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Vessel Operations

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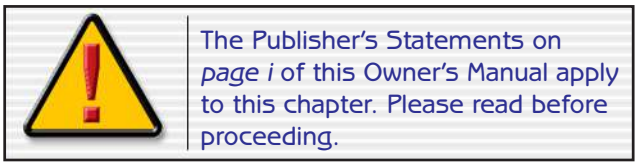


This chapter provides an overview of vessel operations and basic inspection and monitoring routines necessary to safe and reliable boating.

Major Topics:

Vessel Motive Power

Before leaving the dock various checks of mechanical equipment on the boat must be made to ensure the safety of all aboard. Some of the checks also apply when leaving an anchorage. On a boat you should never take anything for granted.

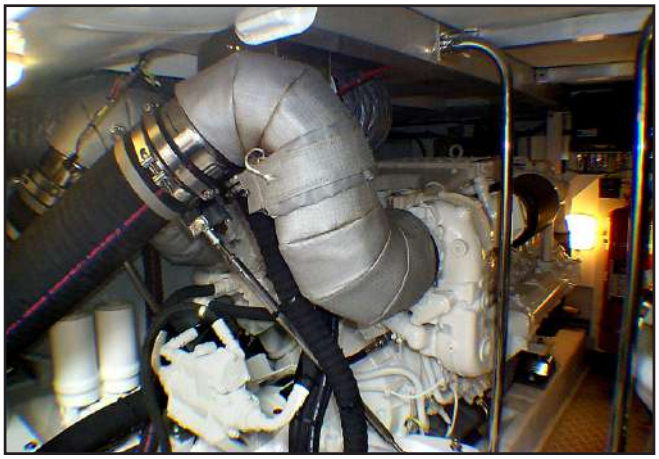
Engine room checks should be done first, in case a problem is found that requires your attention or marina service that could delay your intended departure time.

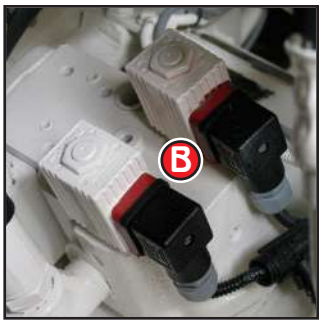
Viking 61FY is equipped with twin MAN D 2848 LE 403 V90° 8-cylinder 4-stroke marine diesels. They feature direct injection and turbochargers with intercooling and a wastegate. Bore is 128 mm and stroke 142 mm (5.04 x 5.59 in) The governor is mechanically controlled, with maximum revs of 2300. Power output is 800 brake horsepower (bhp). When idling or under low load, half the cylinders switch off. The wastegate gives improved acceleration capability.

These engines have low fuel and oil consumption and require minimal maintenance.

The engine and marine gear controls are Rexroth BJ system with Type 240 control head A and a BJ throttle servo motor to operate the push/pull cables for the mechanical governor. The clutches are solenoid operated, B. Engines drive a Twin Disc marine gear, MG 5114A. Specs in the MAN *Fuel, Lube & Coolant* manual require various brands of oil and coolant. Sump capacity is 3.7-4.8 gal U.S. (18 L).

Both engines are equipped with 28 volt alternators. Once the engines are switched on the alternators are triggered to produce from 55 to 120 amps at 28 volts, depending on engine revs.





Pre-Voyage Inspection – Engine Room

Enter the engine room via the cockpit hatch.

Check port and starboard Vetus strainers, S. Look through each lid to ensure they are clear of weeds and debris. If not, close seacock V; unscrew and remove the six bolts B securing the top of the strainer. Remove debris completely and replace the lid – ensure it is properly screwed down tight. Open seacock V and check for leaks around the lid.

Next, check the forward engine room bilge, BP.4. Look for traces of oil – if found, the source must be discovered and corrected. If water level in the bilge is above the Rule-A-Matic housing the pump is not switching on (check breakers). Assuming bilge water is not excessively high, test the the pump and switch by turning knurled knob K to lift the float inside the cage. Pump should start and remove water from the bilge until it sucks air. Hose M is a manual pickup connected to the emergency manual bilge pump in the aft cockpit.

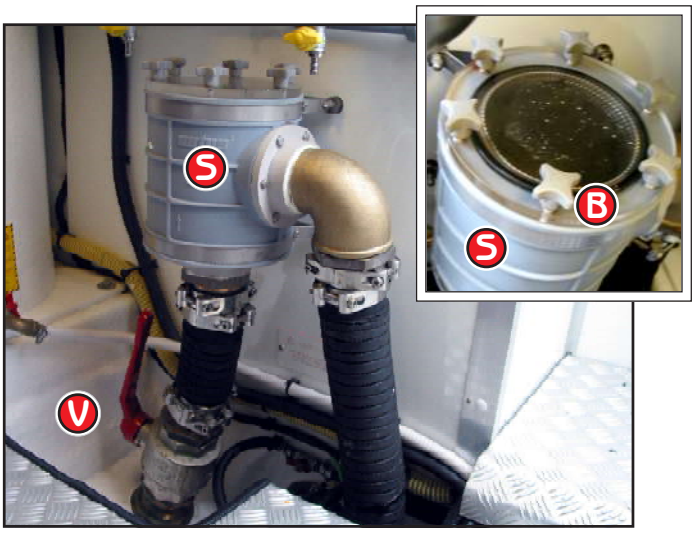
Check the bilge and under both engines for oil or coolant leaks. Walk aft inspecting engines for oily marks and stains from coolant leakage.

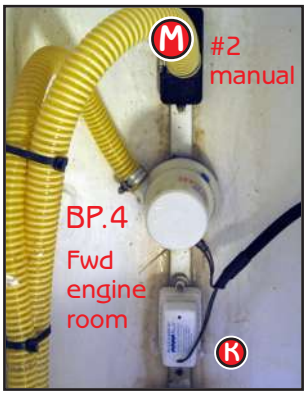
Check coolant level in expansion recovery tank (if installed). To check actual level, WHEN COLD, remove cap C. Level should be 1/2 inch below the internal screen, below the filler cap seal. If not, coolant must be added. (Normally, it will not go down very much, if it does you may have a leak). Do not overfill header tank. Capacity is 96 litres. Texaco Extended Life (ETX 6024) antifreeze mixed 40% MINIMUM to potable water is one of the options in the MAN booklet. NEVER use water ONLY.

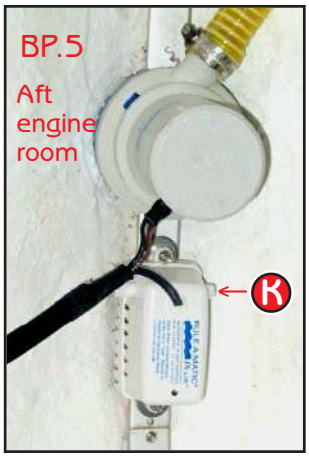
Look at the gauge E on top of fire extinguisher bottle. The needle should be in center of the green area.

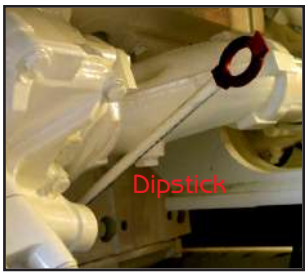
Check the oil level. It should be halfway between MAX and MIN dipstick notches. If not, top it up, but DO NOT OVERFILL. If overfilled, the connecting rods could rotate into the oil, actually causing a lack of oil to critical engine parts, resulting in severe engine damage. Top up with one of the oils listed in the MAN booklet. Oil change capacity is about 7.7 U.S. gallons. Change oil at 200 hours or yearly. Oil is the lifeblood of an engine – NEVER delay an oil change.

Note:- Environmental laws prohibit fuel oil contaminating waterways. Be responsible in disposing of discarded fuel and oil. Inspect for engine room oil leaks.

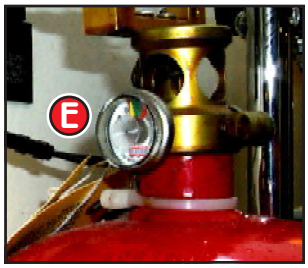








Check coolant level here (if a bottle is installed), but DO NOT top up here.



Aft engine room checks

At the stern, check the Twin Disc marine gear oil level. Normally this should be checked when the oil is hot. Dipstick level when hot, *2 minutes after the engine is stopped,* is between high and low marks . DO NOT overfill. One oil recommended is Shell Rotella-T SAE 30 or 40. Do not use multigrade oil. Remove vent plug D with a wrench to top up oil level.

Check propeller shaft and Tides self-aligning shaft seal. A nitral lip seal prevents entry of seawater into the engine room. Salt from the ocean is very corrosive and the seal stops it. No water should be visible here. The black hoses carry cooling water from the engines to lubricate the seals. The hoses should be firmly attached and no leaks visible when the engines are running. *It is essential that the valves supplying cooling water to the tubes be open.*

The black disc at left C is a carrier kit containing a replacement nitral lip seal in case one gets damaged or leaks. Replacement can be done with the boat in the water. Consult the Strong Seal documentation for instructions.

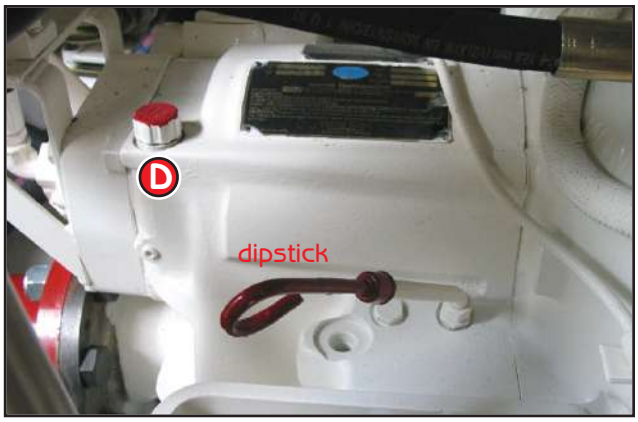
Graphite bonding brushes B make contact with the metal shaft and protect propellers and thru-hull fittings from corrosion. Wire W leading from it connects to the bonding system and external sacrificial zinc anodes. The shaft MUST be free of dirt and seawater deposits under the brush.

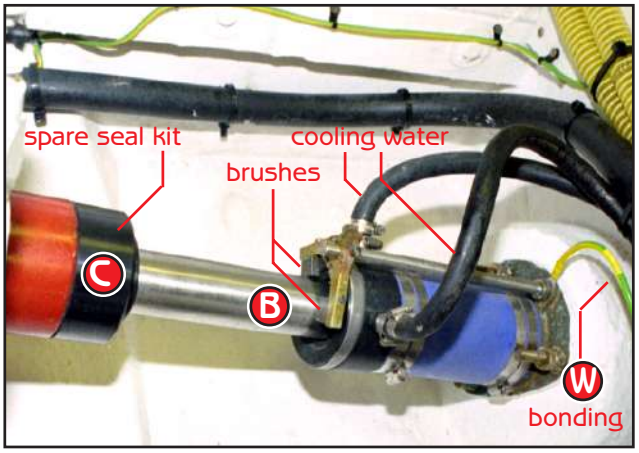
Check Port and Starboard Separ fuel oil filters. Ensure that the "clear bowl" at the filter base is indeed clear. The fuel should be a clear amber color. A little water at the base is okay unless you have a long voyage ahead. If the bowl is not clear or shows excessive water, the filter needs to be serviced – see Fuel System chapter for details on servicing the filter, also look in the Separ filter Owner's Manual.

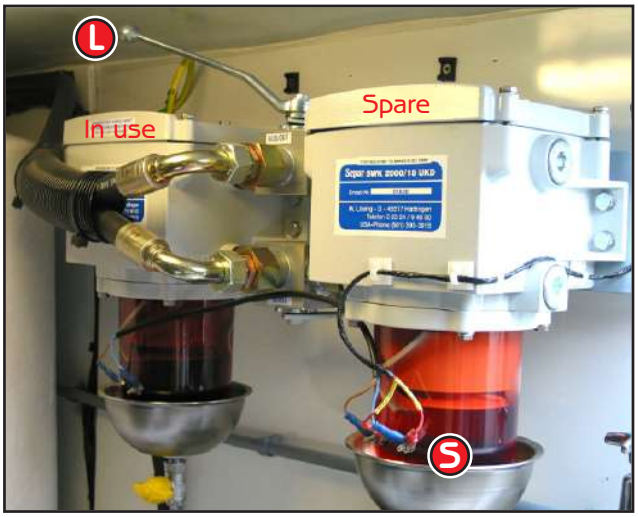
Selection lever L engages either filter to supply the engine. Normally the vessel runs on one filter of each pair (enabling the closed filter to be serviced if needed). For extensive running at high speed it might be advisable to have the selection lever in the center, thus drawing fuel from both filters to avoid any chance of fuel starvation.

Water sensor S triggers a warning at the helm if collected water reaches sensor level. If the alarm goes off the water must be drained as soon as possible.

Aft engine room bilge pump, BP.5 This is under the last hatch in the engine room floor, by the aft bulkhead. When the boat is at rest and level there should be no bilge water here but as the boat comes on plane bilge water can run back. When water declines to just above the base of the pump, pump will stop. It would pump only air if it did not switch off.







Separ filter pair

Select one filter for use by moving lever L all the way towards it. The other filter is your spare.

Aft engine room checks, cont.

Keep the engine room clean, this makes it easier to see leaks, which indicate a problem that must be addressed. There should be no oil on the outside of or under the engines. Use a funnel when topping up the oil level. Do not overfill. Keep the level a little below the FULL mark. Overfilling can damage the engine.

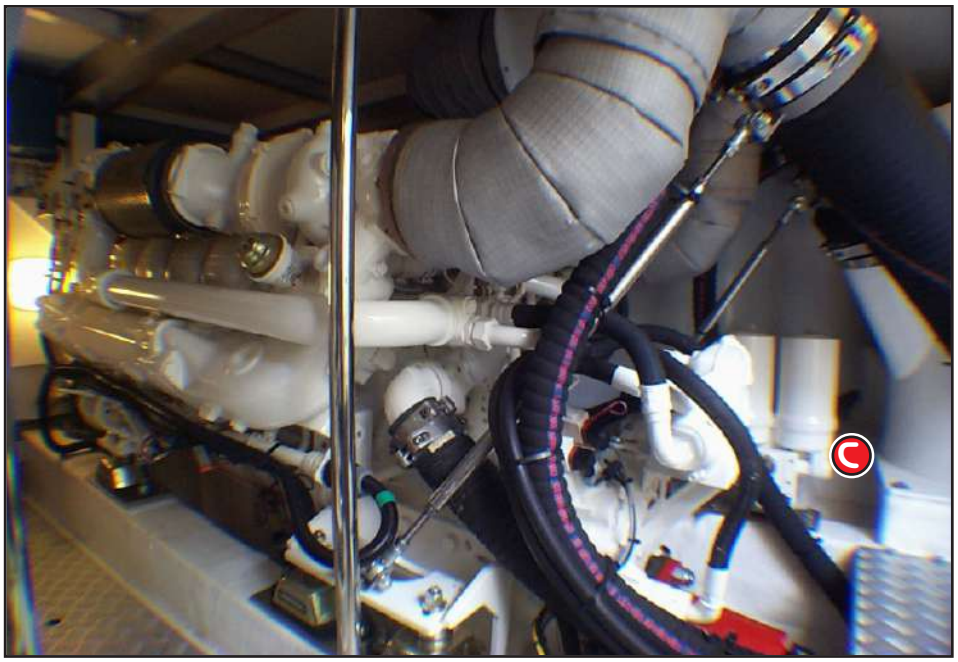
Check for leaks on all fittings that have hose clamp attachments, at the base of oil filters C, on the outside of the Separ fuel filters, lids of raw water strainers etc. Check the outside of the engine air filters M, look for oil on the outside of them. This will indicate that the filter must be replaced.

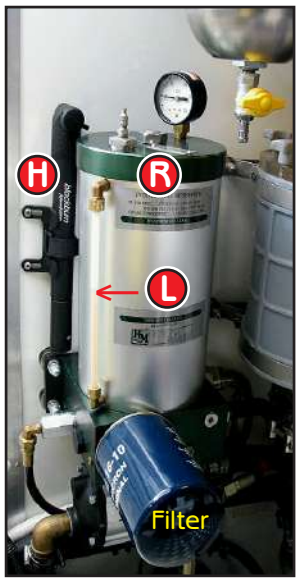
At least monthly open and close the engine raw water inlet valves V. On a long voyage, every two hours slow down, don ear muffs and look into the engine room for obvious signs of leaks, fumes, odor, smoke or a different or excessive noise.

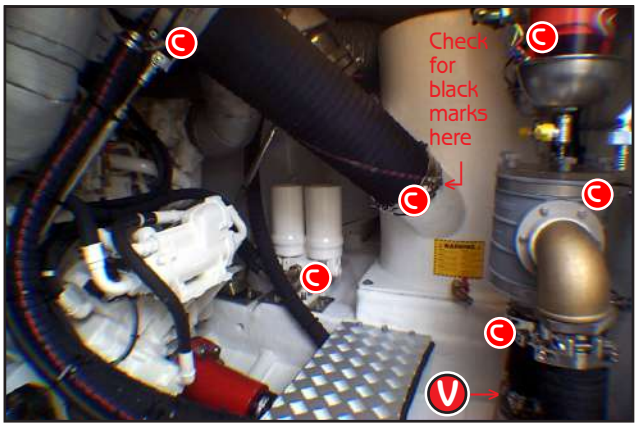
See propulsion chapter for more information.

Power steering reservoir, R

Check oil level in sight tube L. Check for oil and air leaks. Air pressure should be between 20 and 30 psi. If lower than 20 psi use hand pump H to increase pressure to 30 psi. See the Subsystems chapter for more information.







Engine water lift mufflers

Water lift mufflers are installed on all Viking boats. They result in a very quiet running vessel, allowing normal conversation when underway.

Inspect the white fibreglass for black marks, which may indicate exhaust gas leakage caused by a loose hose clamp. *This must be attended to* as deadly carbon monoxide gas can seep through the vessel.

Use a SHORT 5-inch ratchet and the correct size socket to see if the bolt in the clamp is loose. DO NOT USE EXCESSIVE PRESSURE – the fibreglass piping can be deformed resulting in a serious exhaust gas leak.

Warning:- Do not store loose or flammable materials, equipment, or gear in the engine room. Objects must be prevented from falling on the engines. Do not obstruct entrance to engine room.

Pre-Voyage Inspection – Lazarette

There is very important equipment in the lazarette. It must be checked before a voyage. Lift off cushions on bench for access.

Check bilge pump, BP.6. This is under the first floor panel aft of the entrance ladder. Check operation of system by lifting float with knurled knob A. Pump should start. After 30 seconds the high bilge level alarm should sound. If system checks out, return float switch to normal with knob A.

If you intend to use the generator, check it next. First, look through the transparent cover of the strainer D. Any debris must be cleared:

1. Close the generator seawater thru-hull.
2. Remove strainer lid, and clear out all debris.
3. Replace the lid.
4. Open the thru-hull; check for leaks.

Check the generator coolant recovery bottle C (outboard side of generator). If needed, top up with diesel truck antifreeze – Zerex or Prestone with Alumaguard. Mix with water, ratio depending on the vessel's normal location.

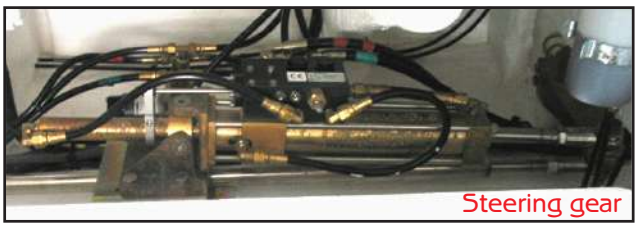
Check the oil level, top up with SAE 30, 10W-30, or 15W-30, depending on climate (see Onan Owner's Manual).

For convenience, the generator is usually started from the salon main panel. But starting from the GenSet Panel, K, enables you to check the instruments to monitor its performance. After starting check that seawater discharge out the exhaust is normal (aft stb). Note:- If any of the GenSet breakers B have tripped it wil not start.

Check water lift muffler W for any sign of loose clamps or leakage of exhaust gas (usually indicated by black marks).

Check the Sea-Fire extinguisher F to ensure it is fully charged, J (on green). If it has discharged for some reason this will be obvious by looking at the discharge head.

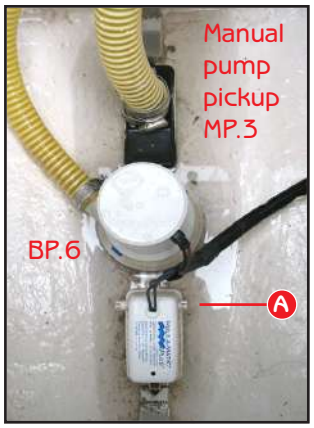
Examine the steering gear, ensure all is in order with no oil leaks or loose parts, etc. Also be sure there is no stowed gear that could move and foul the steering mechanism.

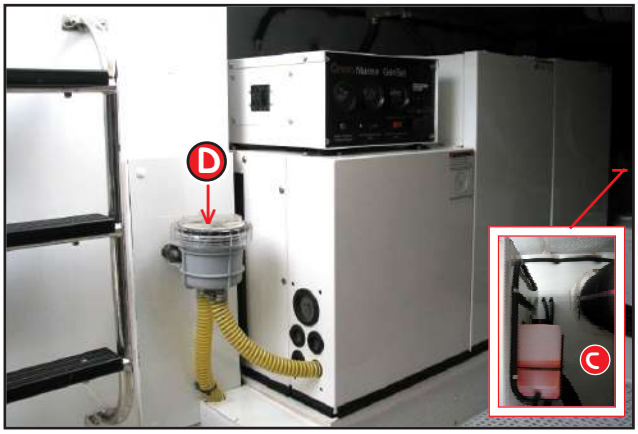

Steering gear

Bilge pump 6

Twist knurled knob A and hold for 30 seconds – bilge pump should start to run and high bilge alarm should sound.

Pump is below first hatch aft of the entrance ladder. The generator seawater pickup G is below the next hatch aft.





Getting Underway

Go through the vessel closing all catches, cupboards, drawers, doors. be sure to lock the shower doors. Close and secure all portholes and hatches. Store all loose equipment, lamps, ornaments etc. Open all blinds and curtains on the salon deck. Have you enough fresh water, and *more* than enough fuel for the intended voyage? Is the anchor safety strap in place? Have you checked the weather report and sea conditions? Binoculars and charts at the helm? If all this is done it is now time to start the generator if it will be used underway.

Master battery switches

Turn on ENGINE START BATTERY switch E – the engine batteries will now deliver power to start the engines. Voltage on the meter should be about 28.4 V with the battery charger ON. Engines will not start if voltage is below 23 volts. All the time the engines are running ENGINE START BATTERY switch E MUST be on. When *not* running the engines, switch it off for safety.

The master switches for both ENGINE START E and AUXILIARY BATTERY (i.e. house batteries) H output remotely through a high amperage contactor/isolator in the lazarette, which actually switches the power on or off. *There must be no load on the circuits when activating the master switches.* Any load will produce sparking and contact burning.

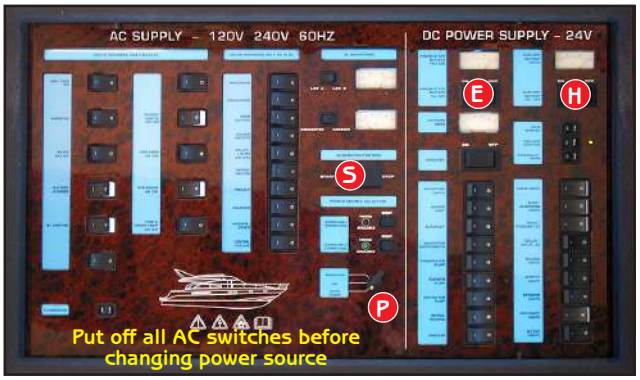
To start the generator

Before starting, conduct usual pre-voyage checks of fluid levels and strainer.

1. Ensure GENERATOR SWITCH K (in laz.) is ON. Push right side of GENERATOR button T for preheat. Hold for 10 seconds.
2. Push START button S; generator will start. When it does, *release button.* Let it run a few minutes with no load. A red LED on the switch will indicate the generator is on.

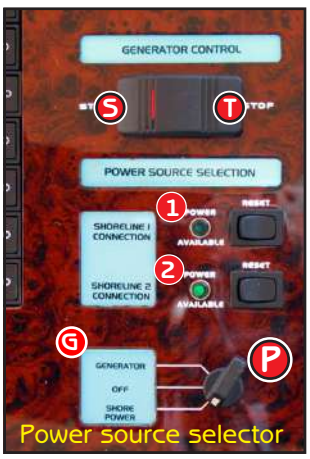
   Note:- If it won't start after holding in the button for 20 seconds, let it go. Try again after 30 seconds minimum.
3. PUT OFF ALL AC SWITCHES.
4. Turn rotary power source selection switch P to off. SHORE LINES 1 & 2 lights stay lit until shore lines are unplugged.
5. Turn switch P to GENERATOR G. Shore lines can be unplugged and stowed at this point (lights 1 & 2 will go out).
6. Check flow of cooling water discharge. Apply loads progressively as required. Check that AC voltage is normal.

When switching back to shore power reverse the procedure, except generator shut down is by pushing the STOP T button.



Generator switch

This 'kill' switch in the lazarette switches current from the dedicated generator start battery.



Power source

As shown here, the vessel is on shoreline 2 only and the generator is running (red switch light glowing).

ALL LOADS MUST BE OFF to start the generator or to switch between Shore Power and the Generator.

Final preparations – Disconnecting from shore services

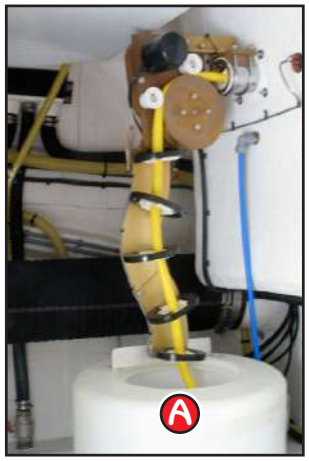
Having switched off all breakers on the AC panel, some captains consider it good practice to now switch off the SHORE SUPPORT breakers Q in the lazarette.

Make sure all 24 VDC breakers for household services are off then switch on AUXILIARY BATTERY, H.

Disconnect both shore power cables. Wind them in with the Glendinning Cablemaster. Assign two crew, to ensure the cable doesn't snag or fall in the water. When cable is fully into its housing screw down the lid to protect it from seawater.

Remove shore water pressure hose and stow safely. Replace cap on vessel shore water inlet. Switch on fresh water pump O. Check that you have pressure water coming out of the faucets

Check that all NAV lights N are working. Chart plotter should have all required courses entered ready to use. Navigation and electronics equipment should be switched OFF while starting engines.

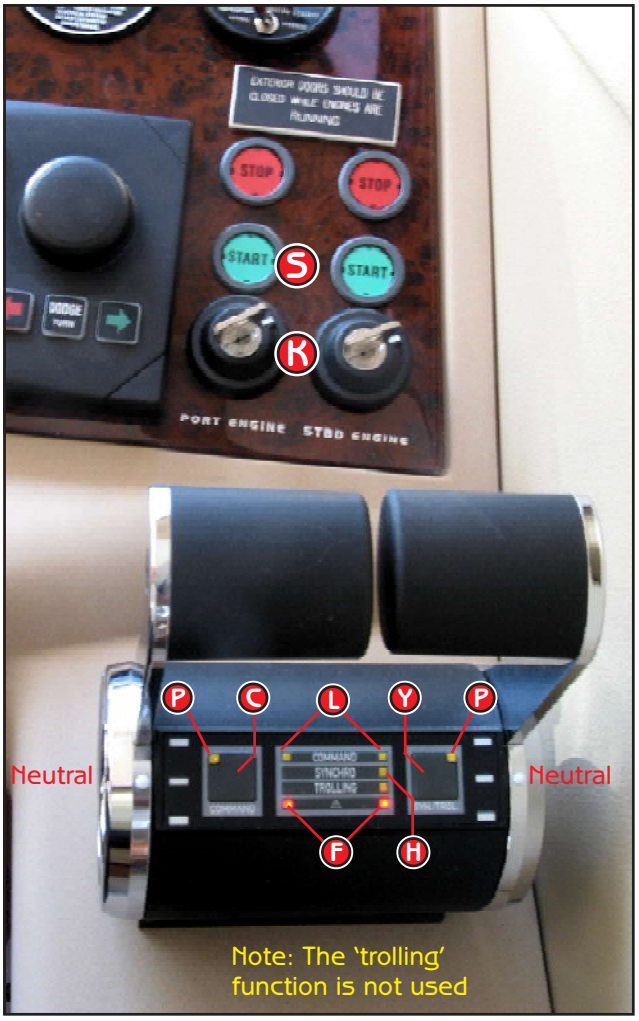


Now it is time to start the engines

Your iinitial start must be from the Salon helm – thereafter, engines can be restarted and stopped from the Bridge. Exept for keys, procedure is the same for engine stop and start at either helm.

Mannesmann Rexroth controls – BJ system

This is a brief description of how to operate Rexroth engine controls. See the *Marine Technique* operating instruction manual for more information. For other features and details refer to the Propulsion chapter in this manual.



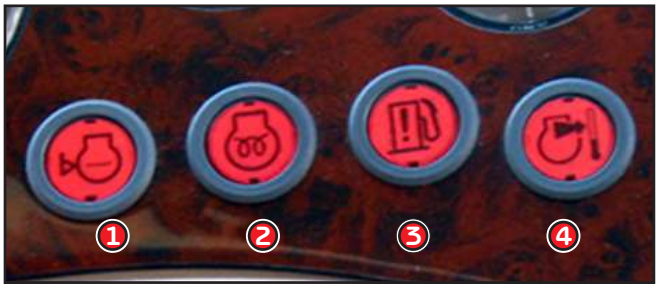
To engage controls:-

1. Put both Salon & Bridge control heads in the NEUTRAL detente position.
2. Switch on BOTH ignition keys K. A loud alarm will sound and the two red fault lights F on the control head will glow brightly. This is a self-test. The yellow POWER ON LEDs P in each corner will also glow.
3. Push COMMAND button C to acknowledge and cancel the alarm. Both yellow COMMAND LEDs L will light up. A short BEEP tone will be heard – indicating you have command at this station.
4. Start each engine individually by pushing briefly on the green start buttons S. A warming up mode is available if required.

To transfer stations:-

5. Put both station control heads in NEUTRAL. Go to the new station and push COMMAND button C. A beep will sound; the yellow COMMAND LEDs L will glow.
6. You now have command at the new station, and both COMMAND lights L stay lit.
7. To engage engine sync both P & S control levers must be under command and ahead at cruise range (1000 rpm to full revs). Push SYN/TROL button Y. The SYNCHRO LED H will light. Port engine control is the master. To disengage push Y once. If the control head is moved out of range, sync deactivates.

Salon Helm Switches



Engine warning lights

1. Engine coolant low
2. Engine preheat on
3. Water in fuel
4. Exhaust overheat

Note:-

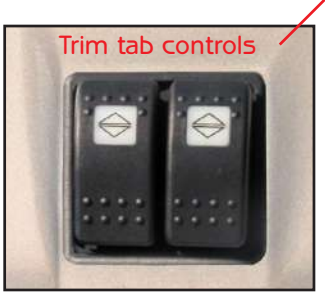
At high revs low coolant or a worn or damaged impeller will result in not enough cooling water going into the heat exchanger, causing the engine to heat up.

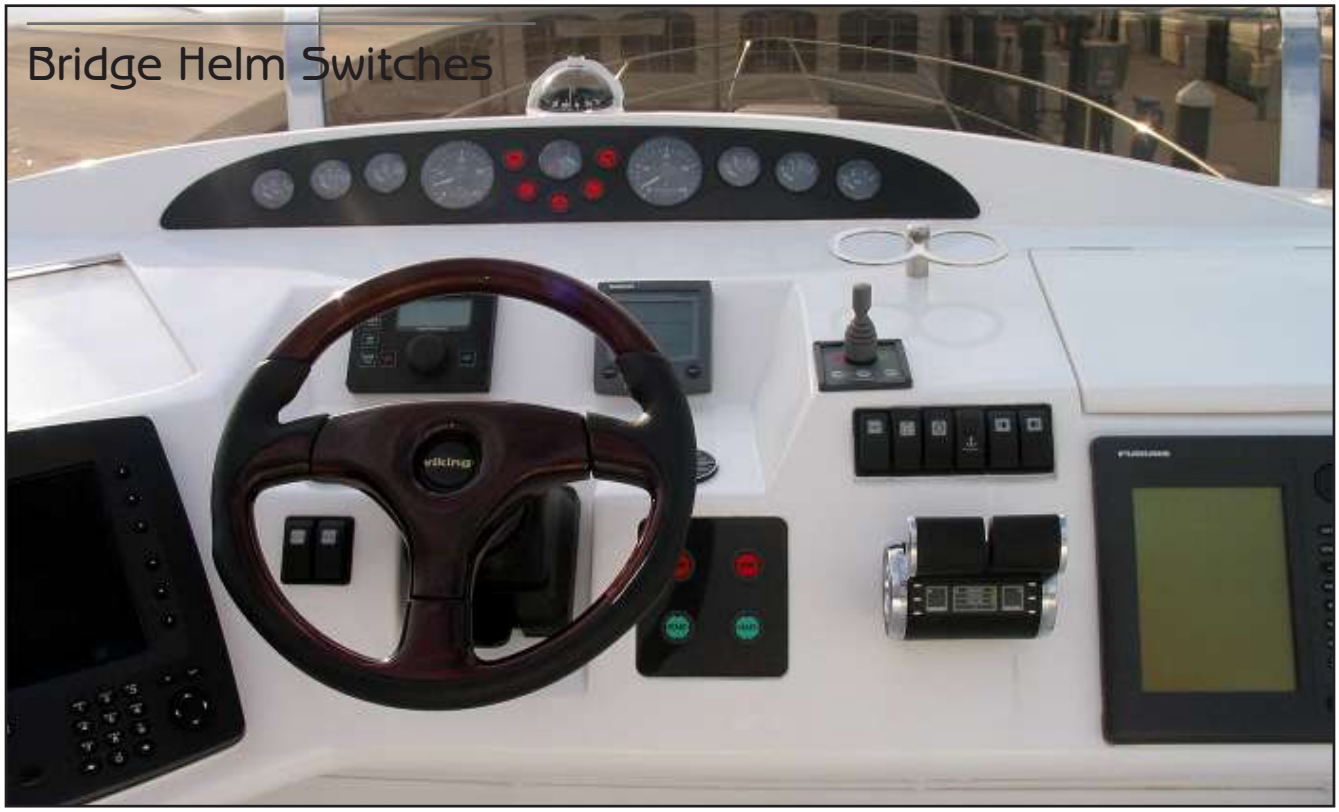
Salon helm switches

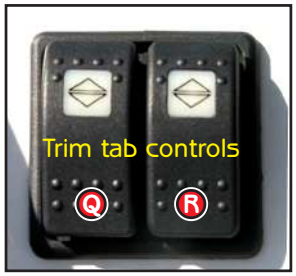
A. Windshield wiper #1
B. Windshield wiper #2
C. Windshield wiper #3
D. Windshield washers
E. Bilge pump #1
F. Bilge pump #2
G. Bilge pump #3
H. Compass light
J. Navigation lights
K. Instrument lights
L. Electric window
M. Windshield demist
N. Horn
O. Anchor windlass
P. Windlass lock

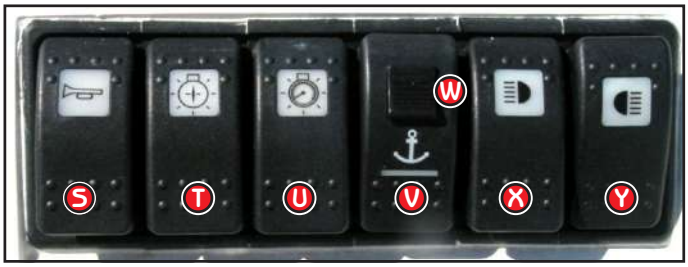
Trim tabs

Located at stb, aft of control levers.Push top edge to put bow down; bottom edge to raise bow.









Note

Switches shown are a typical installation. Your vessel may differ.

For a closer look at icons and what they mean see the Introduction, page 2.

Bridge helm switches

Q. Port tab up/down
R. Stb tab up/down
S. Horn
T. Compass light
U. Instrument lights
V. Anchor windlass up/down
W. Anchor windlass lock
X. Helm lights
Y. Helm lights

Warning lights

1. Exhaust overheat
2. Engine coolant low
3. Bilge pump running

Cruising

If going out on the ocean on a long trip, inform the Harbor Master or other responsible person of your next port or anchorage and expected arrival. Check the weather forecasts before leaving. On Florida's East Coast remember the south-to-north Gulf Stream can be very rough if the wind blows opposite to it. Upon leaving the dock, remove lines and fenders and stow them safely. Switch off BOW THRUSTER ENABLE in case it is accidentally activated. Doors to the deck should be kept closed and dogged down when underway. Watch your wake near shore and marinas. If passing another boat in a channel, let them know, keep your wake down as you pass. Be aware of other boats and where you are on the water. Observe Manatee areas. Keep a sharp lookout for lobster traps, they often intrude into buoyed channels

As in your car, you should AIM HIGH when steering, scan from half way up to the horizon. This gives you time to take evasive action if needed. Scan the danger area OFTEN, between 10 and 2 o'clock. Don't slow down without looking behind. Again, as in your car, a prime rule, YOU GO WHERE YOU LOOK so LOOK WHERE YOU WANT TO GO. If you stare at something, you'll likely end up on top of it.

At sea, monitor the weather and adjust speed to suit sea conditions. Observe speed limits. Good seamen avoid extreme weather by heeding gale and heavy thunderstorm warnings. If you have any doubts about your position, particularly near shore, slow down until you know where you are.

Check engine room,with ear muffs on, every two hours or so on a long voyage, for smoke, leaks, smell or excessive noise. Scan engine displays frequently for deviation from normal. Once familiar with the normal positions of all instruments you can tell if potential problems are developing. Make a note of them; attend to them promptly. Don't let service problems build up.

Monitor instruments often when underway

Engine management

Cruise at the engine revs you find best for comfort and fuel economy. DO NOT RUN FULL REVS CONTINUOUSLY – no more than 5 minutes in every hour is typically recommended for maximum engine life.

At high speeds NEVER pull back the throttle quickly. Reduce speed gradually to give a better ride for passengers, and to allow the following wake to reduce.

Coolant operating temperature should be 180-185°F, and not exceed 190°F. If an impeller is worn or damaged coolant temperature at high revs will go past 190°F and trigger an alarm. Slow to below 2000 rpm and temperature will drop. Oil pressure depends on revs and grade of oil. Get to know "normal" and monitor the gauges.

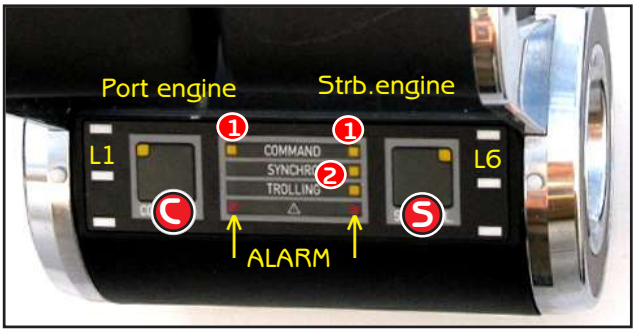
Mannesmann Rexroth BJ system controls

Changing stations

Changing stations is best done with the engines in neutral. It can also be done with throttles at dead slow.

- At your old station, put BOTH the throttles at neutral or revs at dead slow.
- Go to the new station and position BOTH the throttles to match the throttle position of the old station.
- Push COMMAND pad C TWICE on the new station. A short BEEP will be heard. Both lights 1 will light up at new station and will stay lit, and go out at old station. You now have command at the new station.
- There is a delay of a few seconds before control transfers to the new station (which makes it possible for you to do this on your own). It is advisable to have a lookout at the old helm station to watch for any problems and to steer if you are not on autopilot.

Both throttle levers must be in the same position, or in neutral to engage sync.



Engine synchronization

- To select sync. BOTH Port and Starboard throttle control levers must be in the command position and ahead, and revs within the cruise range, 1,000 rpm to maximum.
- Push SYNCHRO pad S. PORT engine will now be in command. Light 2 will light up. Stb will be the slave, only Port thottle needs to moved to alter revs on both engines. Push button S to deactivate, or to activate again. If either thottle lever is moved out of range, then sync will deactivate.

Changing direction suddenly

- To protect the marine gear and achieve the quickest stop a delay is necessary between fast forward and astern. This is set at the Princess factory to M.A.N specs, 10.5 seconds MAXIMUM. The delay interval can be adjusted, but decreasing the delay will NOT achieve a quicker stop. DO NOT CHANGE THIS SETTING.
- Upon a Full-Speed Reversal (typically, an emergency) the engine(s) decelerate but stay in gear until engine speed drops to idle. A pause follows before throttling to the commanded speed in the new desired direction (pause is proportional to prior control head lever position).

Neutral "Fast Idle"

This feature is useful to increase revs for engine warm, or to increase alternator output above idle. You must be very careful, and BE SURE that gear is in NEUTRAL before increasing idle rpm. To activate, with engines running at normal idle:

1. Controls in NEUTRAL detente.
2. Depress & HOLD TRANSFER button C.
3. Move one or both control levers to AHEAD detente position. A short double beep will be heard. Both Lights 1 will blink. Release transfer button C. The transmission now remains in NEUTRAL. Further movement of the control(s) will increase rpm to desired level.
4. To reset controls to normal:- Return control lever to NEUTRAL detente. Indicator lights 1 will remain steady.

Note:-. If increased revs are required for warm up at the dock, ensure that vessel is very securely tied up to the the dock. While in this mode make sure that no one can move the controls accidently.

Using the trim tabs

In port:– Tabs should be fully lifted in port, and at a dock.

In heavy seas:– Use tabs to keep bow down in heavy seas. In the case of *following* heavy seas, tabs should be lifted.

Climbing onto plane:– Do not deploy tabs until you are about to accelerate onto plane. During acceleration, add tabs in short bursts as vessel comes onto plane. If tabs are overtrimmed the bow will plow.

Cruising:– In normal seas, watch the bow wave as the vessel is trimmed – at proper trim the bow wave and spray will move forward and wake will be reduced. Do not overtrim – especially at speed! Usually a power cruiser will plane most efficiently when the hull is trimmed four degrees from horizontal, bow up, stern down. This gives optimum handling characteristics and improves fuel efficiency. The trim will change as fuel load changes and passengers move around.

Coming off plane:– After the vessel has settled off plane, or when operating at displacement speeds, lift the tabs.

Correcting a list:– If the port side is too high or too low, push the control for PORT TRIM, up or down in small bursts to correct the situation. Confusingly, the PORT TRIM control operates the STARBOARD trim tab and *vice versa*. The tab on the starboard side lifts the starboard stern, which lowers the port bow to achieve the desired balance. Though tabs operate in reverse of what you might think, it works! Look at the horizon when operating tabs to judge the amount of tab required.

Using the bow thruster

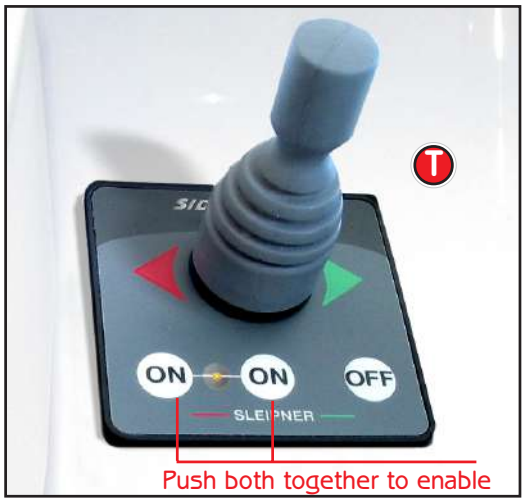
The Side Power electric bow thruster is designed for intermittent use. Viking Sport Cruisers recommend 20 seconds maximum of continuous use. More than this and the motor will rapidly heat up and the fuse may blow. In practical use, with twin propellers at the bow, 20 seconds is more than you need. The main function of a thruster is to assist leaving and coming up to a dock. Although you can use the twin engines to move the stern in an arc, the thruster enables you to move the bow in an arc as well and makes docking much easier if the wind is off the dock.

The thruster tunnel is integrated with the hull to ensure the best possible waterflow for the thruster and to avoid turbulence and cavitation.

The thruster is supplied with 24 V DC power from the engine batteries, and with the engines running full voltage is available. For safety (in case accidentally touched) it is important to "enable" the thruster only when it is about to be used. When not in use it should NOT be enabled (i.e. OFF).

Trim tabs

- *Deploy tabs before climbing onto plane.*
- *In heavy seas, keep the bow DOWN.*
- *In following seas, keep the bow UP.*
- *Running an inlet, use neutral tab position.*
- *DO NOT overtrim at high speed; the bow may dig in and cause the vessel to veer.*
- *Do not reverse with tabs deployed.*
- *In port, and docked, have tabs fully lifted.*



Bow thruster control

Use bow thruster T in small bursts only. Long bursts quickly build up momentum that can slam the vessel into a dock. Watch out for swimmers before using. Enable ON only when in use.

Using the Lewmar windlass

The master WINDLASS switch B (on Salon DC panel) should normally be off until you are about ready to anchor. If possible drop and retrieve anchor with the help of a crew member on the bow who can view the situation better than you at the helm (especially the Salon helm). Look at your chart to see if it is a designated and safe anchorage and the bottom will hold. NEVER anchor over a coral reef – you could face a hefty fine. It is sometimes better to temporarily drop an anchor then take your dinghy to find a protected spot inside an inlet, then take the vessel to it.

To anchor

Switch on WINDLASS master B. The green LED will glow.

Remove the anchor bridle C if installed. Release chain stopper. Ensure anchor is clear to lower. Come up to the anchorage, into the wind if possible. Watch for swimmers. Ensure other vessels have room to anchor, and you have room to swing. Be aware of water depth and tidal changes.

Stop the vessel. When ready, hold down spring-loaded switch lock D to permit use of windlass rocker E, then push the top of rocker switch E to drop the chain. Momentarily go astern as the anchor drops, or let the wind carry you back. Pay out chain to about 3 times water depth. When you let go of lock D it springs back to prevent switch E from moving.

When the vessel stops and it appears to be holding, give a short kick astern to set the anchor. Look at landmarks to see if the vessel stays in place. If not, you must reset the anchor. Check the depth finder and set it to ANCHOR WATCH mode. Drop the chain stopper S onto the chain to take strain off the windlass. Fit anchor bridle C if provided. Switch off WINDLASS master B. Ensure the vessel is not swinging into another boat or into shallow water.

To weigh anchor

Remove anchor bridle C if fitted. Start the engines. Switch on WINDLASS master B. Enable bow thruster. Release the anchor chain stopper.

Depress lock D and hold it down. Idle up to the anchor position, raising the chain as you do with switch E. When you are right over the anchor it should let go; if not, nudge the vessel ahead to get it to release. The thruster may be required, depending on the wind.

When the anchor is home, release D to lock the windlass rocker E. Now lock the chain in place with the chain stopper. Fit anchor bridle if provided. Switch off WINDLASS master B.

If the anchor or chain need washing attach a hose to faucet F in the anchor locker. There is a remote control R in this deck hatch for windlass UP and DOWN if required.

For more information see the Lewmar owner's manual.

Switch lock, D

Hold down switch lock D to permit the windlass rocker switch E to move.

Anchor restraints

The type of anchor restraint (bridle C or chain stopper S) depends on the type of anchor used.

Note:- There is an 120 amp resetable circuit breaker for the windlass inside the DC distribution cabinet in the lazarette. If it trips through overload switch off master windlass enabler B. Wait, then put it on again. This will reset this breaker. Anchor may be lodged on a rock or fouled in heavy weed. Before trying again, pay some chain out. Let the vessel move to a different angle, move to over the anchor, and see if if the anchor can now be raised.

At the End of the Voyage

It is better to operate the vessel from the bridge when entering or leaving a marina and docking. If there is no current, dock into the wind. If there is a strong current, dock into the current.

Slow down to reduce wake before you approach the harbor. Have the crew position fenders, and make all lines ready.

Enable docking equipment:– Fully brief your crew on docking procedure. Switch on HIGH LOAD ISOLATION C to permit enabling of the bow thruster – the green pilot light will glow. Enable the thruster itself just before use (push the two ON buttons). If you need them, switch on SNUB WINCHES breaker B – red and green (port & stb) pilot lights will glow (no glow indicates a fault). Using the bow thruster, and a line ashore attached to a bollard, the vessel can be snugged up to the dock easily.

Idle engines for 5 minutes:– If engines are shut down abruptly the oil film the turbochargers ride on is lost, resulting in excessive bearing wear. Do not rev engines during shutdown.

Shut down:– Switch off engines. Switch off snubbing winches. Switch off bow thruster and HIGH LOAD ISOLATION switch C. Once docked, check position of fenders, attach more if necessary, and tie the vessel securely in a fashion appropriate to the type of dock. At a fixed dock, if possible, it is better to cross-tie the vessel.

Shore power

If two 50 A shore power plugs are available, run out both shore power cables D and plug them in. DO NOT let the cables fall in the water. The electrical field can injure swimmers. It also causes corrosion of fittings on your vessel and others nearby.

There are two sets of 240 volt hi-amp breakers F in the lazarette. If these have been shut off, as some captains prefer, they must now be switched on. One set protects power input from shore; the other protects output from the isolation transformer.

If only one shore plug is available either cable can be used – however, ONLY 50 amps will be available for ALL electrical needs. In this case power must be managed prudently to cut down load. For example, if all A/C units are on they draw 40 amps; with one cable, only two A/C units could be used. Restrict all other heavy loads. Watch the ammeter as load is applied and do not exceed 47 amps.

To switch over from generator to shore power, do this:-

1. Switch off ALL AC switches (load) on the main panel.
2. Turn power selector switch P to OFF (see opposite page).
3. Let generator run with no load for at least 5 minutes to cool.
4. Switch off GENERATOR CONTROL start/stop S (opposite page).

Dock voltage should be 240 VAC. It may be low – but whatever it is that is what standard isolation transformers deliver. However, the optional Charles Iso-Boost 50 isolation transformers E, if installed, correct input voltage between 175 & 210 AC, increasing volts by up to 15%.

Note that the AC busbar is split to allow input power to supply both 120 & 240V breakers.

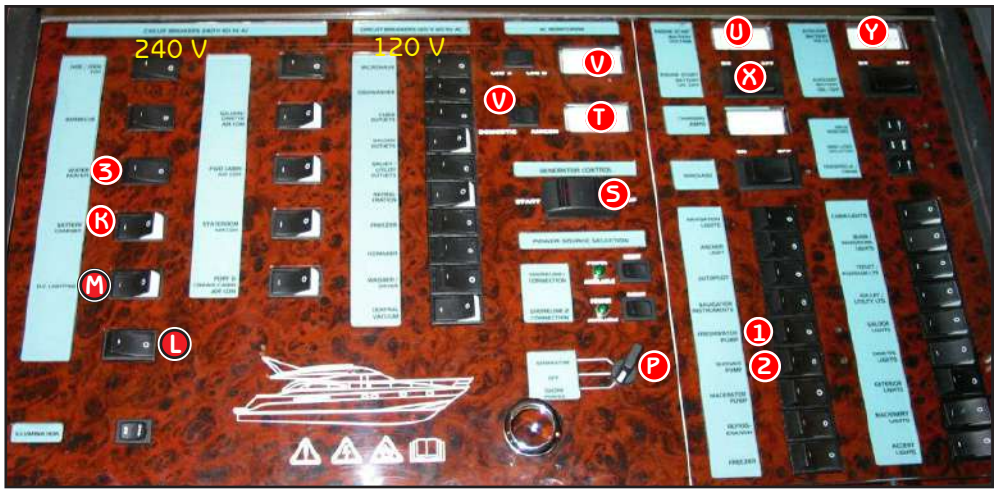
Snubber control

Crew should know where this foot switch is and how to use it (or not).

Isolation transformer

There is an identical transformer for Shore 1 and Shore 2. (Optional IsoBoost 50 shown.)

Engaging shore power



With two shore power lines connected and shore power breakers F (opposite page) on, both green POWER AVAILABLE lights will be lit. If only one shore line is plugged in just one green POWER AVAILABLE light will be on.

Ensure again that all AC breakers are off. Turn power selector switch P to SHORE POWER. Voltmeters will register voltage. With switch V on DOMESTIC, voltage on meter V should be 120. With switch V on AIRCON, voltage should be 240. Because all the AC breakers are off ammeter T will show zero amps.

Switch on the BATTERY CHARGERS K.

Switch on the DC LIGHTING M.

On the DC panel, check Engine U and House Y DC voltages; it should be about 28.0 volts. Apply loads as needed.

Start AIRCON PUMP L; activate A/C units (see A/C chapter).

When the engine room is cooler, switch OFF ENGINE START battery switch X on the DC panel.

Shore water

Break out the fresh water hose and connect it to the shore water supply. Hose should be FDA approved. The organic plasticizer in some hoses, when left in the sun, makes water taste sweet and maves it foam. Connect hose to fitting W an previous page, and to dock fresh water faucet.

When the hose is connected, switch off the FRESH WATER PUMP 1 on the 24 V panel. Ensure SHOWER DISCHARGE PUMP 2 is ON. Switch on hot water tank heater 3.

Water Quality:– It is prudent to filter all water coming aboard. Install a good filter on the dock water faucet. It should trap dirt and rust and have a charcoal element.

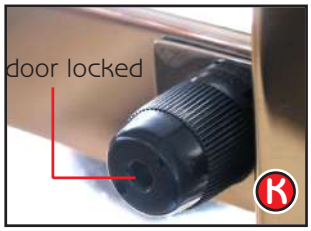
Instruct guests about Salon door

The Salon door has an automatic brake to prevent slamming in a seaway. The chrome door handle H normally points south. To release the brake and open/close the door, turn the handle H from pointing south to pointing southwest, then pull/push the door. When you let go of the handle it springs back to south and engages the brake.

Turn knob K to lock / unlock the door. The silver tip shows when unlocked.

Door mechanism

Turn to release; then pull to open.



Leaving the Vessel

When leaving the vessel, its safety is of prime concern. If you plan on being away for an extended period, as many as possible thru-hulls should be closed.

However, a record must be kept to ensure they are all opened again before the vessel is put back in service. Put a prominent notice on the helm to clearly identify what is turned off, and inform the marina where the vessel is kept.

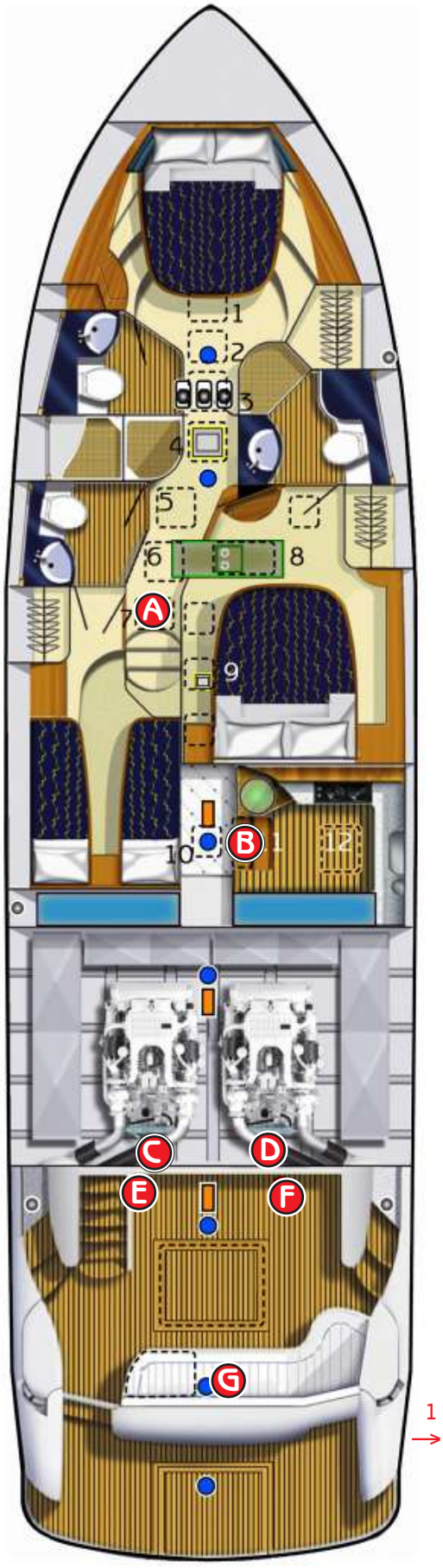
If the air conditioning is to be left running to reduce humidity someone should check it daily in case a strainer becomes blocked.

Mix and stir up a bucket of warm water and dishwasher detergent, such as Cascade. Pour some down each sink and shower, make sure it is pumped overboard from the grey water sumps. Have the holding tank pumped out. To control odor, pour a VacuFlush brand cleaner into each toilet and flush while pumpout is running. Use of anything other than a VacuFlush cleaner may cause damage to lines and void your warranty. Ensure the VacuFlush toilets switch is off.

Other items:

- Check all bilge pumps for operation. Empty all bilges of free standing water. Use the emergency bilge pump to completely empty the bilges.
- Turn off all switches not required to be left on.
- Ice makers should be turned off and emptied if left for more than two weeks. The ice will become stale and unpalatable. Fresh ice cubes can be made very quickly and easily.
- Ensure the AC shore power cable cannot fall in the water. It must be securely plugged in, and turned to lock it in the socket.
- The shore water hose should be removed and stored.
- Close all curtains and blinds.
- Fit all covers on bridge helm and seats.
- Fit windshield covers.
- Make sure all outside entrance doors and escape hatches are locked on the inside.
- If it is not a floating dock make provision when tying the vessel for the tide rise and fall.

Whenever the vessel is left unattended: Disconnect Shore Water Supply and switch off Hot Water Heater.



Thru-hull Fittings

This drawing shows the location of thru-hull fittings on the VSC 61Motor Yacht. These need to be well known in event of an emergency. Shut off thru-hull valves if leaving the vessel unattended, but make sure your marina knows their status and location.

The holding tank overboard discharge must be kept closed and opened only while discharging overboard at sea. After discharge, close it immediately.

It is essential to "work" all thru-hull valves at least monthly, preferably every two weeks. A regular open and close cycle will keep them operating freely and avoid future problems of seizing.

A - Holding tank overboard discharge

B - A/C seawater pickup

C - Depth log

D - Speed log

E - Raw water pickup, port engine

F - Raw water pickup. stb engine

G - Generator cooling water pickup

Hull-side underwater fittings

1 (stb) - Generator Discharge

It's a good idea to work the thru-hull valves off and on every two weeks so they won't stiffen up.