

Welcome aboard *Ardent*!

*Ardent* is a 2014 Beneteau Oceanis 41. She is a spacious boat perfect for cruising the Puget Sound & Salish Sea. Within the last two years she has received a new Bimini, new electrical system (AGM batteries, alternator, inverter, charge manager), macerator freshwater midship head, salon upholstery, light air Genoa, dinghy, and full bottom, hull, deck & engine maintenance.

*Ardent* is very well balanced and sails beautifully in both light and heavy air. Her new Genoa is specifically designed for the lighter air in this region. We recently moved *Ardent* up the Pacific Coast from the San Francisco Bay and experienced her exceptional heavy weather performance during the passage. *Ardent* is also equipped with a bow thruster that makes putting her in the dock a piece of cake.

Our 3 favorite things about *Ardent*:

1. *Ardent* has a huge cockpit for a 41' boat and is shielded by a large, sturdy Bimini and a dodger built onto the cockpit arch. *Ardent's* transom folds down to create a platform easy to load from the pier and great for docking your dinghy or swimming while at anchor. Perfect spot for flotilla parties!
2. *Ardent* has a modern sail plan design with the mast stepped further aft (very large "J" measurement) increasing the headsail size *Ardent* can carry without causing an excessive overlap with the mainmast common in older boats carrying 130% to 150% Genoas. *Ardent's* Genoa is a specially designed radial-cut multi-weight sail that optimizes performance in light air but still allows safely reefing when the wind picks up. This is a great combination with *Ardent's* hard chine hull which is designed to be sailed fairly flat – good news for those that don't like excessive heel.
3. *Ardent's* state of the art networked premium B&G electronics suite includes large touchscreen MFDs, individual helm instrument displays, a wireless network and even a race computer! You will be impressed by the power and user-friendliness of the 12" B&G MFD at the helm. You can also download the free B&G App and view/control the instruments from your iPhone/iPad. Compatible Nav software can also be connected and fully integrated with the B&G instruments.

*Ardent's* Primary Nuances (discussed in detail in our notes below):

1. *Ardent's* transom folds down to create a great swim platform/dinghy dock. There is a multi-step process for lowering the platform detailed below. **Please read and follow these instructions carefully!!** Improper operation will cause extensive damage and result in a large repair charge.
2. *Ardent* is equipped with a saildrive with a **left-handed** prop – she backs slightly to starboard. A potential surprise for skippers accustomed to right-handed props. Use *Ardent's* bow thruster to compensate if you don't plan ahead.
3. Never turn off the diesel engine electrical panel until the engine is fully stopped. To stop the engine, **first hold in the engine "Stop Switch" button (second from top)** until fully stopped and the alarm sounds, then **hold down the "Power Switch" (bottom) for about THREE (3) SECONDS to turn OFF the panel and alarm.**

We hope you will enjoy sailing *Ardent* and cruising the islands as much as we do. We also thank you for taking special care of her. If you have any questions, feel free to contact us or the San Juan Sailing staff.

Have a Wonderful Cruise,

Todd & Lorie Ann Morgan, *S/V Ardent*

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**Ardent Basic Specs:**

Year:	2014
Make/Model:	Beneteau Oceanis 41 (Finot - Conq & Assoc.)
LOA:	40' 9"
LWL:	39' 4'
Beam:	13' 10"
Draft:	6' 11"
Displacement:	18,624 lbs. (Dry)
Air Draft:	61' 10" ~ 63' (incl. VHF antenna)
Engine:	40 HP Yanmar 3JH5e
Saildrive:	SD60 Yanmar
Fuel tank:	53 US Gal
Water tanks:	151 US Gal
Holding tanks:	(F) 20 Gal (A) 35 Gal
EC Certification:	A8-B9-C10

**LINK to Ardent Op Manuals:**

<http://1drv.ms/1GNCOlw>

**1. Anchors, Anchor Windlass, Stern Tie Line & Anchoring Notes**

- *Ardent* is equipped with two anchors.
  - The primary anchor is a 35-pound Delta anchor on the bow anchor roller with 200 feet of 5/16" HT chain in the chain locker. The primary chain rode is marked with yellow paint – a 10' mark at 100' and 5' mark at 150'. The last 20' of chain is marked red as a warning.
  - The secondary anchor is a Fortress FX-23. The secondary rode is 18 feet of chain and 200 feet of three-strand nylon. This anchor is located in the cockpit port lazarette. The rode is contained in an orange bucket for easy movement. Please use care when moving the secondary anchor and rode about the boat.
  - A snubber rig for the anchor is located in the anchor locker.
  - An anchor buoy/trip line is also located in the anchor locker. The trip line is connected to a weight on one side of the buoy that will keep the trip line taught and the buoy located directly over the anchor. **Securely affix the trip line to the anchor crown or the rig may be lost!**

- Anchor Windlass
  - **The diesel engine must be running to operate the windlass!**
  - The breaker for the windlass circuit is located in the starboard aft stateroom near the battery switches and should always be "ON" unless tripped or mistakenly turned off.
  - The controller for the windlass is located inside the chain locker -- please leave it plugged-in and secured to the bracket with the attached bungee.
- A 600' Stern Tie Line is located on a line reel in the stern port locker (aft and below the port helm). **Do not cut this line; it is all needed for certain places in Desolation Sound.**
- *SJS NOTE: The anchor scope to use in the islands is 4-to-1 for the highest water depth you'll encounter in the spot where you choose to drop anchor. Check your tide data to determine the tidal range as the tide floods in and ebbs out during your stay. Since most coves are 15'-30' deep, expect to pay out about 60'-120' of rode. After you have paid out the suitable amount of rode, 2 minutes of reverse (in idle speed reverse) sets the anchor and tests its holding power. Note other boats and points of reference on land. Are you moving? If not after 2 minutes, you've set you anchor successfully. If you wish to sleep even better, throttle up to about 1500 RPMs in reverse for another 30 seconds to prove to yourself that the anchor is set well!*
- *SJS NOTE: For storm conditions (sustained winds of 25+ knots), extend your scope to 7 or 10-to-1, provided you have swing room to leeward. Otherwise, set two bow anchors (using the secondary anchor and rode) in a v-type (45-60°) pattern for extra holding power.*
- SJS NOTES:
  - **Deploying the Anchor.** *With an electric windlass, it is important to deploy the anchor into the water by hand. Have a boat hook ready to fend the anchor off the hull. Pay out enough slack in the chain so that you can hand-deploy the anchor into the water about one foot below the water surface. By having the anchor slightly in the water, the water will buffer that troublesome "pendulum" action that causes a partially-deployed anchor to swing and ding the bow before you get it all the way into the water with a windlass controller that you're not familiar with. Once the anchor is in the water, use the electric windlass to lower the anchor to the bottom of the bay and deploy the desired amount of scope.*
  - **Retrieving the Anchor.** *When retrieving the anchor, never use a windlass to pull the boat forward to where the anchor is set. The windlass is not designed for it and might cause serious damage to the attachment base. Instead, slowly head the boat under power toward the anchor while using the windlass to take up the slack in the chain. When retrieving the anchor, only retrieve it up to where you can see the anchor about one foot below the water -- again to buffer any possible "pendulum" action if the anchor were just out of the water. Then, by hand, retrieve the anchor from just below the water onto the bow roller. This prevents possible pendulum action, plus, if the anchor gets hung up on the bow roller and you continue to press the "up" button on the electric windlass, you will probably damage the attachment base. DO NOT use the windlass power to take up the last few inches of slack. Just take the extra chain and snug it up and hand-set the chain back onto the gypsy.*

- Take your time, the **anchor chain dropping off of the gypsy sometimes bunches up under the windlass and jams the windlass**. You might need to push it down several times (with the boat hook) to the bottom of the chain locker to prevent the chain from jamming in the windlass.
- **Securing the Anchor.** Once the anchor is on the bow roller, be sure to secure the anchor with the anchor “keeper” line. Snap the line through a link in the chain nearest the anchor, then lead the line straight back and around the drum angling the line to the port bow cleat. Secure tightly with a standard cleat knot. The chain on the gypsy on the windlass should not be the only thing keeping the anchor from unexpectedly returning to the sea bottom!

## 2. Batteries & Battery Charging.

- **CAUTION: Never turn a battery switch to “OFF” while the engine is running! This may damage the alternator diodes and your batteries will no longer charge. If this occurs, turn the switch back to “ON”, energize the engine panel then perform a normal engine shutdown and restart.**
- **Battery Charging is controlled by the Magnum inverter/charger. Because it allows charging the AGM batteries at higher voltages/rates this may cause spurious overvoltage alarms on the original equipment electrical panel display. The battery voltage alarm sound on the original electrical panel has been disabled, but an alarm message may still appear.**
- During normal operation, leave the battery switches (starboard stern cabin) in the “ON” (horizontal) position at all times. The battery charger switch on the electrical panel (#4 on the diagram below) should also remain “ON” at all times.
- Battery charging is managed automatically by the Magnum charger/ inverter whenever sufficient power is available from shore power or the diesel engine/alternator. However, YOU must ensure a power source is available for sufficient time to perform the battery charge – see below.
- The control panel is mounted just aft of the electrical panel.



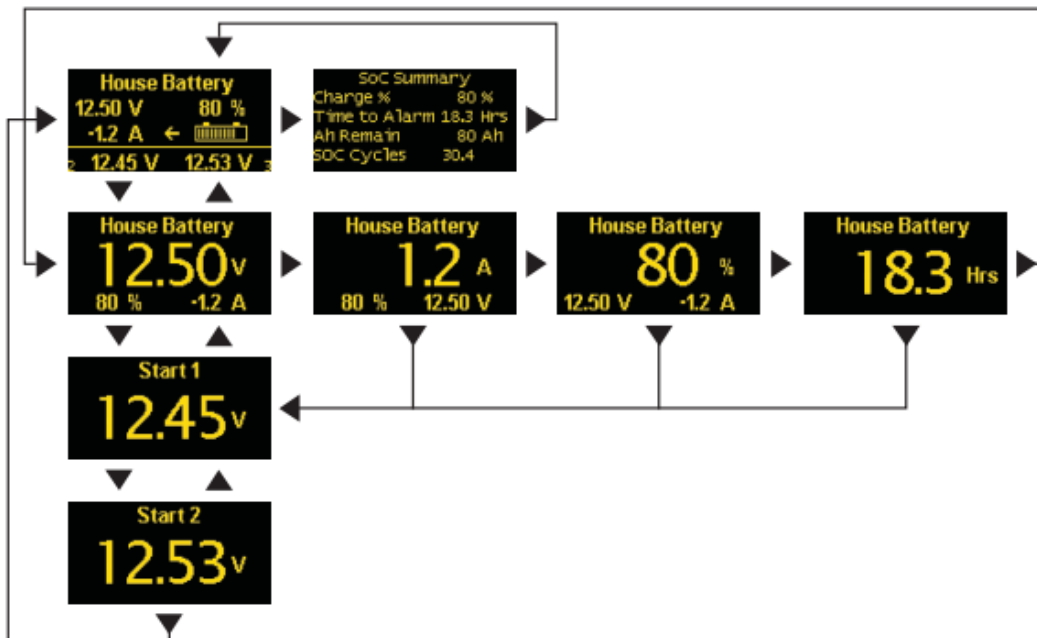
- Isolator devices on the battery busses separate the Engine Start batteries from the House batteries and from the Bow Thruster batteries, while assuring all batteries are charged

- during the battery charging process. This protects the Engine Start batteries from draw-down of the other battery banks.
- The House battery bank has 6 AGM batteries providing 660 AmpHours. The engine start battery is a single Group 24 AGM battery. A third set of two batteries serve as an electrical surge capacity for the bow thruster. The House and Engine batteries are located underneath the port and starboard quarter berths. Bow thruster batteries are located under the V-berth forward of the freshwater tank.
  - For emergency operations, a battery bank cross-connect switch (red/white) is located just inboard of the battery breakers in the aft, starboard cabin. For normal operation this switch should be OFF.
  - Check battery voltages on the BlueSea M2 charge monitor located just aft of the electrical panel. The Blue Seas charge monitor is more accurate than the display on the electrical panel.



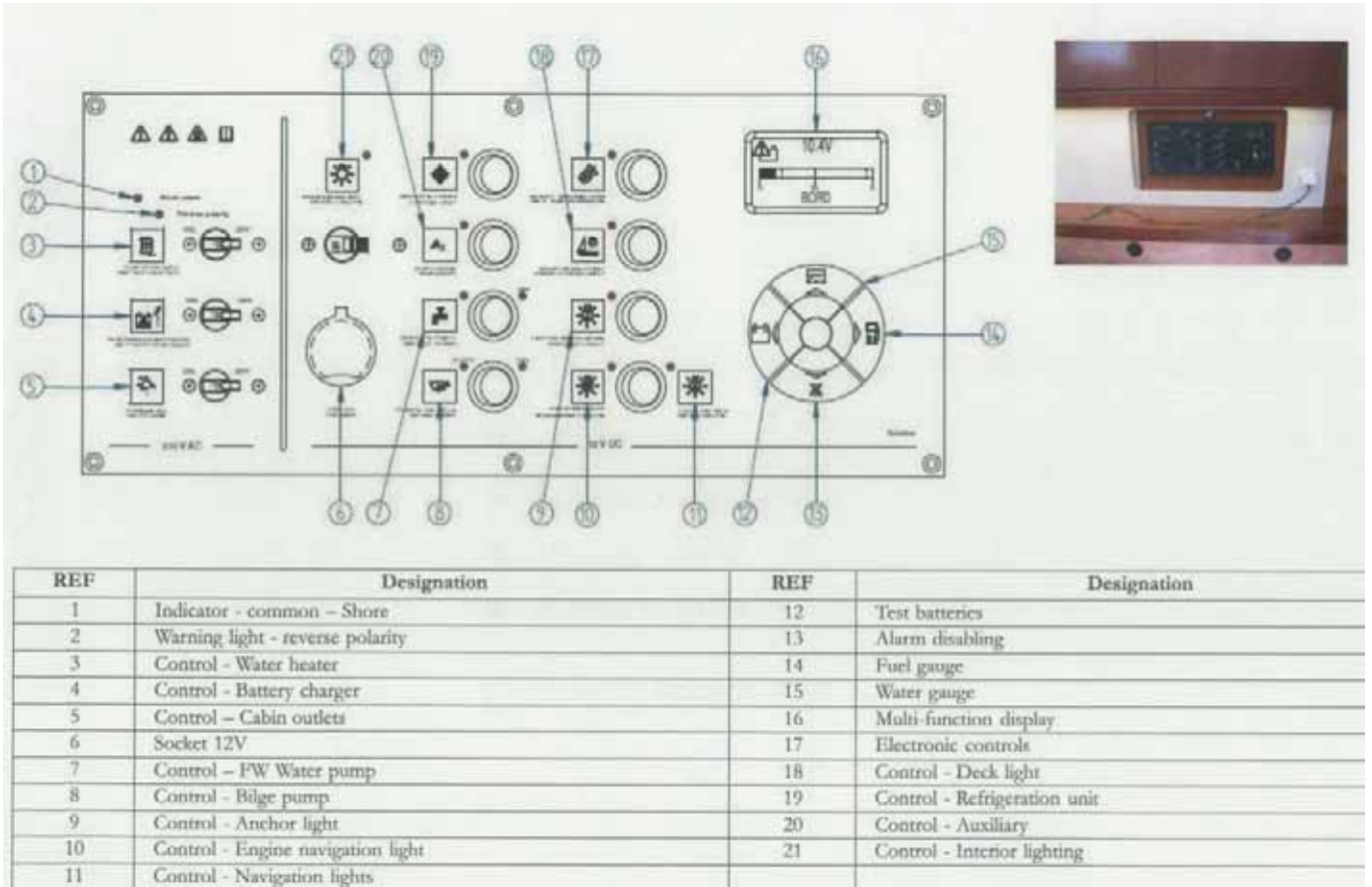
The menu system is a two dimensional matrix. Pressing the UP ↑ or DOWN ↓ arrow buttons will transition the display between the System Summary screen which displays summary information for each of the "voltage" or "current" channels.

Press the **Next** button to display more detailed information about an input channel or to show a single parameter, such as "voltage" in the display (see example below).



- **CHARGE BATTERIES ANYTIME THEY DROP BELOW 12.2V** to minimize battery damage from improper discharge.
  - Charge the batteries by either (1) running the diesel engine or (2) plugging into shore power.
  - Check that batteries are charging by observing charging voltages (13.7Vdc - 14.8Vdc) on the Blue Seas M2 charge monitor.
  - When correctly connected to shore power, a red light will show on the upper left hand side (AC power side) of the electrical panel indicating that shore power is available. **If shore power is connected but the light is not illuminated, check 1) the shore power breaker on the pier, 2) the shore power breaker under the hatch aft of port helm station, and 3) the battery charger switch on the electrical panel.**

3. Electrical Panel



• **AC (120V) Circuit:**

- **Shore Power Indicator Light (Reference #1)** A red light indicates that shore power is connected and available on the AC bus.
- **AC Circuit Breaker:** There is a circuit breaker under the hatch aft of the port helm. This breaker should always be "ON" but if shore power is properly connected and energized but the red light does not appear, you should check this breaker. Reset if tripped, but do not repeatedly reset unless cause of trip is determined.
- **AC Outlets:**
  - To energize the AC outlets, the electrical panel "AC Outlets" switch (#5 above) must be placed in the "ON" position AND the separate AC breaker in the electronics cabinet above the electrical panel must be energized ("I" position).
  - The AC outlets can be energized through 1) shore power or 2) when the inverter is energized (see "Inverter" below).
- **Water Heater:** On shore power, you can energize the water heater electrical circuit (#3). Note: Hot water is also produced by running the diesel engine (see below).

- **Battery Charger:** The battery charger switch (#4 above) must be turned "ON" for shore power to charge the batteries and to energize the AC circuit loads (outlets, hot water heater, etc.). **This switch should remain "ON" at all times.**
- **A reverse polarity light (#2)** is located below the shore power light. If this light is fully illuminated (not just a light shadow from shore power indicator), immediately de-energize shore power and determine the cause of the reverse polarity.
- **DC (12V) Circuit:**
  - **Cabin Lights:** Energizes the circuit with all cabin lights. Lights must be individually turned on. Main Cabin light switches for the saloon are located in the headliner at the bottom of the companionway ladder.
  - **Refrigeration:** Energizes the refrigerator and freezer. Each unit has an independent temperature switch which must be turned "ON" and set.
  - **Freshwater Pump:** Turning on the freshwater pump pressurizes the freshwater faucets throughout the boat. **Turn this switch off when not it use.**
  - **NAV Instruments:** Energizes all the navigation instruments, including the T12 & T7 MFDs, Triton displays, Autopilot, VHF, etc.
  - **Navigation Lights:** Push switch to RIGHT position to energize sidelights and stern light for sailing. Push switch to LEFT position to also energize masthead light for motoring.
    - **NOTE: Night movement is not permitted under terms of your charter agreement. Use Navigation lights for reduced visibility (e.g., fog, rain, etc.).**
  - **Anchor Light.** Should be "ON" all night in an anchorage.
  - **Deck Light:** Illuminates the foredeck for night work.
  - **12V Outlets.** A 12V outlet is located on the electrical panel. Another 12V outlet is located inside the forward compartment of the cockpit table.

#### 4. Inverter.

- *Ardent* is equipped with a Magnum battery charger/inverter. The control panel for this unit is located just aft of the electrical panel. See picture above.
- When energized, the inverter converts DC power from the batteries to AC power and can be used to supply power to small/medium AC loads (e.g., the microwave, low current appliances plugged into the AC outlets, etc.) when not connected to shore power. The inverter cannot power large AC loads (e.g., hair dryers, space heaters, large power tools, etc.) and use of such devices will trip the battery charger breaker (#4 above) and/or other AC breakers and could damage the system.
- Inverter Operation
  - Locate and press the inverter button ON located on the Magnum Panel.
  - Energize AC outlets (see above under "AC Outlets")
  - To deenergize the inverter, turn "OFF" the AC Outlets switch, then turn "OFF" the inverter.

#### 5. Electronics.

- *Ardent* is equipped with state of the art, networked B&G displays and instruments. Several "Quick Start" guides are attached at the end of these Owner's Notes. Also, follow this link to manuals in ".pdf" format: <http://1drv.ms/1GNCOlw>
- **B&G Zeus T12 & T7 Color Multi-Function Displays (MFDs)**





- A 12" Zeus Touch MFD is located at the aft end of the cockpit table and can be rotated and accessed from either helm station. Rotate the display by loosening the knob under the base of the unit support bracket.
- A 7" Zeus Touch MFD is located in on the port side of the saloon above the VHF set. The T7 has all the functions of the T12, but has a smaller display.
- From these MFDs you can access the following functions:
  - GPS/Chartplotter with Navionics Platinum+ Pacific Coast & Hawaii charts. Includes detailed images of many ports & approaches and port information.
  - 4G HD Radar
    - Radar can be displayed in a traditional relative bearing circle or overlaid on top of chartplotter data.
  - AIS information
    - Note: *Ardent* does **not** have an active AIS transponder, but does **receive** AIS information from AIS equipped vessels and virtual AIS NavAids through the VHF radio which must be "ON" to receive AIS information.
  - Autopilot
  - Wind, Depth, Boat speed, SailSteer/Racing computer
  - Stereo settings
  - See Zeus Touch Quick Start guide and Op Manual for other functions.
- Screens can show single functions or can be split (see image above) for multiple views.
- These MFDs are very user friendly for those familiar with tablet devices, but spending a few minutes looking at the "Quick Start" guide will be very helpful. A few items to note:
  - The MFD display always has several windows of information (e.g., a chartplotter window, data bar(s), radio bar). You must select the window you wish to manipulate. Often the bottom bar that controls the radio will be selected and a user will attempt to use the chartplotter getting frustrated when the chartplotter doesn't respond. Touch the chartplotter part of the screen to select that window.
- **See Appendix 1 below for instructions on restoring the normal MFD settings if you have inadvertently changed settings.**
- *SJS Note: In addition to using your PRIMARY navigation aids – namely, the Maptech waterproof chart book or the roll charts (with the most active "killer rocks" marked in red) – up in the cockpit while underway, you also utilize the chartplotter for added safety. It helps you to see if you are where you think you are on the chart book or paper charts. If someone asks, "Where are we?"*

Within 3 seconds, you need to be able to point to the chart and show them the vessel's precise position. If you can't, you're in danger of hitting a rock.

- *SJS Note: The only time when the chartplotter becomes your primary navigation tool is when you're in a "tight spot" like going through a narrow pass or approaching the entrance to a secluded cove. (With the chartplotter, you can "zoom in" to make something that's the size of a dime on a paper chart into the size of a paperback novel or larger on the screen. You can see more detail and, importantly, any hazards in the area. Your boat's position on the chartplotter is typically accurate to within 3 meters – about 10 feet.)*
- **B&G 4G HD Radar**



- *Ardent is equipped with a continuous wave, frequency modulated radar system. Outstanding close range (2-3 NM) resolution at low power consumption (165 mW nominal transmission).*
- *Returns can be displayed in a relative bearing circle or overlaid with chartplotter data.*
- *Radar controls are located on the appropriate screens of the B&G MFDs. On the MFD, press the "Pages" button then select a "Radar" box. On the Radar screen you can set the unit to "Transmit", "Standby", or "Off". Review the B&G MFD Operation Manual for Radar operation and settings.*
- *SJS NOTE: You should have little need of the radar except for the highly unlikely event that you are suddenly enveloped by fog, which is rare in this area. The fog that we've encountered in the islands usually forms in the wee hours of the morning and burns off by mid-day. So if it's a little soupy after breakfast, we put on an extra pot of coffee until it lifts. Never depart from a safe location into the fog! To do so, even with radar, would be contrary to prudent seamanship. FYI – Fog becomes "reduced visibility" when you can see ¼ mile (about 4 football fields) in all directions. It is safe to proceed CAREFULLY in reduced visibility using your radar to "see" beyond the haze, but be sure to look up from the screen about every 10 seconds and use your eyes to scan the horizon forward, behind, and side to side. A motoryacht, tanker or freighter traveling at 20 knots takes only 39 seconds to travel ¼ mile! You need to see these fast-moving vessels sooner-rather-than-later so you can prepare, if indicated, to quickly take evasive action to avoid an impending collision.*
- **Triton Instrument Displays.**



- Fully customizable instrument displays located at each helm.
- Typical screens give wind information, depth, speed, GPS, trip data, route info, etc.
- See the “Quick Start” guide for more information on available screens and operation.

- **B&G Autopilot System**



- Autopilot control panel located at **Port Helm** station.
- Simple operation panel for operating the autopilot system.
- A “Quick Start” guide is attached to the end of these Notes.
- **NOTE: Exercise care and monitor the autopilot when using in substantial following seas. All autopilots have difficulty in these conditions.**
- The autopilot can also be controlled on the MFDs on the appropriate screens.

- **RS-35 VHF Radio Set, Fog Horn/Hailer**



- A networked Simrad RS-35 VHF radio is located on the port side of the saloon.
  - The VHF is “DSC Class D” and can send/receive DSC signals.
  - The VHF also receives and places AIS information on the network to be displayed on the MFDs. There is also very limited AIS display on VHF screen.
  - The VHF receives GPS information directly from the navigation network.

- **If the warning “NO GPS Information” appears on the VHF screen, turn off the VHF, make sure that the T12 or T7 MFDs are energized and have obtained a fix, then turn the VHF back on.**
- VHF Remote Handset (HS-35) *Ardent* has a remote handset for the VHF which connects wirelessly to the RS-35 base unit.
  - The VHF Remote is located in the electronics cabinet above the electrical panel on the starboard side of the saloon. A flexible lanyard is supplied to attach the handset to a rail of the cockpit table so it doesn't move about when underway.
  - **Please return the VHF Remote to the charging cradle when not in use.** Repeated draining without recharging will damage the batteries.
  - The VHF Remote is **not** a second, independent radio but rather a “controller” for the base unit.
- A foghorn/hailer is mounted on the forward face of the mast just below the radome.
  - You can access control functions to sound reduced visibility and other sound signals required by the navigation rules using the “IC” button on the VHF base & handset.
  - You may also use this as a hailer/loudspeaker.
  - Refer to the VHF op manual for specific instructions.
- *SJS Note: To listen to the weather reports (should be done in the morning before you head out and ½ hour before your final destination), push the “WX” button on the radio. Scan the weather channels for the one with the best reception before sailing in the morning and prior to anchoring for the evening. This is generally a light wind region but weather changes can be sudden. Listen for the “inland waters of western Washington” Both cover the San Juan Islands and the Canadian Gulf Islands. You will also hear “Strait of Juan de Fuca” (south of the San Juans), “Georgia Strait” (north), and “Rosario Strait” (runs through the eastern part of the San Juans).*
- *SJS Note: You should monitor channel 16 (the hailing and distress channel) during your cruise. You may save a vessel or a life. You may hail vessels on channel 16, but after establishing contact on channel 16, ask the skipper of the other boat to switch to working channels 78, 79 or 80. San Juan Sailing monitors channel 80 during office hours (closed Sundays). If you need a review of VHF radio protocol, you'll find information located in the onboard Charter Guest Reference Notebook. (By phone you can reach the San Juan Sailing office at -800-677-7245 or SJS's owner, Roger Van Dyken, at 360-224-4300 on cell or 360-354-5770 at home.)*
- *SJS Note: In case of a distress where you can no longer stand by the radio to pass your mayday, use the red distress button on the radio. First flip up the cover, then press the button until it confirms that the automatic distress signal is engaged. GPS input is automatically coded into your signal. The VHF Remote also has a red distress button.*
- **Depth Sounder & Boat Speed (rotolog) Transducer**
  - **Displayed depth is measured to the transducer which is approximately 5.5' above the bottom of the keel. San Juan Sailing uses a ZERO OFFSET for charter vessels.**

- The transducer for depth & speed is located under the cabin sole just inside the forward V-berth.
- This transducer provides depth and “boat speed” (speed through the water) input to the network for all network devices.
- This data is displayed on the MFDs and on the Triton Instrument Displays.
  
- *SJS Note: The digital depthsounder may not give accurate readings in deep water. In deeper water, you will receive many false readings caused by currents, changes in water temperature, fish, and seaweed. Use the depthsounder as an aid to navigation only in shallow water.*
  
- *SJS Note: IMPORTANT -- The key to avoiding rocks is NOT the depthsounder – but knowing where you are at all times. Rocks are the greatest navigational and safety hazard in the islands – but they are all clearly marked on the charts.*
  
- *SJS Note: We do not recommend using the depthsounder's alarm during night. Instead, consult the onboard tide data to determine whether you're anchored in a safe location considering how shallow your depth will become when the tide ebbs out of your anchorage in the middle of the night.*
  
- **WIFI-1 Wireless Network**
  - *Ardent* has an internal wireless network. If you have an iPad or iPhone, download the free B&G app, connect to *Ardent's* wireless network, and use your device to see and control the MFDs. Your iPad turns into another MFD. iPhones will typically only display, not control the MFD screen .
    - Password: ArdentLEE. (verify/change password in MFD “Network” settings)
  - In addition, you can connect your laptop computer to the network (wireless or Ethernet RJ-45) and receive NMEA 2000 data to your planning software if supported.
    - OpenCPN is compatible with this system. Additional information about setting up the system is attached at the end of these Notes.
  - ***Note: Neither the Owners nor San Juan Sailing can provide support for connecting or operating devices on the Ardent network other than what is contained in these Notes.***

### 6. Headroom & Berths

- The headroom on *Ardent* (taken centerline in the main salon) is 6' 4”.
- *Ardent* is ideal for six people, but will sleep a maximum of eight: two in the forward cabin, two in each of the aft cabins, and two on the berth converted from the dinette table and settee (converts to a double berth).
- The forward berth is approximately 6.5 feet long and 5 feet wide at the head and 2.2 feet wide at the foot. The stbd quarter berth is approximately 6.5 feet long, 5 feet wide at the head and 4 feet wide at the foot. The port quarter berth is approximately 6.5 feet long, 4.5 feet wide at the head and 3.6 feet wide at the foot. The converted dinette is approximately 6 feet long and 4 feet wide (with side cushions removed).
- To convert the dinette table and settee into a double berth, pull up on each side of the saloon table, then remove the long metal legs that are attached by friction only. Insert the short legs which are

stored behind the backrest of the settee in a blue bag (location marked behind cushions). Locate the two connected cushions (usually found in the V berth) and place them over the table top.

### 7. Propane Stove/Oven & Microwave.

- The gimballed propane stove has two burners and an oven/broiler.
- Propane is a hazardous gas, and requires caution. For your safety, please follow these procedures:
  - Make sure all burner and oven control knobs on the stove are in the "OFF" position.
  - Make sure the electric propane solenoid switch is "OFF". The propane solenoid switch is located in a small cabinet near the sink.
  - Fully open the valve on the propane tank located in propane locker under stern bench.
  - Turn the electric propane solenoid switch to "ON". A green light will appear on the switch when energized.
  - Depress the push button burner starter or use a butane lighter near the burner/oven/broiler, then push in the stove control knob in and turn to high. The burner should light but hold the knob in for 2-3 seconds to warm the thermacouple so the burner stays lit.
  - After the burner has warmed up, release the knob and operate like a normal gas stove.
  - When finished with the stove, shut off the burner(s), then shut off the solenoid switch.
  - **The propane solenoid valve should be "OFF" anytime the stove is not in use.**
- *SJS Notes*
  - *The propane tank and both propane valves (tank valve and solenoid valve) are in the propane locker below the cockpit deck on the aft port side which is vented and isolated from the rest of the boat. Any leaks there will move down, out, and away from the boat.*
  - *While the propane tank normally lasts for 4 weeks or more, San Juan Sailing's staff tops them off every 2 weeks...so you'll have plenty for you cruise!*
  - *If cooking underway, gimbale the stove by disengaging the retaining rod on the aft side of the stove. Then if the boat heels, hot liquids and foods will not readily slide off of the stove. Also, for added security, use the fiddles that hold the pots/pans on the burners. If you have something in the oven, please lock the oven door so the contents cannot slide out onto the galley sole (or someone's feet). The oven door is equipped with a latching mechanism.*
  - **WARNING: Never cook in high wave conditions or in strong, gusty winds. Food will go flying!**
  - *When cooking at a pier or in a quiet anchorage, lock the stove in position. That way, if someone leans on the stove or grabs the oven handle, it won't tip and spill pot/pans on the cooktop.*
- The microwave oven is located in the cabinet above the galley sink.
  - To operate the microwave, energize the AC outlets (see Electrical Panel above).
  - Leave cabinet door open when cooking to allow heat to dissipate from microwave.

### 8. Refrigerator/Freezer.

- The refrigerator is located below the counter in the galley. The freezer is accessed through the top of the galley prep counter. The refrigerator and freezer are energized through a single common DC switch on the Electrical Panel. Each unit has its own separate temperature control switch which also turns each unit on and off and sets the temperature.
- The freezer has a drain that feeds a drain pump operated by the push button just below the forward front side of the galley sink.
- *SJS NOTE: We recommend running the refrigerator at all times to avoid it becoming smelly. You may want to turn the thermostat down to a medium setting at night. This will help conserve house battery power. Then turn it back up to the normal setting during the day.*

### 9. Barbecue.

- *Ardent* is equipped with a Magma Cabo Stainless Steel Grill attached to the stern rail on starboard.
- To operate the grill, turn "ON" (valve in line with hose) the grill line propane valve in the propane locker, then turn on the propane valve at the grill. Light the propane and adjust the flame for appropriate cooking heat.
- A kit of long handled grilling utensils are located in the starboard lazette.
- Never use the grill legs when grilling on the boat! Always attach grill securely to stern rail.
- ***As a courtesy to the next guest, please clean the BBQ with the wire brush after use.***

### 10. Heads & Holding Tanks.

- *Ardent* has two heads each with its own holding tank. The midship head has a 35 gallon holding tank and the forward head has a 20 gallon holding tank.
- *Both heads may be pumped out using the two separate deck plates on the starboard side of the deck – one for each holding tank. The holding tanks may also be emptied directly overboard using 2" gravity drain hoses connected to the large, red-handled seacocks located beneath each head sink. NOTE: It is NOT legal to dump holding tanks overboard when less than 3NM from land.*
- **Midship Head & Holding Tank:**
  - The midship head uses DC electrical power from the House bank. Breakers for the head electrical circuit are located under the starboard quarter berth and are labeled. If the system appears to not have power, check these breakers.
  - The midship head uses freshwater from the freshwater tanks. The freshwater pump must be ON to supply water to the midship head. A macerator is integrated into the discharge of the midship head and delivers macerated solid waste to the holding tanks. Please use sufficient water to fully macerate the discharged solid waste.
  - A holding tank monitor is located next to the toilet control panel. **Empty the holding tank long before you receive a FULL indication – sailboats heel and can significantly affect the performance and readings of these devices and the levels of the holding tanks.**
- **Forward Head and Holding Tank:**
  - The forward head is a traditional Jabsco manual flush system using seawater. The seawater suction seacock for this head is located under the starboard settee near the tools storage.

- To check the level of the forward holding tank simply open the locker above the head and visually determine the tank level, using a flashlight if necessary. **Empty the holding tank when it is ¾ full or before.**
- SJS Notes:
  - San Juan Sailing staff will discuss holding tanks, overboard discharge and pump outs upon your arrival.
  - *If the toilet pump starts to resist your flushing effort, don't force it! Exploding or leaking sewage is most unpleasant! Search out the problem and correct it. **The heads on Ardent do NOT have Y-valves. When you pump the toilet, it goes directly into the holding tank located in the cabinet in each head.***
  - *The holding tanks can be pumped out via the labeled deck fills or discharged overboard via gravity drain through the large red-handled seacocks in the cabinet of each head. When discharging overboard all tank contents will drain overboard in just a few seconds and you'll hear a noticeable "whoosh" as it discharges. Then close the large red and all toilet contents remain in the holding tank once again.*
  - *If you pump out the holding tank at a shore facility, please fill it with about 5 gallons of fresh water through the deck fitting to rinse, and then pump it out again. Thank you!*
  - **Good sailors have a rule: "Never put anything down a marine toilet that hasn't been eaten first." And that includes feminine items. In fact, offshore sailors do not even put soiled toilet tissue down a marine head. They simply deposit soiled toilet tissue (and feminine items) in a receptacle such as a waste basket with a liner bag that can be closed or a ziplock baggie, but not in the toilet. San Juan Sailing highly recommends you follow this rule. Since we've been recommending this, we've had almost no incidents of plugged heads! Owner's Note: We follow this rule and have never noticed any unpleasant odors even in far warmer climates.**

### 11. Diesel-fired Heater

- *Ardent's* efficient diesel-fired Webasto cabin heater will make the interior "toasty" in around 15-20 minutes. The heater control is located on the port side of the salon near the VHF.
- Push the power button on the lower center part of the panel then set the fan and temperature using the black dials. The temperature sensor for the heater is located adjacent to the control panel. The heater takes a few minutes to heat up before the fans starts running and you will not hear it operating immediately after you turn it on.
- Each compartment has a vent with adjustable flaps to control the heat flow to the space.
- The heater draws diesel fuel from the main diesel fuel tank.
- *SJS NOTE: When it's cool, we recommend warming the boat before turning in for the night, with the last person to go to bed instructed to turn the diesel heater off before retiring. Otherwise, the boat will get too hot and the electric fan in the diesel heater will be a load on the house batteries. The first one up in the morning can turn the cabin heater back on.*



## 12. Bilge pumps.

- Check the bilge each day by lifting the floorboard in the center of the salon that has a pull key.
  - *Ardent's* bilges should be essentially dry. Investigate unknown water sources.
- The electric bilge pump in the center of the salon (bilge low point) can be turned on manually at the electrical panel.
- The Bilge Pump switch on the electrical panel should be left in the AUTO position at all times.
  - In AUTO, the pump is energized by the float switch in the center bilge pocket.
- A Manual Bilge Pump is located in the cockpit just below the starboard helm compass.
  - The handle for this pump is stored on clips inside the starboard lazarette (aft bulkhead).
  - The manual bilge pump takes its suction from a hose with a brass open fitting co-located with the electric bilge pump in the center of the saloon.

## 13. Dodger & Bimini

- *Ardent* has a very large sturdy dodger that protects the crew from the weather when in the cockpit. It has several stainless steel grab handles for safety.
  - **Do not remove the dodger** -- it is very difficult to put back on.
  - SJS NOTE:
    - The dodger's plastic "glass" is vulnerable to scratching from salt crystals, especially after sailing into a challenging breeze. When salt spray on the glass dries in the wind, tiny salt deposits are left behind and tend to obscure your vision. Please avoid directly touching the glass with a damp rag or sponge. Salt does dissolve in water, but not as fast as you might think. The salt crystals remain un-dissolved for several seconds. It's like rubbing the glass with sand paper! To clean, please use generous amounts of fresh water (use bucket & shower nozzle at stbd helm station) and "flood" the glass to dissolve the salt crystals away. Better yet, wait until you're at a dock where you can hose off the salt crystals. If the dodger glass is really clear, you can thank previous guests for their diligence. And we thank you too!
    - **CAUTION** -- *We have found that most spray sunscreens react chemically with the plexiglass and other boat surfaces. Please inform your crew to spray sunscreen downwind of the dodger and other boat surfaces. And please don't lean against the dodger with sunscreen on your back and shoulders. Once that chemical reaction takes place, the glass is ruined and must be replaced at significant cost.*
- *Ardent* has a two-piece Bimini that covers the entire cockpit when both pieces are installed. In combination with the dodger it provides excellent shelter in less than pleasant conditions.
  - The aft section of the Bimini covers the helms and part of the aft cockpit.
    - **This section should NOT be removed.**
    - Please check the large black straps connected to the Bimini supports to ensure they are sufficiently tensioned to keep the Bimini stable in all winds.
  - The forward section of the bimini is relatively easy to remove and can provide extra sunshine in the cockpit if desired. Unzip this section at the support then slip it out of the groove on the arch. This canvas **WILL NOT FLOAT** so use care when removing and installing. Please store dry and properly folded.

## 14. Emergency / Safety Equipment

- First Aid Kits. A large offshore first aid kit is located under the settee on the starboard side of the saloon. Smaller kits including basics such as Band-Aids and antibiotic ointment are located in each of the medicine cabinets for minor scrapes or cuts. Please note any use of these items so they may be replaced for the next guest.
- Visual Signals & Flares. Visual day/night distress signals are located in an orange waterproof box in the starboard lazarette.
  - A battery powered distress signal light may be used day or night. It can be mounted with the attached tethers and left on while dealing with the emergency.
    - Batteries for the light are replaced at the beginning of each season and a spare set of batteries is located in the box.
  - An orange distress flag is also included for daytime emergencies. Display the flag from a flag halyard or any other noticeable area
  - Hand flares and parachute flares are also included in the box, but the distress light and flag meet all USCG distress signal requirements and are better for emergency use in most cases.
  - **Exercise extreme caution when using flares and other pyrotechnics.** They can cause damage to the boat and to the crew!
- Fire Extinguishers. There are four portable, manual fire extinguishers (one in each compartment) and an automatic halon-type extinguisher mounted in the engine compartment.
  - A fire extinguisher is located on the aft bulkhead of the galley
  - An extinguisher is located on a bulkhead just inside each stateroom.
  - There is an indicator light for the automatic engine compartment fire extinguisher near the battery switches in the starboard quarter stateroom.
    - This light should be green indicating the extinguisher has not discharged.
    - This light will only be energized when the battery breaker for the engine is ON.
- Emergency Tiller. The emergency tiller ("T"-shaped metal pipe) is located under the hatch at the starboard helm.
  - The rudder post attachment point is in the center of the cockpit between the helms.
  - To remove the cover, insert a winch handle in the star-shaped fitting and unscrew.
- Jacklines (2) & Tethers (2) are located in a small case in the starboard lazarette.
- Other Available Emergency Equipment
  - **By Advance Request Only -- Additional charges may apply for certain equipment**
  - For longer or offshore cruises, you can arrange to carry any of the following equipment:
    - EPIRB
    - Liferaft
    - Storm Sail (jib)
    - Personal AIS location devices (2)
    - 5 gallon diesel cans (2) & shaker siphon hose
  - Advance notice is required to ensure that this equipment is available.

### 15. Engine, Bow Thruster & Handling

- *Ardent* is equipped with a Yanmar 3JH5e 40hp engine and an SD60 saildrive.
- Operation
  - Yanmar diesel engines are very reliable when they are not abused.

## Owner's Notes for *Ardent*

- For *Ardent's* Yanmar 3JH5E engine cruising speed is approximately 7.5+ knots at 2600 RPM with a corresponding fuel consumption of approximately 1.2 gallon/hour.
  - Please do not exceed 2800 RPM except for short periods of emergency maneuvering.
- SJS NOTE: To avoid the possibility of sucking air or sludge when the fuel level approaches 1/4 of a tank, refuel when the fuel drops below 1/2 full and before it reaches 1/4 full.
- Reverse
    - *Ardent* has a **left-handed prop** and backs to starboard slightly.
      - Sufficient sternway or the bow thruster will help overcome the prop walk.
      - **Hold the wheel tightly in reverse** or water pressure on the aft edge of the rudder will slam the rudder over possibly damaging the steering system.
  - Forward
    - *Ardent* has a large spade rudder which responds quickly and turns in a narrow radius.
  - Docking
    - Never turn off the engine until the vessel is securely tied at the dock.
    - You'll need to use your engine – in reverse – to stop the boat. It's very difficult and often impossible for people holding lines to stop the forward momentum of a vessel as heavy as a cruising sailboat.
  - *SJS NOTE: When coming into our docks in high winds or if you'd just like a little assistance upon arrival, simply hail "San Juan Sailing" on VHF channel 80. They will be glad to offer some "coaching" and/or catch your lines. In fact, most marinas in the islands will help you if you hail them and ask for assistance. Asking for docking assistance, especially in windy conditions or with an inexperienced crew, is a sign of prudent seamanship.*
  - Starting
    - Look around the engine compartment for leaking fluids or anything that appears or smells unusual for an engine compartment.
    - Check the oil level.
      - The dipstick is accessed by opening the panel just inside the starboard aft berth.
      - The dipstick is on the starboard side of the engine.
      - Note the oil range dots on the dipstick. Also, if the dipstick indicates no oil the first time you check it, reinsert and try again - the correct level will show when the air lock bubble is broken. It is unlikely that you will need to add oil during your time on *Ardent*.
      - If you need to add oil **Do Not Overfill**, the excess oil will escape somehow, perhaps by blowing the head gasket.
        - Use the onboard spare oil to add no more than a cup at a time.
        - After waiting about 2 minutes for the oil to trickle down to the pan, check the level again.
        - Expect the oil to be blacker than that of a gasoline powered automobile engine...this is normal for a diesel after only a few hours of operation.
    - Check the saildrive gear oil located on the aft starboard side of the engine/saildrive unit.
      - The cap is a yellow orange color.

- After unscrewing the cap and dipstick, wipe it off and return to the opening but do NOT screw it in. Remove again and read the level which should be between the marks.
- Check the coolant level...anywhere between the two lines (high and low) on the overflow reservoir is "good".
- Check for belt tightness by feeling behind the large gray cover on the front of the engine for the belt and check its tightness.
- Check diesel fuel level on the Electrical Panel.
- Look over the stern for kelp, logs or branches that could foul the propeller.
- Place the gearshift/throttle in neutral (straight up/down) then press in the red pin on the throttle (disengages the clutch) and advance the throttle an inch or so keeping the red pin pushed in.
  - Advancing the throttle slightly with the clutch disengaged makes it easier for the engine to start and reduces engine wear.

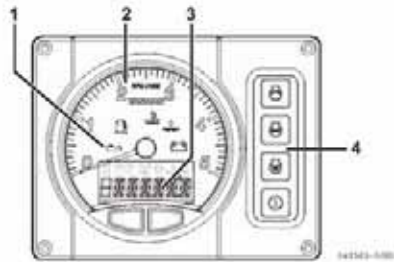


Figure 14

1 - Alarm lamp  
2 - Tachometer

3 - LCD  
4 - Switches (push-buttons)

**Control panel switches**

All switches are push-buttons.



**Start switch**  
Pushing this switch operates the starter and starts the engine.



**Glow switch**  
Pushing this switch for the specified time heats the air heater on the air intake manifold. It becomes red-hot, facilitating fuel ignition. This assists starting in cold weather.



**Stop switch**  
Pushing this switch stops the engine.



**Power switch**  
Pushing this switch turns on or off the power.

- Energize the engine panel by pressing the bottom right hand button (Power Switch) for about one second. Observe the low oil pressure alarm sounds after a few seconds.
- Press the top right-hand button (Start Switch) on the engine panel to start the engine.
  - After the engine starts, release the Start Switch and check for water gurgling out the exhaust over the port side near the helm.
  - Do not hold down the start button for more that 4-5 seconds at a time.

- **WARNING – EXCESSIVE STARTING CAN DAMAGE THE ENGINE**
- After the engine is running smoothly, gradually ease the throttle back to idle and observe that the red button pops out – the clutch is now reengaged.
- Please allow 5-10 minutes of warm up before placing a load on the engine. It is very hard on a diesel to be placed under load when cold.
  
- Proceeding in Forward / Reverse
  - You are in neutral when the throttle/shifter clicks in the straight up and down position. You may engage forward gear by pushing ahead on the throttle or reverse gear by pulling back on the throttle.
  - **Remember to pause 2 seconds (say “one and two and”) in neutral when shifting from forward to reverse and vice versa.** Otherwise, you may damage the transmission.
  
- Engine Overheat.
  - If the engine panel alarm sounds while the engine is running, **look at the engine panel to determine the cause of the alarm (e.g., high temperature, low oil pressure, etc.).**
  - If it is high temperature/engine overheat, it is most likely a failure of cooling water flow.
    - Many times it's no more serious than eelgrass plugging up the raw water strainer. The best solution to this problem is prevention—keep an eye peeled for eelgrass mats, especially along those “soapy” looking tide and eddy lines in the water. Don't run over it. When eelgrass gets sucked into the engine cooling water intake, it jams at the raw water strainer.
    - To clear the eelgrass from the raw water strainer, twist off the clear screwtop and extract the eelgrass and toss it in the galley garbage can. Replace the lid and hand-tighten by turning it clockwise until the lid is seated firmly on the rubber gasket. Do not use a tool to tighten the lid.
    - Restart the engine.
    - If upon restarting the engine overheats again, check the seal between the strainer, the rubber gasket, and the lid. If the strainer is drawing air, it won't draw water. If needed, open and then retighten the lid on the strainer...and check to make sure the rubber gasket is in place in the lid (and not lying in the bilge.)
    - If the above fails to solve the problem, call San Juan Sailing for assistance.
  
  - *If you lost oil pressure, the oil icon warning light will light up. If it's the oil light, shut down the engine, check the oil level, and contact San Juan Sailing.*
  
  - *The alarm buzzer is more likely to indicate engine overheating, and the temperature icon light will light up. Before you shut down the engine, check for water gurgling out the exhaust. If you have a “wet exhaust”, check the coolant level in the overflow reservoir bottle and if none is seen, add enough to reach the top level line on the bottle. (ONLY AFTER THE ENGINE COOLS DOWN, you might remove the cap on the engine block and add coolant.) And check the bilge for a light green liquid. If found in the bilge, call San Juan Sailing. If the coolant reservoir bottle is full, check to see if the engine threw a belt. Without a belt on the raw water pump, the coolant won't circulate and cool the engine. (Replacement belts are located in the engine spares kit.) One other possibility is that the impeller in the raw water*

*pump has failed. While they are replaced each spring with a new one, it's still possible that a hard object may be drawn in and break off an impeller blade. (A replacement impeller is found with the engine spares.) Call San Juan Sailing if you suspect you have an impeller problem.*

- Engine Shutdown
  - **NEVER turn off the engine panel electronics (Power Switch) while the engine is running.** This can damage the diodes on the alternator, and the batteries will no longer charge.
    - If you accidentally do this, press the Power Switch to reenergize the electric panel then as soon as possible then perform a normal engine shutdown even if you plan to continue operating the engine. You can do a normal restart if you intend to continue operating the engine.
  - To shut down the engine, press the engine Stop Switch on the right side of the engine control panel (second from top) until the engine stops and you hear the panel alarm.
  - **After the engine completely stops** and you will hear the panel alarm, **hold in the Power Switch for approx. 3 seconds** until the panel turns off and the alarm ceases.
  - **EMERGENCY SHUTDOWN**
    - If the engine won't respond to the engine panel Stop Switch, do the following.
    - Make sure the throttle is in neutral and engine is running at idle speed and allow the engine to cool down for approx. 5 minutes in idle.
    - Press engine shutdown button on starboard side of engine.
      - RED rubber button near middle of starboard side of engine about a foot above top of dip stick.
      - NOTE: If engine RPM won't decrease to idle or if engine RPM is increasing, **immediately** press shutdown button on side of engine, **do not wait for cool down.**
    - If the engine still continues to run, shut the fuel shutoff valve on top of the fuel tank and starve the engine of fuel.
      - The fuel cutoff valve is a small valve that can be accessed from the port stern berth under the bedding and a sliding horizontal panel -- labeled.
      - The engine will not stop immediately when the fuel is valve is shut. It will take some time to starve the engine of fuel.
    - After engine stops, turn off the Power Switch on the engine panel to deenergize the electronics.
    - Notify SJS immediately anytime an emergency shutdown is performed.

- Engine Alarms

**Indicators and Alarms (Optional)**

When a sensor detects a problem during operation, the indicator on the instrument panel will light and an alarm will sound. Indicators are located on the instrument panel and the alarms are located on the back of the panel. Under normal operating conditions, the indicators are off.



**Battery Low Charge Indicator**

When the alternator output is too low, the indicator will light. When charging begins, the indicator will turn off.



**Coolant High Temperature Indicator and Alarm**

When coolant temperature reaches the maximum allowable temperature (95°C [203°F] or higher), the indicator will light and the alarm will sound. Continuing operation at temperatures exceeding the maximum limit will result in damage and seizure. Check the load and troubleshoot the cooling system.



**Engine Oil Low Pressure Indicator and Alarm**

When the engine oil pressure falls below normal, the oil pressure sensor will send a signal to the indicator, causing it to light and the alarm to sound. Stop operation to avoid damage to the engine. Check the oil level and troubleshoot the lubrication system.



**Water in Sail Drive Seal Indicator and Alarm**

When water is detected between the seals of the sail drive, the indicator will light and the alarm will sound.

- **Bow Thruster**

- **The Bow Thruster consumes large amounts of DC battery power. Use it sparingly and fully charge the batteries after any significant use!!! Failure to do so can damage the thruster batteries.**
- The bow thruster control is located at the port helm station. The bow thruster motor and batteries are located under the forward V-berth. The bow thruster breaker is located near the battery switches in the stbd quarter berth. The Thruster breaker is typically ON at all times.
- To turn ON the bow thruster, push and hold both red and green buttons on the panel at the starboard helm until you hear a beep. The bow thruster will eventually “time out” after approximately 15 minutes of inactivity and must be turned on again.
- To turn OFF, simply allow it to time out (preferred method) or press both buttons together until you hear a double beep.

- To move the bow left, press the left (red) button. To turn the bow right, press the right (green) button. Note: The thruster moves the bow and the boat will pivot about its turning point so the stern will move in the opposite direction!
- Do not use the bow thruster for prolonged periods or at high speeds. It is for slow maneuvers only.
- **Do NOT press one button then the other in quick succession! Treat it like an engine shifter and give a brief pause between pressing opposite buttons.** You may repeatedly press the same button or hold it in for several seconds without pausing.

### 16. Fuel Tank & Fueling

- **Ardent** has a 53 gallon diesel fuel tank located under the port quarter berth. The deck fill is on the port side near the stern and clearly labeled.
- The engine consumes approximately 1.2 gallons per hour at cruising speed of 2600 RPM.
- A fuel cutoff valve is located on the fuel line on top of the fuel tank in the port stern berth. Access the valve which is under the bedding and a sliding horizontal panel -- labeled.
- **SJS NOTES:**
  - *Please be very careful when fueling. Never allow maximum flow from the filler hose. If you do, the fill tube will surge and diesel will spill from the vents onto the side and onto the deck. It takes only a few drops of diesel fuel in the water to create a sheen and subject you to a Coast Guard fine. Fill slowly and carefully. Check the side vent and, with dish washing soap, wipe up any excess fuel to avoid yellowing the hull and stern and polluting the water. Also be very careful of drips when removing the hose. Diesel and shoe bottoms are a very slippery and dangerous combination. After wiping, please use soapy water to scrub down any drips so it does not stain the fiberglass.*
  - *Put your ear down to the fill hole and listen to the diesel flow. When the pitch changes and gets higher and higher, the tank is likely full and you're now filling the hose between the tank and the fill hole. Avoid a fuel spill – STOP! Check the fuel gauge. If the gauge is not on "F", continue filling. When you think you're finished fueling, check the fuel gauge one last time to make sure it's reading "F". That way, San Juan Sailing will not charge you a \$50 fueling charge plus the cost of fuel.*
  - **CAUTION:** *Unlike automobile fuel gauges, fuel gauges on boats are notoriously inaccurate, especially on the low end. Whenever the fuel level drops below ½ full, you should refuel at your next opportunity. NEVER let the fuel level fall below ¼ full or you're in danger of running out of fuel. Towing and the cost of a mechanic to bleed the air from the fuel lines is expensive.*

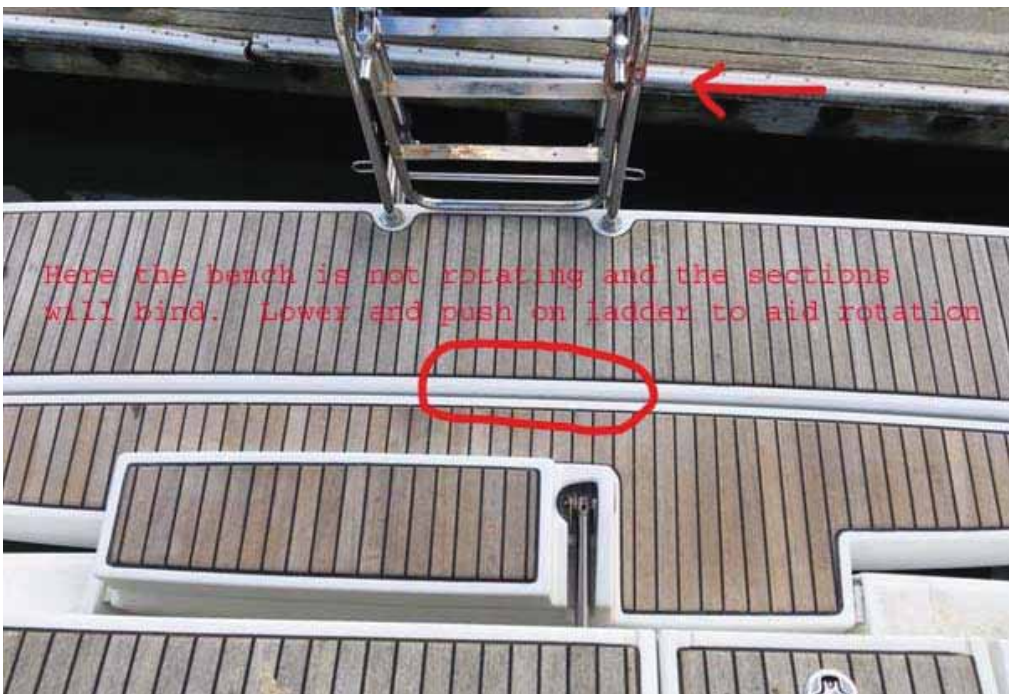
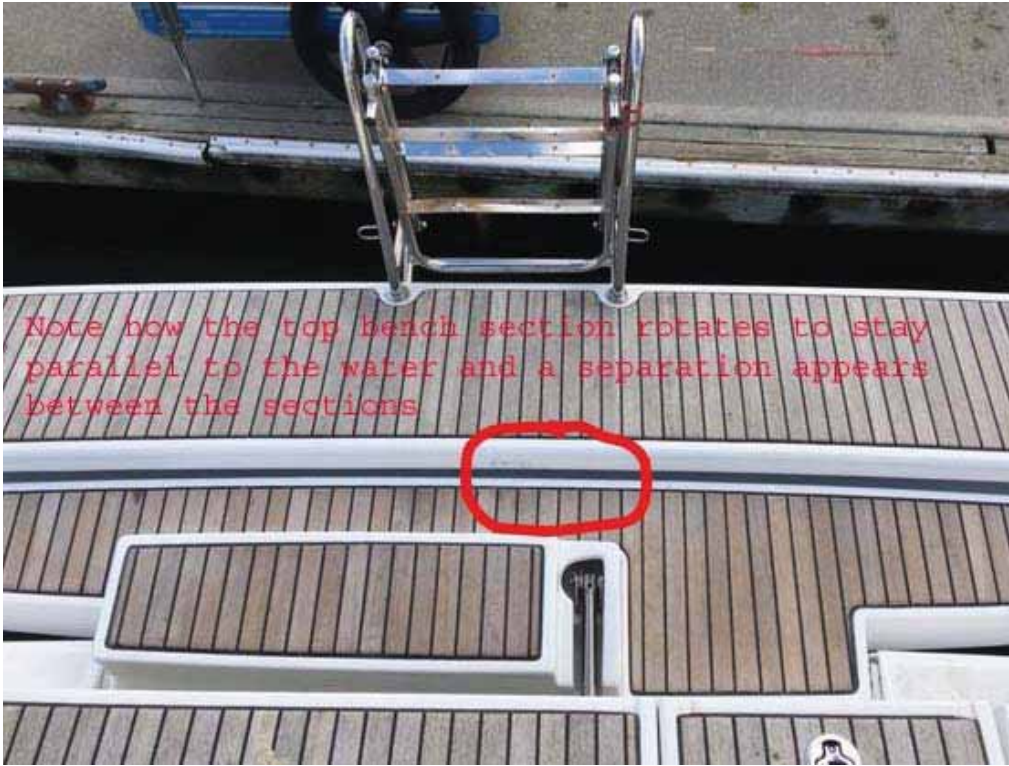
### 17. Keel Depth.

- *Ardent* has a deep fin keel and draws 6' 11".
- *SJS* requires a **ZERO DEPTH SOUNDER OFFSET** so **depth readings are referenced to the transducer NOT to the bottom of the keel.**
  - Subtract 5.6' from the sounder readings to obtain depth under the keel.
- *SJS* strongly recommends that you always maintain a minimum of 10'-12' under the keel at all times, both underway and at low tide on anchor.



**18. Movable Transom/Swim Platform -- READ CAREFULLY BEFORE OPERATING**

- **Ardent's transom and stern bench** fold down to create a great swim platform, dinghy dock, and easy on/off for loading your provisions and gear from the pier.
- **NEVER CONTINUE TO OPERATE THE TRANSOM IF IT APPEARS (SIGHT OR SOUND) TO BE BINDING.**
- To **Lower** the Transom:
  - **Remove safety lifelines** from the gate and attach to keep out of the way when transom raises or lowers.
  - Ensure no lines, shore power cables, other obstructions are around the transom/bench.
  - Locate the Transom Switch -- inboard of the port helm, below the compass.
    - Black switch with red safety button. The red safety button must be pushed down before depressing either the top of the switch (to raise the transom) or bottom of switch (to lower the transom)
  - **Locate the black line below the stern bench that is connected to a safety lock pin on each side of the bench. Pull and keep pressure on that line until the seat has fully lifted off the seating screws.**
    - If pulling on the line doesn't appear to release the lock pins (i.e., you don't feel or hear a "click"), the lock pins may be binding from the previous use.
    - Place the transom switch in the "Raise" position to fully raise and seat the transom which should remove the tension from the locking pin.
    - Try to unlock the pins again.
  - Press the Red safety button down, then press the bottom of the black Transom switch. The motor should lift the seat off the seating screws then lower it to make a flat deck just above the water surface.
- To **Raise** the Transom, push down the red safety button then press the top part of the Transom Switch.
  - Normally the Stern will raise and re-seat itself without any problems. You can then re-attach the safety lifelines.
  - **Sometimes the top, bench section will not self-rotate to stay parallel to the water as the transom is raising. If this happens, it will bind with the section below it. A slight push on the stern ladder will correct this. The bench section must always be horizontal to the water as it is moving.**



## 19. Dinghy

- *Ardent* has a 10' 2" Achilles aluminum hull RIB dinghy with one seat, oars and a 2.3 HP Honda outboard engine mounted on the stern rail (see also "Outboard" below)
- **SJS NOTE:**
  - *Towing works best when the dinghy is brought close to the boat – only have about 4 or 5 feet of painter line from the stern cleat to the bow of the dinghy. This lifts the bow slightly out of the water and reduces drag so you go faster, and lessens the chance of wrapping the painter around the propeller. Tie the painter off twice – once at a cleat with a standard cleat knot, then the bitter end to the stern rail. We've recovered dinghies "lost at sea" by others who relied on a single cleat hitch.*
  - *Please take special care when beaching the dinghy -- refer to the dinghy beaching procedure in your charter guest book. Most of the beaches you will land at are strewn with barnacle-covered, bottom-slicing rocks. When approaching the shore, weight the dinghy aft by leaning or moving the crew toward the back of the dinghy. Then offload everyone over the bow. Lift the dinghy above barnacle height using the hand lines on either side, and set it down gently on the beach. Also remember to secure the painter under a rock or to a large driftwood log – we have very large tidal fluctuations.*

## 20. Outboard

- *Ardent* is equipped with a 4-stroke Honda 2.3 horsepower outboard. This brand and size has proven to be a practical and VERY reliable dinghy outboard.
- DO NOT add any oil to the gasoline mixture – it uses straight gasoline. The fill cap is located at the top of the engine. According to the specs, the engine should run for about an hour at full throttle using just the gasoline in the onboard tank. *As a courtesy we have an additional red spare gasoline container tied into your dinghy.*
  - **WARNING – Gasoline fumes are explosive and a very dangerous fire hazard if stored on a boat. Keep the spare gasoline container in the dinghy and tied to the transom so it stays upright. NEVER store the spare gasoline container in a locker, lazarette, or any other storage area on your vessel.**
- Starting
  - Push the fuel valve lever (starboard aft corner of the outboard) aft to open the fuel valve.
  - Pull out the choke switch (starboard forward corner of the outboard).
  - Open the air vent on the top of the fuel cap (top of outboard) by turning counter-clockwise about 3 full turns.
  - Make sure the black U-shaped kill clip (with the red lanyard) is clipped into the red shut-off knob (port forward corner of the outboard).
  - Turn the handle throttle ¼ turn counter-clockwise.
  - Pull the start cord until the engine starts. You shouldn't have to pull it more than 5 times.
  - Push the choke back in shortly after the engine starts (after about 10 seconds).
- Operating
  - There is no transmission--just throttle up to go forward and throttle down to stop. If you want to go in reverse-- swivel the outboard around 180 degrees while flipping the handle over.
  - To avoid prop damage, shut the outboard off and raise it out of the water before you reach the shore. Pull the outboard forward and out of the water until it clicks at stays in place.

- To put the outboard shaft back in the water, release the stainless steel lever on the starboard side of the shaft.
- To Shut Off
  - Shut the outboard off by pushing in the red shut-off knob (where kill-clip attached) or just pull the red engine kill-lanyard until the clip pops off.
- When Not in Use
  - Put the outboard back on the outboard mount on the stern rail and tighten both braces.
  - Push the fuel valve lever forward to close (starboard aft corner of the outboard).
  - Close the air vent on top of the fuel cap (top of outboard) by turning it clockwise.
  - Secure the outboard further by tying the safety lanyard with to the stern rail.
  - *The outboard is light so it's easy to transfer from the stern rail outboard engine mount to the dinghy transom. PLEASE do not cruise with the outboard on the dinghy. It will no longer work after saltwater gets into or even near the intake of the carburetor. San Juan Sailing also recommends taking the outboard off the dinghy at night. They have had dinghies deflate in the cool of the night and had wind waves or powerboat wakes flip the dinghy over.*
- Troubleshooting.
  - If the engine won't start, review the steps above to make sure you've done them all.
  - There is a spare spark plug and spark plug wrench in the tool box in case the engine won't start or is running rough. A new spark plug solves myriad outboard problems. If you use the spare spark plug, notify your check-in skipper upon your return so a new one can be placed aboard for future guests.
  - If the outboard is running and the engine suddenly quits, it's usually that someone has forgotten to vent the fuel cap.
  - If the engine is running but the propeller isn't moving, the shear pin is probably broken. Take the cotter pin out to remove the propeller and replace the broken shear pin. A spare pin is located under the handle grip of the motor forward of the shaft.

## 21. Sails & Sailing

- *Ardent* is a delight to sail. She has a modern sail plan using a mast stepped much further aft (large "J" measurement) than was common on older boats. This allows a large headsail without having as much mast overlap as was common on older boats carrying 130-150% Genoas measured with masts stepped further forward.
- We had a Genoa specially designed for the lighter air conditions in this area. It uses material of different weights in a radial design so it will be effective in both light air and when reefed.
- Once she has way, *Ardent* is well balanced and easily steered with small rudder changes. Her perfect breeze is 10-20 knots with heel at 5-20 degrees. Full sail can be carried in winds up to 17 knots. *Ardent* also has a hard chine and is designed to be sailed fairly flat under all conditions – great for those that don't like excessive heel.
- If you reach the edge of your comfort envelope sooner, don't hesitate to shorten your sails. Remember, "Reef often and reef early." You can always shake them out if you decide you've been too conservative.
- **NOTE: The mainsail & headsail are secured by two sets of clutches – one set on the port side under the dodger and a second set on the port sided of the mast. Both must be released to ease or tension the sails.**

- **Normally it is not necessary to adjust these halyards. Adjusting the mainsail too tight can cause the furling mechanism to bind. Adjusting it too loose can cause the mainsail to bunch up in the mast and not deploy.**
- Headsail
  - *Ardent's* light air Genoa mounted on a Facnor roller furler.
  - Whether fully or partially deployed, you'll have good sail shape. Slight hand-over-hand tension on opposing lines – furling line and sheets – prevents problems such as a rat's nest on the drum (should the wind catch the sail and unwrap it violently) or a baggy furled sail.
  - Reefing the Headsail – Turn down to a broad reach and ease the jib sheets (keeping control of them) while pulling in the jib reefing line until only the amount of sail you desire is deployed. You should not have much tension when using a winch to take in the Genoa and in light winds you should be able to do it by hand.
- Mainsail
  - *Ardent* has an in-mast main furling system.
  - With an in-mast furling rig, in normal conditions it's recommended that the headsail be deployed first (while underway). The mast bows slightly aft at the top. By deploying the head sail first, the pressure of the wind in that sail tends to straighten up the mast making it more "plumb". This makes it easier for the main to deploy from within a plumb mast.
    - Provided that the wind is less than 20 knots, steer to a course of approx. 60 degrees to the wind (close reach). Deploy the head sail first. Now you may throttle down and place the engine in neutral, sailing on the head sail alone. (After a few minutes of "cool down", kill the engine.) Now you're ready to deploy the main.
    - *If you're in high wind (20+ knots) conditions, you may prefer to deploy the mainsail head-to-wind instead.*
      - *Since you're in high winds, only partially deploy the main so it's "reefed". Once deployed, fall off and begin sailing...just like you would on a vessel with a conventional main. Then partially deploy the headsail.*
      - *Be conservative with the amount of sail you deploy in high winds. If you've been too conservative, you can easily deploy more sail area in both the main and headsail while you're sailing.*
  - Deploying the mainsail:
    - The mainsail does not cooperate when the boom is pulled down too tight, so give it a little "play" but don't completely release the mainsheet and boom vang.
      - Loosen the boom vang by pulling out about a foot of line (then close the rope clutch) and loosen the main sheet by pulling out about 3 feet of line (then close the rope clutch).
    - The "outhaul" line pulls out the main and the main furl line will wind around the main furler.
      - Open the main furler line and keep slight tension on the main furl line.
        - You can control how much of the main you deploy by controlling how much of the main furl line is released.
      - Pull the outhaul by hand or careful use of the winch. Be careful not to force the outhaul or you will do damage to the rigging and the sail. The wind pressure on the main will actually help the main to deploy.
        - If it doesn't respond to moderate force, check for the hang-up.

- *Ardent's* line clutches provide one-way stops, so you don't need to open when winching in.
- Reefing the Mainsail:
  - You have infinite reef points with an in-mast furling main. You can deploy as little or as much sail area as you determine is appropriate for wind conditions you encounter -- from the safety of the cockpit!
  - Place the "main furler" line on a winch.
  - Place the opposing "outhaul" line on a winch with a minimum of two wraps since the sail is under load and you'll need to maintain control, but do not lock the line in the winch since it needs to be free to pay out slowly.
  - Turn down to a close reach (approx. 60° off the wind) on Starboard tack and let out the mainsheet to around 45 degrees.
    - This will take a lot of pressure off the main while you are reefing it.
    - Starboard tack is preferred because the furler rotates counter clockwise when furling and will go into the mast and wrap neatly.
    - If practicable, tension the vang to bring the boom closer to parallel so that the mainsail enters the mast at the correct angle.
    - Do not over-tension the vang. The boom does not need to be perfectly parallel.
  - When ready, open the outhaul clutch and winch in the main furling line while you slowly pay out the opposing outhaul line.
    - Maintain tension so the sail furls neatly in the mast until you've shortened the mainsail to a position appropriate for the current wind conditions.
  - Close the outhaul clutch and fully tension the foot of the sail with the outhaul.
    - **NEVER tension the sail with the furling line.** The pressure can damage the furler. Always use the outhaul.
  - After you've reefed the main, you are ready to shorten the head sail. If you shorten the head sail first, you'll increase "weather helm" and likely round up. Always reef the main first.
- Furling the Mainsail
  - When you're ready to bring in the sails, furl the main first using the procedure above. Think of furling the main as reefing "all the way".
  - Winch in the main furling line until the main is completely furled, with only about 18 inches of sail (at the foot) remaining outside of the mast.
  - **IMPORTANT:** Keep plenty of tension on the outhaul when reefing/furling the main in order to get a neat tight wrap of the mainsail inside the mast. The wind will help you get a nice tight wrap. However, if you furl the main without any wind pressure on it (e.g., head-to-wind in high winds, becalmed, etc.), tension on the outhaul line is the **ONLY** force that will get you a neat tight wrap. A loosely furled main inside the mast could mean a tough next deployment or a jammed main.
- Now that you're just sailing on a close reach on the head sail only, start the engine and shift into "idle speed" forward in order to maintain your course of 60° off the wind. While holding course, furl the head sail.

- Asymmetrical Spinnaker – **Advanced Notice and Spinnaker Resume Required**
  - *Ardent* is equipped with a large asymmetrical spinnaker.
  - There is no extra charge for use of the spinnaker, but **you must contact SJS at least one month prior to the charter and make arrangements to have the spinnaker onboard.** In addition, a spinnaker resume review and approval by SJS is required.

## 22. Fresh Water System, Hot Water & Shower Drain Pumps

- Water pressure. Turn on the fresh water pump at the electrical panel to pressurize the system.
  - Please turn “off” the freshwater pump when the system is not being used. If one of the fresh water tanks runs dry the pump will run continuously and burn out. You may not even hear the pump running continuously over the sound of motoring or sailing.
- Water tanks. *Ardent* has two water tanks for a total capacity of 151 US gallons.
  - Select a water tank at the manifold beside the water pump beneath the settee on the starboard side.
  - Use only one tank at a time – do not leave both valves open.
  - When the tanks are full, use the bow tank first. With water tanks heavy with water, sailboats tend to be a little bow heavy (especially if ground tackle is all-chain). Depleting some of the water weight forward first brings the boat into balance.
- Water Level. A gage on the electrical panel will show the approximate levels of freshwater in the forward and aft water tanks.
- Hot Water Heater. The hot water heater is located beneath the aft part of the starboard settee.
  - It takes about 30 minutes of running the engine under load to get the water hot.
  - When on shore power, you can heat your water using electric coils by turning the “water heater” switch on the AC panel to the “ON” position.
  - CAUTION: Engine heated water may be scalding hot. Please BE CAREFUL!
- The shower basin in each head can be pumped out using the shower drain pumps. Each head has a push switch located near the wash basin.
- On warm, sunny days, an alternative to the below decks shower is the swim platform shower (with hot and cold water) located at the starboard helm. This is also a good way to rinse off salt after swimming or dirt after going ashore.
- State parks do not have pressurized water to refill tanks, but all points of civilization do.

## 23. Tools and Spares.

- *Ardent* is equipped with a large variety of tools and spares for the engine and other systems. These are located in labeled containers under the starboard settee and the engine compartment. Rig/Bolt cutters are also located under the forward part of the starboard settee.
- Engine related spares are located under the companionway ladder.
- Spare Jabsco toilet repair items and a spare freshwater pump are located under the saloon settee near the hot water heater.
- A spare alternator is located under the port quarter berth – labeled.
- A spare transom actuator can be accessed through the hatches inboard of the port berth.
- Miscellaneous small spares are located near the tools under the starboard saloon settee.

**Enjoy your vacation aboard *Ardent* !**

**Appendix 1: Restoring standard settings for B&G MFDs (chartplotters)**

The B&G MFDs are fully customizable. If you decide to change a setting or if a setting is changed by mistake, please use the following procedure to restore the original settings.

1. Press "Pages" button – this is a "hard" button around the rotary knob in the upper right corner
2. Select "Tools" – soft button at bottom of screen
3. Select "Files"
4. Select "MyFiles"
5. Use rotary knob to highlight "SJS-Settings.set" file then select by pressing in the rotary knob
6. Select "Import"
7. Select "Yes" at restart warning

NOTES: It will take a few minutes for the MFDs to reset. Each MFD must be reset individually.



Appendix 2: OpenCPN settings for use with *Ardent's* onboard network

