

## Notes from the Owner of Mirage

Beneteau 34

Dear Friends and Guests,

Welcome aboard Mirage!

Mirage has been in the San Juan Sailing Charter Fleet since 2016, formerly known as *Viva*, then *Pura Vida*.

Being a Beneteau 34, she has two staterooms (one forward and one aft) and one head. The inside is cozy and comfortable, and the sailing is superb! She is the perfect cruising size for a couple or a small family.

I have made many wonderful cruising memories in the San Juan Islands and points North. I hope the time you spend on Mirage will provide you with beautiful cruising memories of your own.

If something comes up while you are out on your charter, please don't hesitate to reach out to San Juan Sailing. Your comfort and enjoyment are important to me.

I wish you fair winds and wonderful memories. Thank you for being my guests!

Warmly,

*Chuck Deaver,*  
Owner of MIRAGE 🌿



## Table of Contents

1. Specifications and Vessel Information .....	3
2. Nuances .....	3
3. Emergency/Safety Equipment.....	4
4. Anchors and Windlass .....	5
5. Barbecue.....	8
6. Batteries and Charging .....	8
7. Berths and Bedding .....	10
8. Bilge Pumps .....	10
9. Dinghy and Outboard .....	11
10. Dodger and Bimini .....	13
11. Electrical.....	14
12. Electronics and Instruments .....	16
13. Engine.....	18
14. Entertainment Systems.....	23
15. Fuel.....	24
16. Heads and Holding Tanks.....	24
17. Heaters (Cabin) .....	26
18. Lighting.....	27
19. Refrigerator and Freezer.....	27
20. Sails and Rigging.....	27
21. Showers and Sumps.....	29
22. Spares and Tools .....	29
23. Storage.....	30
24. Stove and Oven .....	30
25. Water .....	32
26. Whale Interim Sanctuary Zone .....	34

## 1. Specifications and Vessel Information

### Vessel Information:

**U.S. Customs Re-Entry Decal** – Located on the aft side of the binnacle.

**Vessel Official Number - 1244396** (same number as shown on the Coast Guard Certificate of Documentation found in Section 5 Documentation of the Charter Guest Reference Manual (white binder). Mirage's number is located inside the starboard cockpit locker.

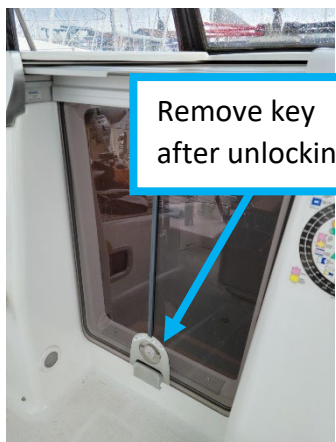
**Coast Guard Boarding Document** – Refer to the Charter Guest Reference Manual (white binder), Section 5 Documentation. Explains what to expect if you are boarded by the Coast Guard and where to find the information/equipment they may ask to see as part of their safety inspection.

### Specifications:

<b>Year:</b> 2011	<b>Engine:</b> 29 HP Yanmar with folding Max Prop
<b>Make/Model:</b> Beneteau 34	<b>Fuel:</b> 34 US Gal
<b>LOA:</b> 34' 0"	<b>Water (2 tanks):</b> 77 US Gal
<b>Beam:</b> 11' 8"	<b>Holding:</b> 21 US Gal
<b>Draft:</b> 6' 2" deep fin keel	<b>Heads:</b> 1 electric
<b>Displacement:</b> 12,566 lbs. (Dry)	<b>Electronics:</b> Raymarine Chart Plotter

## 2. Nuances

There are a few things about Mirage that are not 'typical'. These are the things that may require special attention or where it may be best to deviate from customary operating procedures. We have listed some here because we believe they will help you plan your charter.



### **Companionway Door, Locking/Unlocking**

Mirage's companionway door is a single unit that raises up and then slides into itself. It is very important that the key is removed IMMEDIATELY after unlocking. If you raise and slide the door without removing the key, it is likely to break off in the lock. Please make sure you are gently placing the door in the slide or down to relock.



**Lighting**

Mirage is equipped with LED lighting throughout the boat. For lights to work, you must first switch on the DC Main at the electrical panel. This will provide DC power to all the lights. Most lights have individual switches where you can turn them on or off.

**Stern Tie**

If you are anchored and want to use a stern tie, it is mounted on the stern rail, port side. It is 300 ft of line. If you use the stern tie line, please take care in coiling it back up neatly. It needs to be a VERY tight wrap.



300 ft of stern tie

**3. Emergency/Safety Equipment**

**Bilge Pump (Manual) and Handle:** Located on the starboard side of the cockpit next to the engine start panel. The pump cover doubles as the pump handle. Note: if water rises above floorboards, you can use shower sump pumps in an emergency.

**Carbon Monoxide Detectors:** Forward stateroom, aft stateroom, and nav station (replaced NEW in 2022).

**Emergency Tiller:** Long curved metal pipe in starboard cockpit locker. In the event you should lose steering, remove the round cap under the helm seat with a sinch handle and insert the emergency tiller over the top of the rudder post.

**Fire Extinguishers (4):** Both staterooms, under nav table, and under the port settee, aft end.

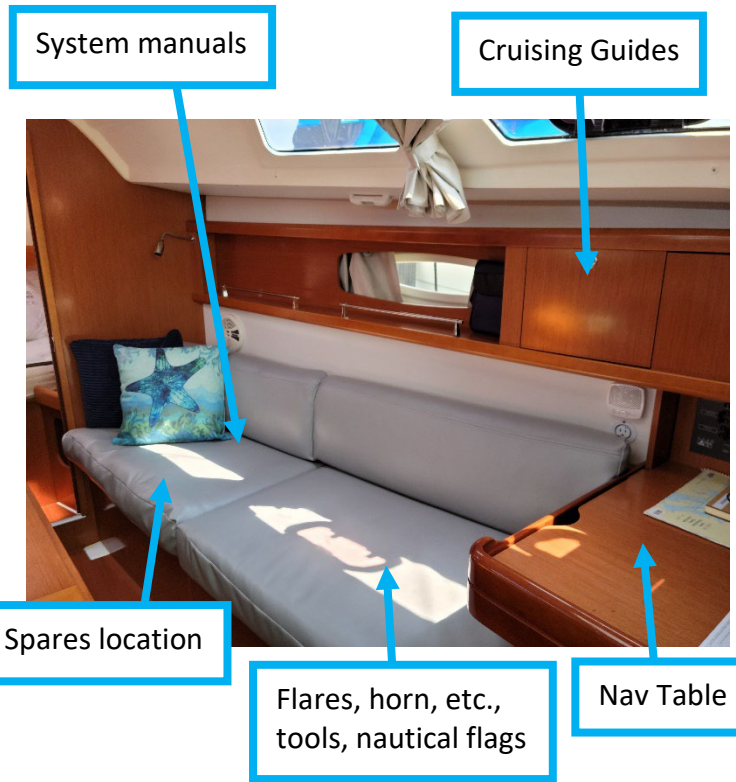
**First Aid Kit:** In salon head vanity cabinet.

**Flares (Pyrotechnic - 3) and Folded Plastic Distress Flag:** Inside a green mesh bag in the salon, under the starboard settee, aft end.

**Flashlights:** Inside the nav table and in clips at the top of companionway stairs.

**Horn, handheld:** Inside a green mesh bag in the salon, under the starboard settee, aft end.

**Lifesling:** On the port stern pulpit. Please review the cartoons on the face of the case for procedures. The lanyard is secured to the boat so that tossing the floating harness allows it to tow behind the boat like a ski tow rope. Circling the person overboard will draw the recovery line near them.



**PFDs – Inflatables (6):** Located in the aft stateroom hanging locker. NSO: please check for “green” visible at bottom of clear canister before each cruise. That verifies the auto-inflate function will trigger when immersed. For your safety, please wear these at all times when working on the deck and in the cockpit.

**PFDs - Foam Vests (4):** Located in the forward stateroom under berth.

**Radar Reflector (tube style):** Starboard shroud above first spreader.

**Spares:** Clear plastic bin under the starboard settee, forward end.

**System Manuals:** *If a mechanic needs this level of information for an emergency repair, they are in a Beneteau navy blue soft case under the starboard settee seat storage, forward end.*

**Tapered Plug, Universal Foam Orange StaPlug:** Inside a green mesh bag in the salon, under the starboard settee, aft end.

**Tools:** Located under the starboard settee, aft end.

**VHF Radios:** Channel 16 is for emergencies. VHF base unit and handheld at nav station.

**Windlass Clutch Release/Tighten tool:** Use a jib winch handle, located in the cockpit.

## 4. Anchors and Windlass

### Highlights

- Windlass controller is in the anchor locker.
- Engine must be running to use the windlass
- Windlass breaker is on the battery panel in the aft stateroom.
- Chain is marked at different lengths, and a placard is mounted in the anchor locker which denotes what the markings indicate.
- Use a winch as a Windlass clutch release/tighten tool. If the windlass slips when raising the anchor, the clutch may need to be tightened. In an emergency, if the anchor needs to be lowered quickly the clutch can be loosened. Keep enough tension on the clutch so the chain pays out at a controlled rate – keep an eye on the chain pile and be prepared to tighten the clutch if a knot of chain is pulled up.
- The windlass gypsy is not designed to hold the boat while anchored, so please use the snubber with chain hook to hold the chain while anchored.



- Please avoid chipping the bow with the anchor by using caution and slowly raising/lowering the anchor when it is out of the water.
- Turn ON the Anchor light from dusk to dawn. The breaker switch is labeled and located on the DC panel at the nav station. Note: the anchor light is difficult to see as lit from the deck.
- Secondary/Spare anchor is stowed in the starboard cockpit locker.

## Details

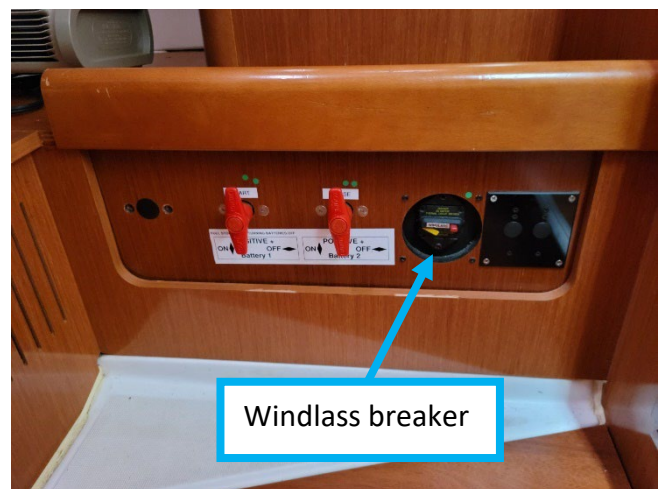
Main anchor – 33# Lewmar claw, mounted on the bow, with 190' of 5/16" chain, and 60' of 5/8" nylon rode, marked with 10' yellow paint at 100', and 5' yellow at 150', and the last 20' of chain (between 170-190') is solid red paint. The nylon section is not marked.

Snubber – Have the anchor snubbed at all times, except when setting or retrieving the anchor.

Secondary – 22# Delta, with 30' of chain and 150' of nylon rode. The entire secondary system is inside a mesh bag in the starboard cockpit locker.

## To Deploy Main Anchor:

- 1) Check tide tables to determine current water level and amount of drop/raise while anchored.
- 2) Weather (Ch 4, "Northern Inland Waters" or Ch 7) helps select a safe anchorage.
- 3) The windlass circuit breaker is located on the panel with the large battery switches in the aft cabin, below the hanging locker on the port side.
- 4) Normal for the islands is a 4 to 1 scope, bow to bottom (add 5 feet to depth sounder reading: 4' freeboard and 1' for transducer below waterline). In the San Juans Islands, anchorages are often about 25' bow to bottom, so I often deploy about 100' chain—hence the 10' marker at 100'.
- 5) To avoid hitting the hull when initially lowering the anchor, I do the following to prevent the anchor from swinging as it travels over the roller: Push the anchor forward keeping the shank *level* before gradually allowing the shank to rise as I ease it forward slowly into the hanging position (no swing!).
- 6) Lower the anchor to approximately the number of feet on the depth sounder so the anchor is on the bottom, either by easing the brake or depressing the down switch. To loosen, pull aft, then use a pulsing motion to moderate gravity descent.
- 7) A signal to the helmsman prompts reverse at idle speed while deploying rode to the desired scope.



- 8) Allow the anchor to set and to stop the boat while it continues in reverse, idle speed. Then line up objects on shore to determine if the anchor is holding, staying in reverse at idle for about one minute.
- 9) Finally, set the snubber and ease the windlass so it is not under strain.
- 10) If stronger winds are forecast, I test with RPM at half the projected windspeed (1,000 rpm for winds to 20 knots; 1,500 rpm for 30 knots, etc), *after* making sure the snubber is set. (Checking movement shore side, not the significant prop current going by the chain.)
- 11) In storm conditions (or storm forecast), you can increase scope if there is adequate room to leeward.
- 12) The secondary anchor is available for additional holding power if a storm is anticipated, but best if set before the storm hits.
- 13) If anchored in a small cove, you may wish to deploy a line ashore. 300' floating polypropylene on a reel resides on the stern rail, port side. Get in the dinghy off the swim step and pull the line with the dinghy while the spool unwinds. If sufficient length, bring the line around a secure shore object and back to the boat to a transom cleat for ease of retrieval.  
**Please note: if you use the stern tie line, please take care when recoiling it so that it is tight and neat.**

#### To retrieve the anchor:

- 1) Start the engine so you can power the windlass.
- 2) Depress "up" switch, always assuring the chain is vertical during retrieval—this avoids either towing the boat or dragging the chain against the hull. Into a breeze, engage forward gear as needed, but exercise care that you don't over stand and drag the chain against the hull.
- 3) As needed, clean the chain during retrieval. You can use a bucket of salt water to splash the chain, or you can use the boat hook to remove pieces of eel grass that gets wrapped around the chain.
- 4) A mountain of chain under the windlass can jam it and in rare cases cause a wild gravity runout of rode. If that happens, stand clear for safety. To avoid that chain "mountain" push the chain forward in the well as it is retrieved, using the mop handle. This is important for the initial chain retrieved. The last 50' can stack under windlass ok. **Using a boat hook for this is likely to cause damage to the hook and it will need to be replaced.**
- 5) As the length of rode remaining approaches the water depth, the sound of the windlass laboring alerts you to immediately stop. Sometimes a brief pause will cause the anchor to break free, given the 90 degree angle of pull. After about 30 seconds of waiting try the windless again, if it's laboring, you may have to break out the anchor with the engine in idle forward using the snubber, not with the windlass.
- 6) To nest the anchor without chipping the hull, the anchor may need to be swiveled. Use the windlass to bring the anchor shank up and over the bow roller in one continuous motion, then nest the anchor by hand.
- 7) After nesting, with a slight slack in the chain, secure the anchor once again with the snubber on the forward bow cleat. As noted, the chain is only "un-snubbed" when it is moving in or out.
- 8) Reminder: cover the windlass switches *before* closing the anchor locker lid.

- 9) Turn off windlass breaker.

## 5. Barbecue

The Magma BBQ is mounted on the starboard rail at the stern. Replaced new in 2023, it uses its own propane tank which is hooked directly to the gas regulator.

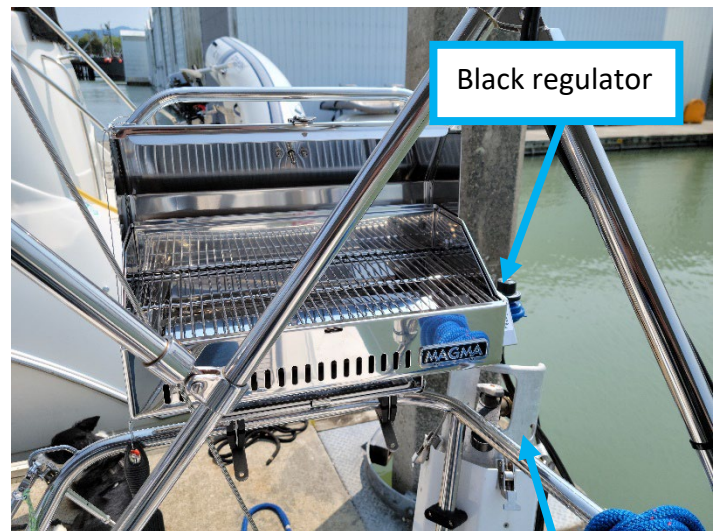
To use the BBQ:

- 1) Open valve on the propane tank so gas is flowing to the BBQ.
- 2) Push in the regulator (black knob) and twist
- 3) Push the black button at the front of the grill to ignite

When finished:

- 1) Turn off valve on the propane tank **first\***
  - 2) Twist the regulator back to the off position
- \*It's important to turn off the propane tank first, that way propane will bleed out of the line.**

As a courtesy, please clean the grill after each use to prevent grease and grime buildup. Please remember to replace the black cover on it once fully cooled.



Black regulator

Propane tank valve

## 6. Batteries and Charging

### Important Notes

- Please keep batteries above 12.2V at all times. 12.8V is fully charged (with all loads turned OFF – including the fridge and when not charging).
- When charging, battery voltage will read above 13V.
- Ensure batteries are charging when connected to shore power
- When underway the engine is automatically charging all batteries.
- At anchor, the house battery bank is ample enough to handle normal DC loads including lights, diesel cabin heater, and stereo. **You should turn off the refrigerator while at anchor;** it will keep things cool overnight.



**BATTERIES:**

Mirage has two battery systems, one for the engine (start battery) and one for the boat (house batteries). The batteries themselves are located in the engine compartment and under the base of the aft cabin bed and under the port settee. They are AGM and maintained by our Maintenance Professional.

Each system is controlled by large red switches located on a panel under the hanging locker on the port side of the aft cabin. You do not need to change the positions of the battery switches as the banks are isolated automatically.

Note: both switches must be ON for batteries to charge.

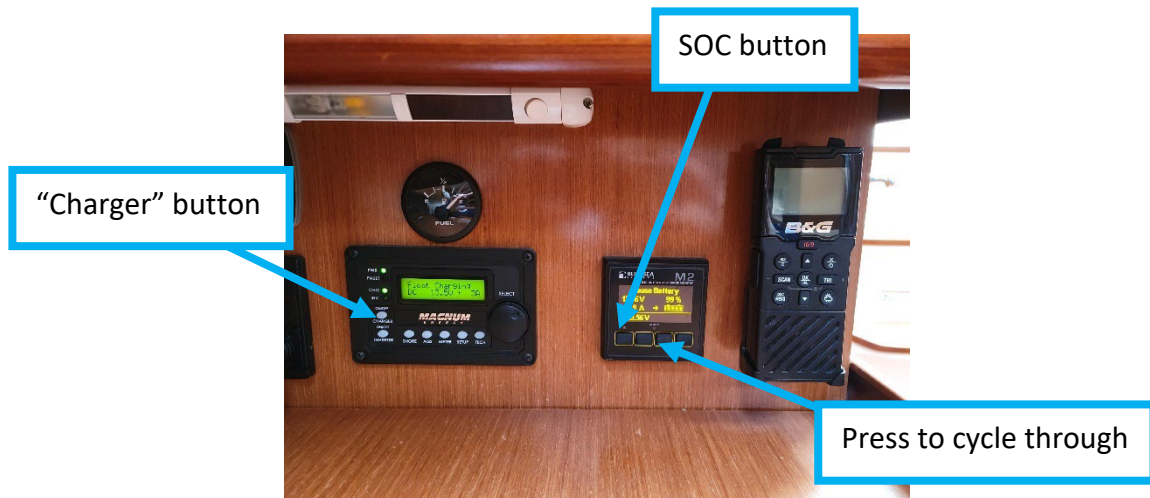


**CHARGING**

Mirage's batteries are charged in three ways:

- 1) By the engine alternator (while the engine is running)
- 2) By the Magnum AC charging unit when connected to shore power (Battery Charger breaker: ON)
- 3) By three flexible Renolgy solar panels (total 300 watts) mounted on the bimini top

There is a Blue Seas M2 State of Charge meter at the nav station that monitors both the house and start batteries, the % of charge available, and the discharge rate. The left button will show a State of Charge (SOC) summary; the second button will cycle you through the Start, House, and State of House (SOH). Low voltage alarms have been programed into the meter and a red LED light and a tone will warn of low battery voltage.



The Magnum Energy charging control panel at the nav station displays the state of charging level (bulk, float, absorb, or full charge) and battery voltage/amps. Normally, the unit will start charging automatically after

connecting to shore power, but if not then you will need to push the "CHARGER" button to put it in charging mode and make sure the "Battery Charger" breaker on the AC panel is flipped ON.

### Shore Power

120V AC power is provided by the shore power cord attached at the dock and the AC receptacle on the starboard stern. Because the shore power receptacle on Mirage is just above the furnace exhaust, **please loop the cord around a stanchion before plugging into the boat to keep it tensioned enough to not drop in front of the hot exhaust outlet.** The master AC breaker is in the starboard aft lazarette behind the engine instrument panel.

### Solar Panels

Mirage is equipped with 300 watts worth of solar panels that automatically charge the house batteries – no action is required by Charter Guests. The panels, combined with motoring and/or plugging into shore power, will normally keep the batteries topped up.



## 7. Berths and Bedding

Mirage can sleep up to 6 people. She has two cabins with hanging lockers and storage areas. The forward cabin is a V-berth and the port side, aft cabin is athwartship berth measuring 7' long and 5.3' wide. Both cabins can sleep 2 adults comfortably.

In the salon, each port and starboard settee can sleep one person comfortably. The salon cushions were reupholstered for the 2023 season. Please be careful when lifting the seats of the settee to not catch or tear the fabric.

## 8. Bilge Pumps

### Electric Bilge Pump

Mirage has an automatic electric bilge pump below the salon floor. A three-way switch is located on the electrical panel. The center position is OFF, when tilted to the left it is being controlled manually, and when tilted to the right it is operating automatically using a float switch to detect water and when to begin pumping. Please keep it in the automatic operation position.

Please visually inspect the bilge each day and note any excessive accumulation of water. If you suspect a problem, please contact SJS or the Maintenance Professional.

### Emergency Bilge Pump

The emergency bilge pump operates manually from a pump handle that is attached to the pump body located under the helmsman's seat on the starboard of the pass-way.

*Note: in emergencies, the shower sump pump can be turned on if water rises into the head.*

## 9. Dinghy and Outboard

### Highlights

- 10' fiberglass hulled Kachemak dinghy
- **New for 2023:** Torqeedo 1103 CS Electric Outboard
- Tow the dinghy 6' off stern using the port cleat (the side away from the diesel exhaust). Use a proper cleat hitch and for peace of mind tie off the painter's bitter end to base of the stern pulpit. In very rough conditions, towing the dinghy from the low side makes it unlikely the dinghy will flip in the wind and waves.
- Do not tow with outboard attached to dinghy or leave on the dinghy overnight.
- Inflatable tube air pump – located in the starboard cockpit locker.

### Details

#### Towing the Dinghy

Always remove the outboard motor from the dinghy before towing. Towing works best when the dinghy is brought close to the boat with 5-6 feet of painter line between the stern and the towing bridle of the dinghy. This lifts the bow out of the water and reduces drag. To keep the dinghy away from engine exhaust, tie the painter off at the **port** stern cleat with a standard cleat knot, then attach the bitter end to the stern rail using a rolling hitch or similar secure knot.

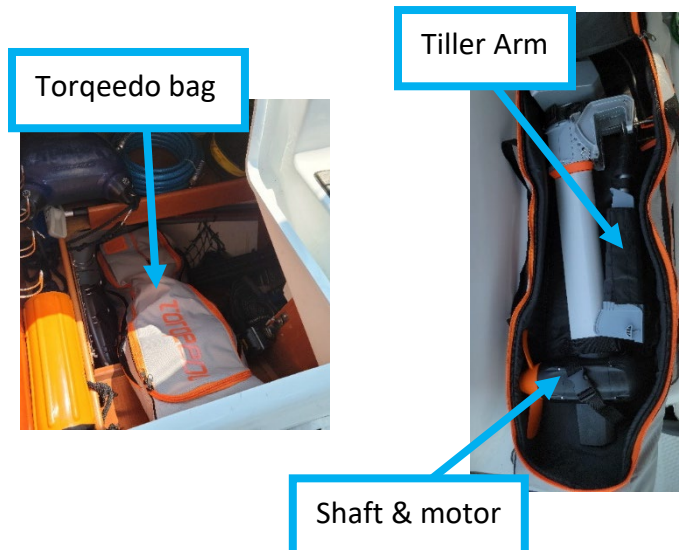
#### Inflating the Dinghy

If the dinghy needs inflation, the foot pump is in the starboard cockpit locker. The dinghy has three baffles, each with an inflation valve located on the inside of the boat. Use the black adapter to inflate the main baffles.

The foot pump is held closed with a locking clasp. Release the clasp, insert the appropriate inflation nozzle onto the valve and give a ¼ turn to lock it in place. Inflate the baffle with the foot pump until it is firm. When done, carefully detach the inflation hose. If the valve is still open, press it once to close it.

#### Preparing and Using the Outboard

1. The outboard pieces are stored in the starboard cockpit locker inside the grey and orange Torqeedo bag and in the battery cabinet above the nav station.
2. The outboard will be broken down into three pieces: the tiller arm, the battery, and the shaft with prop. Unclip and carefully remove both the shaft and the tiller arm from the storage bag



and grab a battery from the cabinet above the nav station.

3. Transferring the outboard to the dinghy is best accomplished by having one crew member in the dinghy to receive the outboard pieces from another crew member on deck, rather than a single crew member trying to get off the boat and onto the dinghy with multiple outboard pieces in hand. Although the outboard pieces are relatively light, please handle them with care.
4. Secure the shaft to the dinghy by tightening the tension knobs.
5. Slide the tiller arm into place.
6. Slide the battery into place, making sure the power cord does not get caught.
7. Plug both the tiller arm and the power cable from the shaft into the battery. Please close the black cover over the charging receptacle so it does not get water damage.
8. Insert the long orange locking pin and attach the kill clip, first to yourself, then the outboard.
9. Press the power button on the tiller arm. The display will show the battery percentage, speed, and power usage.
10. The Torqeedo outboard allows you to move in both forward and reverse. Grip the handle on the tiller arm and rotate it to go forward or reverse. **When switching gears, please allow a moment for the prop to stop spinning, this will put less stress on the motor.**



### Arriving at the Beach

1. Before you hit the beach and while still in a few feet of water, slow your speed to neutral and allow the momentum of the dinghy to carry you forward.
2. Tilt the motor out of the water to avoid damaging the propeller.
3. Please do not drag the dinghy up onto the beaches over sharp rocks and barnacles.
4. Secure the painter to ensure the dinghy doesn't float away on a rising tide.

### When The Outboard Is Not in Use

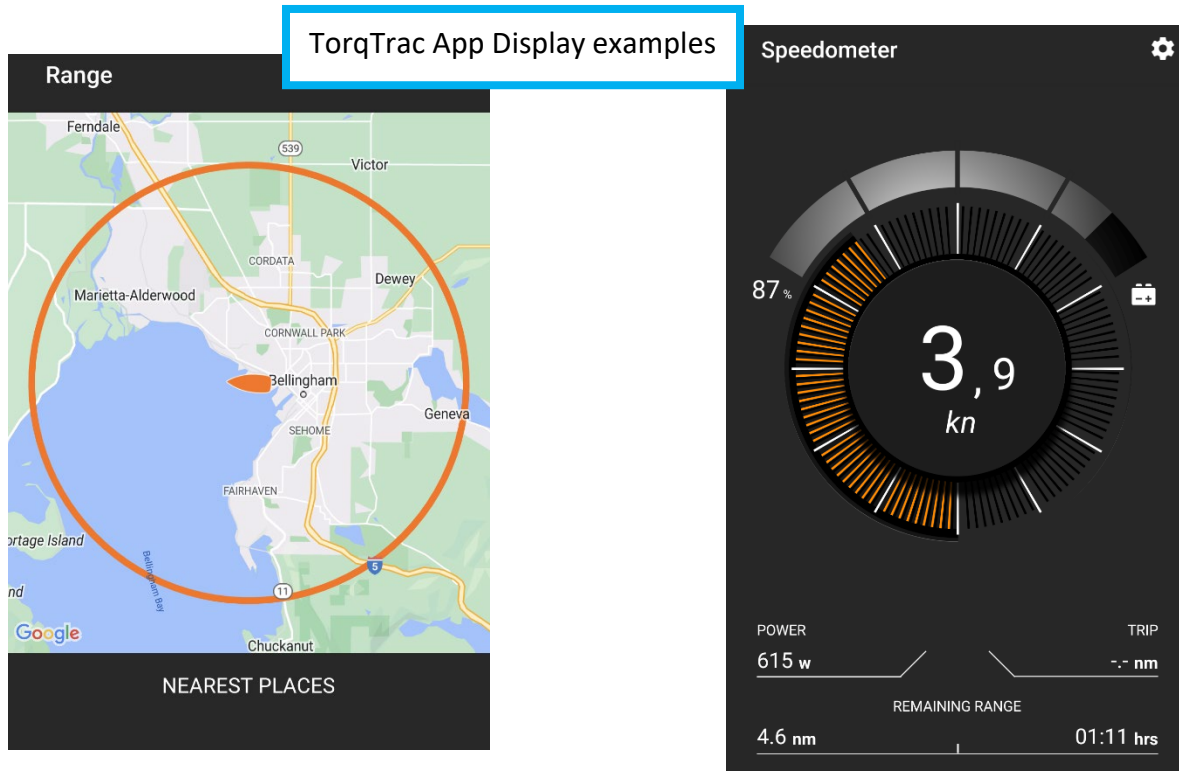
1. Put the outboard back inside the grey and orange Torqeedo bag and stow it carefully in the starboard cockpit locker.
2. Make sure the battery is seated properly in the cabinet above the nav station and, if applicable, make sure it is charging.

### TorqTrac App

Torqeedo has a unique app called "TorqTrac" that uses a Bluetooth connection to transmit information from the outboard to a smart device, where it can be merged with map information from Google Maps, enabling you to see in real time just how far you can still travel. You can also enter waypoints and view your expected time of arrival at your destination.

To use, you must download the “TorqTrac” app to your iPhone/iPad or Android device and have the “TorqTrac” cable plugged into the outboard battery. The cable is stored inside the Nav station.

Once your smart device is connected to the Torqeedo via the Bluetooth, you will see a speedometer that will display speed, power, distance traveled, the remaining battery capacity, and remaining range.



Use the map section to view your GPS position, course, and speed in relation to geographical locations available on Google Maps. A circle on the map shows the remaining range of the battery life. You'll want to make sure Mirage is always within that orange circle in order to ensure a return to the boat, unless you're planning to paddle. Note: the range will change based on conditions and your speed.

**Please note: when using the map section, the map is NOT a navigational chart and will NOT show hazards.**

## 10. Dodger and Bimini

### Dodger

The dodger protects the crew from the weather when in the cockpit and also has stainless steel supports to grab for safety. The glass panels can be unzipped for increased ventilation, but please be aware that they are a tight fit and re-zipping may be difficult. The center front panel can be unzipped on the sides and folded back along the underside of the top and secured to the fittings there. The dodger is not designed to be lowered.

The dodger's plastic "glass" is vulnerable to scratching from salt crystals, especially after sailing into a challenging breeze. The salt spray on the glass dries in the wind, leaving behind tiny salt deposits that obscure your vision. Please avoid directly touching the glass with a rag or sponge. Salt does dissolve in water, but not as fast as you might think. The salt crystals remain undissolved for several seconds and premature wiping can have the same effect as rubbing sandpaper on glass.

To Clean: Use a generous amount of fresh water from a pan from the galley to "flood" the glass and dissolve the salt crystals away. If you are at a dock, you can use a freshwater hose.

*Caution: Most spray-on sunscreens and bug-sprays react chemically with the plastic windows. Please inform your crew to spray downwind of all the panels. And please don't lean against the panels if you have sunscreen on your back or shoulders. Once that chemical reaction takes place, the plastic is ruined.*

### **Bimini**

The Bimini offers additional weather and sun protection back at the helm. Constructed of the same material as the dodger, the Bimini has a plastic glass insert above the helm so the helmsperson can see the position and the trim of the mainsail. Solar panels are mounted on top. Between the dodger and Bimini is a center section that zips in place and connects the two. This center section can be removed.

*If you remove the center section of the Bimini:* Care should be taken to protect this section by storing it in a secure location where it cannot be damaged or lost overboard. Care must also be taken when reinstalling this section as the fitting is quite tight. You will need two people to ensure damage isn't caused by over-muscling the zippers in re-connection.

## **11. Electrical**

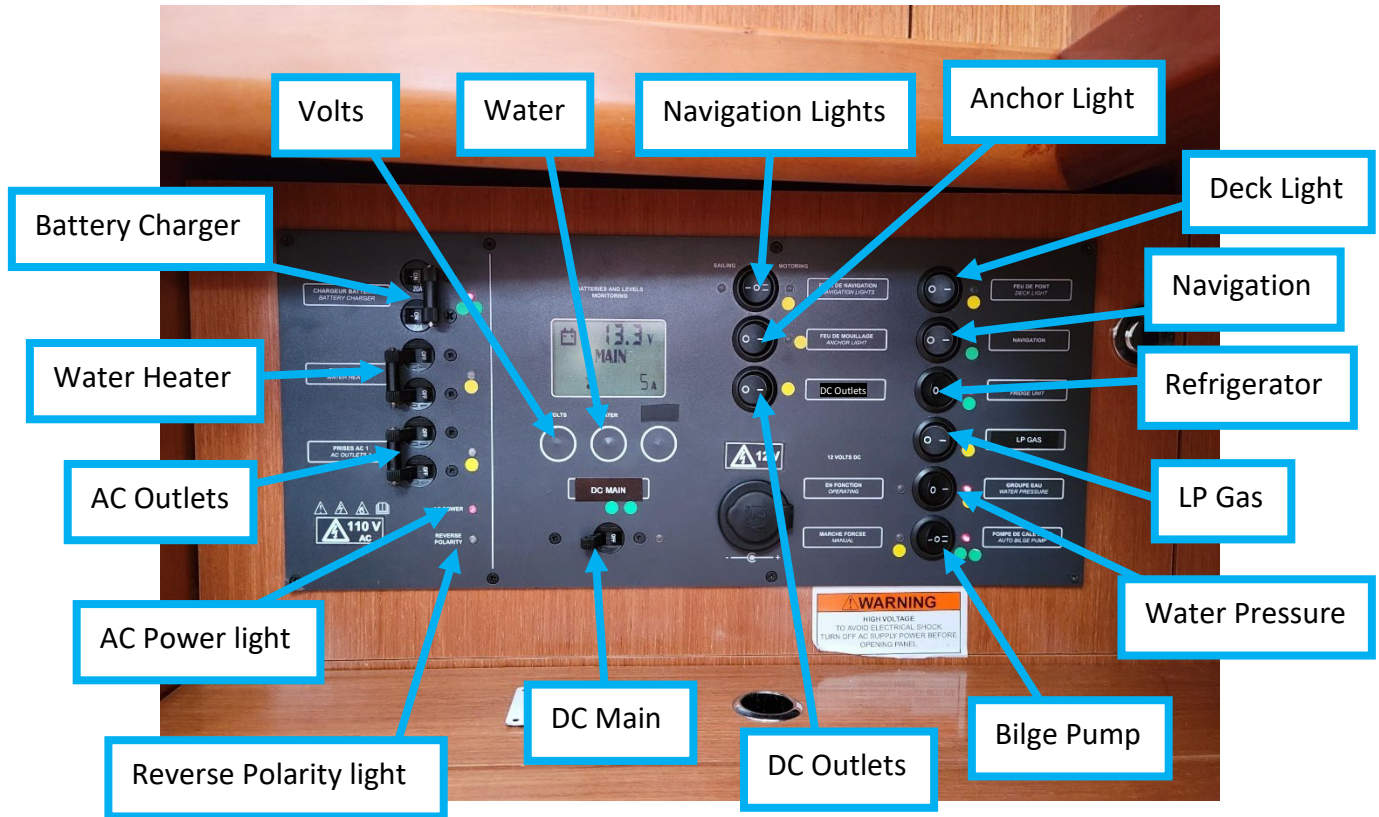
The electrical panel is divided into two section, AC and DC. The AC is nominally 110V and the DC is 12V. The 30-amp shore power cord should be plugged into the boats AC receptacle before you plug into the shore side. Please be sure to carefully thread the plastic collars in place; they cross-thread easily.

### **AC Panel**

The left side of the electrical panel is the AC side and has three double pole switches. Below those are two lights which indicated AC power is present, and a Reverse Polarity light which indicates something is wrong with the shore power source. If this happens, disconnect until the problem is corrected.

### **DC Panel**

The right side of the electrical panel is the DC side and it has several breakers, as well as the battery gauge. The DC Main must be ON for any of the DC breakers work.



### Switches and Controls on the Electrical Panel

- **Shore Power:** All the AC controls are along the left side of the panel. There is no “master switch” to turn on AC power; when you connect and disconnect shore power, AC is simply ON or OFF. When the AC is ON, a red LED light is illuminated below the AC switches. Please ensure that the switches for the AC items (water heater, battery charger, AC plugs) are turned OFF before connecting or disconnecting shore power.
- **Water Heater:** Activate the electric hot water heater when you are on shore power if you need more hot water (when the engine is running it heats the water).
- **Battery Charger:** Turn ON the battery charger switch whenever you are connected to shore power. It must be “ON” to charge the batteries while on shore power.
- **AC Outlets:** Activate this switch to turn ON the AC electrical outlets located throughout the boat, electric heater, etc. These will only work while connected to shore power or using the inverter. Please do not use high amp appliances when using the inverter.
- **Bilge Pump:** Always leave the bilge pump setting in “Auto.” Test the pump daily by switching to manual and listening for the pump to run, then return it to the “Auto” setting.

- **Battery Gauge:** Multipurpose
  - 1) **Volts** – gives the state of battery charge. Push repeatedly and it will cycle through the start and house state of charge. A secondary gauge is located directly aft of the nav table.
  - 2) **Water** – gives the amount of water in each tank, in quarter amounts.
- **Water Pump/Pressure:** If you don't hear the pump start when you turn it ON at the panel, it means that the system is at working pressure – you should hear the pump start again after you use some fresh water. The toilet, shower, and sinks use the fresh water supply, as does the cockpit shower.  
*Tip: When underway and if no one is below deck, turn the water pump OFF.*
- **LP Gas:** provides power to the LP gas solenoid to allow LP gas into the boat in order to use the stove and/or oven
- **Fridge Unit:** We usually leave the fridge switch "ON" whenever we're on the boat. If the house battery charge level drops to near 12V and you aren't planning to run the engine/connect to shore power, turn the fridge off. Your provisions will stay cold overnight.
- **Navigation Instruments:** Turn this switch "ON" to activate the chart plotter, VHF, instrumentation, and multi-function display in the cockpit. This switch also provides power for the radar, depth sounder and knotmeter.
- **Anchor Light, Navigation Lights, and Deck Light:** When anchored or mooring, turn on the Anchor Light at dusk (located at the top of the mast). When motoring at night, turn on the mast-mounted Navigation Lights. Turn on the Deck Light if you must go forward on deck at night.
- **DC outlets:** This provides power to various DC outlets on the boat.

## 12. Electronics and Instruments

### CHART PLOTTER:

**BRAND NEW 2023:** A Raymarine touch screen plotter is at the helm. Turn on the Navigation breaker on the DC panel, then the Power button on the unit until the Raymarine logo appears. Press OK to acknowledge the disclaimer message. You will then be brought to the Home screen.

*Note: Please refrain from changing settings beyond the typical functions like chart orientation, radar overlay, AIS overlay and range.*

### Commonly Used Chart Plotter Selections:

#### Finding the Navigational Chart:

When the Home screen appears, select Chart.

#### Zooming in and out:

To change the scale of the chart, use the Zoom buttons + and – on the touch screen. You can also use two fingers to zoom in and out, like you would on a touchscreen phone. If you want to look at some feature that does not yet appear on the chart screen, just slide your finger on the screen in the direction you want to view. Tap the screen to place the cursor on your feature and zoom in/out to see what you are looking for.



### Returning the screen to the vessel's current location:

To return the screen to Mirage's current position, press the little white boat that has appeared along the top left of the screen.

### Clearing Pre-existing Waypoints, Routes, and Tracks:

You can enter/edit/view Waypoints, Routes, and Tracks by selecting the menu icon → Waypoints, Tracks, and Routes → then select the one you want. From each selection you can view, edit, or delete.

### Chart Orientation:

You can change the Chart Orientation to your preference. We recommend either Heading Up or North Up. To change, select the menu icon → select the settings icon → View and Motion → Chart Orientation and then select your preferred choice. When back on the regular Chart screen, your orientation is denoted in the bottom left.

### Display Brightness:

Press and swipe over the power button and arrows → a menu screen appears and the Backlight Level control will be displayed as a bar at the bottom of the screen → use your finger to adjust the brightness up or down.

### Course over Ground (COG) Vector/Line:

The COG line should always be ON. If it is not, press and hold the little white boat icon at the top left of the screen. You will then have the option to turn the COG line on.

### Displaying and using a Split Screen:

From the Home screen, select which split screen you would like: dual chart, chart/radar, etc. Push whichever side on which you want to change any settings. The Raymarine radar uses the plotter touch screen.

### Radar Overlay:

From the Home screen, select Radar connect → a screen will pop up that says Radar Quantum Radome (-10441), select Tx → once connected, you can go back to the Home screen, select Chart, and the Radar will overlay on top. You can change the radar range by selecting the icon in the lower right corner of the screen.

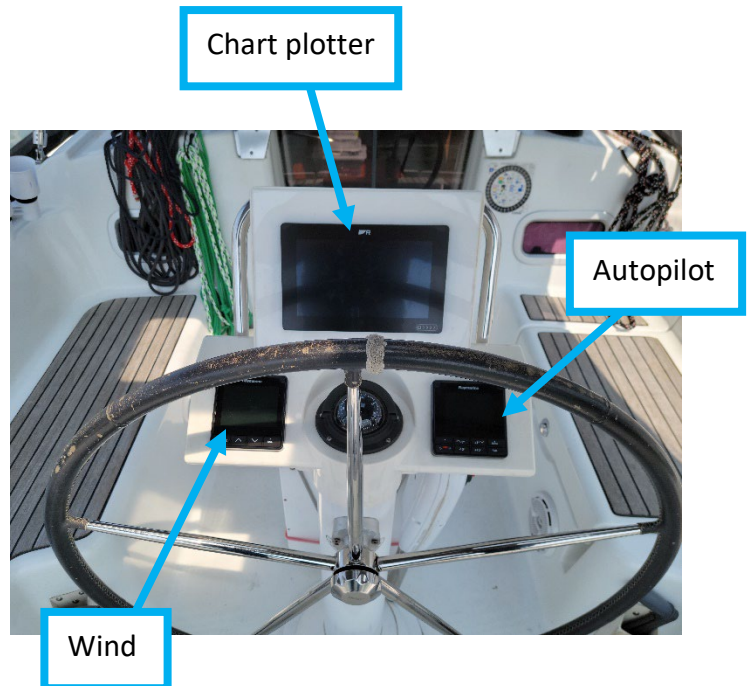
### AIS Overlay & Targets:

AIS should always be on. To view targets, from the Chart screen, select the menu icon → Targets → AIS. Touch any vessel name to view their position and vessel details.

### A.I.S. (Automatic Identification System):

#### Highlights

- Mirage transmits her position and data via an AIS signal as well as receives AIS signals from other vessels equipped with AIS transmitters (Commercial vessels are required to have AIS, recreational vessels are optional). **Mirage is transmitting her position when the VHF base unit radio is ON. Please turn ON the VHF unit anytime you are underway.**
- On most vessels the VHF base unit radio and must be ON to send and receive AIS data. Some vessels will have a separate AIS unit installed and wired to the batteries for full-time transmitting. The chart



plotter is tied to the VHF radio or AIS Unit and shows the positions of vessels with AIS as triangles. Make sure the AIS overlay is turned ON in the settings menu.

- AIS information supplements marine radar, which continues to be the primary method of collision avoidance for water transport.
- AIS requires each vessel to have a 9-digit MMSI (Maritime Mobile Service Identity) number to transmit position and data. Mirage's MMSI number is 368142650.

### **Details**

AIS vessels appear on the chart plotter screen as triangles. The triangle points in the direction that the vessel is moving and if you touch the screen over the triangle the system will give you additional information (such as name, size, speed, bearing, etc.) about the vessel. The system also transmits this same type of information about Mirage to other vessels with AIS.

The AIS is an added safety feature which allows large commercial vessels to easily see you and your direction/speed. They may try to contact you via VHF channel 16 to verify your course intent. In addition, AIS allows San Juan Sailing/Yachting to provide faster assistance in case of unplanned maintenance issues as well as alert San Juan Sailing/Yachting of Mirage's return approach. Vessels with AIS can be viewed in real-time through mobile device apps and websites like [www.marinetraffic.com](http://www.marinetraffic.com) that will reveal vessel name, course, speed, track, and other information.

### **AUTOPILOT:**

BRAND NEW 2023: The Raymarine Evolution EV-200 Sail Autopilot breaker. To engage, press "Auto". Push "Standby" to regain control of the wheel.

### **i70s MFD:**

The i70s multifunction display will show your Speed, Speed Over Ground (SOG), True Wind, Apparent Wind, Depth, and Heading. Use the arrow keys to cycle through the different display options. **Please do not change any settings.**

### **VHF RADIOS:**

Mirage has 2 VHF radios. One above the Nav table and one B&G handheld device. To use, you must have the Navigation breaker on. The base unit at the Nav table must be on to use the handheld. The handheld VHF charges automatically using inductive charging when snapped into its holder above the Nav table.

**San Juan Sailing monitors channel 80. We suggest doing a radio check before your initial departure to ensure you're transmitting with no issues. And upon your return, you can hail our office and our staff can assist with lines as you return to Mirage's home slip.**

### **USB Charging Ports:**

Mirage is equipped with three dual-port USB charging ports, with both USB-A (original USB) and USB-C. There is one each in the forward berth and aft berth, and one at the Nav station. They have three modes of operation: ON-with-battery-voltage-indication, ON-with-red-LED, and OFF.



## 13. Engine

### Important Notes:

- Keyless engine start
- Slight prop walk to **port**
- Max RPM is 2800; fast cruise is 2600 RPM; efficient cruise is 2400 RPM

### Details

#### Inspecting the Engine

Engine access is provided by lifting the companionway stairs, which operate on hydraulic lifts – there are no latches, just lift it up, push it down. Side access is provided via the hatch in the head. Aft access is provided via the port-aft stateroom.

We recommend performing the following inspections each morning before getting underway:

- Lift the companionway steps to access the engine compartment. *Look around and below* the engine for any signs of oil or other fluid leaks.
- *Check the coolant level.* Anywhere between the two lines (high and low) on the overflow reservoir is where you want to be.
- *Inspect the raw water strainer for debris.* This can be done visually with a flashlight. In case of an engine overheating alarm, check for eelgrass clogging the strainer. When doing this, ensure the Seacock is CLOSED, unscrew the top of the strainer, clean out any debris, then replace it.
- *Check belt tightness* by deflecting the belt inward with your fingers; it should not depress more than a half inch or so.

For longer charters (> 7 days), check the oil level once a week. The dipstick is on the forward side of the engine and can be accessed by lifting the companionway stairs. If you need to add oil, there is spare oil stored with general spares. There are two (2) oil filler caps, one on top of the engine and one on the starboard side near the dipstick. Do not overfill; add no more than a cup at a time and re-check the oil level.

#### Starting the Engine

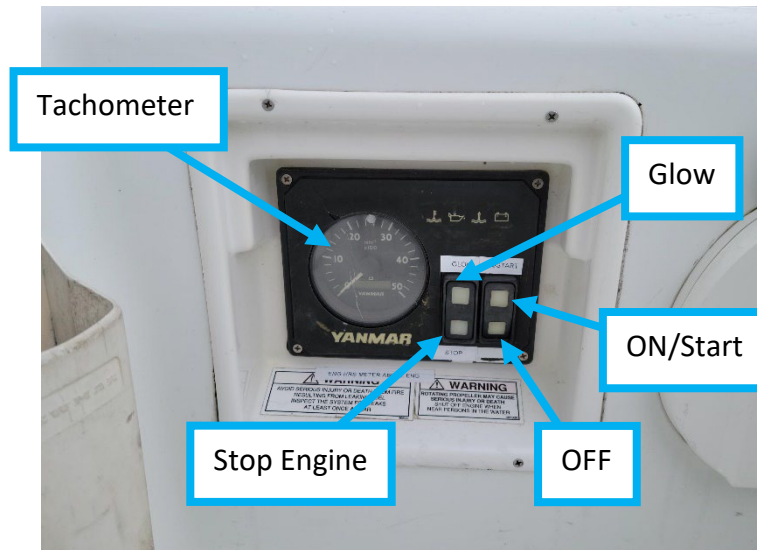
This is a keyless start system. The main battery engine switch, located in the aft port cabin, must be in the “ON” position to start the engine. (When docked in a marina, or leaving the boat for an extended period, switch the engine battery switch to “OFF” and lock the companionway hatch).

1. Ensure that the throttle/gearshift is in neutral.

**OPERATING TIP:** In colder weather or when you want to run the engine at a higher idle speed (e.g., to charge batteries), depress the **red** button at the base of the throttle and push the throttle slightly

forward. This disengages the transmission and allows the engine to run at a higher idle RPM. We recommend targeting 1000-1200 RPM for warm-up and battery charging.

2. Hold the GLOW button for about 10 seconds.



3. Push in the START/ON button to the first detent. A fan will start, and red warning lights will illuminate.
4. Push the START/ON button fully, which will start the engine.
5. Listen/look for water discharging from the aft starboard end of the hull. If water is not in the exhaust immediately shut the engine down and contact SJS.

**OPERATING TIP:** Allow 5-10 minutes of warm up before placing a load on the engine. It stresses a diesel engine to be placed under load when cold. Conversely, allowing a diesel engine to idle too long will cause carbon build-up.

### Running the Engine

- Engage forward or reverse gear by moving the transmission directly from Neutral to Idle-Forward or Idle-Reverse (the transmission will click into each setting), pause momentarily, then move the throttle forward/backward smoothly to your desired RPM setting. Engaging the transmission in jerky incremental steps can slip the clutch, causing damage over time.
- To keep the transmission “healthy” when shifting from forward to reverse and vice-versa, pause ~2 seconds in the 12 o'clock neutral position (say “one and two and”) before shifting gears.
- An economical cruising speed of 5-7 knots is achieved at 2000-2500 RPM, which uses about 1 gallon of diesel per hour. Please do not exceed 2800 RPM: it’s hard on the engine and fuel consumption goes

way up with very little increase in speed. I recommend keeping the engine speed under 2500 RPM for most operating conditions.

- To avoid sucking in air or sludge when the fuel level approaches  $\frac{1}{4}$  of a tank, refuel when the fuel drops below  $\frac{1}{2}$  full and before it reaches  $\frac{1}{4}$  full. The tank holds 34 gallons, so topping up at about 17 gallons is a reasonable exercise and doesn't take too long.

### Shutting Down the Engine

1. Allow the engine to idle for a few minutes in neutral to cool down.
2. Press and hold the STOP button, which will stop the engine.
3. After engine stops press the bottom OFF button and hold for a second until you no longer hear the ventilation fan in the engine compartment. The red lights on the tachometer will turn off. If the bottom power button is not turned off, an alarm will sound periodically.

**SAFETY REMINDER** – Never stop the engine by turning off the battery switch. Doing so will seriously damage the diodes on the alternator and the batteries will no longer charge.

### Boat Handling Tips

#### *Forward*

Because the propeller is almost directly below the engine, the wash from the prop takes a moment to reach the rudder; anticipate this delay when maneuvering in tight spaces. A short burst of throttle will direct water at the rudder, which if already turned, will result in a short, sharp turn with little forward movement – a strategy that can be handy when turning in confined spaces.

#### *Reverse*

Prop walk is minimal to port in reverse. Driving in reverse is a pleasure. Grip the wheel firmly when in reverse: water pressure on the aft edge of the rudder can push the rudder over to one side, which is hard on the steering mechanism (and your arms).

#### *Docking*

Unless there are high winds, we typically motor in the marina in Idle-Forward, which will produce a boat speed of about 2 knots. About 4 slips from our target dock, shift to neutral and glide in. Use the engine to stop the boat at the dock, and don't shut down the engine until the vessel is secured at the dock.

**SAFETY REMINDER:** It's difficult for people holding lines on the dock to stop the momentum of a heavy cruising sailboat. It's also a bad idea to use dock lines on a cleat to stop movement; this can result in a sudden swing of the boat and damage to cleats, boat, and/or dock. When docking, crew should avoid having to jump to the dock. If you can't step off calmly, back-up and try again.

When coming into our docks in strong winds, or if you'd just like a little assistance on arrival, hail "San Juan Sailing" on **VHF Channel 80**. They'll 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 is a sign of smart seamanship.

**SAFETY REMINDER** –Whenever you are departing or arriving at the dock have a crew member designated as the “**roving fender**” teammate. If you are going to accidentally “touch” a boat or other object, lower the fender to the point of contact.

**Note:** San Juan Sailing offers free handling instruction before you leave for your charter if you'd like to practice with Mirage or just bone up on your boat handling skills. Spending 30-60 minutes practicing getting in and out of the Bellingham marina can be a great experience.

### Troubleshooting Engine Problems

Yanmar engines are incredibly durable and you shouldn't have any problems on your voyage. Nevertheless, there are a few things to watch out for.

#### *Engine Overheating*

If the engine overheat buzzer sounds while the engine is running, it's usually no more serious than eelgrass plugging up the raw water strainer. The solution to this problem is prevention – keep an eye out for eelgrass mats, especially along those “soapy” looking tide and eddy lines in the water, and don't run over it. When eelgrass gets sucked into the engine cooling water intake, it collects in the raw water strainer.

To clear eelgrass from the raw water strainer, stop the engine, close the Seacock, twist off the clear screw-top, and extract the eelgrass. Replace the lid and tighten by turning it clockwise until the lid is seated firmly on the rubber gasket. Don't over tighten as the lid can crack. Make sure the lid's threads are not crossed as this can give the appearance of a tightened lid but the gasket won't seal. Reopen the Seacock, then restart the engine.

If after restarting the engine it 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, repeat the steps above, then open and 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 steps fail to solve the problem, call San Juan Sailing for assistance.

#### *Loss of Oil Pressure or Coolant*

If the engine loses oil pressure, the warning buzzer will sound and the oil icon warning light on the tachometer will light up, so check which light is showing red. 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. After the engine cools down, if none is seen, add enough to

reach the top-level line on the bottle. Remove the cap on the engine block and add coolant. Then check the bilge for a light green liquid (coolant). If coolant is found in the bilge, call San Juan Sailing immediately.

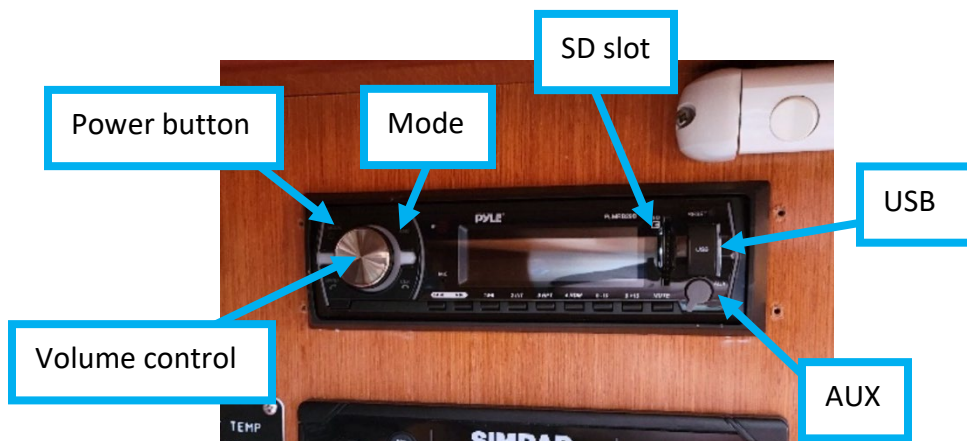
If the coolant reservoir bottle is full, check to see if the engine threw a belt. Without a belt on the raw water pump, the coolant won't circulate and cool the engine. Replacement belts are in the engine spares kit. One other possibility is that the impeller in the raw water pump has failed. While they 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.

**OPERATING TIP: Bottom line – you're on vacation!** If the engine is giving you problems, call SJS for assistance. They have repair teams in the Islands to assist you.

## 14. Entertainment Systems

Mirage has a PYLE Bluetooth Stereo Radio with speakers in the salon and cockpit. The speakers are not separately zoned and will be on in both areas. The receiver at the nav table features a digital LCD, both button and knob controls, Aux in, USB/SD slot and AM/FM radio. A remote is mounted next to the thermostat.

To connect to the stereo via Bluetooth, make sure the DC main is ON, and then press the POWER button on the receiver. Search for a Bluetooth connection to "PYLE" on your device. You can control the volume of the speakers on your device. Note: if you're using a smart phone and receive a call while using the Bluetooth function, your receiving conversation will be played through the vessel speakers.



**Reminder: Sound carries for long distances over water, please be courteous to any neighbors.**

## 15. Fuel

### Important Notes:

- The diesel fuel tank holds 34 US gallons.
- The fuel gauge is located at the nav station. The ignition must be on to read the fuel level.
- Refuel when gauge reads ½ or greater.
- Fuel deck fill is on the starboard deck, near the stern; wrench for fuel cap is in the nav table.
- In nominal conditions, the engine consumes 1 gal/hour at 2500 rpm.
- A fuel cutoff valve is located on the fuel line on top of the fuel tank under the aft port berth.

When fueling:

In the cockpit locker, we have rubber fueling gloves. The attendant will give you absorbent pads. Before fueling, build a fuel absorbent dam fore and aft in case of overfill (reaching for the pads after the spill is too late). Please fill very carefully because it is difficult to tell when the tank is full. You need to put your ear to the tank, do not fill “too fast”, and be prepared to stop immediately when the pitch rises.

*Note: The fuel tank has a breather vent and that will overflow before the fill cap does. Place a spill pad over this vent to prevent spillage.*

## 16. Heads and Holding Tanks

### Important Notes:

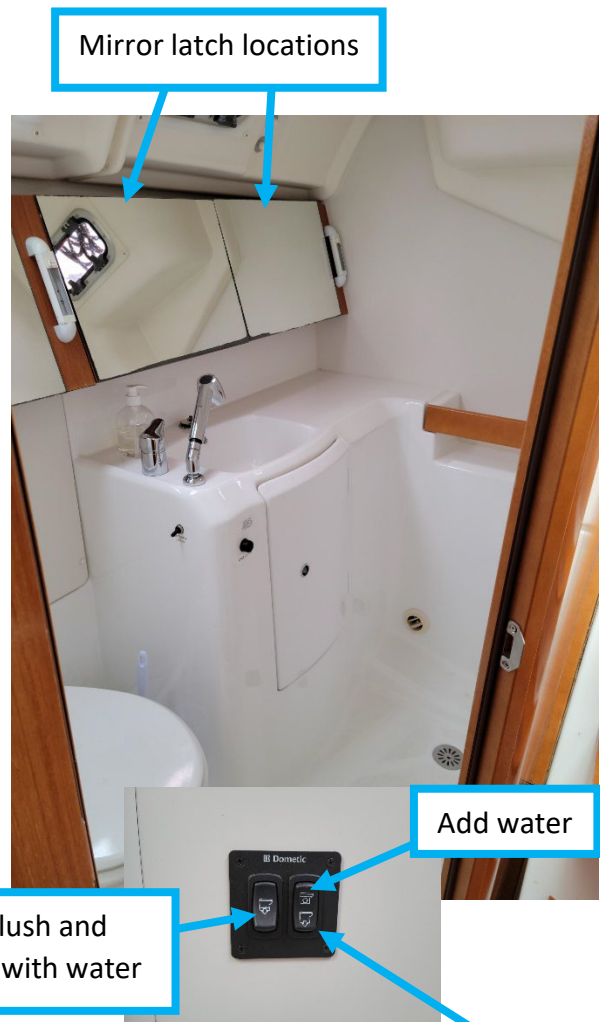
- Only what has been eaten goes in the toilet.
- Water pressure breaker must be ON to operate.
- Tank holds 21 gallons.
- Pump out cap is amidship on starboard deck.

### Head

Mirage has a fresh water, electric toilet. Do not put anything down the toilet that has not been eaten, including toilet paper, tissues, feminine products, etc. Toilet paper should be placed in a wastebasket in Ziploc baggies, not down the toilet because paper tends to clog the hoses. San Juan Sailing provides plastic baggies in each head for you.

### Head

Mirage has a fresh water, electric toilet. To operate, the Water Pressure and DC Main breakers must be on to use. The controls for the toilet are on the forward wall.

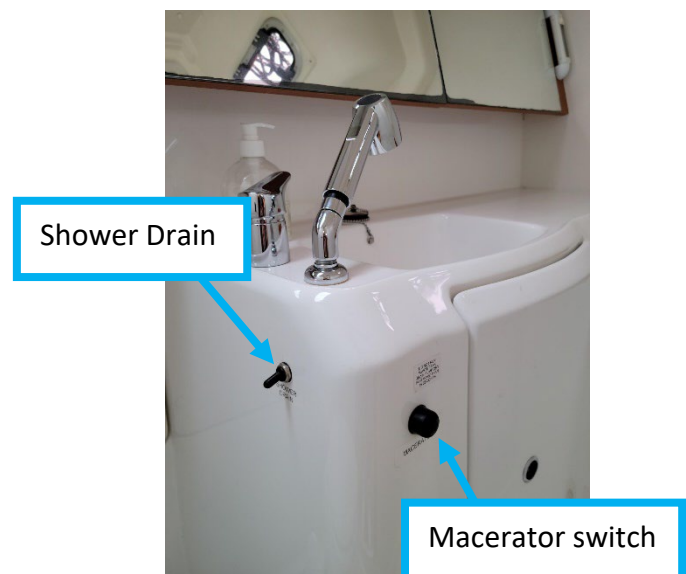




Flush only

**Holding Tank**

The holding tank holds 21 gallons. There is a "Y" valve under the sink in the head that directs the sewage to either the holding tank, or directly overboard. Please monitor tank use and empty before necessary. To check the level of the tank, open the forward mirror in the head and use a flashlight to help see the level within the tank.



**Caution:** don't let the tank get too full. Leaking sewage is not only unpleasant, but it can come with a hefty fine. Please note that in U.S. waters it is illegal to discharge holding tanks overboard. While in Canadian waters, outside of bays and harbors overboard discharge is allowed.

**Emptying the Holding Tanks**

1. Deck Pump-out
2. Overboard Discharge with Macerator (**where legal**)

1. Deck Pump-out

The holding tanks can be pumped out via the labeled deck fills. After pumping out the holding tanks, please refill the tank\* with about 5 gallons of fresh water through the deck fitting to rinse, and then pump-out again. This will help keep the waste system smelling fresh! Thank you!

*\*When refilling the tank with water, **do not use the boat's fresh water hose**, and avoid touching the tip of the hose to the deck fitting!*

2. Overboard Discharge with Macerator (**where legal**)

Where appropriate, you can empty the tank by using the macerator. Be sure the macerator seacock is open (located under the head sink). The discharge switch is the round black rubber button on the face of the head sink. Listen for a change of pitch from the macerator motor which will indicate the tank is empty.

## 17. Heaters (Cabin)

### Highlights

- Webasto forced air diesel heat control on the side of the nav table
- Tip: close the companion way to keep heat inside
- Not efficient to run all night, noise wakes light sleepers

### Details

The Webasto thermostatically controlled forced air heating system draws from the main diesel fuel tank. The thermostat is at the nav station. To operate, just slide the button on the control unit on the side of the nav table from OFF to HEAT on the temperature control and set the desired temperature with the UP and DOWN buttons. The heater outlets in all the rooms are controlled by baffles on the opening to regulate heat (**note: these should remain open at all times**), except the salon which is regulated by the temperature set on the control unit.

The master breaker for the furnace is behind the battery switches in the aft cabin. Raise the lid above the switches and the breaker is on the forward bulkhead on the outside nearest the hull.

The Pacific Northwest typical operation is to turn on the furnace in the evening, off all night while sleeping under the warm comforters, then on again in the morning to take the chill off and dry out the cabins. Also, the heater uses considerable battery power, so running all night MAY deplete batteries below the minimum threshold, depending on what battery power you used during the previous evening.



## 18. Lighting

Mirage is equipped with LED lighting throughout the boat. For lights to work, you must first switch on the DC Main at the electrical panel. This will provide DC power to all the lights. All lights have individual switches where you can turn them on or off.

## 19. Refrigerator and Freezer

The refrigerator is a front opening electric refrigerator with a small freezer. The capacity of the fridge is 4.6 cubic feet, or 133 liters. The freezer is about 5-quart size. The temperature is adjusted with a control wheel inside the fridge. It is marked from 0 to 6 with the coldest temperature being 6.

An additional cold storage is available in an ice box next to the stove. Measurements: H= 11" W=12" L=16" You can use this for either cold or dry good storage.

In order to save on battery power during the night, you may want to shutoff the refrigerator at the circuit breaker panel. Your food will remain cold until the next morning.



Freezer

## 20. Sails and Rigging

### Important Notes:

- Main and Headsail are furling sails
- Deploy and furl the Mainsail before the Jib
- Running rigging adjusts from the cockpit
- Mainsail and Jib Halyard clutches should not be released
- Reef early to keep sailing efficiently
- Keep pressure on opposing line when adjusting sails; tight wraps prevent jammed sails
- Let boom free float when adjusting sail area
- Let wind help get a tight sail wrap by not luffing during furling

### **Mainsail – New in 2024**

#### Deploying the mainsail:

- 1) Set the boat up so that it is on slight starboard tack. Doing this will ease the movement of the sail in and out as it provides a straighter angle to the furling mandrel.

- 2) Loosen the boom vang and the main sheet just a bit to allow the boom to assume a free-floating position.
- 3) Keeping slight tension on the main sail furling line, pull out on the Main Sail Outhaul. Note: tension on the opposing line when deploying or retracting a sail prevents fouling the furling drum. Use hand pressure on the outhaul until the last few inches when the winch may be necessary.
- 4) Tighten the boom vang and mainsheet to meet the wind conditions.

#### Furling and retracting the main:

- 1) To reduce sail area or fully retract the main, loosen the boom vang and mainsheet slightly so the boom can free float. Again, a slight alignment of the boom to the port side (starboard tack) will help the sail movement in and out.
- 2) With a slight pressure on the outhaul, pull on the main sail furling line until the sail is where you want it.
- 3) Once the furling line is cleated, minor adjustment of sail trim can be done with the outhaul. Because the final foot or so of the main has a sun cover sewn onto it, do not retract it into the mast, as it could jam.
- 4) Retighten the boom vang and then mainsheet.

#### Topping Lift:

If the topping lift is so tight that it interferes with main sail shape, it can be released at the mast while you sail. Although the rigid vang will support the boom, please use the topping lift when you are done sailing for the day.

#### **Headsail**

Deploying the Jib is similar to the main. After un-cleating and un-coiling the jib furling line, pull on the appropriate jib sheet to deploy, pull on the jib furling line to retract or furl. Again, slight pressure on the opposing line will reduce the chances of a drum wrap. When fully retracting, wrap the jib sheets at least three (3) times around the furled sail to keep the wind from unrolling the jib.

#### **Reefing**

When reefing the Jib, it may be necessary to have two people pulling the furling line in heavy winds. If two are not available, moving up near the mast and pulling from there will make it easier to furl. Reefing the Main may require use of a winch on the furling line. Remember: Reefing and furling as the wind increases reduces your heel angle and yet has little effect on your overall speed.

#### Lines and Clutches

All running rigging that you will be adjusting runs to the cockpit, so no one has to go forward. Although both Jib and Main Halyards run to the cabin top clutches, under normal circumstances there is no need to adjust either Halyard. These are the clutches you can find onboard:

- **Jib Furling:** the black furling line runs back through pad eyes on the rail stations to a clutch on the aft port deck
- **Jib Halyard:** black line on the first clutch (L to R) on the cabin top. Please **do not adjust** this line as there should be no reason to lower the jib.

- **Main Halyard:** black line on the second clutch. Please **do not adjust** this line as loss of tension can jam the sail. Both the Main and Jib Halyards are store in a mesh bag on top of the cabin. Under normal operations, please do not disturb this bag.
- **Main Sail Furling:** solid green line. Furls and retracts the main.
- **Boom Vang:** black line which adjusts the tension on the rigid boom vang
- **Main Sail Outhaul:** white line with green/black flecks. Pulls the main sail out of the mast
- **Main Sheet:** black line with white/orange flecks. Positions the boom.
- **Topping Lift:** black line cleated on the starboard side of the mast. It adjusts the heigh of the boom when the main is furled
- **Spinnaker Halyard:** yellow, white and orange striped line. Use to lift dinghy or other heavy objects onto foredeck if desired.

## 21. Showers and Sumps

Mirage has a wet-head shower. Water is heated automatically when the engine is running under load. The hot water is store in the insulated 6-gallon tank located under the aft salon seat. It can also be heated electrically when on shore power.

To conserve water, we suggest taking a "Sailor Shower": wet down, water off, soap up, water on, rinse. The faucet spigot will become a shower spray when the muzzle is pulled out. The shower water drains into the pump pan located in the bilge. If the water rises onto the floor of the head, flip the switch around the cabinet from the macerator switch on the side of the sink cabinet.

There is also a swim step shower on the stern. Make sure the water pressure breaker is ON to use.

## 22. Spares and Tools

**Common spares:** under forward starboard settee cushion

Contents: fuel filters, oil filter, impeller.

**Heavy Duty spares:** under forward starboard settee cushion

Contents: spare electric bilge pump, spare domestic water pressure pump(s), spare engine starter, spare engine alternator, bag with spare oil and fuel filters, light bulbs, outboard spares, toilet one-way check valves, spare shower drain pump.

**West Marine Toolkit:** under forward starboard settee cushion

## 23. Storage

Please feel free to make good use of storage space while aboard, especially to keep things secure while out sailing. Be sure to remove any personal items when debarking. We also ask that you place items back where you have found them – item locations are noted on the vessel inventory, and we want to ensure every guest is able to find necessary items. We thank you for your courtesy!

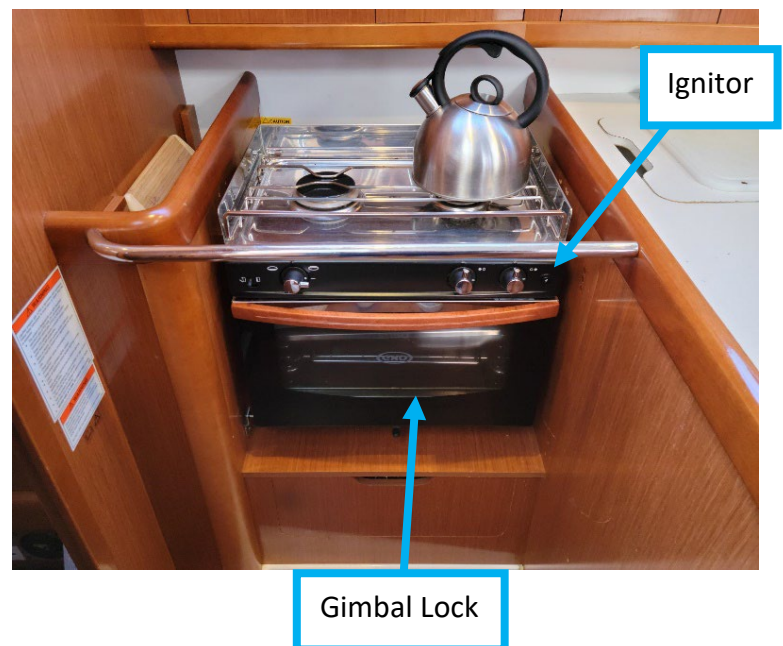
## 24. Stove and Oven

### Highlights

- The stove/oven are propane-fired.
- The propane solenoid switch is located on the DC panel
- There are two 2.5-gallon steel propane tanks in the cockpit propane locker, under the port helm seat. The locker is vented overboard for safety.
- The San Juan Sailing staff checks these tanks weekly to assure they are full.
- Turn off the solenoid switch after stove use.
- Caution: propane is heavier than air. If a leak is detected, extinguish all flames and open all hatches and doors, and get out.

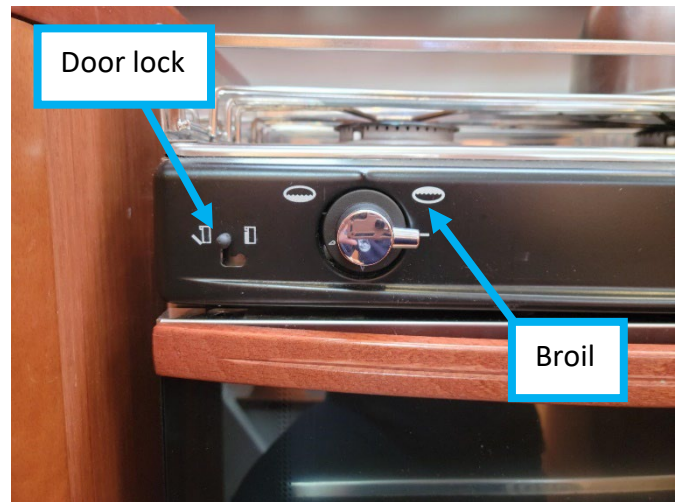
### Using a Stove Burner:

- Make sure the propane tank hand valve is open and the LP gas breaker is on.
- Make sure the gimbal lock at the bottom of the stove/oven is secured. That way, if someone leans on the stove or grabs the oven handle, it won't tip and spill pot/pans on the cooktop.
- Push in and turn desired burner knob while pushing the electric ignitor button. Once lit, keep knob pushing in for a few seconds so the thermocouple can warm up, then release and set desired temperature.
- To stop, turn the flame off and turn the LP Gas breaker OFF.
- Close the valve on the LPG tank.



Using the Oven:

- Make sure the propane tank hand valve is open and the LP gas breaker is on.
- Make sure the gimbal lock at the bottom of the stove/oven is secured. That way, if someone leans on the stove or grabs the oven handle, it won't tip and spill pot/pans on the cooktop.
- To open the oven, ensure oven door lock is in the open position.
- To light the oven, push in and turn the oven temp knob while pushing the electric ignitor button. Again, allow the thermocouple to warm up before releasing.
- Check to ensure you have a flame, and then close the oven door slowly so it is not blown out. Set knob to desired temperature. When you turn the knob to the right, it will act as a broiler.
- To stop, turn the oven knob off and turn the LP Gas breaker OFF.
- Close the valve on the LPG tank.



## 25. Water

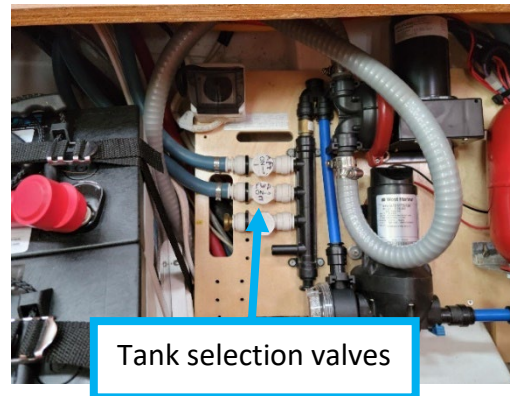
### Highlights

- Two water tanks totaling 77 gallons.
- Water pressure switch is on the electrical panel, starboard side of the salon.
- Tank level gauge is on the electrical panel.
- Water tank selection valves are located in the salon, under the port dinette seat. Open only one tank at a time, starting with the bow (F) tank.
- Deck fills are located above the tanks – one near the bow and one near the port stern.
- Hot water is produced by two methods: 1. Shorepower, 2. Engine.

### Details

#### Water Pressure Switch:

Please turn off the water pressure switch when the system is not being used (note: DC main and the water pressure need to be on for the toilets to flush). If one of the water tanks runs dry the pump will run continuously and burn out. You will likely not hear the pump running over the sounds of motoring or sailing.



#### Water Level Gauge:

The water tank level gauge is located on DC electrical panel. There are two water tanks on Mirage, totaling 77 gallons. The tanks have selection valves that are located in the salon, under the port dinette seat. At the beginning of your charter, it should be set that you are using the bow (forward) tank first. When that tank runs out, you will need to remove the cushions from the port dinette and switch the forward tank valve to closed before opening the valve for the aft tank. Only have one tank open at a time; always use the bow tank first. When the aft tank is empty, please refill both water tanks and change the selection valve back to the forward tank to use up first.

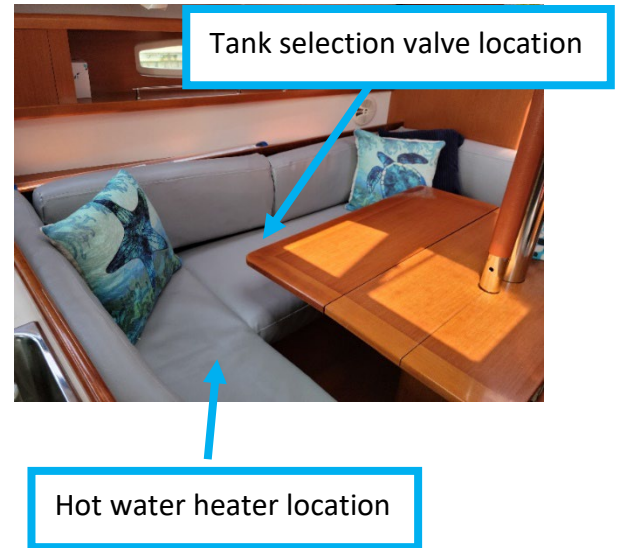


Hot Water Heater:

The hot water heater is located beneath the aft part of the starboard settee in the salon.

- It takes about 30 minutes of running the engine under load to get the water hot. CAUTION: Engine heated water may be scalding hot. Please BE CAREFUL!
- When on shore power, you can heat the water electrically by turning on the WATER HEATER switch on the AC panel.

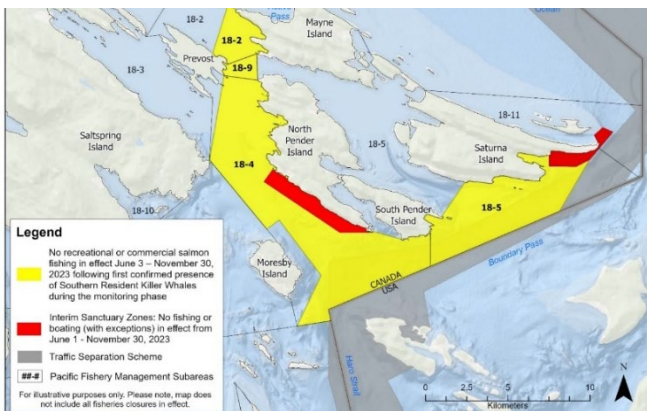
State parks do not have pressurized water to refill tanks, but all points of civilization do.



## 26. Whale Interim Sanctuary Zone

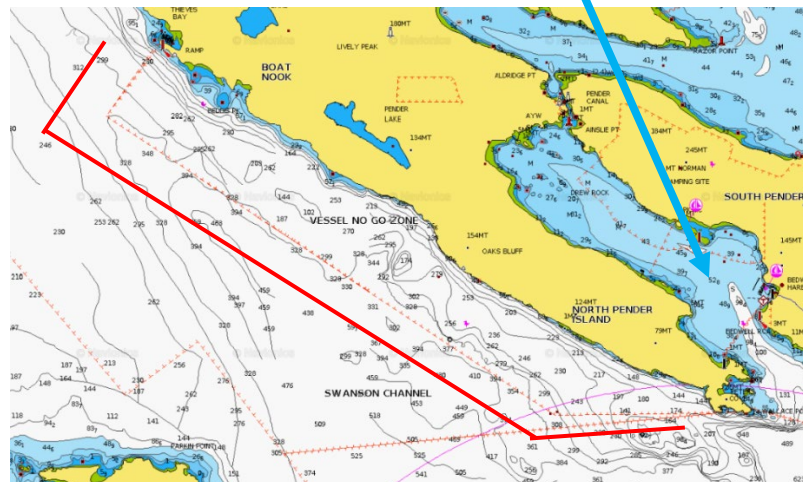
Our local Killer Whales are a wonderful part of the local family. But they are having a difficult time surviving due to declining salmon runs. These whales use echo location to find and catch their food. Therefore, noise pollution from boats and ships make it harder for them to thrive. In an effort to decrease human impact both the Canadian and US governments have implemented rules. We provided you a summary of these rules in the packet you receive when you arrived and there is more information in section 10 of the white reference book onboard Mirage. In general, stay at least 400 ft. away from the whales. Sometimes they come to you, if this happens shutdown the engine and turn off the instruments (assuming this is safe to do). They can hear the pings of the depth sounder – this is why we have you turn off the instruments.

In Canada they have gone a step further by creating some zones where boats are not allowed. This further improves the environment for the whales. The red areas in the diagram below show these zones.



Canadian Customs Check-in

And here is an example of what they look like on Mirage's chart plotter. The red lines have been added to help point out the dashed lines, which are what you will see on the plotter.



Note this is just to the west of Bedwell Harbour, so on your way in or out of there be sure to avoid this area.

I hope this information helps. Have a great time!