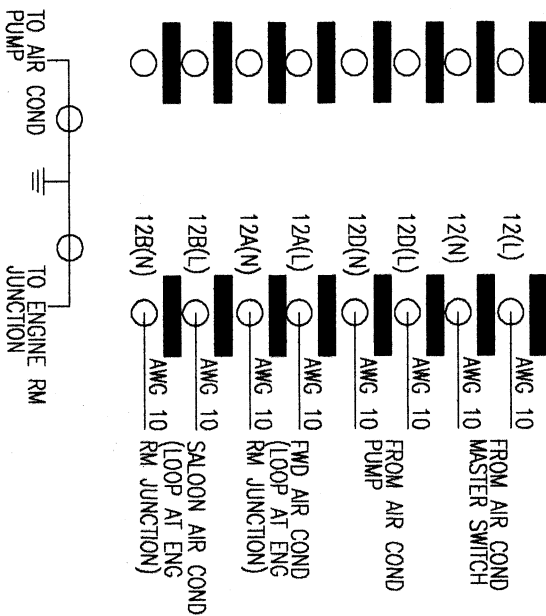


PORT CABIN

FWD A/C BLOWER
UNDER BERTH

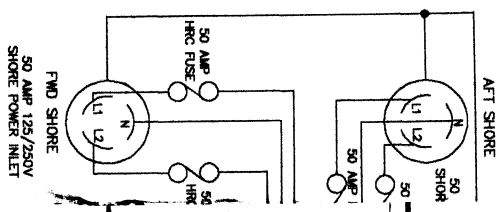
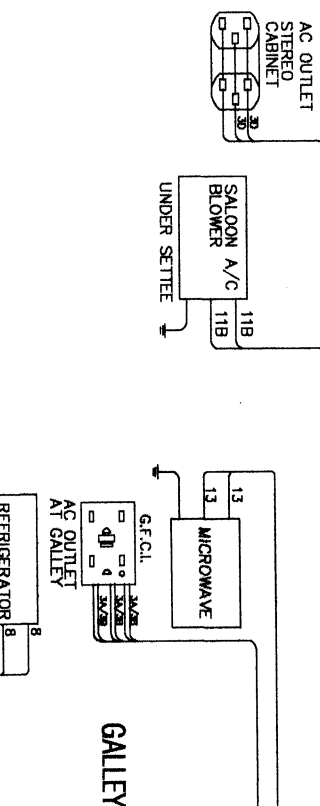
AC OUTLET
FWD CABIN
PORT

AIR COND PUMP CONTROL UNIT



FLYBRIDGE AC WIRING NIL

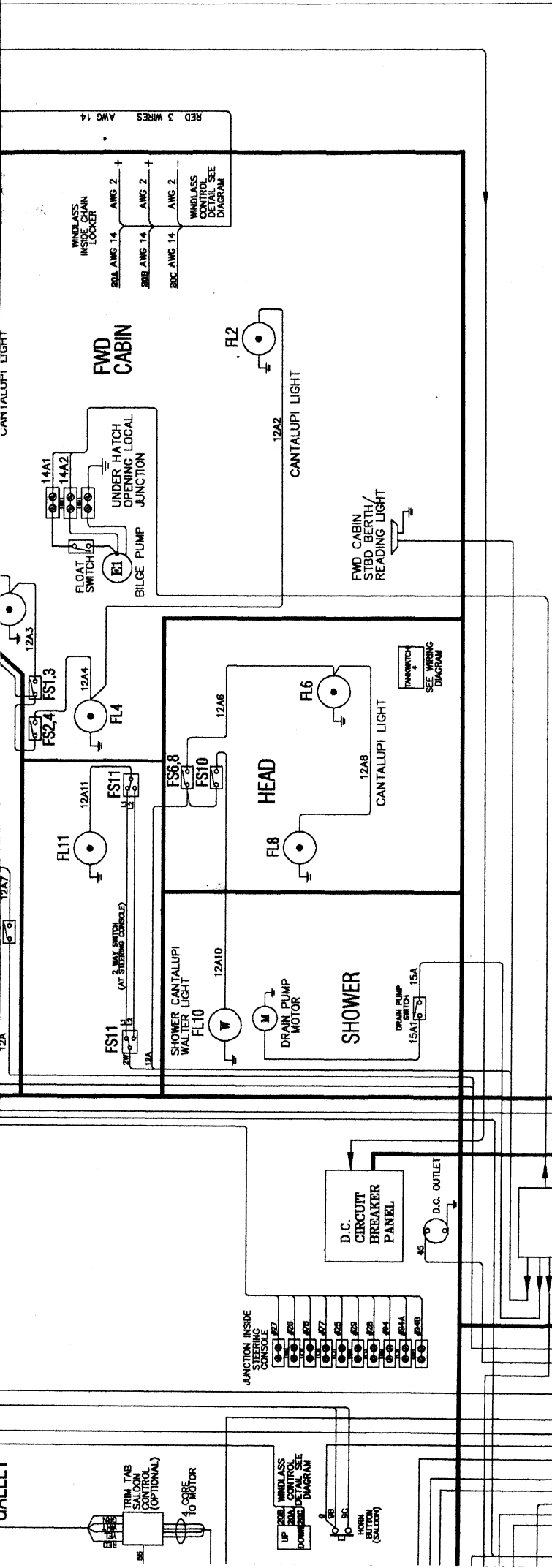
L1 BROWN	60A FUSE	AWG 6
L2 BROWN	50A FUSE	AWG 6
N BLUE		AWG 6
G GREEN		AWG 6
AFT SHORE		



AC S
2
CIR

SALOON





GB42EU#1511 D.C SCHEMATIC

NOTE:-

- 1) ALL WIRINGS WHICH ARE POSITIVE IS RED.
- 2) ALL WIRINGS WHICH ARE NEGATIVE IS BLACK.
- 3) SYMBOL ± REPRESENTS D.C. NEGATIVE.
- 4) ENG START/STOP WIRES CONNECTION, SEE ENG WIRING DIAGRAM
- 5) ENG ALARM AND INSTRUMENT WIRES SEE ALARM AND INSTRUMENT WIRING DIAGRAM

☆ GRAND BANKS YACHTS SDN BHD ☆

ENGINEERING DEPARTMENT
 Plo 488, Jalan Suessa, Kaw. Perindustrian Pasir Gudang,
 P.O. Box 148, 81707 Pasir Gudang, Johor, Malaysia.
 Tel : 07-2517488 Fax : 07-2517388

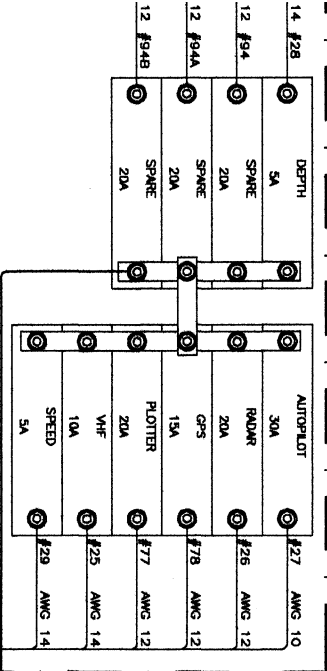
TITLE :-

12V D.C. SCHEMATIC

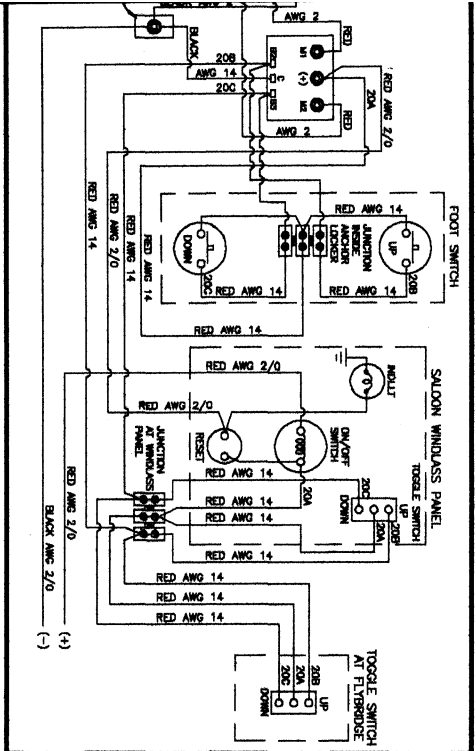
DRAWN BY :	NIZAM	04.06.2002	BOAT MODEL :	GB42EU#1511
CHECKED BY :	SUKRI	05.06.2002	HULL NO :	1511EAD01A
APPROVED BY :	KAMAL	05.06.2002		
DEALER :	OCEANIC YACHT SALES		SYSTEM :	12V
SCALE :	N.T.S		LAYOUT :	

REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED

OVERHEAD ELECTRONIC LOCKER PANEL

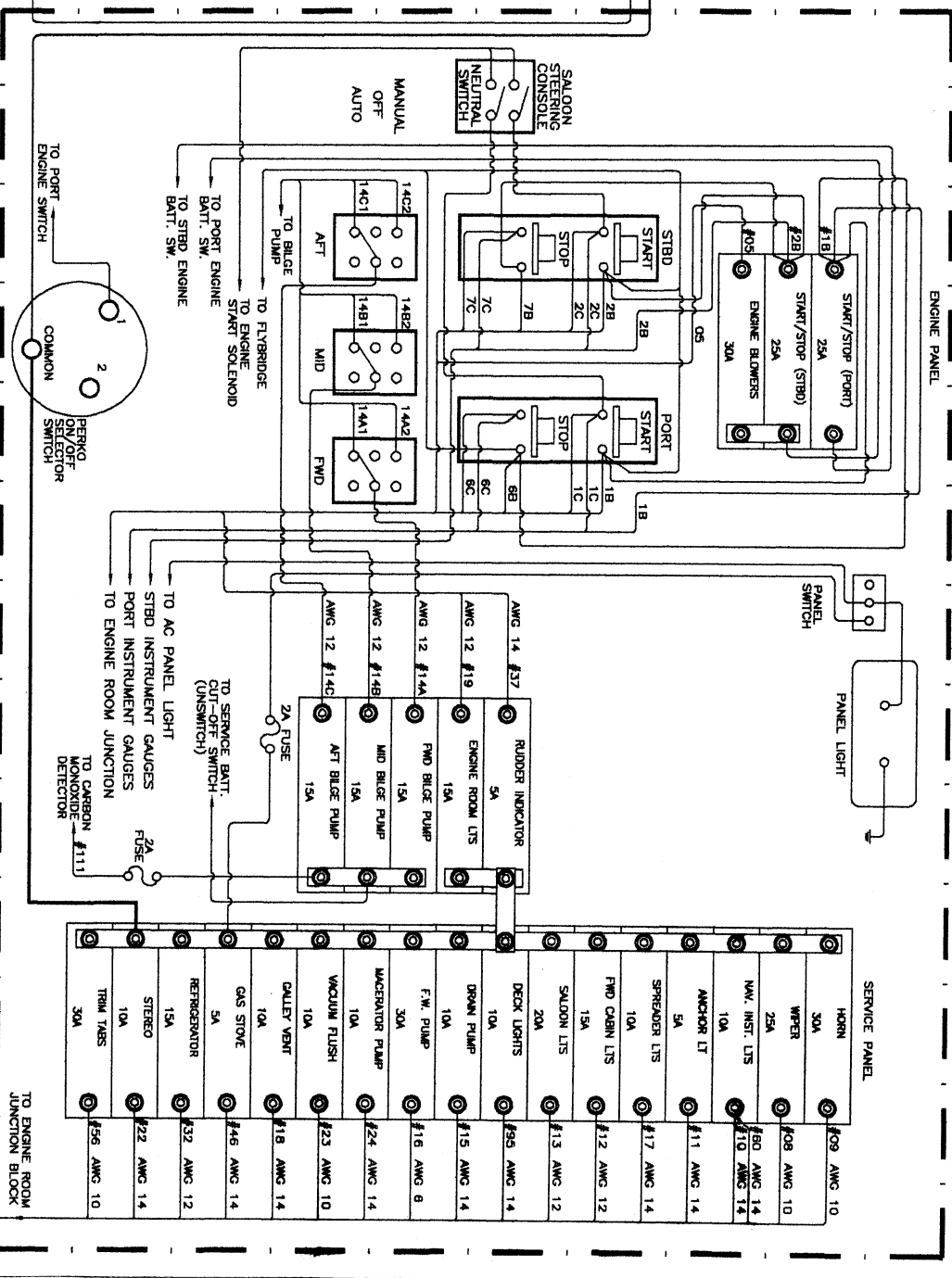


WINDLASS WIRING DIAGRAM

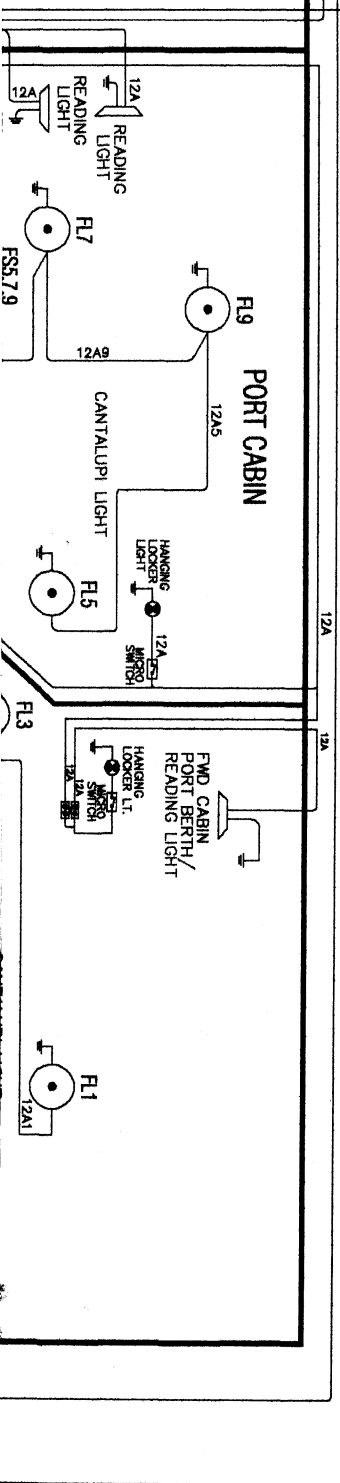


ENGINE PANEL

D.C. CIRCUIT BREAKER PANEL 42EU#1511

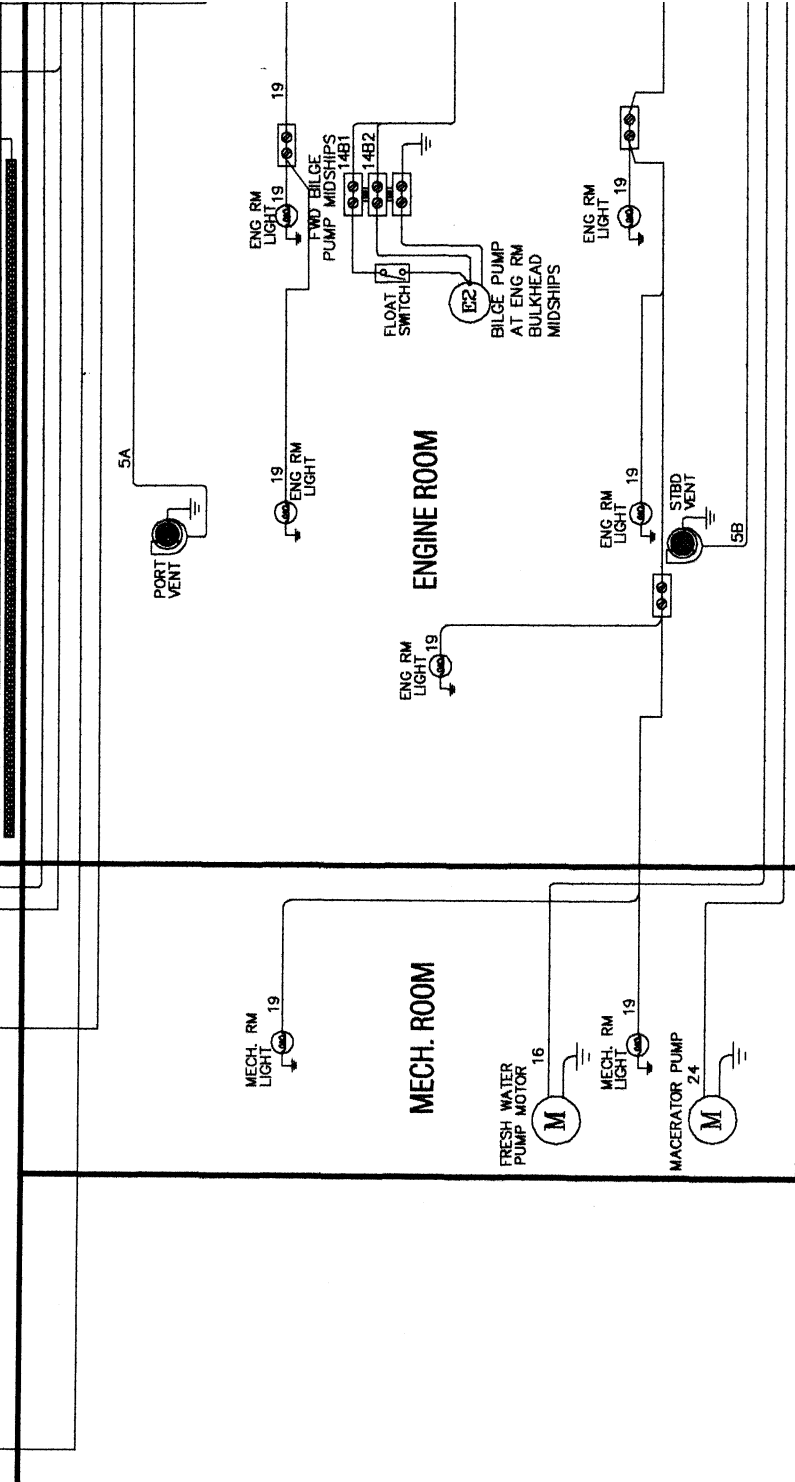
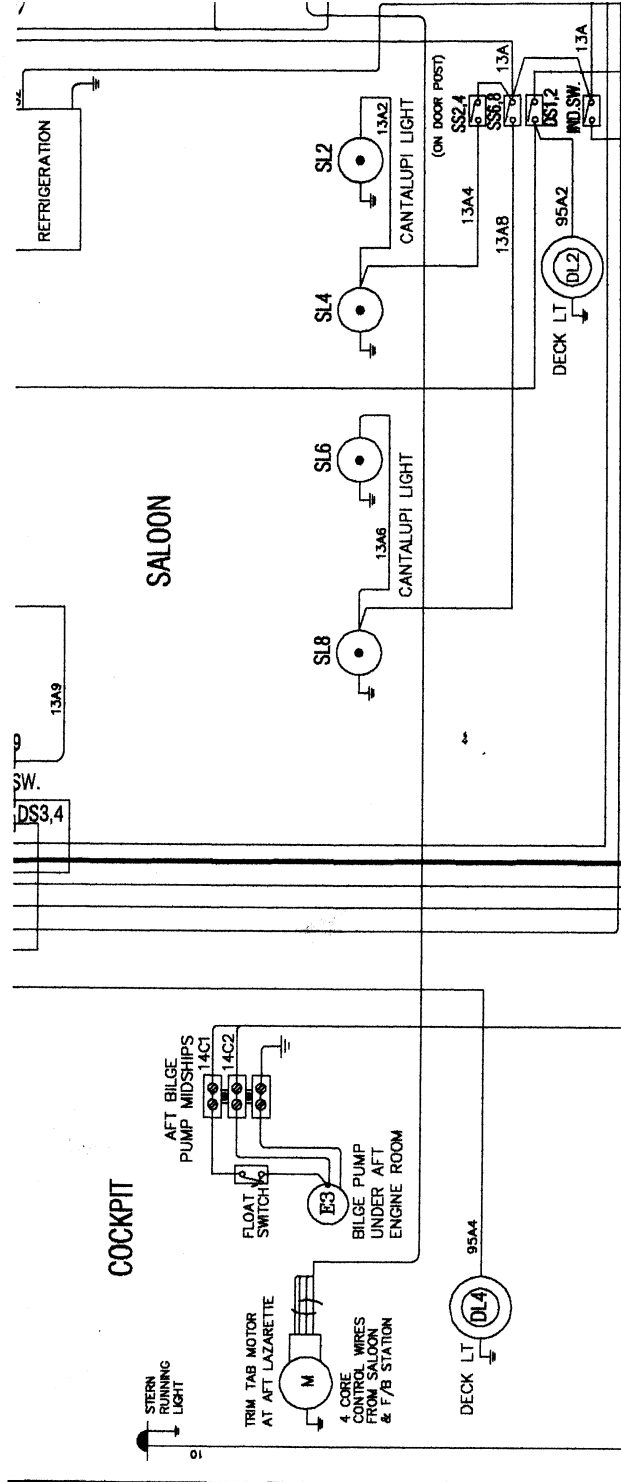


PORT CABIN



14E2	ANG 14	2B	ANG 14	14B2	2B	ANG 14
14C1	ANG 14	05	ANG 14	14C1	05	ANG 14
14C2	ANG 14	05	ANG 14	14C2	05	ANG 14
15A	ANG 12	15	ANG 12	15	ANG 12	15
17	ANG 14	17	ANG 14	17	ANG 14	17
18A	ANG 14	18	ANG 14	18	ANG 14	18
22A	ANG 14	22	ANG 14	22	ANG 14	22
22B	ANG 14	22	ANG 14	22	ANG 14	22
23A	ANG 10	23	ANG 10	23	ANG 10	23
24	ANG 12	24	ANG 12	24	ANG 12	24
37	ANG 14	37	ANG 14	37	ANG 14	37
48A	ANG 12	48	ANG 12	48	ANG 12	48
58	ANG 10	58	ANG 10	58	ANG 10	58
58	ANG 10	58	ANG 10	58	ANG 10	58

JUNCTION 3
D.C. GROUND
MAIN JUNCTION



<u>NO</u>	<u>DESCRIPTION</u>

** D.C. GROUND (-) WIRES ARE THE SAME AS THE POSITIVE (+) WIRE EXCEPT THE COLOUR EG. #1 (RED) #2 (BLACK)

TO LOAD TO D.C. BKR TO LOAD

