

Chester

Boat Manual

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Waste System

Head Operation

Please make sure **all crew members** are aware of precautions and operation of the marine head.

CAUTION: The marine head and waste system are fragile and have a limited capacity compared to home toilets. **Absolutely nothing can be flushed down the head except human waste.** WWSC has provided ziplock bags for the disposal of toilet paper. Anything else can clog the valves, pump and plumbing of the head. Thank you for your compliance.

To operate head:

Open the toilet intake seacock located under the head sink. Next, set the gray lever on the head pump to “flush” by switching it to the left. Slowly pump the handle several strokes (directly up and down, do not bend the handle side to side when pumping as water may escape through the valve) to get some water into the bowl. The head can now be used. After use, pump the handle until the bowl is cleared. Then switch the gray lever right to “dry” and pump a few more strokes to empty the bowl and hosing of water. **Note:** It is imperative to pump the waste entirely through the pipes and into the holding tank as to avoid backflow into the bowl. If the head intake seacock is accessible, turn it back to the closed position between uses. These measures will prevent seawater from flooding the bowl and damaging the valve when the boat heels. *Always close intake in heavy seas

Holding Tank

The waste holding tank is located starboard, behind the head and has 20 gal capacity. If the head is used by **ANYONE** during the charter, the waste tank must be pumped out. The deck fitting for the waste pump out is located starboard on deck, near the cockpit. The waste tank reading unit has been disabled.

PUMP OUT PROCEDURE

The **pump-out facilities** are located at the end of the fuel dock (H dock) and at the end of “A” dock (south end of marina).

- Set up for docking just like you are returning to the slip and secure the boat to the dock.
- Located the deck fill key and remove the waste cap.
- Turn on the waste pump on the dock by pushing the green button. Make sure the valves (blue “T” handles are shut on both pump-out hoses and behind the porta-potty dump. Otherwise, the vacuum pressure can’t build up.
- Bring the hose on dock and push the black rubber cone into the waste fitting firmly to form a seal. Open the valve (“T” handle) and keep the end pressed into fitting firmly until the liquid stops flowing consistently.

- Shut the valve, and then take the hose back to the dock. Put the end of the hose in the water and open valve for 10 seconds. This will suck up seawater to rinse out the hose (as a courtesy to the next user).

Pumping overboard is illegal in the Puget Sound.

Electrical System

Most accessories on the vessel are battery powered through the 12-volt DC system on the electrical control panel. The batteries are located under the port and starboard salon settees, closes to the galley and nav table.

Because the power supply is limited, turn on only the accessories that are currently being used to avoid draining the batteries.

Charging the batteries

The batteries can be recharged in two ways.

1.) Engine Alternator

When the engine is running, the alternator will be charging the batteries.

**NEVER TURN OFF THE BATTERY SWITCH
WHILE THE ENGINE IS RUNNING**

When the battery is switched off, the current from the alternator has nowhere to go, resulting in a fried alternator.

2.) Battery Charger

When connected to shore power, make sure both the main AC breaker and the charger switch are “on”. On AC power, all batteries will be charged regardless of battery switch position.

Shore Power

The boat can be connected to shore power (household-type AC current) with the large orange cable onboard. Look carefully at the plug and socket to make sure the angled prong goes into the angled slot. **This cable is plugged into the starboard aft side of the cockpit on the transom.** Normally this will be connected when you arrive at the boat. Disconnecting or connecting should be done with the breaker off.

After the cord is plugged in, check to see if the AC light is on, if there is no light check the heater provided for power.

Water System

Fresh Water Supply

On board, fresh water is carried a tank located on the port side under the aft bunk. The capacity of the tank is 55 gallons. The fill for the tank is located far aft on the port side, just outside of the cockpit combing.

Water Pressure – A pump provides pressure for faucets. It can be turned on with the water pressure button on the electrical panel. If the pump continues to run and no water is coming out of the faucet, the tank may be empty. **It is important not to run the pump when the tank is dry because it will burn out the pump.**

NOTE: Always turn off the water heater when you leave the vessel

Hot Water

The water heater is located under the aft bunk, toward the middle of the boat and holds 6 gallons. When the engine is running, it also heats up the hot water tank. (This requires at least one hour of engine running). While the engine is running, leave the water heater breaker off.

Shower – Water, especially hot water, is a limited resource onboard. In general, it is best to shower at the marina. If you do decide to use the shower, be aware that the small water heater capacity means a brief shower. First, open the thru-hull under the head sink. When you are finished showering, you can use the pump located right of the head sink to drain the head. To operate, turn on the “shower pump” switch on the electrical panel and activate the pump by pushing the black button next to the sink railing labeled “sump”.

Sinks – On a boat, sinks drain directly into the sea. Please be mindful of what you dump down the drain. Food waste from dirty dishes can clog the drains fairly easily, so it’s a good practice to wipe off plates and pans into the garbage before washing them. The drain hose is connected to a seacock where it exits through the hull. This can be closed during sailing to prevent water from backing up into the sink in rough water. If the sink is not draining, check to make sure the seacock is open. The seacock for the galley sink is located under the head sink.

Galley Systems

Stove/Oven

Propane Safety

This flammable gas (also called LPG) is heavier than air and can collect in the hull of the boat if it leaks out of the system, resulting in a risk of fire or explosion. To minimize risk, the tank regulator and solenoid are in a locker that vents overboard.

- **Solenoid is to be kept off when not using stove.** When the solenoid is off, gas pressure is prevented from going out of the locker. If there were to be a leak at one of the connecting fittings it would be vented overboard. When the solenoid is on, gas goes to the stove. Stove and over controls must be in the off position when not in use to prevent unburned gas escaping into the cabin.
- **Oxygen depletion.** When stove is in use, it will consume some of the oxygen in the cabin. You should not leave the stove on for more than an hour without ventilating the cabin.
- **Fire.** Keep all flammable items (towels, wood utensils, coat sleeves, etc.) away from the flame.
- **Motion underway.** Be cautious of hot liquids, pans, and surfaces when cooking onboard. The boat can be rocked, even at anchor, by wakes or gusts.

<p>REMEMBER: Turn solenoid off when not cooking Ventilate cabin when stove is in use Turn tank valve off when done with boat</p>

OPERATION

- Open the valve on the propane tank. The tank is located behind the wheel, under the captains seat, port side.
- Make sure all stove controls are off.
- Turn solenoid breakers on. Primary at the DC panel labeled LPG (F1). Secondary behind the stove and aft.

To light stove:

- Simultaneously push in and rotate control knob counter-clockwise to the flame symbol.
- Using a lighter or match, light the gas while continuing to hold the knob in.
- After it lights, continue holding the knob in for 10 seconds.
- Release the knob. If the flame goes out when the knob is released, it needs to be held in a little longer while lit to prime to fuel lines.

Using the oven:

- There is one burner in the oven at the bottom.
- Open the oven (push stainless steel button on the right side and simultaneously pull up and out on the handle.
- Select a burner. The knob for the burner is on the far right.
- Position the lighter near the rectangular hole at the bottom center where the fuel line is and light the fuel while holding the burner knob in and turned to flame.
- Keep the knob pushed in for 10 seconds.
- Release the knob. If the flame goes out when the knob is released, it needs to be held in a little longer in order to prime the line.
- To avoid accidental extinguishing of the flame, close the oven carefully.

Refrigeration

The vessel has refrigeration that works best while plugged into shore power. Do not operate the refer longer than 6 hours without recharging the batteries. Use the alternator by means of running the engine if necessary to recharge the batteries. Please remove all items and wipe down refer with supplies provided upon leaving the boat.

Microwave

The microwave is only for use while plugged into shore power. There is no inverter so there will be no outlet power unless plugged into AC shore power.

Diesel Furnace

<p>CAUTION: The furnace produces exhaust containing toxic compounds. Follow all safety precautions.</p>
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Safety

If there is a diesel smell in the cabin, shut off the heater immediately and ventilate the cabin. This situation can happen if the wind direction blows the exhaust towards the cabin or toward the air intake of the furnace. It can also occur if there is a leak in the exhaust system. Before using the diesel furnace, make sure all fenders and equipment is clear of the exhaust outlet (will melt fenders, hot fumes!).

OPERATION

- Locate heater control above the nav table. Turn switch on (bottom of console).
- Select thermostat setting using the gray buttons.
- Locate the black heating vents. Make sure they are not closed or blocked. Cool air will come out of the exhaust outlet located starboard aft on the hull. **Make sure all lines and fenders stay clear of outlet.** There may be white smoke at first, then a roaring noise (like a jet plane far away) with little smoke.

-If heater does not light after 10 minutes, turn off the switch, then turn back on after a few minutes.

Note: A tapping sound may be heard during start up and operation. This is a fuel metering pump delivering fuel to the furnace. You may also notice the heater cycling on and off to maintain the selected cabin temperature.

The fan in the heating system uses battery power. Frequently monitor voltage and make sure you are not drawing from engine battery.

REMEMBER: Make sure heater is turned off when you leave the boat.

Engine

The vessel is equipped with a Volvo Penta Saildrive diesel engine.

Max 2500 RPM when motoring.

Be nice to the transmission by slowly shifting to neutral when switching from forward gear to reverse or vice versa. The engine has 28HP and upon reverse gear, the boat pulls to starboard (starboard prop-walk). Because it is a saildrive, the prop is more centered and will pull the stern to starboard less than a shaft drive would. So “slight starboard prop walk”.

Starting Procedure

Complete all engine checks in Skippers log.

-Turn both house and engine batteries on. Engine battery switches are in port aft stateroom behind door.

-Shift to neutral.

-Hold the “ON/OFF” button for 3 seconds, gage will light up and beep a couple times.

-Next, hold the “start” button until the engine completely turns over

-If the engine does not start after turning her over for 3 seconds. Simply engage neutral throttle by pushing on the black button at the base of the shifter arm and move the throttle forward. If you are not familiar with this process please contact dockstaff (Popcorn on channel 68)

-Check for water coming out the exhaust.

To kill engine:

-Make sure you are in neutral

-Hold the “stop” button until engine is completely off.

-Then hold the “ON/OFF” button for 3 seconds.

Fuel System

There is one fuel tank, located under the cushions in the port aft state room and it holds 40 gallons of diesel. The fuel gage for the tank is located on the binnacle at the helm. In order to get a reading from the electronic gage, push the power button on the Volvo Penta EVC panel (just below the fuel gauge) with the engine breaker on.

The fuel fill is located starboard, aft on the outside of the cockpit combing. When fueling, please fill slowly and do not top off. You might want to keep a rag or absorbent pad close by in case of overflow or spillage.

Troubleshooting Engine Problems

Engine Overheating:

1. **Immediately shut down engine.** Make sure you and the vessel are in a safe drift (you may raise sails to keep course and out of danger). The most likely cause is the clogging of the sea-strainer. Locate the raw water strainer in the engine room and close the through hull valve. This valve must be closed in order to prevent backflow when opening the sea-strainer. Remove the lid and clean the basket inside. Upon cleaning, it is imperative not to lose any part of the sea-strainer. Improperly putting it back together or losing a component will result in a compromised seal.
2. **Check the coolant.** Locate the coolant reservoir and make sure the coolant level is between the two fill lines. If coolant level is low, you may carefully add some from the spare parts contents. *Note: Coolant needs to be mixed 50/50 with fresh water. Read instructions on the bottle. Feel free to contact Windworks if you have any questions or concerns!
3. **If neither of these solutions works, please contact WWSC immediately.**

Low Oil Pressure:

1. Immediately shut down engine.
2. Check oil level using the dipstick. Add if necessary, be careful not to overfill. It is best to do small amounts at a time and wait a minute for the level to settle before getting a proper reading on the dipstick.
3. If the engine oil level is not low, **DO NOT RESTART.** Contact WWSC.

Alternator Failure:

You may keep running the engine, but be aware that the batteries are not being charged. Conserve usage on engine and house batteries until connected to shore power.

Engine Dies and Won't Restart:

Contact WWSC immediately.

Windworks Sailing Center phone numbers are located on the back of the skipper's log. WWSC can also be reached on VHF channel 68 (if you are within sight of Shilshole Marina).

Windlass

The boat is equipped with a windlass and anchor, which are both stored on the bow.

The engine must be running in order to use the windlass. Otherwise it will drain the batteries. The windlass breaker is located by the on the control panel by the captains table. Make sure that this is on before operating the windlass.

There is a windlass control “remote” that must be plugged into an inlet located in the chain locker. This remote is usually stored around the nav station in the captains table or a cabinet. Please use care when inserting and unplugging this, as the pins/flanges can break off if not properly inserted. Remember to cover the outlet with the attached threaded cap when unplugging the remote. Pay close attention to the fairlead of the chain coming up and down as the gear mechanism may jam if not led properly through the windlass.

When operating the windlass, always USE EXTREME CAUTION to keep fingers, toes, and loose clothing away from the chain and gears. Watch the chain and rode as it is pulled up by the windlass and **be ready to stop immediately** if there is any problem. Stop when the anchor reaches the roller and carefully pull anchor over the roller by hand. Refer to operation tips for windlass instructions.

Anchor length: 164’ chain & rode – 30’ increments

Rigging

The vessel is equipped with both a rollerfurling headsail and an in-mast rollerfurling mainsail. Both halyards are at the mast. Please do not adjust the halyard tension without contacting dockstaff.

Furling Mainsail (MAST HEIGHT 57’)

Both controls (main furler and outhaul) are located with the other line controls under the dodger.

RATCHET/FREE FURLING SYSTEM (winch gear on mast below boom for furling)

-It is imperative to have the adjustable pin on the winch gear at the mast in the free position in order to furl out the main.

-When furling or unfurling, make sure no lines are lazy. A lazy line will knot up, and create avoidable problems.

-To unfurl, release the outhaul clutch as well as both main furler lines.

*Note: the main furler lines are actually one continuous line spliced to itself running through two clutches, blocks and ultimately through the ratchet/free Seldon furling system at the mast. In order to unfurl/furl, both clutches must be open allow the furling line to run freely.

-When the ratchet/free pin is in the **free** position, the sail is free to unfurl and furl while bypassing the mechanical advantage of ratchet. With this understanding, the sail can be furled in both clockwise and counter clockwise (in the free position). When in **ratchet**, the sail will only furl in counter clockwise. This is why we only furl in the sail counterclockwise to avoid confusion.

-To furl in the sail, release the outhaul clutch and both main furler clutches. Keep tension on the outhaul (ensuring a nice flat sail) as you pull on the right most furling line (starboard most furling line) to furl the sail. It is important to keep as much tension on the outhaul as possible without playing ‘tug-a-war’ with whoever is pulling on the furling line. This will allow for a tight furl ensuring that the entire sail gets furled into the mast. A loose and lazy furl will create problems upon the next unfurling as there is only so much room in the mast for the sail to be furled. Think of the analogy of rolling up your sleeping bag and then putting the sleeping bag cover on it. If the sleeping bag was not furled up tight, it will not fit into the bag cover.

Reefing

To furl is to reef.

Rollerfurling Headsail

Use the furling line located along the portside rail.

Other Notes

Chester also features an electric swim step. There is a rocker switch located on the starboard side of the cockpit by the captain’s seat. Do not over tension the swim step past flush when hoisting.