AUXILIARY ENGINES

UNIVERSAL "ATOMIC 4" GASOLINE. Operation and maintenance procedures for the Universal "Atomic 4" gasoline engine are well covered in the manual that is enclosed, if your boat is powered by an "Atomic 4". Additional information may be obtained from: Universal Motor Division, Metalist Industries, 1552 Harrison Street, Oshkosh, Wisc. 54901 or one of their many local dealers. They have prepared a special onboard spare parts kit that should prove invaluable. This kit contains parts most likely to be required for emergency needs such as a coil, contact points, spark plugs, etc. Additional optional engine extras, such as oil or fuel filter kits should also be ordered through these same local dealers. When ordering these kits, it is important to note the manufacturer of the alternator (Motorola since 1969), distributor and starter (Delco since 1969) and your engine serial number which is shown on your Boat Specification Card.

VOLVO DIESEL. If your boat is equipped with a Volvo diesel, the operation and care of the engine is detailed in the enclosed manual. The Volvo diesel is manufactured in Sweden and distributed in the Southeastern United States and the Caribbean by: Power House Marine Corp., 4760 N.W. 128th Street Road, Miami, Florida 33054.

Volvo has additional distributors serving regions in the U.S. Check the Yellow Pages in your area.

PERKINS DIESEL. You will find a Perkins engine manual enclosed, if your boat is equipped with a Perkins. Headquarters for Perkins' U.S. operation is: Perkins Engines, Inc., P.O. Box 283, 24175 Research Drive, Farmington, Michigan 48024

All Perkins engines include free start up service and owner orientation. This service will be provided by Perkins' local service representative. **IMPORTANT:** Do not start the engine yourself. Initial START-UP must be performed by Perkins in order to protect your warranty. Your Irwin dealer will contact Perkins to perform this service.

MARINE GEARS

The gear unit installed on the aft end of the engine is a combination reverse and reduction gear (except with direct drive gears). The reduction gear ratio is given on the Boat Specification Card. For more information, consult the engine manual.

PROPELLER SHAFT

Information as to diameter and length of the propeller shaft is given on the Boat Specification Card. The shaft is tapered, threaded and has a keyway at both ends. At the forward end, it is coupled to the marine gear.

SHAFT LOG

The propeller shaft log is a filament wound fiberglass tube which contains a cutless type marine bearing. The bearing is secured in the tube by stainless steel set screws which can be removed from outside the boat.

The fiberglass shaft log tube is bonded to the hull where it passes through the boat. The stuffing box is fastened to the inboard end of the shaft log by a flexible hose which will allow a misalignment up to .010 inches without excessive wearing of the stuffing box packing.

STUFFING BOXES
(Propeller Shaft, Rudder Post, Centerboard Pennant)

The rudder post on all models and the centerboard trunk (in cases where the boat is a centerboarder) are also equipped with stuffing boxes. For the rudder post, a fiberglass tube is bonded to the hull and the stuffing box is attached to the inboard end of the tube with a section of hose. The centerboard uses the same arrangement to allow the pennant to pass through the centerboard trunk.

The stuffing boxes are packed with braided flax packing which is held in place by the packing nut. The stuffing boxes should be **DAMP** at all times because water lubricates the gland. Should it be found that a stuffing box is leaking slightly, this does not indicate that it needs repairing. It should only be necessary to loosen the lock nut, tighten the packing nut (by hand), and then tighten the locking nut again. **CAUTION:** Do not tighten the packing nut excessively, because you may cause the shaft to seize on the stuffing box.

REPACKING THE STUFFING BOX. If a stuffing box continues to leak after tightening down on the packing nut, replace the packing. To repack, unscrew the packing nut and remove the old packing. New packing should be wound around the shaft in **separate** rings with enough rings to nearly fill the stuffing box nut. The correct packing sizes are shown on your Boat Specification Card. The ends of each ring should touch and the joints should be staggered. The packing nut is then moved toward the stuffing box over the packing and screwed on the stuffing box gland. Tighten the packing nut just until leaking stops, and then tighten the lock nut well. If the stuffing box still shows signs of leaking, it is suggested that you see your dealer and have him investigate.

CENTERBOARD MODELS

Our centerboards are of fiberglass construction, ballasted with lead. The centerboard is not heavy. The average weight is between 75 and 150 pounds. The objective is to have the board heavy enough so that it will drop, but not so heavy that it would put a strain on the operating mechanism.

The board is raised and lowered by a ratchet winch located in the cockpit. To raise the board, put the handle in the winch socket and turn the handle in a clockwise direction. A stop on the lifting pennant prevents the winch from being "over cranked". To drop the board, remove the handle and press down on the release lever.

Our larger models use a worm gear winch. With this winch, turning the handle in a clockwise direction raises the board and counter-clockwise lowers it.

A stainless steel wire pennant is anchored on the centerboard which, in turn, is attached to a delrin rod. The delrin rod serves two functions. First, its smooth surface easily slides through the centerboard stuffing box, maintaining a watertight seal. Secondly, the rod eliminates the possibility of electrolysis by acting as an insulator. The inboard end of the rod is attached to the inboard stainless steel wire pennant. The pennant is lead forward, through a large turning block secured to the hull, and then aft to the centerboard winch.

12-VOLT ELECTRICAL SYSTEM

The basic electrical system aboard all Irwin boats is 12-volt D.C. with negative ground. Power for this system is obtained from lead acid batteries which are charged by the alternator on the engine.

A dual battery system is standard on some models and available as optional equipment on others. All 12-volt systems are equipped with a main battery switch. If your boat has one battery, it is disconnected in the "off" position and connected on position "1" or position "all". The main switch must be set on "1" or "all" for the engine alternator to charge the battery.

With dual battery installations, the batteries are connected in parallel (negative to negative and positive to positive) and feed to the main battery switch. Turn the main battery switch to the position you have designated at the engine starting battery. When the engine is idling, you may switch from one

battery to another for charging. Charge only one battery at a time. If you attempt to charge the batteries with the main switch in the "all" position, the alternator will cut-out when the strongest battery is charged, leaving the second battery uncharged. **NEVER** pass through the "off" position when the engine is running or the alternator diodes will burn out. The "all" position should be used to start the engine when both batteries are low. It's a good idea to use one battery for the ship's gear and save the second battery for engine starting.

Each circuit on the 12-volt panel is fused. The fuse for a circuit is located next to the switch for that circuit on the electrical panel. The fuses can be easily replaced without tools. The replacement fuse for all circuits is an SFE 20 amp.

On most models, there is not a switch for the interior cabin lights on the 12-volt panel because the interior fixtures have individual switches. For models with bilge blowers, the blower switch is located on the engine instrument panel.

Fuses for the cabin light circuits, engine blower and the 12-volt refrigerator (if installed) are on a fuse block located in the engine compartment or on the aft side of the bulkhead where the 12-volt panel is mounted.

If the boat has a factory-installed compass, the compass light is wired into the running light circuit and will light when the running lights are turned on.

REBULBING. All interior lights use GE-1142 bulbs. The running lights use GE-68 bulbs. Do not substitute larger bulbs in the running lights or you will melt the plastic lens.

The bow running lights must be re-bulbed from the inside. Re-bulbing is accomplished by unfastening the light socket from the plywood back-up block located in the forepeak, replacing the bulb and then refastening the socket. On the Irwin 32, the lights are located behind the teak sheathing along the side of the hull over the forward "V" berths. The access panels on the sheathing must be removed in order to get to the light sockets.

110-VOLT ELECTRICAL SYSTEM

110-volt service is offered on several models. Equipment powered by this system includes: Duplex Outlets, Converter (if installed), Hot water Heater (if installed), Refrigerator (if installed). Power for this system is obtained from either shore power or from the auxiliary generator (if installed). The shore power inlet is located in the cockpit area. The inlet fitting is a Hubbell No. 60CM61, rated at 30 amps, 125 volt, 2-pole, 3-wire grounding. The correct cord set is Hubbell No. 61CM28. The female connecting body only for the inlet is No. 31CM23.

Each 110-volt circuit is protected by a circuit breaker and the breaker is used to turn on/off a particular circuit. The breakers are labelled and located in the engine compartment.

CONVERTER. The converter steps down 110-volt A.C. shore power to 12 volts and rectifies it to D.C. Thus, the converter can be used to power all 12-volt D.C. circuits without having to use the boat's batteries. In addition, the converter has a separate battery charging circuit which monitors the state of charge on the batteries, and automatically charges them when required.

The charging circuit is wired directly to the batteries, so the Main Battery Switch can be set to any position. At dockside, with the engine off, you will probably have the switch on the position designated for the ship's gear.

REFRIGERATOR. The Norcold refrigerator supplied on some models is a dual voltage unit that can run either on 12-volt D.C. or 110-volt A.C. If the switch inside the refrigerator is "on", the unit will automatically run on 110-volts if plugged into dockside power and off the ship's batteries, if not. NOTE: The refrigerator when operating on 12-volts D.C. draws 5 amps which means that, if the ship's battery is rated at amp hours and fully charged at the start, it would be completely discharged by the refrigerator in 15 hours. Therefore, you must be careful not to operate the refrigerator for long periods of time without running the main auxiliary engine or connecting to shore power.

AUXILIARY GENERATOR. The optional diesel auxiliary generator (if installed) is equipped with its

own starting battery and fuel tank with an on-deck fill plate. The generator has its own battery charging circuit to maintain the starting battery. The generator is wired to all the 110-volt equipment on board.

We require that if an auxiliary generator is installed, that the boat also be equipped with a shore power transfer switch. This switch, located adjacent to the 12-volt panel, allows the owner to select either dockside power or the auxiliary generator as a source of 110-volt current. It also prevents the possibility of using both sources simultaneously which could cause serious damage to the generator.

GETTING UNDERWAY – GASOLINE ENGINES

Turn on the main Battery Switch to the position you have designated as the engine battery.

In order to clear any dangerous gasoline fumes from the bilge, run the blower for 5 minutes prior to starting the engine. The blower switch is located on the engine instrument panel.

While the blower is running and prior to starting the engine, please check the following:

GAS TANK & FUEL SHUT-OFF VALVE. In all models equipped with a Universal Atomic "4", except the IRWIN "32½", the gas tank is located under the cockpit fill cap and vents aft. The fuel shut-off valve is located adjacent to the tank and can be reached through the cockpit sail locker.

When the valve handle is parallel to the fuel line, the fuel line is OPEN. When the handle is at a right angle to the line, the valve is CLOSED. A partially filled gas tank can cause water condensation, a major cause of sticky valves. Therefore, we recommend keeping the tank full and the carburetor bowl clean.

ENGINE COOLING WATER VALVE. The ½" water intake valve is located adjacent to the engine. The hose runs directly from the valve to the water pump on the engine. This valve **must** be open while the engine is running. Turn the valve in a COUNTERCLOCKWISE direction to open.

SEA VALVES. All thru-hull fittings below the waterline are equipped with gate valves. It is a good practice to close all sea valves when leaving the boat, especially for extended periods of time. To open, turn counter-clockwise: to close, turn clockwise. Once a month, close and re-open all valves to keep them in working order.

ENGINE OIL. Since a marine engine works at maximum capacity about 90% of the time as compared to an automotive engine (which rarely works at maximum capacity at any time) the requirements for a good lubricating oil are far greater. Quaker State Heavy Duty SAE 30 NON-detergent oil has been used originally and we recommend its continued use. Keep the engine oil level between the LOW and FULL marks on the oil level dip stick located on the starboard side just forward of the transmission.

The reverse/reduction gear box uses the same oil as the engine. Oil should be changed every forty to fifty operating hours with three quarts of SAE 30 Heavy Duty Non-Detergent oil. Our experience has shown the SAE 30 Non-detergent oil functions better than the 20-20W detergent oil recommended by Universal Motors. Also remember to clean the drain plug when the oil is changed. The drain plug is magnetized so that it will collect any metal particles from the engine.

STUFFING BOXES. Check the propeller shaft and rudder post stuffing boxes as well as the centerboard stuffing box, if your boat is a centerboard model. Remember that the stuffing box gland should be damp, but not leaking excessively. If it is, follow the directions provided in the manual. Make sure that the stuffing box hoses and hose clamps are tight.

STARTING PROCEDURES – GASOLINE ENGINES

Has the blower been running for 5 minutes?
Have you completed the check list detailed above?

1. Place the shift lever located on the side of the cockpit or on the side of the pedestal in the vertical or neutral position.
2. Advance the smaller throttle lever (adjacent to shift lever) about one quarter.
3. Pull out the choke knob all the way. Turn the ignition key clockwise and hold until engine starts.
   a. Push choke in about 1/3 the way and as the engine warms up, continue to push it in gradually until it is all the way in.
   b. Adjust throttle to idling speed.
   c. Oil pressure should be approximately 5 pounds at idle speed and 30-35 pounds at maximum speed with a hot engine.
   d. The cooling system is operating only if water is coming out of the exhaust outlet in the transom. If the water does not begin to flow out the transom outlet within 3 or 4 minutes, STOP the engine and check the water intake valve.
   e. Engine temperature should not exceed 145° F. in salt water; 165° F. in fresh water.
   f. Turn off blower.

GETTING UNDERWAY – DIESEL ENGINE

If your boat is equipped with a Perkins diesel, the starting procedure is the same as for the gasoline engine except for the following differences:

Our diesel installations are not equipped with a blower motor, because diesel fumes are not explosive.

A diesel engine uses fuel as a lubricant as well as a source of combustion into the engine and then returns approximately 80% of this supply back to the fuel tank. In other words, a diesel has a "loop" fuel supply system. The line that leads from the tank to the fuel filter is the supply; the other line from the engine back to the fuel tank is the return. This supply/return system works on suction which means that there must be fuel in the lines at all times. If air gets in the line, then the suction is interrupted and the engine will not operate until the lines have been bled. Bleeding the lines is required under the following circumstances:

1. When commissioning the boat for the first time
2. A leak in the fuel line
3. After the fuel filter has been cleaned or removed
4. If the fuel supply tank has been allowed to run dry

HOW TO BLEED THE FUEL LINE. Detailed instructions are given on Page 18 of the Perkins Handbook.

ENGINE OIL. Quaker State Heavy Duty SAE 30 Non-detergent oil has been used originally in the Perkins Diesel, and we recommend its continued use. Keep the engine oil level between the LOW and FULL marks on the oil level dip stick located on the starboard side. The oil should be changed every forty to fifty operating hours with approximately 6½ quarts of SAE 30 Non-detergent oil and the oil filter replaced with an AC-70 element.

The reverse/reduction gear box used Automatic Transmission Fluid. The gear box has been filled at the factory, but you should check that the fluid level is between the marks on the transmission dip stick located on the port side of the gear box.

FRESH WATER COOLING. All perkins engines are supplied with a fresh water cooling system. As shipped from the factory, the fresh water reservoir located at the front end of the engine has not been filled. We recommend filling the reservoir with Prestone anti-freeze rather than water. **CAUTION:** Do not use a "stop-leak" type anti-freeze as it may damage the engine.

STARTING PROCEDURE – PERKINS DIESEL

Have you completed the pertinent items detailed on the gasoline engine check-list as well as the items listed above?

DO NOT START THE ENGINE, if you have **not** received owner orientation from your local Perkins service representative – as you may void your engine warranty.

1. Place the shift lever located on the side of the cockpit or on the side of the pedestal in the vertical or neutral position.
2. Advance the smaller throttle lever (adjacent to the shift lever) about one quarter.
3. Turn the ignition key clockwise and hold until engine starts.
   a. Adjust throttle to idle speed.
      Idle speed – 750-800 RPM
      Cruising speed – 2800-3000 RPM
      Maximum speed – 3600 RPM **(Do Not Exceed)**
   b. Oil pressure should be 35-40 pounds at idle speed and 30-35 pounds at cruising speed with a hot engine.
   c. The cooling system is operating only if water is coming out of the exhaust outlet in the transom. If the water does not begin to flow out the transom outlet within 3 or 4 minutes, STOP the engine and check the water intake valve.
   d. Engine temperature should never exceed 200° F.

RUNNING PROCEDURES – ALL ENGINES

Run the engine at idle when shifting into forward or reverse. If your boat is equipped with a folding prop, you must be particularly careful about putting the engine in gear except at idle speeds. The prop can be damaged if engaged much over 1000 RPM.

FRESH WATER SYSTEM

WATER SUPPLY TANK. The fresh water system on all IRWIN models is basically the same. On our smaller models, the tank is filled inside the boat through the fill cap. The larger models are equipped with on-deck fill pipes and the deck plate is marked "Water".

The optional fresh water connection allows you to connect the boat's water system directly to a dockside water supply so that the tank does not periodically have to be re-filled. The deck mounted dockside connection accepts a standard size garden hose fitting.

On manual water supply installations, the supply lines lead to the galley and lavatory pumps. With a pressure water system, a 12-volt automatic demand pump is installed in the water supply line and conventional water faucets replace the manual galley and lavatory pumps. The switch for the pressure water pump is located on the 12-volt panel.

HOT WATER HEATER. If you boat is equipped with a hot water heater, the water can be heated at dockside by the 110-volt electric element in the unit. The "hot water" circuit breaker must be on for operation. **CAUTION:** Do not operate the heater without water in the tank or you may burn out the electrical element.

Cold water is supplied from the water tank to the heater by the pressure pump. The cold water enters the heater where it travels through the coils and is heated by either a 110-volt electrical element (at dockside) or by hot water from the engine cooling system. From the heater, the water is routed to the various faucets aboard the boat. NOTE: As a safety precaution, we do not provide for the hot water to be heated by the engine if the engine has a raw water cooling system. Why? Because the raw engine cooling water would be circulating through the hot water heater. If the boat were in salt water, this cooling water would be salt water which could quickly corrode the heater, and possibly sink the boat.

TOILETS

Three types of sanitation systems are offered aboard Irwin yachts.

STANDARD MARINE TOILET. Sea water for flushing is drawn into the toilet through a ½" water intake gate valve and waste is discharged overboard through a 1¼" gate valve. Operating instructions are included with the toilet. Additional information and replacement parts can be obtained from the manufacturer.

MONOMATIC "HANDI-HEAD". This is a self-contained, holding-tank type toilet. The unit is initially "charged" with fresh water and a package of "Monochem T-5" which is recirculated for rising water. Waste is held in the holding tank that is located in the base of the toilet. The holding tank can be pumped out at dockside through the plate mounted on deck. Where dockside pump-out facilities are not available, an optional manual pump can be attached to the deck fitting and used to empty the holding tank. Operating instructions for the "Handi-Head" are included with the Owner's Portfolio, if the boat is equipped with this type of toilet.

MARINE TOILET & REMOTE HOLDING TANK. On some models, where space allows, we offer a standard marine toilet connected to a separate re-circulating type holding tank. This system is similar to the "Handi-Head" unit except the capacity of the holding tank is much larger and the owner has the advantage of a china, rather than plastic, toilet. In some boats that have two toilets, such as the IRWIN "37", both toilets are connected to one remote holding tank. There is one deck-mounted pump-out fitting as well as a back-flush hose connection for each remote holding tank. The optional manual discharge pump can be attached to the deck fitting to empty the tank when dockside pump-out facilities are not available. Detailed instructions for the toilet and holding tank are included in the Owner's Portfolio.

PRESSURE ALCOHOL STOVE

Several different types of alcohol stoves are offered. Some are counter top units, others are gimballed and some have an oven as well as top burners. You will receive an instruction manual for the unit aboard your boat. However, there are a few additional points on filling the alcohol tank that should be made.

Before removing the fill cap:

1. Make sure all burners are OFF.
2. On remote tank installations, the main alcohol shut off valve on top of the pressure tank must be closed.
3. Tank pressure is at ZERO. Remove stopper.
4. Fill tank three-quarters full to allow for air pressure.
5. Replace the fill cap and screw down tight.
6. Pressurize Tank. On tanks with pressure gauges, we have found that 5 pounds of pressure is more than adequate and imposes less strain on the fittings than the recommended 10 pounds.

WARNING. Do not leave any alcohol stove unattended. Remember the alcohol is coming out of the supply tank under pressure. If the burner is ON and the flame should go out, the alcohol will continue to run into the burner and may overflow down into base of the unit. The alcohol is invisible, so if the flame went out without your knowledge, you could have a serious flash fire when attempting to re-light the burner.

It's a good idea to place a pot of water on the burner before you light it. The pot will prevent the flame from reaching the overhead if you have a flare-up, and if the situation should get out of control, you can use the water to douse the flame. (Alcohol and water are miscible.)

GOING AGROUND

It can happen to anyone. You wander out of the channel and suddenly you find yourself stuck on the bottom.

With centerboard models, the first thing to do is crank up the board. If the board is left down, it can become wedged in the soft sand or mud and put a tremendous strain on the centerboard trunk.

Next, have the entire crew move to one side. This will cause the boat to heel over and may reduce your draft enough to free the boat.

If this tactic does not work, start the auxiliary engine, put it in reverse, and try to back out. You can also throw an anchor over the stern and try to pull yourself clear.

If these remedies fail, relax. You will just have to wait for an incoming tide or a fellow yachtsman.

MAINTENANCE TIPS

The interior of your Irwin should be treated like any home interior. Air is a wonderful cleaner: bring the vacuum cleaner aboard and always keep the boat well ventilated, especially the bilge and lockers. The following are some additional tips:

FIBERGLASS SURFACES. Periodic application of Tide and fresh, warm water with a deck brush and sponge, followed by a good hosing and chamois, will do the cleaning job. If the gloss dulls or fades, wax the smooth surfaces with "Vista" or Meguiar's "Mirror Glaze" paste wax. Surfaces that have started to oxidize can be brought back with Meguiar's "Fiberglass Boat Cleaner" or DuPont's "White No. 7 Polishing Compound". Wax the hull with a power buffer and paste wax once a year. The non-skid surfaces can be brought back to life with a lather of "Tide" or "Mr. Clean". Be sure to follow-up with lots of fresh water to avoid streaks on the topsides. Avoid any metal filings on the fiberglass surfaces as they will leave rust spots. These spots can be removed with oxalic acid or "Teak-Brite", but first test a small area against bleaching of the surface color.

WOOD SURFACE. The tiller, along with the spreaders on some models, has been well covered with a high grade marine varnish at the factory. In order to maintain the original high luster and protect the wood, sanding, and re-varnishing will be necessary when the gloss fades or bare spots appear.

The rest of the exterior is teak which is weather resistant due to its natural oil. Teak does fade to a dull gray, which, if objectionable, can be cleaned with a teak cleaner and preserved by applications of Weldwood's "Woodlife" or similar sealers. Teak, when well varnished, produces the ultimate in a yacht wood finish but requires constant loving care!

CARE OF SAILING HARDWARE. Winches must be kept clean and well oiled (Lubriplate is excellent unless the manufacturer recommends otherwise) as do all turnbuckles, track slides, sheaves and shackles. Keep all gear lubricated and in good working condition. Remember, the less an item is used, like a turnbuckle for example, the more apt it is to freeze up.

All hardware will tarnish or stain to varying degrees when exposed to salt water spray and weather. This surface condition can be prevented to a great extent by thoroughly washing down the boat with fresh water after every trip. The chrome can be brightened up with a chamois. Use a good automotive chrome cleaner for those stubborn stains. A mild household cleaner like "Comet" will remove tarnish spots on stainless steel.

CARE OF SPARS & RIGGING. The spars have been clear anodized to protect against corrosion. However, dust, dirt, smoke, soot and traffic fumes will adhere to the spars, making the surface dull and unsightly. Coating the new surfaces with a good paste wax like "Vista" or "Simonize" will help maintain the original lustre and make cleaning easier.

Clean rigging means clean sails. A quick trip aloft with a damp rag will take care of this problem. While aloft, check the entire rig for loose screws, nuts, bolts, cotter pins and chafe which may have resulted from hard sailing. Periodic inspection of the rig from aloft is the best insurance against rigging and spar failure. Keep halyards tied away from the mast to stop annoying dockside noise and to avoid damaging the mast finish.

CARE OF THE SAILS. Take care of your sails with periodic checks, especially spinnakers, for small

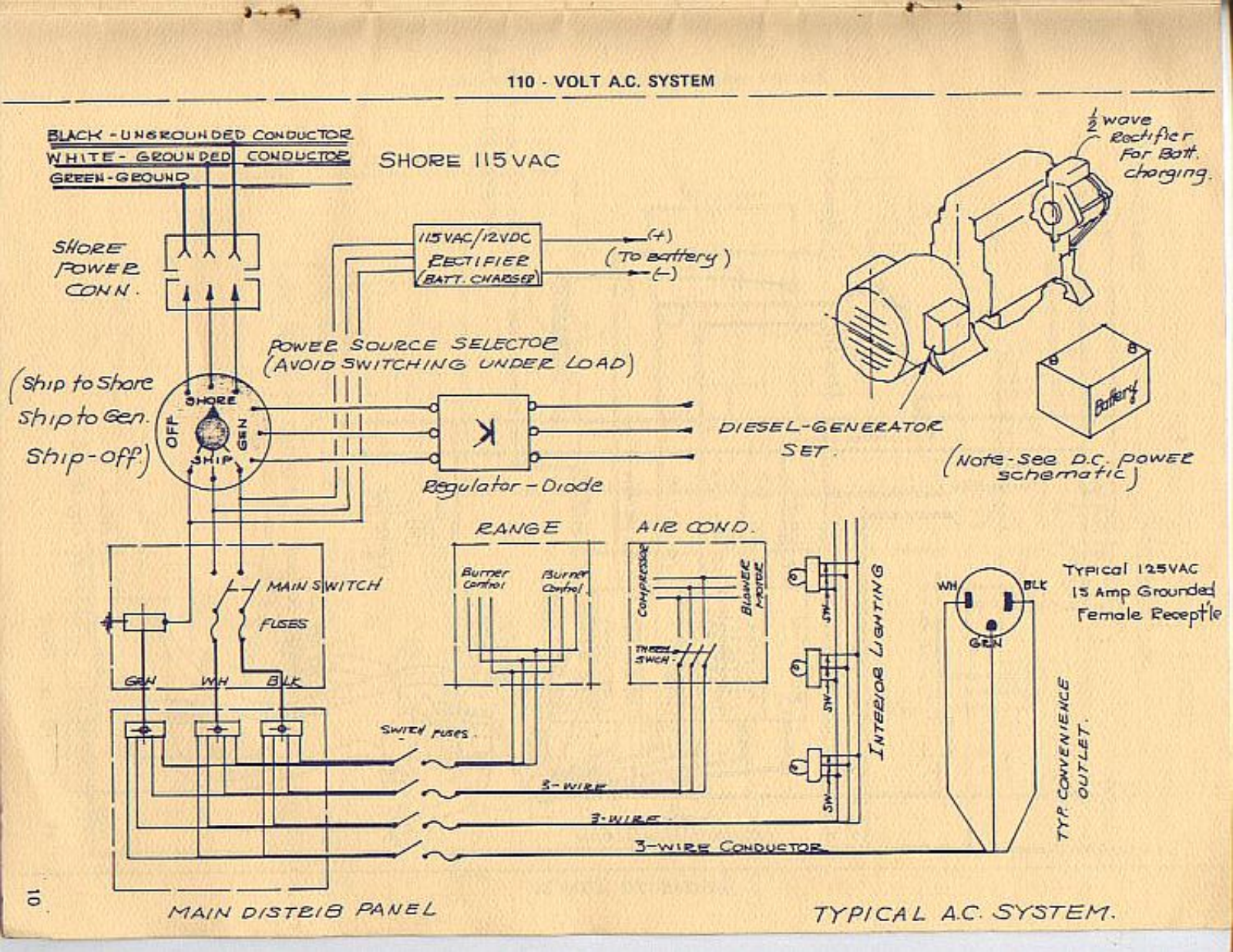
tears and chafe. A dacron mainsail with its battens removed and outhaul slacked may be left on the boom if it is properly furled and covered. Dacron really doesn't like sunshine so sails left on the boom should be protected with a cover. Headsails should be stripped of their sheets, folded, bagged and stowed below. When sails are wet and caked with salt, hose them off with fresh water and dry them thoroughly by laying them out on the lawn.

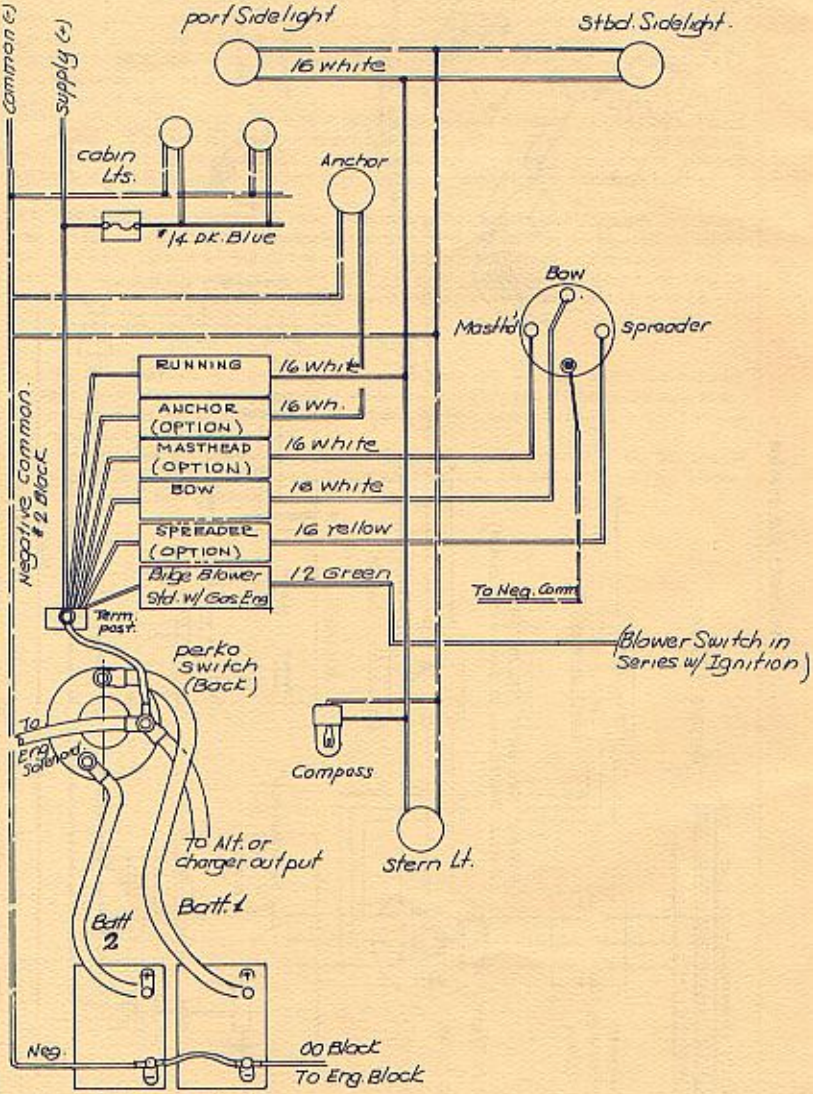
BOTTOM PAINT. The type of bottom paint used on your boat is shown on your Boat Specification Card. A small can of paint is included with each boat for touching up areas in contact with the cradle during shipment. We recommend that when re-painting the bottom is required, you use the same type of paint as applied at the factory. For best results, follow the manufacturer's instructions exactly.

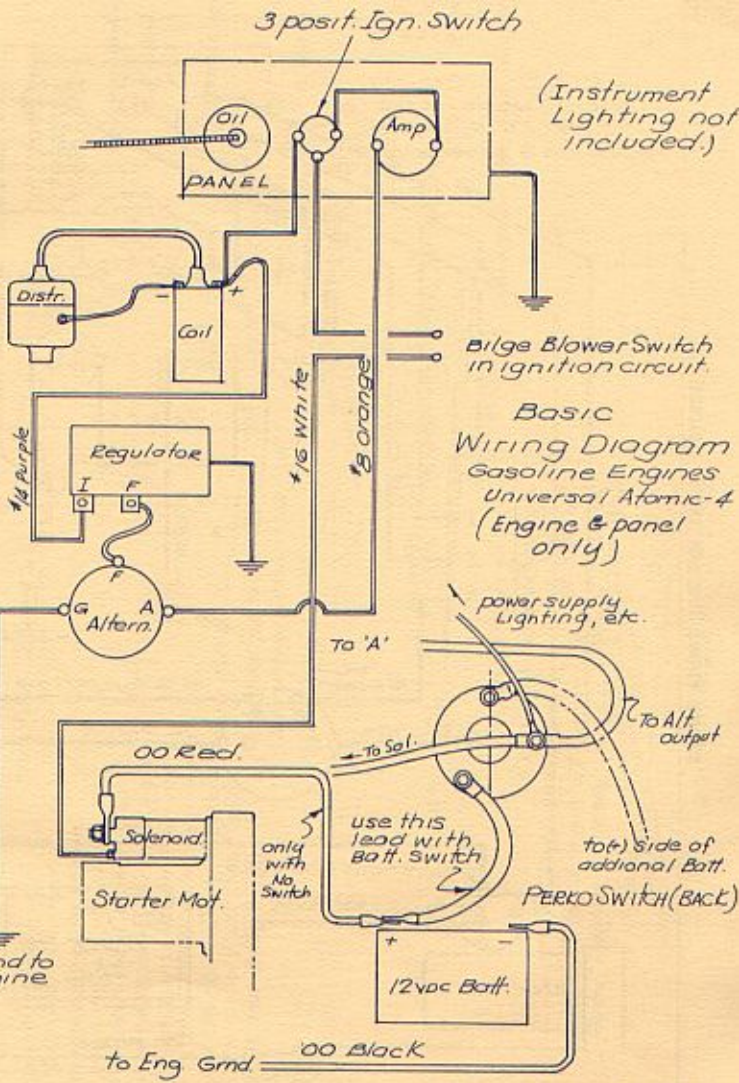
BATTERY CARE. Make sure there is water in the battery. Particularly in warm weather. The battery water will evaporate quickly. When measured by a hydrometer, the solution in a fully charged battery will have a specific gravity of approximately 1.280. A discharged battery will indicate about 1.150 on a hydrometer. You should never allow your battery to stand idle in a discharged condition. Keep the terminals clean. A solution of baking soda and water is a good cure for battery terminal corrosion.

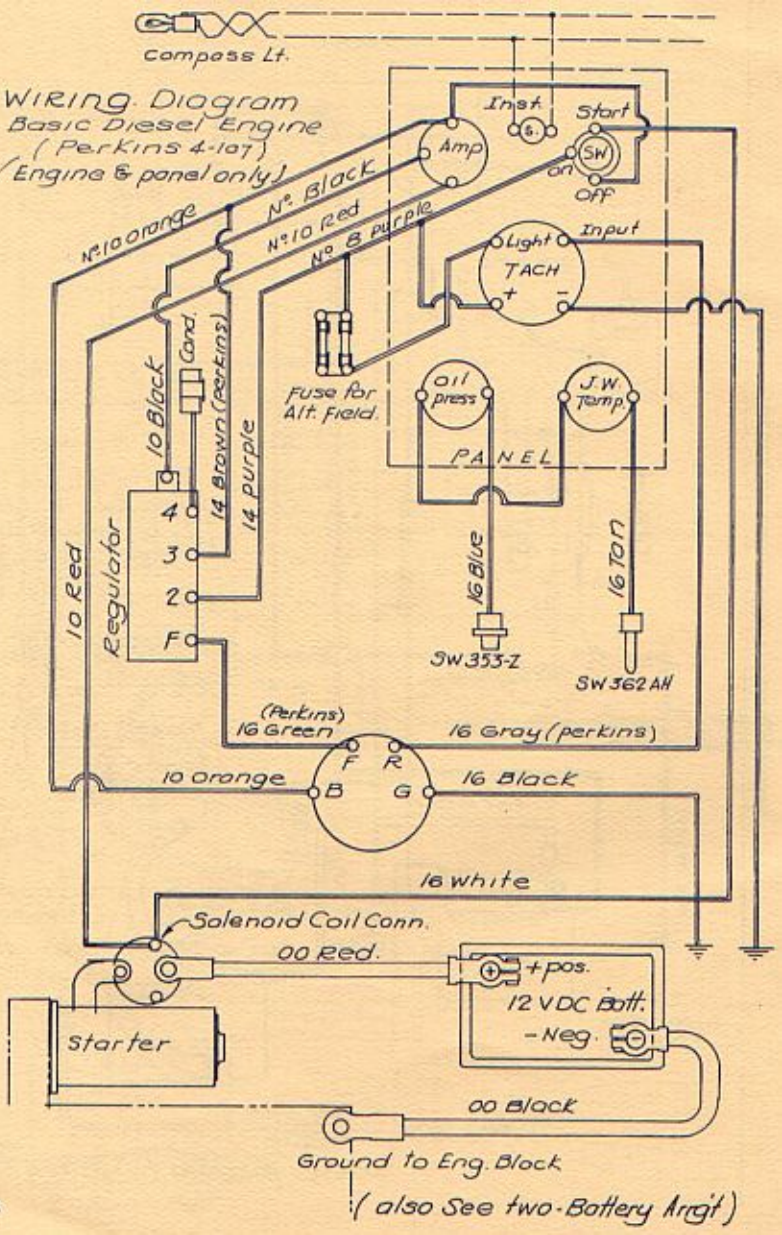
Irwin Yachts' interest in both customer and product continues long after your boat is commissioned. Our Parts Department is ready to serve your nearest dealer quickly and efficiently. All replacement parts and accessories are delivered through your dealer. He must have detailed information from you to be certain we send the parts requested.

We have selected our dealers because they are knowledgeable yachtsmen who can provide professional marine service. If you have a problem not covered in this manual, see your Irwin dealer. He will be happy to be of assistance.

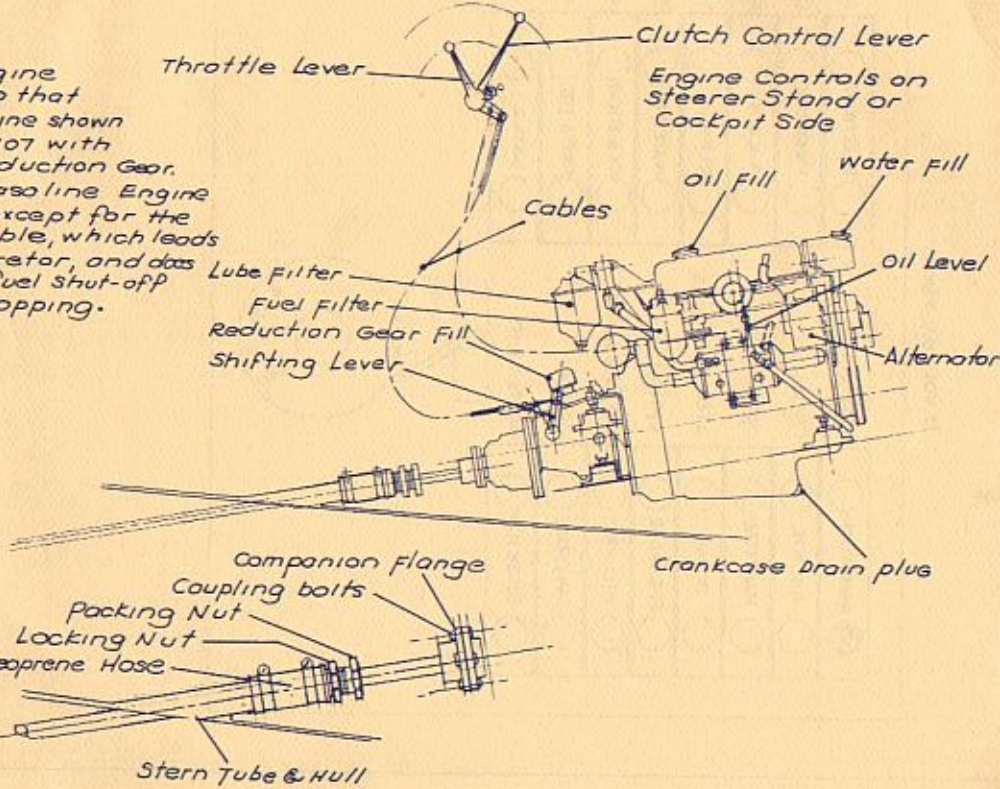

BLACK - UNGROUNDED CONDUCTOR
WHITE - GROUNDED CONDUCTOR
GREEN - GROUND
SHORE 115 VAC
SHORE POWER CONN.
115 VAC/12 VDC RECTIFIER (BATT. CHARGER)
(+) (To battery) (-)
½ wave Rectifier For Batt. charging.
POWER SOURCE SELECTOR (AVOID SWITCHING UNDER LOAD)
(Ship to Shore Ship to Gen. Ship-off)
SHORE
OFF
GEN
SHIP
Regulator - Diode
DIESEL-GENERATOR SET.
Battery
(Note - See D.C. power schematic)
RANGE
AIR COND.
Burner Control
Burner Control
COMPRESSOR
BLOWER MOTOR
THERM SWCH
MAIN SWITCH
FUSES
GRN
WH
BLK
SWITCH FUSES
3-WIRE
3-WIRE
3-WIRE CONDUCTOR
SW
SW
SW
INTERIOR LIGHTING
WH
BLK
GRN
Typical 125VAC 15 Amp Grounded Female Receptle
TYP. CONVENIENCE OUTLET.
MAIN DISTRIB PANEL
TYPICAL A.C. SYSTEM.


port Sidelight
Stbd. Sidelight
16 white
common (-)
supply (+)
cabin Lts.
Anchor
#14 DK. Blue
Bow
Masthd
Spreader
RUNNING
16 White
ANCHOR (OPTION)
16 Wh.
MASTHEAD (OPTION)
16 White
BOW
18 White
SPREADER (OPTION)
16 yellow
Bilge Blower Std. w/ Gas Eng
12 Green
To Neg. Comm
Negative Common #2 Block
Term. post
(Blower Switch in Series w/ Ignition)
perko Switch (Back)
To Eng Solenoid
Compass
To Alt. or charger output
Stern Lt.
Batt 2
Batt. 1
Neg.
00 Block
To Eng. Block
2 - 12VDC Batt.


3 posit. Ign. Switch
(Instrument Lighting not included.)
Oil
Amp
PANEL
Distr.
Coil
Bilge Blower Switch in ignition circuit
Basic Wiring Diagram Gasoline Engines Universal Atomic-4 (Engine & panel only)
#14 purple
Regulator
I
F
#16 white
#8 orange
F
G
A
Altern.
power supply lighting, etc.
To 'A'
To Alt. output
00 Red.
To Sol.
#4 Black
Solenoid
Starter Mot.
only with No Switch
use this lead with Batt. Switch
to (+) side of addional Batt.
PERKO SWITCH (BACK)
Ground to Engine
12 vdc Batt.
to Eng Grnd
00 Black
(also See two Battery Arrgt')


Compass Lt.
Wiring Diagram
Basic Diesel Engine
(Perkins 4-107)
(Engine & panel only)
Inst.
Start
Amp
SW
on
off
No. Black
No. 10 Red
No. 10 orange
No. 8 purple
Light
Input
TACH
+
-
Fuse for Alt. Field.
Oil press
J.W. Temp.
PANEL
10 Black
Cond.
14 Brown (Perkins)
14 purple
10 Red
Regulator
4
3
2
F
16 Blue
16 Tan
SW 353-Z
SW 362 AH
(Perkins)
16 Green
16 Gray (perkins)
F
R
B
G
10 orange
16 Black
16 white
Solenoid Coil Conn.
00 Red.
+pos.
12 V DC Batt.
-Neg.
Starter
00 Black
Ground to Eng. Block
(also See two-Battery Arrgt)

Typical Engine Is Similar to that Shown - Engine shown is perkins 4.107 with Reverse – Reduction Gear. Universal Gasoline Engine is similar except for the throttle cable, which leads to a carburetor, and does not use a fuel shut-off cable for stopping.



12 VOLT D.C. PANEL