



**Information & operations manual for  
Nautitech Open 40 2016  
'Double Espresso'**

# Welcome



Welcome to Horizon Yacht Charters and your Nautitech Open 40 "Double Espresso". We hope you had a pleasant journey and are looking forward to a fantastic holiday and some of the finest sailing in the world here in the British Virgin Islands.

This manual is here to guide you through the ins and outs of your yacht. Please take the time to read this manual and don't hesitate to ask any of our professional, friendly staff if you have any questions.

All of the yachts in the Horizon fleet are maintained to the highest standards so that you may enjoy a trouble-free vacation, on a beautiful yacht. Please remember that these yachts are all privately owned and we ask that you care for it like it was your own.

Best wishes for a great vacation,

Sylvia and Andrew  
Directors

***Office Hours:***

*Monday – Sunday 08:30 – 17:30*

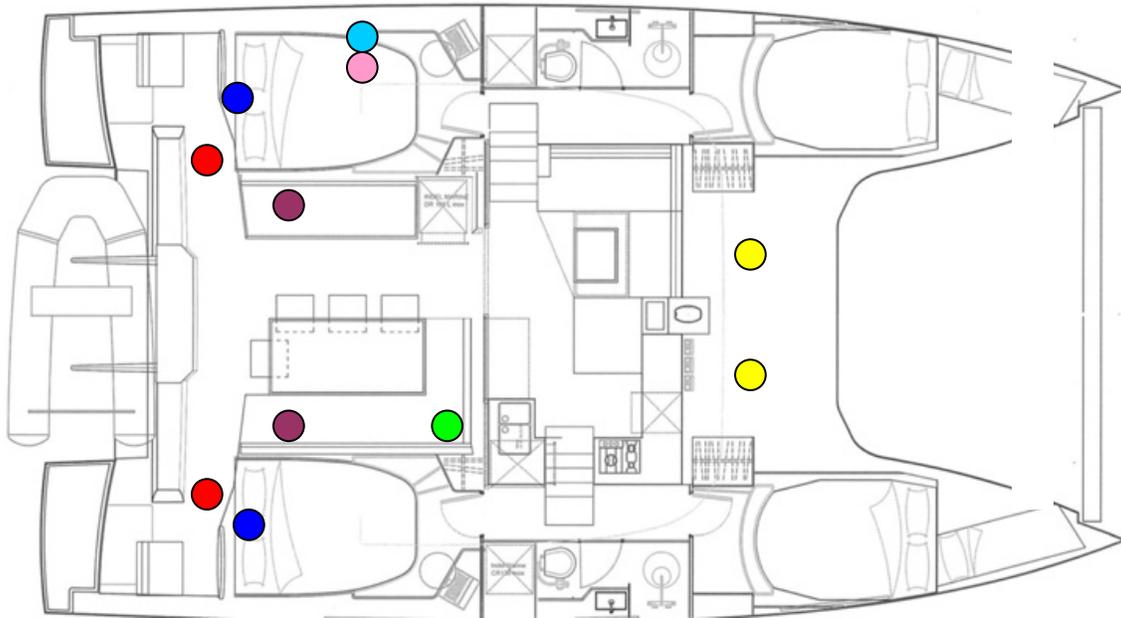
*Telephone: (284) 494 8787*

*Duty Manager: (284) 542 8788 (Technical questions, damage reports and emergencies)*

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## 1. Yacht specifications



<b>Length</b>	39' 3"
<b>Beam</b>	21' 3"
<b>Draft</b>	4' 5"
<b>Fuel</b>	116 gallons (58G x 2)
<b>Water</b>	112 gallons total (56G x 2)
<b>Engine</b>	2 x 30 hp Volvo Penta D1-30F
<b>Generator</b>	Fischer Panda 8000i (6KW)

### Location of:

- Fresh water refills (foredeck)
- Diesel refills (aft cockpit – under floor grills)
- Manual bilge pumps (each cockpit locker)
- Propane tank (under stbd cockpit seat)
- Windlass breaker (port aft cabin)
- Electric winch breaker (port aft cabin)
- Diesel cut off valves (under each aft cabin berth)

## 2. 12-volt panel

The following list corresponds with the photo below and tells you what each switch does from top to bottom, left column first.

**Water gauges**

**Fuel gauges**

**Voltmeter**



### Left column

1. Navigation lights
2. Steaming lights
3. Masthead light
4. Deck floodlight
5. Salon lights
6. Port cabin lights
7. Stbd cabin lights
8. Cockpit lights
9. Not in use

### Center column

- Water pump
- Port bilge
- Stbd bilge
- Port shower
- Stbd shower
- Fridge
- Freezer
- Cockpit fridge
- Not in use

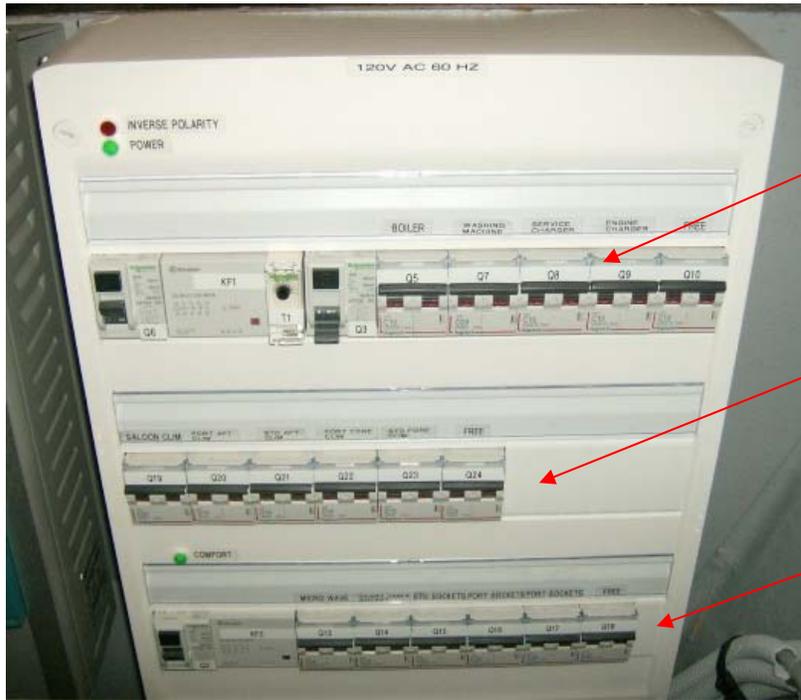
### Right column

- Gauges
- 12V outlets
- Stereo
- Autopilot
- Nav instruments
- VHF
- Propane
- Port head
- Stbd head

## 110v Breakers

The 110v breakers are located under the port aft berth

The 110-volt outlets will operate whilst you are plugged in to shore power or running the generator. If the outlets do not work, then ensure that the 110v breakers are in the 'On' position as shown below.



Battery  
Chargers

AC  
breakers

Outlets

There is no selector switch for Shore power / Generator. The yacht is equipped with the ability to detect whether the generator is running and will select the most appropriate source of input whether from shore power or generator.

### 3. Inverter / Charger

**Warning:** Leaving the Inverter turned on will severely deplete the house batteries. For that reason, it is better to run the engines at the same time. **You do not need to use the inverter if the generator is running.**



**Battery Charger**



**Inverter**

(Both located under the port aft cabin berth)



Inverter remote control located at the Nav desk

#### To use the inverter:

1. Press the "on" button on the Inverter control panel. The green light on the switch will then illuminate.
2. All the 110V outlets are now live.

When finished, switch the inverter off and check that the light on the panel is no longer illuminated.

#### 4. Engine start procedure.

- Make sure engine is in neutral.
- Press the On/Off switch to turn the ignition panel on.
- Press the start button until the engine is running.
- When the engine is running check there is water coming out of the exhaust.
- To stop the engine, push the **STOP** button and then press the **OFF** button to turn off power to the panel.



Should you hear an engine alarm during operation, check which symbol appears on the tachometer and immediately shut down the engine-CALL HORIZON

All our yacht engines run with diesel fuel. There are two diesel filler caps located under floor grills at the aft end of the cockpit which are clearly marked "DIESEL" **DO NOT PUT WATER IN HERE.**

## 5. Daily Engine Checks

- Check the oil level using the yellow dip stick located to the right-hand side of the engine. The level should be at least halfway between the empty and full marks. To add oil, open the oil filler cap on the top of the engine.
- Behind the engine is the seawater filter, **do not** remove the cap.
- To the left of the engine is the engine coolant reservoir. The coolant level should be between the maximum and minimum lines.
- Check for any engine leaks or bilge water below engine.
- Check the belt for any damage and correct tension (rear of engine).

**KEEP HANDS CLEAR OF ALL MOVING PARTS.**

**ANY PROBLEMS CALL HORIZON**

Coolant tank and refill

Oil filler cap



Oil dipstick

## 6. Generator

**You must not run the generator when underway**

Double Espresso is fitted with its own generator which will run the 110v outlets, the air conditioning and will also charge the batteries in place of the engine. **The generator is located under the stbd fwd berth** and the start panel is inside the salon at the Nav desk. The raw water pickup and coolant tank are located in the stbd fwd crew bow cabin.



There is no selector switch for Shore power/Generator. The yacht is equipped with the ability to detect whether the generator is running and will select the most appropriate source of input whether from shore power or generator.



**Generator breakers in stbd fwd bow cabin**

## Starting the Generator



- Make sure all the 110v systems (especially the air conditioning) have been switched off prior to starting the generator.
- Press the 'On' button at the top left of the panel.
- After a slight delay the panel will illuminate, display the Fischer Panda logo and then you will see the panel information as shown in the photo above.
- Press the start / stop button once and you will notice that the display changes from **Preheat** to **Override** and then to **Running**.
- Allow the generator to warm up for 5 minutes and then gradually load up the system, adding one load (air conditioner) every 5 minutes.
- If you encounter problems with the 110V sockets when running the generator, make sure that the breakers are turned ON under the port aft cabin berth. Also check the breakers in the stbd fwd bow cabin as shown on the previous page.
- The water heater will work when the generator is running but this is not usually needed. Hot water is primarily generated by running the main engines (stbd eng heats the water).

## Stopping the generator

- **Allow the Generator to cool down for 5 mins under no load before shutting it down**
- Press the 'Stop' switch once. The generator will close down.

## 7. Air conditioning

The air conditioning unit will operate when the vessel is plugged in to shore power or when the generator is running. Each cabin has its own individual air conditioning control unit and there is one unit in the salon. **Whether on shore power or generator, the salon air conditioning cannot be run alongside all the cabins as the current load is too high.**



### Operate the air conditioning as follows:

- Press the power button to turn the unit on.
- Ensure "cool" is illuminated, not "heat".
- The digital display will identify the current ambient room temperature.
- Adjust your base temperature using the temperature control. **Do not set the temperature below 22 degrees otherwise the unit may freeze up.**
- Select fan strength using the fan control on the left

Load up the generator with one air conditioning unit every 5 minutes so that the generator does not overload.

## 8. Instruments

Located at each helm position is a Garmin GMI 20 multifunction display and a Garmin GPSmap 7408 touch screen Chartplotter. The stbd helm benefits from a Garmin GHC 20 Autopilot and remote windlass chain counter.



## 9. VHF Procedure

### Using the VHF radio:

Familiarize yourself with the method for switching channels, and with the squelch and volume controls on your radio. Most radios have a button to instantly select Channel 16 – ensure you understand how this operates or you could end up speaking on Ch. 16 when you think you are on some other channel.

1. Make sure the radio is switched on, volume quite high power to high unless the station you are calling is very close.
2. Squelch up until loud hissing, and then back a little until the noise *just* stops.
3. Select the channel for calling (Channel 16, unless specified otherwise).
4. Press switch on microphone when speaking. Release immediately.

If no response, wait two minutes and repeat the call. If still no response, wait a further two minutes before trying again. If calling on Channel 16, it is very important to switch to a working channel after the contact is established. Do not use Channel 16 for your conversations – this channel is for hailing and distress only.

### Channels to use:

- 16** Hailing and Distress
- 74** Contact Horizon Yacht Charters (when in range)
- 12** Yacht Charter Companies working channel – assigned for yacht breakdown servicing and emergency only
- 68** Marinas and Yacht Clubs – for lunch/dinner reservations etc
- 06** Ship to Ship – along with Channel 68 and 77 can be used for contact between boats

In the event that your vessel is involved in a non-life threatening incident with an object or with another vessel, it is important that you contact the Horizon Office immediately at 494 8787 or 542 8788. Please remember to get as much information as possible about your location, the other vessel's description and what damage has been done to your vessel so that we can best assist you.

**Failure to report any accidents or incidents in a timely manner may result in nullification of your hull damage insurance.**

### **Types of emergency:**

In the unlikely event that you are involved in an emergency stay calm and follow these steps. You will also have an Emergency Procedure card next to your VHF.

**Distress:** "MAYDAY, MAYDAY, MAYDAY." This is an International Distress signal and an imperative call for assistance. It is used only when a life or vessel is considered to be in grave and imminent danger.

**Mayday Relay:** used to summon help for a vessel which is either too far offshore to contact the coastguard directly, without radio capabilities or whose radio has been damaged or destroyed.

**Urgency:** "PAN-PAN, PAN-PAN, PAN-PAN" This is the International Urgency Signal and is used when a vessel or person is in some jeopardy but is not considered to be in grave and imminent danger.

**Medical emergency:** "PAN-PAN MEDICO, PAN-PAN MEDICO, PAN-PAN MEDICO" (Pronounced med-ick-oh). This is an International Urgency Signal that should be used when medical advice is needed.

**Safety:** "SECURITE, SECURITE, SECURITE" (Pronounced Say-cure-it-tay). This is an International Safety Signal and is a message about some aspect of navigational safety or a weather warning.

### **How to issue an emergency message**

Select Channel 16 and press transmit button on handset

Say slowly and clearly 'MAYDAY, MAYDAY, MAYDAY, CALLING ALL STATIONS

This is.... (vessel name) ....' and repeat vessel name 3 times

Give position – vessel's position in degrees of latitude and longitude or nautical miles from, and bearing to, a navigational landmark

Describe emergency – list the problem, the type of assistance needed; number of passengers aboard (boat length, hull colour and type is also useful)

Wait 1 minute for a response, repeat message

**ALTERNATIVELY: Dial either 767 (SOS) or 999 from any BVI cell phone or call 494- HELP (4357)**

## 10. Batteries

The systems on your yacht are all 12volt except for the air conditioning. The batteries will need to be recharged as often as you deplete them. Conserving power will result in less time needed for charging, so turn off systems that you are not using.

Your batteries will charge when the engine is running at 1400rpms or more whether sitting at a mooring or motoring to a destination, or when the generator is running. Check the battery levels and make note of them before charging.

Run the engines at 1400rpms or more (or the generator) for a minimum of 1-1 1/2hrs **twice daily**.

Shut the motor off. Wait 15 minutes before checking the battery levels, (directly after turning off the motor they will remain in an excited state for about 10 minutes).

The House system should come to rest at 12.8 v. and then slowly get lower. When the system gets to 12.2 you should start planning to re-charge the batteries soon.

Double Espresso's house battery bank is isolated from the engine start battery and the house battery's have a capacity of 430Ahrs

The batteries are located under the port aft cabin berth. They do not require any checks whilst on charter.



## 11. Anchoring & the windlass

### Setting your anchor:

#### Preparation:

- Establish a nonverbal communication system between helmsperson and windlass operator, as with the noise of the engine and wind, verbal communication proves difficult.
- Shorten the painter so that it cannot go under the yacht and wrap around the prop.

#### Location:

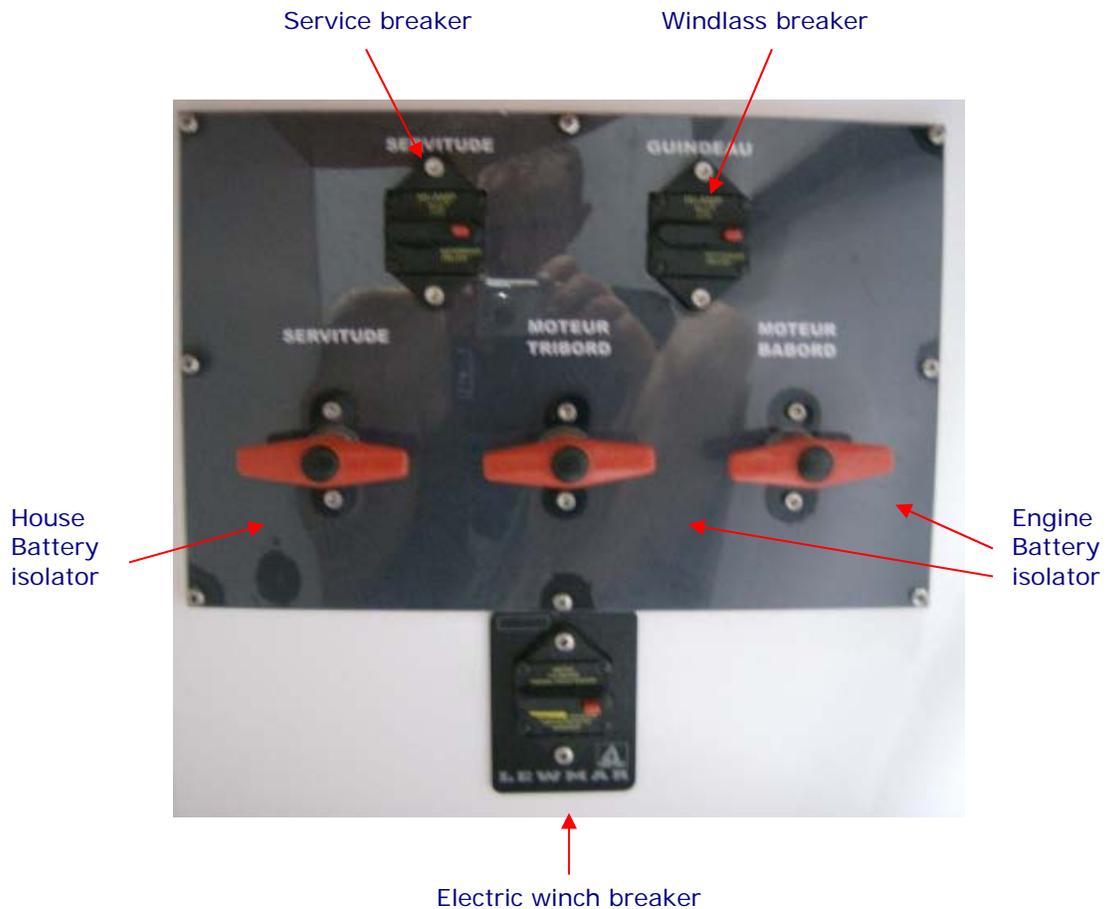
- Choose a clear area to anchor in and you can see the bottom. A white bottom is sand and perfect for anchoring. A brown or green bottom will be grass, rock or coral. **Only anchor in sand.** Maximum depth would be 1/5<sup>th</sup> of your anchor rode. Remember the depth is set from the bottom of your keel so keel draft should be added to the reading of your depth gauge.
- Anchoring on a lee shore is not recommended and would recommend using both your primary and secondary anchor if you choose to anchor off a lee shore. (see below)

#### Action:

- Always have your engine revs increased to @ 1400 rpms before windlass operator touches the windlass remote. The windlass needs optimum energy to operate correctly.
- Minimum scope is 5:1. In heavy weather you may want to increase that, always ensuring your swing area is clear of any obstacles.
- Use the elements; approach from downwind or current, whichever prevails.
- Have the anchor ready to deploy. This may require you to slack the chain and manually push the anchor slightly overboard so that it will go deploy when you press down on the remote.
- Once the yacht is stationary use the electric windlass to drop the anchor to the sea floor. The elements will push you back and away from the anchor. Keep deploying chain until you have acquired the correct scope. Attach the snubbing line.
- **Always attach the snubbing line before setting the anchor with the engine and whilst you are anchored. The snubbing line protects the windlass and it is important that you attach the snubber every time you set the anchor. Attach the hook around the chain link (the hook is too big to go through the link) and cleat off the bitter end of the line to a bow cleat. Pay out enough chain so that the snubbing line becomes taut.**
- If the hook falls off the chain, it means that there is not enough tension on the line. You may need to hold slight tension on the snubbing line as you deploy more chain until the snubber takes the load of the anchorage. Engage reverse, slowly building up to 1500 rpm to really drive your anchor into the sand. Take transits as you set the anchor so that you know that the anchor is not dragging.
- It is always advisable to snorkel the anchor and ensure it is bedded in correctly and not just lying on its side or hooked on a rock.

## Retrieving Primary Anchor:

Never use the windlass to pull the yacht to the anchor. The windlass operator should point in the direction of the anchor chain so that the helmsman can move slowly in that direction. As soon as there is some slack on the anchor chain the bowman tells the helmsman to put the engine in neutral and then increase RPMs. Bowman then retrieves all the slack chain. When the chain becomes taut then you repeat the process from the beginning. Ensure the anchor does not swing into the bow of the yacht.



## Manual operation of the windlass



If you lose power to your windlass, start the engine and fast idle the engine at 1400rpms **in neutral**, to make sure you have not just got a low battery voltage. Then make sure the windlass breaker has not tripped in the port aft cabin. If you still have no power, you can operate the windlass manually.

To drop the anchor, secure the windlass handle onto the hole on the side of the windlass (shown in the picture above).

Turn it counterclockwise to loosen the gypsy. Your anchor is now ready to drop.

Remove the safety line or safety pin to release the anchor, keeping hands and feet clear. Control the rate the chain pays out by tightening or loosening the gypsy with the handle. When you have paid out enough chain – 5 to 8 times the water depth, turn the handle clockwise to tighten the gypsy. Increase revs to 1500 rpm, to set the anchor in reverse. If you drag, pay out more chain, and re-try 1500 rpm in reverse. When the anchor is set, fit the anchor bridle then release the more chain on the gypsy as above, so that the load is taken up on the bridle.

## Electric Winch

The main halyard winch at the stbd helm can be operated manually or electrically. **Extreme care should be taken if using the winch electrically as accidental damage or injury can easily occur.**



Electric / manual winch

Single speed winch button

Should the electric winch be overloaded a breaker in the **port aft cabin** will trip. Push the Reset lever back up to reset it.



Test button

Reset lever

## 12. Picking up a mooring buoy

- Ensure the dinghy painter is tied off short on the bow or amidships and is clear of the prop.
- Approach the mooring buoy, keeping the bow into the wind or current, whichever prevails.
- Have a crew member on the bow to pick up the mooring pennant with the boat hook.
- The bowman will direct the helmsman to the mooring, using the already established non-verbal communication system. Once at the mooring, inspect the buoy and pennant for any signs of wear and tear; if you are unsure about a mooring buoy's integrity, choose another location to moor up.
- The bowman should ready a line to a bow cleat to slip through the eye of the mooring pennant. This line is then shortened and brought back to the same cleat.
- Once set your mooring buoy will be attached either on the port or starboard cleat and the yacht will be head to wind. Remember to centralize the wheel and lock in place to avoid the yacht sailing around the buoy.
- Next attach a second back up line to the mooring. Attach a line from the opposite bow cleat and if possible, attach it directly to the mooring buoy. It is always easier to do this from the dinghy. Do not try to make the lines of equal length, the first line should be taking all the weight of the boat.
- To depart, release the back up line first. Slowly motor the boat forward to create slack, release the line from the cleat and allow the pennant to slip from the line into the water. Fall back with the wind or current and be careful not to foul your prop on the pennant.
- **Remember to tie your dinghy away from the stern whenever you are maneuvering in close quarters.**

### 13. Bilge Pumps

Your yacht is equipped with a fully automatic bilge pump in each hull and in each engine compartment. A manual pump is in each of the cockpit lockers and diverter valves allow the pump to be used in either the hulls or engines compartments. Their use will be demonstrated to you during your brief.

Bilge pump

Float switch



Eng room bilge pump  
With float switch



Manual bilge pump with  
diverter valve

## 14. Freshwater system

Double Expresso is equipped with two water tanks with a total capacity of 112 gallons. Both water tanks are the same size (56G).

Before filling the tanks let the water run from the hose for a while before placing the end into the fillers that are located on the foredeck. Please ensure that the correct fillers are used, NOT the holding tanks or the diesel fill.

To use the freshwater system, turn on the freshwater breaker on the 12v panel and open a faucet. When the tank runs out of water the pump will run at high speed and the faucet will start to cough air. As soon as you hear the pump running continuously, it is time to change over to the second tank. **The valves are in the port bow locker**

Port water tank valve

Stbd water tank valve



## 15. Heads

- **Nothing is to be put down the head unless it has been digested first.**
- Prior to use, press the lower left button for a few seconds to wet the pan.
- Use the head, remembering that all non-human waste must be put into the waste bin.
- After use, press the upper button for at least 20-25 seconds to flush the pan.
- Lastly, press the lower right button to leave the pan dry.
- Wherever possible please use the heads ashore as this keeps our waters nice and clean.

Each head on Double Expresso has a fully operational holding tank which can be used by closing a valve on the waste seacock. These are located under the central bilge floorboards. Check that the holding tanks are empty before returning the vessel and please flush each one through to minimize residual odors.

- Wherever possible please use the heads ashore as this keeps our waters nice and clean.
- **Blocked heads will be cleared at a cost to you of \$150.00 sewerage fee, plus a technician's fee of \$75 per hour and the call out fee.**



Holding tank  
Discharge valve  
in each central  
bilge

## 16. Showers

Your yacht has a hot & cold, fresh-water shower in each head and at the deck shower on the stbd transom.

If the engine has been running, the hot water can be very hot – be cautious!

In order to use the showers, the fresh-water pump must be activated on the 12V panel.

The head showers drain into a sump box which has an automatic float switch and pump, so the water will be pumped out automatically (ensure that the shower pump switch is selected on the 12V panel).



Shower sump box in each hull

### Transom Shower

The valve on the left has two functions;

- By pushing the valve up or down you can turn on the water and adjust the water pressure.
- By turning the knob clockwise and counterclockwise you can change the temperature of the water. Be careful. The water can be very hot. Test before showering.

To use the shower head simply pull it out and press the lever on the back. If no water comes out make sure that the 12V water switch is on, that the shower hose is not kinked (access from the stbd eng compartment) and that the water pressure valve is in the correct position.



## 17. Refrigeration

Double Espresso is installed with two fridges and a freezer. All these are 12v systems. They are designed to run 24hrs a day if you wish. To ensure that they do not fail there are two things you should do.

- Firstly, keep your batteries charged. If the level goes below 12v the system will malfunction. Refer to section 10 for charging instructions.
- Secondly, **do not chip at the ice or use any other sharp items in the fridge**. If something is frozen to the side of the fridge do not force it away. Pour warm water on it if you need to melt the ice.

There are thermostats in each unit to adjust the temperature.

Ask one of our staff for a deck cooler if you would like one for storing your drinks. It will keep the drinks cooler and the refrigeration colder, as people will not be going in it every 5 minutes for a drink.

Please note that we are in the tropics and we cannot guarantee that items will remain frozen when placed in the fridge and that fruit, vegetables and other fresh produce may have a shortened shelf life.

Galley fridge



Freezer



Cockpit fridge

## 18. Propane and stove

The propane tank locker is located under the stbd cockpit seat.

### To use:

- Press the switch located on the 12V panel.
- To light, turn the relevant knob 90 degrees anti-clockwise, push the knob in and light the burner with the electric igniter button.
- Hold the knob in for 5-10 seconds, then release. Make sure that the flame goes all the way around. Reduce any wind that may hinder this.
- If you cannot get it to light, check the manual shut off on the propane tank.

The 12v solenoid system is USCG approved device. You do not need to shut any manual valves unless you wish.



## **Gas safety**

All our yachts are fitted with propane detectors. The propane 'sniffer' has been placed in the bilge (propane is heavier than air and so will sink into the bilge). The detectors are sensitive to several types of gas and will trigger the alarm. The alarm can also be triggered if there is moisture in the bilge. If the alarm sounds it does not necessarily mean that the propane system is leaking, so don't panic!!

If the alarm goes off, follow these steps:

- Close the valve on the propane tank.
- Check the stove and surrounding area for propane smell.
- If detected, open the bilges and hatches. Point the boat downwind and use the manual bilge pump to pump out the bilges.
- Call Horizon immediately

**Under no circumstances should you use the electrical bilge pumps or any other electrical system if you suspect a gas leak.**

## 19. BBQ

- When using the BBQ, tie your dinghy off at the side of the yacht, not off the stern
- Never use the BBQ while sailing
- Never use the BBQ on a dock
- Never change propane tanks when using the BBQ
- Make sure someone is always tending the BBQ when hot
- Call us if you have too much food



## 20. Fire Safety

Prevention is the best answer to fire safety.

- Always switch off the safety solenoid when stove is not in use
- Never leave the stove or oven burning unattended.
- Never change propane tanks whilst barbequing.
- Never smoke below decks.
- Never smoke when changing propane tanks.
- Safely store any flammable liquids (for example charcoal lighter fuel).
- Keep matches away from children.

### Engine compartment fire:

In the event of a fire in the engine compartment it will be necessary to lift the hatch to the compartment. Be very careful as opening this hatch will allow more air to enter the compartment and thus feed the fire.

- Pull the yellow key out
- Press down on the red button until all the contents of the extinguisher have been discharged.

### Open fire:

- Pull out the yellow safety tab.
- Point the extinguisher at the base of the fire and press down on the red button to discharge contents.
- Generously cover the base of the fire and surrounding area to ensure the fire is under control and cannot spread. Continue discharging extinguisher until the fire is out.



### Galley fire:

- Take the fire blanket out of its container. Read the instructions for use carefully.
- Ensure hands and limbs are protected from the fire by the blanket.
- Carefully lay the blanket over the fire, laying the blanket away from you and keeping yourself protected at all times from the flames.
- Once in place leave the blanket until all heat has gone from the scene of the fire, this way you can be sure that the fire has definitely gone out and will not re-ignite.

## 21. Dinghy & Outboard

**The driver of the dinghy must be over 18 and must always be wearing the kill cord. Never operate the dinghy under the influence of alcohol or drugs.**

- Always tow your dinghy on a short line while motoring and a long line while sailing, always tow with the engine leg up as it gives you an extra half knot.
- Most of the time it is fine to leave the outboard on the dinghy, but if conditions are very rough, the outboard needs to be mounted on the push-pit.
- When going ashore for an evening's entertainment allocate a dinghy captain, someone who will bring the whole crew back to the boat safely, allowing the rest of the crew to enjoy various local cocktails and concoctions.
- To start the engine, lower the motor into the water using the lever on the starboard side of the engine. The lever position corresponds to the motor position, up and fwd for towing and back and down for driving. Check you are in neutral and **the safety cord is in place**. For starting an engine that has been at rest for 3 or more hrs use the choke. Pull the choke out and set a few revs with the throttle. Do not twist the throttle trying to prime the engine. You will only flood it. Face the engine and pull the start cord and push the choke back in as soon as it runs. If it runs for a second but cuts out, try again without the choke.
- To stop the engine, press the button on top of the kill cord, or pull the kill cord out.
- Keep the kill cord with you to prevent anyone from borrowing it. You have been provided a dinghy lock and cable. Use them.
- Do not drag the dinghy onto a beach; anchor it off or put it on a dock with a stern anchor to prevent damage from going under or hitting the dock.
- Do not speed in and around other yachts, speeding fines have been introduced.
- At night an all-round white light must be displayed along with red & green side lights, and it is always a good idea to have a flashlight with you, to show the way, and warn other vessels of your presence.
- Wear the life preservers provided in the cockpit lockers when in the dinghy.
- GAS to OIL ratio, 1 Gall = 3 ounces (80ml)

## Outboard Engine - 15HP 2 stroke



Pull cord

Throttle

Choke

Stop button

Gear shift

Kill cord

## Fuel tank



Security cable

Fuel cap w/ air vent

Fuel line