

KINGFISHER

NOTES FROM OWNERS

Revised July 2017

Welcome Aboard KINGFISHER

KINGFISHER is a 2005 Nordic Tug 37. We go to great lengths to keep her up to date and in the best possible condition. Nordic Tugs are one of the most reliable, economical, and comfortable vessels on the water.

KINGFISHER is equipped with all the creature comforts you expect in a well-equipped and well-maintained vessel.

We are pleased to be able to share our 37 Nordic Tug with you, and hope you enjoy cruising KINGFISHER. Let us know if you find anything missing or have suggestions or improvements. Also, please NO SMOKING or shore shoes onboard.

Thank you,
The Shivelys

These notes are prepared for Quick Reference. Much of this information is taken from the Tug Operator's Manual. The Owner's Notes assume that the charter guest/operator is experienced and competent in the safe operation of a 21,000 pound, 39 foot power boat, and knowledgeable of boating rules and regulations. These notes do not attempt to anticipate every situation or occasion that may arise, and are not a substitute for reading the Owner's Manuals (Owner's Manuals are stored beneath the starboard pilot house seat) and other informational materials which are located on the boat, or for exercising reasonable care and good judgment in the handling and operation of the boat. NO WARRANTY IS EXPRESSED OR IMPLIED.

2017

KINGFISHER Owner's Notes

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1. ANCHORING

KINGFISHER is equipped with two anchors. The primary anchor is a 45lb Bruce with 200ft. of chain rode. The rode is marked at 100' with 10' of yellow paint and every 50' thereafter with 5' of yellow paint. The last 20' are painted red-- STOP here!

A spare anchor with 15ft of chain and 200ft of rode is stored in the lazarette.

The stern tie line is mounted on a reel, stored in the lazarette, and contains 600ft of line.

The anchor windlass has foot controls (up/down) at the forward end of the deck. There is also a switch on the helm panel so the anchor can be deployed or lifted at either location.

There is a large circuit breaker for the windlass located in the forward section of the forward cabin. It is located on the starboard side of the forward berth, tucked under the teak trim surrounding the mattress. Another breaker switch is located on the DC electrical panel for convenience and safety. Most Owners leave the forward cabin breaker on and utilize the smaller breaker in the DC panel as their safety switch.

The windlass is powered by the house battery bank. The vessel's engine should be running whenever the windlass is used as the windlass puts a heavy load on the batteries. **Use the thrusters only to adjust the rotation of the vessel not to maneuver the vessel to a different position.**

CAUTION: There is a safety issue regarding the breaker being on or off. If left on all the time (for convenience in frequent anchoring), there may be a danger of guests (children) playing with the foot controls near the windlass, and someone inadvertently having a finger or foot caught in the moving anchor chain.

a. Deploying the Anchor:

Come to a complete stop before releasing the anchor from the bow. Drop the anchor slowly off the bow roller and into the water. Determine the depth and let out enough chain to allow the anchor to hit the bottom. Inform the helmsman to reverse the engine slowly and pay out the chain until you reach the desired scope (Usually 3 to 1). Make sure to take into account the tide and how much the water is going to rise or fall. Using a combination of reverse and neutral, gently tug on the anchor until it is set. Once the anchor is set, use the "keeper line" to take the weight and tension of the anchor off the windlass. Perform an anchor watch for about a half an hour and you should sleep well.

b. 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, it would be a large draw on the batteries, and it might cause severe damage to the attachment base). Instead, head the boat under power toward the anchor while using the windlass to take up the slack in the chain. Take your time, the anchor chain sometimes bunches up under the windlass and you might need to push it down to the bottom of the chain locker to prevent the chain from jamming in the windlass.

c. Securing the Anchor:

Once the anchor is on the bow roller, be sure to secure the anchor with the “keeper” line. Snap the line through a link in the chain nearest the anchor, then tie the line to the port bow cleat. (The chain over the wildcat on the windlass should not be the only thing keeping the anchor from unexpectedly returning to the sea bottom!) After securing the anchor with a line, immediately switch the windlass breaker “off” to prevent draining the battery should the windlass system decide to short.

2. BARBEQUE GRILL

The BBQ grill is permanently mounted on the aft rail. It is plumbed into a propane tank secured just below the grill within one of the fender holders in the aft of the cockpit. Please clean the grill after use with steel brush provided. Turn off the valve at the propane tank when not in use.

batteries. Likewise, overuse of the thrusters, or davit will draw down the available “electrical fuel tank” of the Bow or Stern Batteries.

The batteries are charged via various systems. While the engine is running, the alternator handles the battery charging chores. It charges all batteries except the generator battery.

When connected to shore power or when the generator is running, batteries are charged by an inverter/charger. The digital control panel for the inverter/charger is located on the lower-right portion of the AC Panel (port-side control panel). The switch on the inverter/charger should be left “on” always and leave the amp setting at 30. Also leave the battery charger and inverter breakers on the AC Panel “on”. This will ensure the batteries charge from shore-power or the generator (when running).



There are systems in place on KINGFISHER to protect against a damaging draw-down of the batteries. These systems include breakers, Automatic Charging Relays (ACRs) and, finally, various fuses.

The breakers and ACRs are automated safeguards to protect the batteries and to protect the user from being stuck in a situation without adequate battery power.

Breakers: The standard AC and DC panel breakers are discussed elsewhere. The breakers discussed here are installed in the circuits between the Bow and Stern Batteries and the respective Bow and Stern Thrusters. A breaker will “open” to protect the battery and thruster from low voltage or high-load conditions. The Bow Thruster breaker is located in the forward-stateroom floor hatch, starboard side, mounted to the hull next to



the Bow Battery. Here are two photos of the Bow Thruster breaker. The left photo shows the breaker in the normal, “closed”, position and the right photo shows the breaker “open” with the breaker lever circled in red. If the Bow Thruster stops working, check this breaker and close the lever if necessary. The red button is the TEST button it is NOT the breaker lever. The breaker lever is black and to the left of the TEST button—again, circled in the picture above at right.

There is a similar breaker for the Stern Thruster located in the starboard side of the lazarette below the cockpit. Here is a photo of the Stern Thruster breaker. The windlass is powered by the house battery bank. The windlass and the Bow Thruster, and the davit and Stern Thruster each put a heavy load on their respective batteries. Using them both at the same time will quickly drain the available power. **Use the thrusters only to adjust the rotation of the vessel not to maneuver the vessel to a different position. The engine should be running, to support charging of the batteries, whenever you are using the windlass or the davit.**



This information is helpful when troubleshooting charging issues after, for example, overuse of the bow thruster that has led to low voltage levels and open thruster breakers.

*****NEVER let any battery bank go below 12 volts. Please check the battery voltages displayed on the top left corner of the DC panel multiple times every day to ensure the batteries are always above 12v.*****

Battery Charge Troubleshooting: If you suspect that your batteries are not charging even with the engine running or when connected to shore power, there are steps you can take to confirm the situation and take proper action. (NOTE – when running your engine, plugged into shore power or running the generator, all three battery voltage meters located at the top left corner of the DC panel should all be reading 13v – 14v. If one of the banks is reading lower than 13v then there is a good chance that battery bank is not being charged)

1. Check the charging status of the ACRs as described. If the ACRs all show a steady green LED when the engine is running or when connected to shore power or the running generator, then all systems are charging properly. If one or more ACR LEDs are off or blinking, then proceed to the next step.
2. Check the condition of the Bow and Stern breakers, as described, and reset them if necessary.
3. After resetting the Bow and Stern thruster breakers, check the ACR status lights again. It may take some time (KINGFISHER's owner has seen ~30 minute delay) after resetting the breakers and with shore power or engine running for the ACR to sense sufficient Start battery voltage and again allow charging of the other battery banks.

4. BERTHS

KINGFISHER has berths for 6 people. The master stateroom has a queen berth, the starboard stateroom has 2 bunks, and the dinette converts to a double bed. To convert the dinette, lift the seat cushions and remove the 2 pins then slide out and re insert the pins.

Do not use the night table in the port bunkroom as a step—it is not made to carry a large load. Use the folding step attached to the closet.

5. BILGE PUMPS

KINGFISHER has 3 bilge pumps. They are located below the front hall, below the galley, and in the lazette.

The circuit breakers in the DC BREAKER PANEL (position 4, 5, and 6) should remain on at all times and should be in the automatic position on Helm Control Panel.

6. DECK WASH

There is a deck wash connection on the bow and on the starboard side of the cockpit. Sea water is pumped through the connection using a self-coiling hose that is kept in the propane box in the cockpit. Please use to clean the anchor chain and anchor and wash dirt overboard through deck drains. When cleaning anchor chain please spray chain before it gets to roller to keep mud off the deck. To use the deck wash:

- Plug into connection and twist to use.
- Turn on washdown pump breaker on DC Panel.

7. DINGHY/DAVIT

The dinghy is a 10ft AB inflatable with a fiberglass bottom. It has a Eurohelm and 20hp Honda motor. It really zooms!

To lower the dinghy, start by removing the cover and release the tie downs (two) at the stern and the strap in the middle of the dinghy. The davit arm has two positions: a lower position and an upper, or lifting position. If the davit arm is already in the lifting position, as shown in the adjacent photo, you are ready to move to the next step (and next paragraph). If the davit arm is in the lower position you need to move it to the lifting position. It's best to do this with two people. One person removes the bowtie cotter pin and then pulls the metal positioning rod out of the davit base. This frees up the davit arm. The second person then raises the davit arm to the lifting position and holds it in place while the first person inserts the rod in the upper hole of the davit base and secures the rod with the cotter pin.

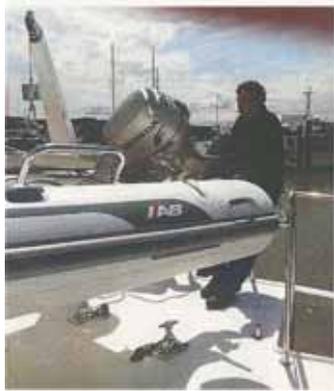


Figure 1

Confirm that the two dinghy drain plugs are in place. One is installed inside the dinghy and one is installed on the back of the transom. The dinghy controls should be folded down and the motor should be turned all the way to port.

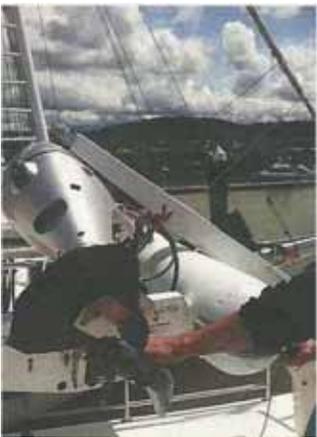


Figure 3

With the davit arm in the lifting position, attach the davit hook to the rear O ring in the bridle that is connected at four inside corners of the dinghy. Standing at the stern, plug the davit control (stored in the starboard step of the pilot house) into the connector at the rear of the davit base. Use the control to raise the dinghy while holding the stern and rotating the dinghy clockwise as it rises. You want to line up the red tape on the rear of the dinghy controls with the red arrow on the davit arm. See Figures 1-4. As you see in the photos, you will end up with the davit arm swinging out over the side so that the dinghy bow is facing to KINGFISHER stern.



Figure 2



Figure 4

Lower the dinghy to the water watching so that it does not contact the side of the boat. It is better to lower steadily rather than starting and stopping the davit to avoid putting unnecessary pressure on the davit. It is helpful to have someone in the cockpit below to guide the dinghy down to the water and grab the dinghy painter.

When the dinghy is on the water, unhook the davit and use the davit control to bring the davit hook back to the top deck where you can attach the davit hook to one of the dinghy supports.

In the dinghy, unhook the bow bridle hooks and place the bridle behind the seat. It is not necessary to detach the rear bridle hooks.

Rotate the dinghy controls up and insert the two pins to hold the controls in place. To start the engine, pump the fuel bulb (behind the seat) until firm (and no more) then turn the key to start the engine and let it idle for a few minutes. Do not raise the throttle lever as you can flood the engine. If the engine does not start and you smell gas, you've flooded the engine and will need to let it sit for a few minutes. The engine tilt control is on the outside of the accelerator lever.



Figure 5

When remounting the dinghy, make sure the dinghy is again oriented with its bow facing KINGFISHER's stern. Detach the pins in the steering control and rotate the control down. Tilt the engine to the up position and turn it to port. Reattach the bow bridle hooks and attach the davit hook to the rear O ring in the bridle. With one person on the upper deck and one in the cockpit to guide the dinghy as she raises, the person above will use the davit control to raise the

dinghy in one motion being caution not to strike the side of KINGFISHER. Reversing the procedure you used to offload the dinghy, raise the dinghy until it is clear of the rail and rotate it and lower to the chocks. See Figures 5 – 7. Rear chocks should be approximately 4 inches in front of rear transom of dinghy. After the dinghy is resting on the chocks you may move it forward or sideways to better position it on the chocks.

Before traveling, be sure to reconnect the two straps at the dinghy stern and the single strap crossing the dinghy middle.



Figure 6



Figure 7

8. ELECTRIC PANELS and SHORE-POWER (dis)CONNECT

KINGFISHER has a DC and an AC Breaker Panel. The DC Panel is located on the starboard side helm seat and the AC on the port side.



DC Breaker Panel

- 1) There is a large LED PANEL in the upper left corner, which shows the voltage in various battery banks. A toggle switch below it has three positions: 1, 2, and 3. The switch is labeled “BATTERY BANK”
 - i. Position 1 is the **START** battery bank
 - ii. Position 2 is the **HOUSE** battery bank.
 - iii. Position 3 is a combination of the **BOW** and **STERN** batteries (for the Thruster at the Bow and Thruster and Davit at the Stern)
- 2) The MAIN switch provides power to all the breakers (except covered breakers).
- 3) BATT 1 breaker energizes the remote battery switch coming from the START battery bank.
- 4) BATT 2 breaker energizes the remote battery switch coming from the HOUSE battery bank.

- 5) Below the LED panel is the COVERED (for safety) circuit breakers. The nine covered breakers are labeled as follows:
1. Battery 1
 2. Battery 2
 3. Engine Controls
 4. Bilge pump
 5. Bilge pump 2
 6. Bilge pump 3
 7. Stereo
 8. Step Light
 9. Spare
- 6) The covered breakers are all part of the “Vital Buss”, which means they are always on.
- 7) The remaining two rows of circuit breakers are clearly labeled and switched on or off as needed.

NOTE: The breakers are color-coded on both the DC and AC panels. Breakers marked in green should be left on all the time whether you are on or off the boat or on or off shore-power. Breakers marked in yellow are turned on or off depending on desired use. Breakers marked in red should be left in the off position.

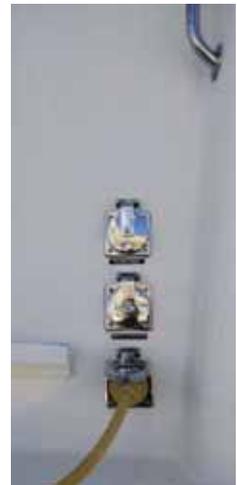
- 1 The AC Breaker Panel is color-coded similarly to the DC Breaker Panel. Before disconnecting and stowing the shore power cord, turn off the individual AC breakers. Then turn off the master breaker



AC Breaker Panel

located on the upper portion of the boat's AC electrical panel (marked above). Then turn off the breaker at the dockside power outlet before disconnecting the shore power cord from KINGFISHER. **This prevents arcing of the plug terminals.**

- 2 To reverse this procedure, (as when you have returned to the dock) plug the cord into the boat's shore power inlet (portside, just aft of the pilot house door), then (after confirming the dockside power breaker is "OFF") into the dockside power outlet. Turn on the switch at the dock outlet. **(Remember plug first, then switch – to prevent arcing).** Then check the boat's AC panel meter to see if the polarity is OK. (If it is reversed, indicating a dangerous condition, a red light will show on the boat's AC panel at the breaker marked Reverse Polarity—in the photo above, center, second from top). If OK, continue to turn on the master switch, the breakers with green markers, and any other breakers you wish to have on.



In addition to these basic components, KINGFISHER has a generator to furnish AC power. The on/off rocker switch for starting/stopping the generator is located just below the AC panel. To start the generator, hold the rocker switch in the ON position until the generator stops.

INVERTER

The inverter breaker should be left "ON" at the AC Panel (see the photo above). The inverter takes energy stored in the house battery bank and converts that DC energy to AC power so you can power certain devices needing AC power (e.g., microwave) when you are not connected to shore power or using the generator. The inverter powers only the breakers in the left hand column of breakers in the AC Panel, see above photo.

9. ELECTRONICS & STEREO

KINGFISHER is equipped with Furuno radar and electronics, including AIS transceiver, installed in 2017. The chart plotter is a Furuno model TZ Touch 2. The radar is Furuno NXT Doppler.

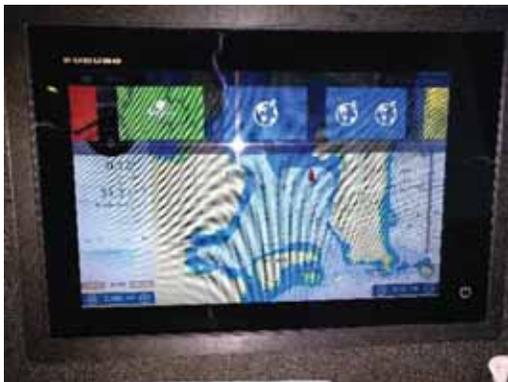
There are several breakers on the DC Breaker Panel that are activated to operate the electronics. There are two breakers marked “Electronics” on the right column of breakers, the “Thrusters” breaker is in the middle column and the “Autopilot” breaker is in the left column of breakers. You can see all of these in the photo above of the DC Breaker Panel.



In the photo at left, the chart plotter is the large display on the left. The autopilot (Furuno NAVpilot-71 IC) is located at the lower right. Above the autopilot are two multi-function displays. The one to the right is wind speed/direction and the MFD to the left displays speed, course and depth.

The plotter is controlled much the same way as a smart phone using touch gestures such as “pinch and zoom” to change the viewable

range or using a single finger to adjust the position of a chart. Using one finger to swipe in from an edge brings up a menu, photo below left, to select different plotter functions such as a charts or radar or split screen of both charts and radar. A swipe up from the bottom displays a ‘layers’ menu, photo below right, with numerous options including, for example, layering radar or AIS objects on the chart.



Basic chart and radar operation tips: After the chart plotter is powered on, swipe down from the top of the display and select the chart icon (blue globe). In the lower right of the display is a TX icon—press the TX icon to put the radar in Transmit mode (the TX icon will turn yellow). If you want the radar display overlaid on the chart, swipe up from the bottom and turn Radar Overlay to the On position. You can touch a location on the chart and select Go To on the pop-up menu to direct the autopilot to steer a course for that location.

To adjust radar gain and other settings, swipe down and select the radar icon (green radar display). Press the radar display anywhere to bring up a pop-up menu with various options. For example, turn Target Analyzer to ON to change the radar display to indicate stationary objects or objects moving away in green and objects moving toward you in red.

The autopilot has three primary modes of operation. Standby mode is the default mode that requires the boat to be steered by the helm wheel. No matter the current mode of the autopilot, a single press of the power button returns the autopilot to Standby mode. The Auto mode is entered by pressing the AUTO button after the captain steers the boat towards its desired course. The NAV mode is used to pilot the boat using waypoints entered via the chart plotter. Here is a short explanation of autopilot functions.



Operators Guides for the chart plotter and the autopilot are stored with the Charter Guest Reference Manual aboard Kingfisher. The same information and more is available at the Furuno website:

- Chart plotter Operator's Guide (brief overview of functions) http://www.furunousa.com/ProductDocuments/TZTL12F_15F%20Operator's%20Guide%20ver%20A.pdf
- Chart plotter Operator's Manual (complete, detailed manual) http://www.furunousa.com/ProductDocuments/TZTL12F_15F%20Operator's%20Manual.pdf

Kingfisher is equipped with Bose speakers and a Pioneer Stereo mounted above the chart table in the pilot house. The Pioneer is equipped for AM/FM and Satellite (Sirius) radio as well as CDs. You can also stream music from your Bluetooth-equipped device to the Pioneer stereo.

The Pioneer stereo is also the DVD player for the LG TV mounted in the hinged cabinet above the galley counter. To watch a DVD, unlock the two latches and lower the screen (careful, it's heavy) into the viewing position. Power to the screen is provided by turning on the appropriate circuit breaker (AC breaker panel, left-most bank of breakers, the bottom breaker, marked "TV Outlet"). The LG remote control turns on the screen and is used to set the input. Select the AUX mode from the main screen of the Pioneer stereo and use the Pioneer remote control to set volume and Play/Pause.



10. EMERGENCY/SAFETY

KINGFISHER is equipped with modern safety equipment.

Life Jackets are located in the cabinet next to the settee in portside locker in the salon. Please try on and adjust to size before departure.

A Life Ring/Sling is located on the stern rail.

There are 3 Fire Extinguishers located:

- 1 Salon
- 2 Engine Room
- 3 Master Suite

There is a flare kit located in the aft locker portside.

The EPIRB is attached to the port helm seat.

Flashlights are located in the helm drawer.

First Aid Kit is located under port seat in Pilot House.

11. ENGINE

Refer to the KINGFISHER QUICK START laminated card for engine room checklist. This procedure should be performed daily before departure. The KINGFISHER QUICK START is printed on a laminated card located in the chart table drawer.

The 380HP Cummins engine aboard KINGFISHER is designed with a maximum RPM of 3000 rpms. These engines are intended to operate at a maximum operating/cruising RPM of 80% of maximum output or, in this case, 2400 RPMs. The engine should not be operated at this 80% of maximum for more than one hour per day.

12. DIESEL FUEL

KINGFISHER has 2 diesel fuel tanks (324 gallons total) in the tank room aft of the engine and accessed through the hatch in the salon floor. Each tank has a clear sight tube that lets you see the actual level of fuel in the tank (see photos below). You can also monitor the fuel tank levels from the helm using the selectable gauge located below the TankWatch system. Turn the outer ring to position 2 (Port) and 3 (Starboard) to check fuel levels. See Section 14 for a photo of the fuel gauge at the helm.

The tanks have a crossover tube between the tanks that allows the fuel to equalize between tanks. The crossover tube valve should always be left open.

FILLING FUEL TANKS



Port Fuel Tank and Sight Tube

a. Deck fittings are clearly marked FUEL, WATER, or WASTE, and the deck fittings are removed with a special spanner wrench located in port helm step (and a second one in the chart table drawer). Filling the fuel tanks can be a bit messy unless care is taken. Keep a rag or paper towels readily at hand when filing the tanks. Clean any fuel spill off the deck as it is very slippery and hazardous. Although there is a crossover tube connecting the tanks, you will need to fill each tank separately to get both full because the crossover equalizes the tanks overtime but not in the short time it takes to fill the tanks.



Starboard Fuel Tank and Sight Tube

b. If you fill the tank to the very top, then you run the risk of overfill spilling out of the fuel tank vent, and down the hull of the boat into the water. THIS IS NOT GOOD. It is a good practice to have someone watch the sight tube on the fuel tank and alert the person topside when it nears the top. Immediately replace fuel fill cap to prevent contaminates from entering. **It is very important to have clean fuel for the engine.**

FUEL FILTERS

- a. KINGFISHER has dual RACOR fuel filters. These are the first line of defense against contamination, whether water or dirt. The filters are mounted to the wall at the back of the engine room, portside. They have glass bowls so a visual check for water or contamination is possible. This should be a regular inspection by the operator to prevent fuel problems while underway. There is a lever on the dual filter manifold, allowing flow through both, or either single filter. The

selector lever should be positioned to one or the other filter, not both. This will allow one filter to collect contaminants, and leave the other one ready to use when you change the dirty filter. The fuel filters are shown in the photo at right where the left filter is currently active, as indicated by the direction of the selector lever. If dirt or water is apparent in the glass bowl, the operator can switch the lever over to the other filter. If this is necessary, the operator should contact San Juan Yachting or the maintenance pro to discuss.



- b. If the vacuum gauge mounted between the filters reads between 7 and 10 for the filter being used switch to the other filter. If it becomes necessary to replace a filter please refer to the operating instructions manual or call San Juan Yachting for assistance @ 1-800-677-7245.

13. GENERATOR

KINGFISHER is equipped with an ONAN 9 KW generator. The Generator has a remote switch panel located on the AC Breaker Panel on the side of the port helm seat, see photo to left.



c. The generator switch panel as a large, rubber-coated rocker switch. The top is labeled START and the bottom is labeled STOP. This switch also has an indicator light that indicates status and various error conditions printed next to the rocker switch. When you push and hold the rocker switch in the ON position the indicator light blinks yellow while the generator is in preheat mode. When the generator starts, release the rocker switch and the light will turn to green. If the unit does not start, or shuts down, for any reason, then the service light blinks a numerical code; for example 2 blinks means low oil pressure 4 blinks means failure to start within a specified time limit. The actual codes are in the manual and also on the plate attached to the generator.

d. GENERATOR SERVICE: A generator has a diesel engine requiring the same care as the main engine. You have to remove the sound shield to check the oil level. The generator's diesel engine uses coolant just like the main engine. Check it routinely. Always check for evidence of leaking oil, fuel, or coolant.

e. If the generator fails to start at the remote switch, check that the DC breaker on the genset is "ON", see photo to the right.



14. HEAD AND HOLDING TANK

The head has a VACUFLUSH freshwater toilet that flushes into a 32 gallon holding tank. The vacuum pump is located in the engine room, and runs for approximately 30 seconds after each flush. An indicator panel is mounted adjacent to the toilet, and has an on/off switch, and indicator LEDs to show its status. READY (green) or WAIT (red). Lift up the foot lever to “pre fill” the bowl if there is not water in the bowl or you need additional water. Step down on the foot lever to empty the bowl and lift foot quickly. If foot lever is released before waste is clear of bowl do not flush again until vacuum pump stops running and red light goes out. If vacuum pump runs longer than one minute raise foot lever and push down again. **DO NOT PUT ANYTHING DOWN THE TOILET THAT HAS NOT BEEN EATEN.**

The toilet discharges into the WASTE TANK. The tank is located under the engine pan, and the level of waste is measured by a TANK WATCH system, with sensors inside the tank itself. The indicator panel is below the helm along the stairs to the staterooms. To activate the indicator panel, turn on the macerator breaker on the DC panel. LEDs show the level of the tank fluid: Green means empty, Yellow means Low, Orange means half full, and Red means full. The toilet should not be used when the indicator light is red, until the waste tank is emptied.

The round gauge below the TankWatch panel indicates Fuel (Port and Starboard Tanks) and fresh water level by rotating the outer ring of the gauge to different positions. The gauge is activated by the “Pump Gray Water” breaker on the DC panel.



Pump-Out and Dumping

There are numerous pump out locations around the San Juan Islands. Use a pump out to empty the waste tank. **It is illegal to dump the waste tank overboard in US waters. Check local rules in Canadian waters.**



If dumping overboard (into the crystal clean waters of the Salish Sea) is necessary, follow this procedure. **First, and critically important, you must open the macerator seacock to allow waste to exit the macerator into the sea.**

The macerator seacock is located in the tank room aft of the engine and accessed through the hatch in the salon floor. With the hatch removed and facing forward, kneeling in the tank room, look forward and to starboard and you will find the macerator seacock. In the photos at left, the seacock is in the normal, closed position. Open the seacock valve so the valve handle is in-line with the hose. To dump overboard, turn on the macerator breaker at the DC panel, then toggle the macerator switch below the tank watch LEDs to the “down” position. Leave the macerator toggle in this position for ~ 4 minutes and then toggle the switch to the “up” position. Then turn the macerator breaker off.

Finally, return the seacock valve to the normal, closed position.

15. HEATING\COOLING

KINGFISHER has two heating systems: a set of three reverse cycle heating\cooling units and a diesel furnace. See the photo below of one (of three) reverse cycle heating\cooling unit controls and the diesel furnace control.

The reverse cycle heating\cooling system (aka the Air Conditioners) is powered by shore or generator power. Each of the three reverse cycle heating\cooling units is controlled by a separate thermostat, one in the master stateroom and two in the galley/salon. These units can be used to heat or cool KINGFISHER depending on conditions. With only one shore power cord attached, you will only be able to run one zone at a time. Each unit is controlled by a breaker on the AC



panel. Note: In addition to turning on the breaker(s) for the desired heat/cooling unit, you must turn on the breaker for the Air Conditioner Pump—also on the AC panel. The AC Pump has a separate seacock that must be opened before turning on the AC Pump. You will find the seacock in the engine room, on the starboard side forward (lift the wooden step and you will see it below) When not on shore-power and using the generator, you can use all three AC units at one time.

The diesel furnace can be used to heat KINGFISHER without shore or generator power. The furnace draws from the same diesel fuel supply as the main engine and generator. The simple control for the diesel furnace is shown in the lower half of the photo. Slide the power switch to ON and set the temperature to the desired level.

16. REFRIGERATOR/FREEZER

The refrigerator and freezer are wired to use either 12volt DC power or 110volt AC power when available. The refrigerator is located in the forward portion of the Galley and the freezer is in the aft Galley. When 110 volt AC power is available, the fridge/freezer automatically selects that option to save battery power. When connected to shore power, make sure the refrigerator and freezer breakers are turned ON at the AC BREAKER PANEL. When not connected to shore power, make sure the refrigerator and freezer breakers are turned ON at the DC Breaker Panel.

17. SHOWER

Before using the shower, be sure the Fresh Water Pump and Pump Gray Water switches are on at the DC BREAKER PANEL. Gray water from the shower goes into a holding tank and is automatically pumped overboard with a standard bilge pump. If you are at a marina location where it is not advisable to discharge gray water, you may shut off the pump gray water at the panel. The tank only holds 9 gallons so don't overfill.

Hot water is provided by an electric water heater and by a heat exchanger from the engine. You automatically have hot water if the engine is running and it will stay hot for quite a while after the engine is turned off. It is a good time for showers while the water is still hot so you don't have to run the generator. When connected to shore power or using the generator be sure the Water Heater breaker is ON at the AC BREAKER PANEL.

Remember to conserve water when showering; turn the shower off when applying soap then rinse.

18. SPARES

Refer to the inventory list for all spares and location.

19. STOVE

KINGFISHER has a three burner propane stove with oven.

PROPANE SYSTEM PROPANE SYSTEM

Propane Safety – Many boaters have been wary about having propane appliances abroad. Over the years, many improvements have been made in propane systems, so that you find more and more boats with a propane cooking range installed.

Safety Measures

- a. The tank is located outside the cabins, and below the doors and windows of the cabins. This is so that any gas leaks do not waft back into the interior of the boat. Nordic Tugs installs the tanks in a locker on the back deck, vented so leaking fumes, if any, go overboard through vents in the lower corner of the tank locker.
- b. There is a main valve on the tank, to manually turn off the gas when not in use.
- c. Next is a pressure gauge which is also located in the propane locker. The purpose of the gauge is it is to test the system for leaks. The test is made at installation, and should be done by the boat operator routinely (weekly is often recommended) after that. **NOTE: The pressure gauge can also be utilized as a rough measure of remaining fuel in the tank. Readings below 40psi indicates the need for a refill, but since this reading varies in hot or cool temperatures, measure how much fuel is added to fill the tank, extrapolate what reading works best, (e.g. 38psi instead of 40) in your conditions.**
- d. The pressure regulator, under the gauge, is set to limit the pressure of the gas flowing to the appliance.
- e. The high-flow valve, upstream of the regulator, checks the amount of gas flow if the regulator fails for any reason.

To use the propane stove, the main valve on the propane deck needs to be open. Next, the propane breaker on the DC panel needs to be “ON”. Then, below the DC panel is the control for a solenoid (photo) that controls the flow of propane: push the “on” button on the solenoid control. Now propane should be delivered to the stovetop. You may need to open one of the stovetop burner controls for 10 or 20 seconds before propane extends through the system to the stove and lights.



20. Thrusters

KINGFISHER is equipped with Bow and Stern Thrusters. There are two controls for the thrusters. The primary control is at the lower left of the control station, pictured here. The second control is a remote, hand-held device that should be kept in the chart table drawer.



The thrusters should be used in short bursts and only to rotate the vessel. They should not be used to maneuver the vessel, for example, for finding the ‘right’ spot to drop anchor, to pick up a buoy or to maneuver through a marina. Over-use of the thrusters will quickly deplete the thruster batteries and leave you without their valuable assistance.

See the section on Batteries and Charging for more information about batteries and circuit breakers related to the thrusters.

21. WATER

KINGFISHER has a 150 gallon fresh water tank located in the tank room aft of the engine and accessed through the hatch in the salon floor. The gauge to check the water level is located at the helm, below the “Tankwatch” panel. The gauge is activated by the “Pump Gray Water” breaker on the DC panel. Turn the outer ring of the selectable gauge to position 5 to view the water tank level. See Section 14 for a photo of the water level gauge. There is also a sight tube under the salon sole (look aft and port and see photo). Open the red handle valve to read and then close the valve as it might suck air into the water tank if left open.

The electric water pump will pump variable quantities of water, based on demand. The water pump comes on automatically whenever a faucet is turned on.

To fill the water tank locate the deck fitting marked “WATER” at the starboard aft. The spanner wrench to open the plate is located in the port helm step or chart drawer. Connect the fresh water hose located in the lazarette to the domestic water supply. Let the water run overboard for a minute or two to wash any contaminated water from the hose. **Do not use the marina water hose to fill the water tank-you don’t know where it has been.** Fill until water comes out the overflow below the deck fill. Tighten the plate immediately and return spanner wrench.



22. Reference Photos (for discussion with Maintenance Pro, if necessary)



22. KINGFISHER 2015 INVENTORY

THE FOLLOWING IS A LIST OF THE MAJOR INVENTORY ITEMS ON KINGFISHER AND THE LOCATIONS THAT THE ITEMS CAN BE FOUND.

If you find that the locations listed below are not the most convenient for your needs, feel free to relocate items during your charter. However, please return all items to their original location at the end of your charter to make it easier for San Juan to inventory and restock for the next charter guest. Thank you!

HELM

Shelf above controls

-Annotated Chart 1841, Annotated Canadian Charts 3441, 3442, 3443 (rolled in tube)

Helm Drawer

- 2 dinghy keys on floats
- 2 cabin keys on floats
- 2 Engine keys on floats
- Parallel rule, 6"dividers, 24"straight edge w/compass dial
- Knife
- Thruster remote

- Pioneer Radio remote
- Laminated reference card
- Pens and notepads
- Flashlight (3)
- Ports and Passes guide
- Floating VHF transceiver and charger
- Pad lock
- Extra batteries
- Playing cards
- Star chart
- Deck key
- Waterproof chart book (San Juan Islands)
- Guest book
- Second stateroom keys on float
- Scotch tape

Helm Seat Compartment

- Boat Owners Manual
- Engine, Generator, and Gear Manual
- Expandable file folder with misc equip operating instructions
- Cummins's Captain's Briefing Manual
- C-Map Cartridges
- Furuno Chart Plotter Remote Control

Passenger Seat Compartment

- Cruising guides: Waggoneers, Gunkholing in San Juans, Dreamspeaker: San Juans and Gulf Island and other reference books (or on map table)
- Waterproof Maptech Chartbook of San Juan Islands (or on map table)
- Current Atlas and Companion Charts
- Container with spare light bulbs, small hose clamps, nuts and bolts
- Windshield cover
- West Marine binoculars

Starboard Helm Door Step

- Battery float charger
- Davit controls
- Flyswatter

- Windlass assist bar

Port Helm Door Step

- First Aid Kit
- Extra Bandages
- 2 Spanner Wrenches and Deck Key

Starboard Arm Rest

- Door Screen
- Window and door covers

Port Arm Rest

- Door Screen
- Window and door covers

FORWARD STATEROOM

- 2 pillows
- Comforter
- Blanket
- Mattress pad

SECOND STATEROOM

- 2 pillows
- 2 comforters
- 2 blankets
- 2 mattress pads
- Dehumidifier (in hanging locker)
- Multiple game kit (above hanging locker)
- Small extension cord with additional electric plug (in hanging locker)

GALLEY/SALON

The galley has a refrigerator, freezer, three burner propane stove with oven, and microwave. There are two rugs. The LG TV is mounted in the hinged cabinet above the galley counter (the DVD player is a part of the Pioneer Stereo in the helm electronics).

- Flatware service for 8

- 8 wine glasses
- 8 water glasses
- 8 steak knives
- Dinnerware service for 8
- 4 small garnish dishes
- One rectangle 'cheese' plate
- Large spoon
- Large chef's knife
- Large bread knife
- Paring knife
- Can/bottle opener
- Cork screw
- 2 cheese cutters
- Cheese grater
- Garlic press
- Pancake turner
- Rubber spatula
- Tongs
- Measuring cups
- Peeler
- Whetstone or steel
- Plastic cutting board
- Medium serving bowl
- Small mixing bowl
- Large mixing bowl
- 2 plastic storage containers
- 2 frying pans (8" and 10")
- 2 saucepans (1 qt and 2 qt)
- Plastic juice container
- Oven casserole dish with cover
- Broiler pan
- 2 wooden spoons
- 2 silicone pot holders
- Dish drying towel (in drawer)
- Drip coffee pot
- Coffee press with thermal container
- Tea kettle
- Paper towel stand
- Colander

Settee (under)

- 2 tool caddies and socket set

- Power extension cord
- Vacuum Cleaner (handle is broken, works better as handheld vacuum)
- Rear Door Cover
- Desk lamp
- Dehumidifier

Bookshelf

- Various guidebooks and local information

Cabinet by Stern Door

- 5 life jackets
- Misc buckets
- Orange container with flares and other survival items
- Porthole screens
- Windlass cover

Cabinet under Sink

- Misc cleaning supplies
- Trash container
- Dust pan and brush
- Crab pot with lid
- Dish drying rack

Cabinet above Settee

- US and Canada flags
- DVD collection in black holding case
- TV remote
- Folding thermal cooler

HEAD

- Waste basket
- Toilet brush

Bring a 17x24 inch bathmat (or two to rotate when one is wet) if it would make your stay more pleasant. This is the same size as a hand towel.

LAZERETTE

- 50 ft. freshwater hose
- Deck brush
- Chamois mop
- 2 folding deck chairs
- Spare anchor with chain and rode
- 600' stern line
- Extra line(s)
- Manual bilge pump
- Dingy cover
- Crab trap

DECK

- Magna BBQ Grill and cover
- Propane tank and hose for BBQ in fender storage bay
- Boat hook attached to ladder
- Mop attached to ladder
- 5 black fenders
- Door mat
- Large ice chest (upper deck)
- Life Sling

Propane locker

- Deck wash water hose and nozzle
- Propane tank
- Chamois
- Dingy gas can
- Windlass cover

ENGINE ROOM

- Plastic container of absorb mats, rags, and misc supplies
- Containers of engine oil, gear oil, wiper fluid, distilled water
- Battery water filler and misc funnels
- 4 containers of gen set, engine, Racor filters, and impellers

23. **KINGFISHER QUICK START AND OPERATION CHECK LIST**
Updated March 14, 2015

1. **Engine room checks should be performed daily, before cruising.**
 - a. Check engine oil and coolant levels.
 - b. Check generator oil and coolant levels.
 - c. Check Racor fuel filters for water or contamination.
 - d. Check generator fuel filter.
 - e. Observe engine room for leaking oil, coolants, or fuel.
 - f. Check that main sea strainer is clean and free of debris.
 - g. Verify that all seacocks are open.
 - h. Check that generator strainer is clean and free of debris.
2. Disconnect shore power
 - a. In the boat, confirm Shore 1 and Shore 2 breakers are in off position at the AC breaker panel.
 - b. Turn off shore-power circuit breaker at pedestal on the dock.
 - c. Disconnect yellow electrical cord from boat and place in lazarette. *Always disconnect from the shore end and connect from the boat end to avoid moving a live cord.*
3. Turn on breakers
 - a. Turn on both electronics breakers, the engine control breaker, the auto pilot breaker, and the thruster breaker.
 - b. Alarm will sound when you turn on the engine control breaker: Silence by pushing the button on shifter control.
 - c. Turn on other circuit breakers as you desire.
4. Close all port holes and hatches that might permit water to enter the boat.
5. Confirm that dingy is secure.
6. Check around boat for obstacles in the water and items on the boat that need to be secured.
7. Check fuel level sight gauges.
8. Turn on Furuno radar/chartplotter and VHF radio.
9. Start Engine
 - a. Set control handle to neutral.

- b. Turn ignition switch to ON.
- c. Push black Start button and crank engine until it starts. *Note: Cummins engine company states, "Do not crank engine for more than 30 seconds, wait 2 minutes to allow the starter motor to cool down before restart attempt."*

10. Turn on Bow/Stern Thruster by pushing both buttons at the same time and check they are both functioning.

11. Check wind and current directions. Check traffic in the marina; know where you are going and what the conditions are around you.

12. Boat Operation

- a. Warm up by advancing throttle to 1000rpms when clear of marina.
- b. Operate engine no faster than 1400rpm until the coolant temperature reaches 140 degrees.
- c. Operate the engine at any speed after reaching normal operating temperature of 170-185 degrees.
- d. The 380HP Cummins engine aboard KINGFISHER is designed with a maximum RPM of 3000. These engines are intended to operate at a maximum operating/cruising RPM of 80% of maximum output, or, in this case 2400 RPMs.
- e. If you are operating at the maximum RPMs (2300-2400 rpms), do so for only one hour out of eight.
- f. The following table provide some information about fuel consumption and speed at various engine RPMs

RPM's	Fuel Consumption	Speed (depends on currents, too)
1300	1.6 gal per hour	~8 kts
1400	2 gal per hour	~8 kts
1600	3 gal per hour	~8.5 kts
1800	4.5 gal per hour	~9.5 kts
2400	10.7 gal per hour	~11.5 kts

13. Returning to Dock

- a. Place fenders on docking side of boat.
- b. The engine cool down period before shutting the engine down is at least 5 minutes at slow speeds or at idle.
- c. When docked and the mooring lines are secure, shut off the engine.
- d. Turn off power to instruments.

14. Reconnect to Shore-power

- a. Confirm that Shore-power switches are turned OFF at the AC breaker panel.
- b. Re-attach the power cord to the boat, insert the plug, turn and tighten the ring.
- c. MAKE SURE THE DOCK POWER SOURCE BREAKER IS IN OFF POSITION, then connect the power cord to the dock power source. After connected, turn on the dock breaker.
- d. Turn on shore power breaker at AC Breaker panel.
- e. Turn on desired AC breakers. Battery Charger, refrigerator, freezer, etc.

15. Closing the boat

- a. Close the appropriate windows and hatches.
- b. Lock all doors.
- c. On the deck, check the position of all fenders and see that mooring lines are secure. **The furnace vent is port, mid ship, and marked with a red line. Do not place a fender in this spot.**