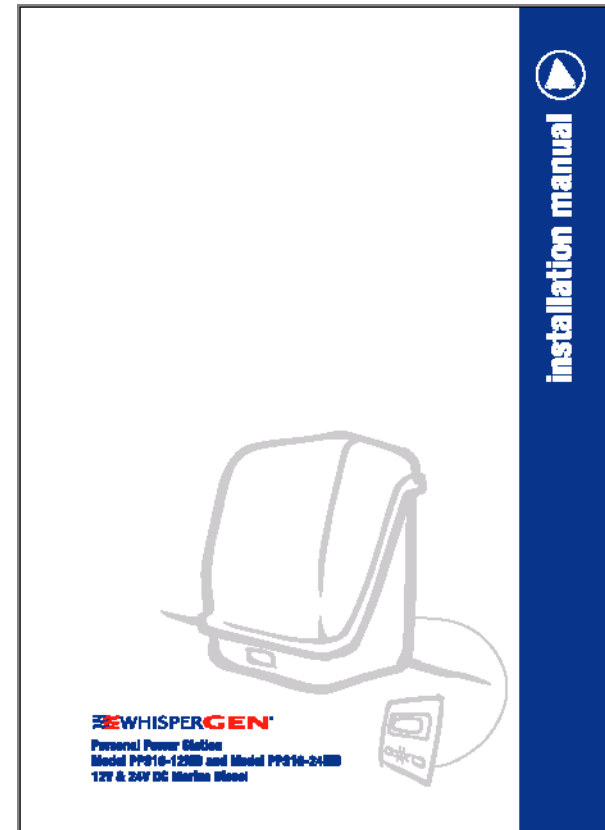


# Section 1 – Installing the WhisperGen™

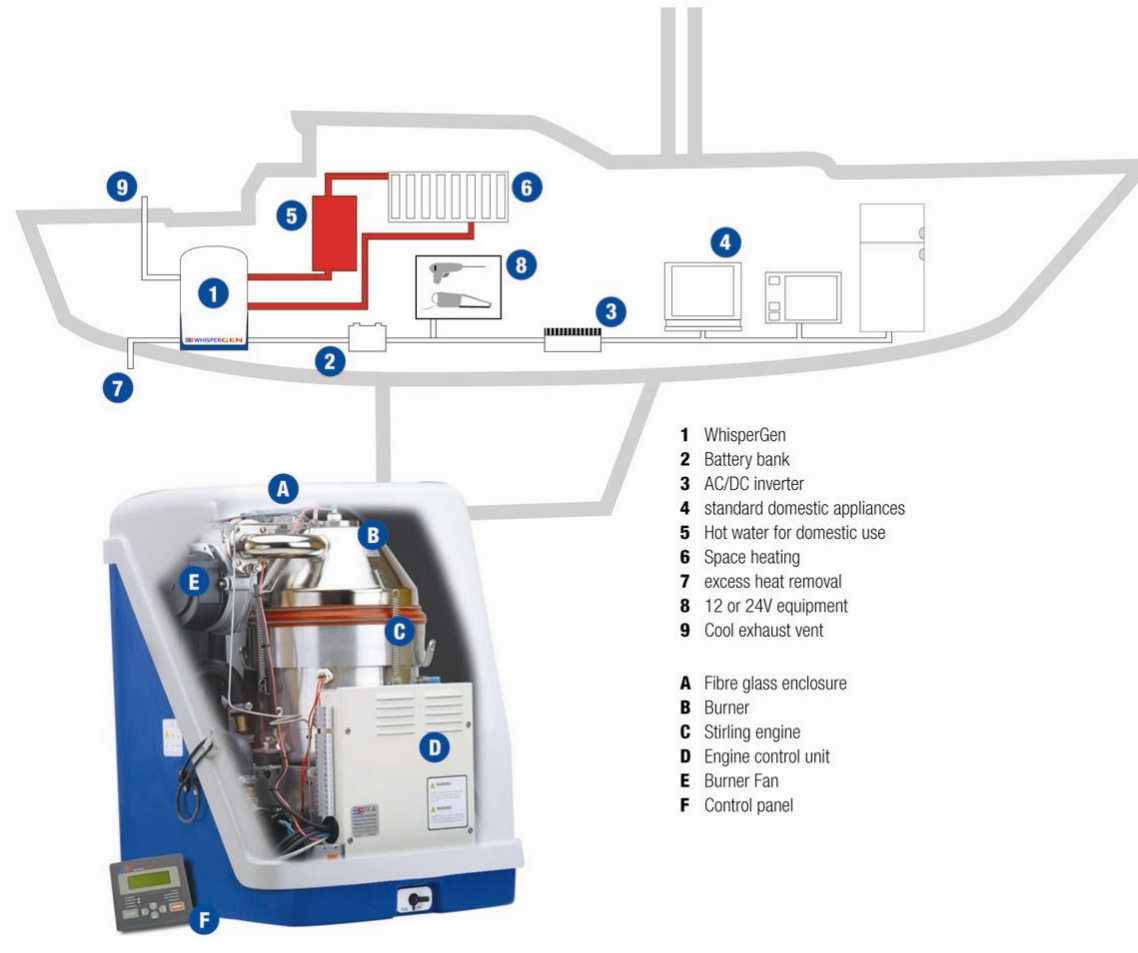
## Planning the installation



- All WhisperGen™ units are shipped with an Installation manual
- Design & planning information starts on Page 6:
  - See standard equipment supplied
  - See optional Installation Kits
- ALL installations are different!
- Prepare a detailed design and installation plan **before** starting the installation.



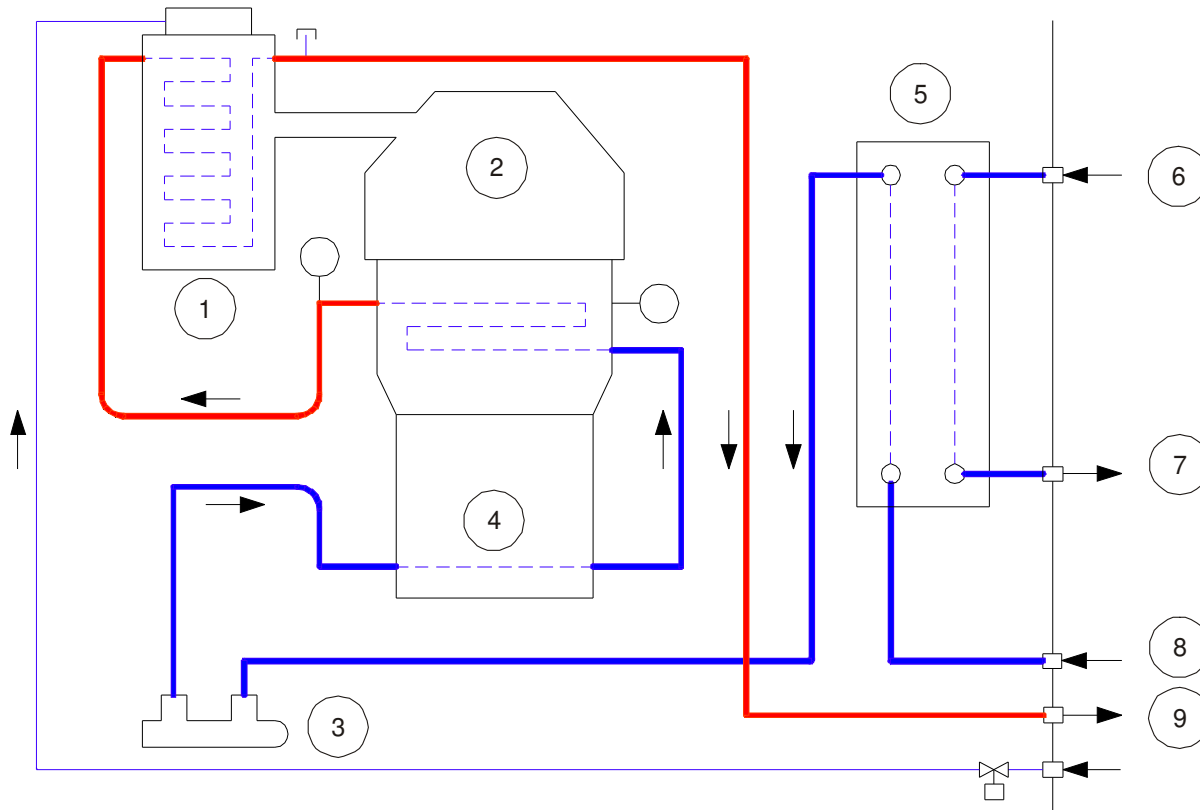
# Planning the installation- Equipment in a typical installation



# Planning the installation- Overview of primary & secondary coolant circuits



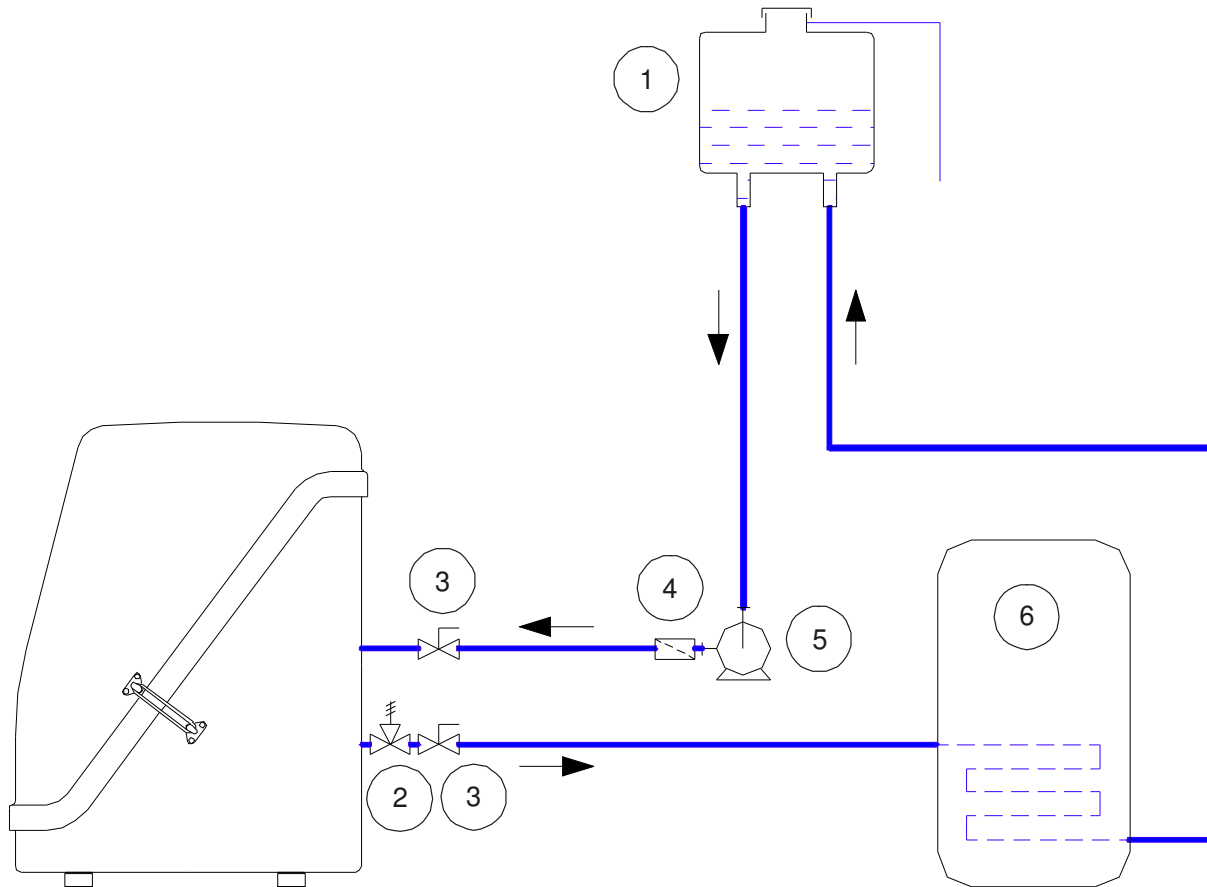
See Page 12 of the manual



Key:

1. Exhaust heat exchanger
2. Core engine
3. Clamp element heater
4. Generator housing
5. Marine heat exchanger
6. Secondary cooling in
7. Secondary cooling out
8. Primary coolant in
9. Primary coolant out

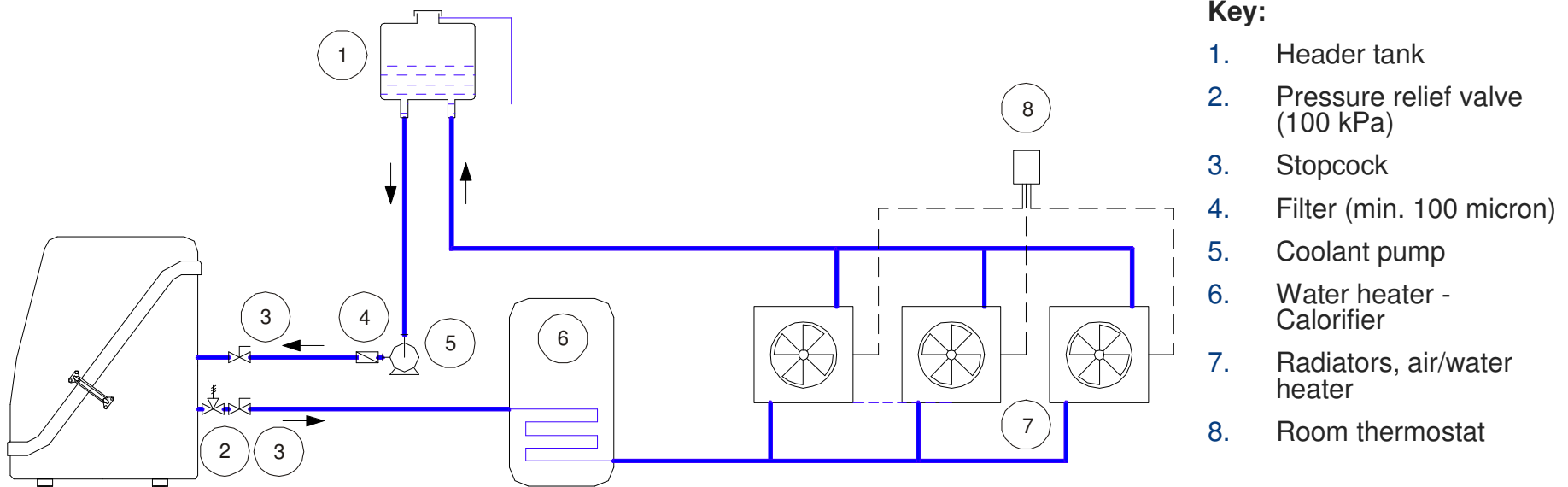
# Coolant circuit design - Potable water heating only



### Key:

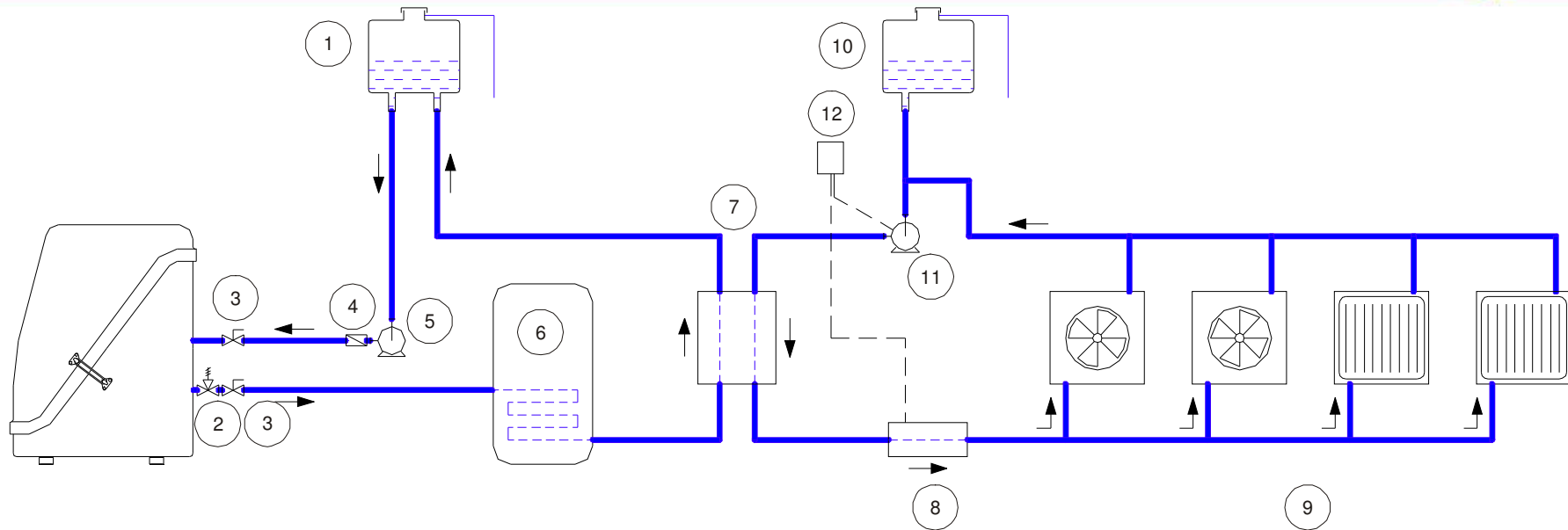
- 1. Header tank
- 2. Pressure relief valve (100 kPa)
- 3. Stopcock
- 4. Filter (min. 100 micron)
- 5. Coolant pump
- 6. Water heater - Calorifier

# Coolant circuit design - Potable water heating and up to 5.5kW space heating



**Recommended for smaller heating circuits and new installations**

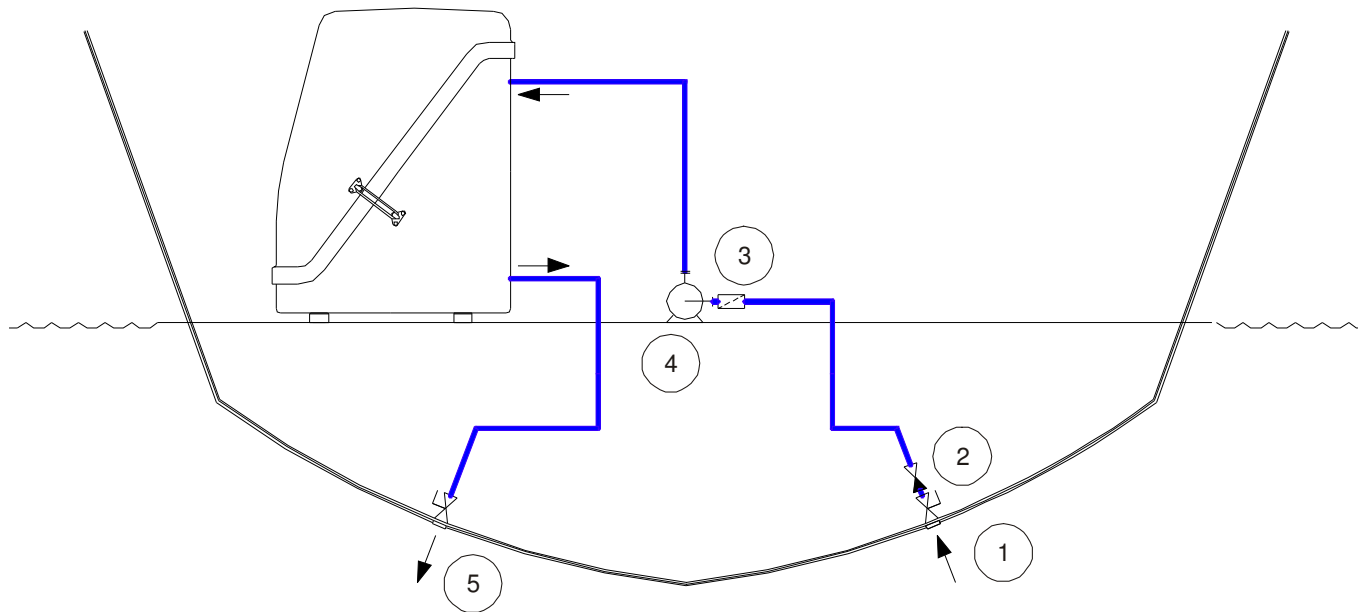
# Coolant circuit design - Potable water heating with over 5.5kW space heating



- |                                    |                                    |
|------------------------------------|------------------------------------|
| 1. Header tank                     | 7. Heat exchanger                  |
| 2. Pressure relief valve (100 kPa) | 8. Diesel water heater             |
| 3. Stopcock                        | 9. Radiators, air/water heater     |
| 4. Filter (min. 100 micron)        | 10. Expansion or header tank       |
| 5. Coolant pump                    | 11. Pump (if not fitted to heater) |
| 6. Water heater - Calorifier       | 12. Thermostat                     |

**Recommended for larger heating circuits and old or existing systems**

# Coolant circuit design - Secondary heat dump design – raw water cooling



## Key:

1. Inlet seacock
2. One way valve (if required)
3. Strainer / filter
4. Secondary cooling pump (self-priming)
5. Outlet seacock

- Keep **WhisperGen™** & pump above waterline!
- Min 2m gap between inlet and outlet!
- Use a self priming pump

# Coolant circuit design - Warnings & cautions



- Primary coolant circuit:
  - *Do not connect the boat's main engine cooling system to the same circuit as the WhisperGen™, as cast iron contaminants may damage the WhisperGen™.*
  - *If the coolant system is used to heat the vessel potable water system, a compatible non-toxic corrosion inhibitor (and anti-freeze if required) must be used.*
  - *Use only the specified coolant. Use of incorrect coolant will result in corrosion of the WhisperGen™ and will void the warranty.*
  - *Always refer to manufacturer's instructions for corrosion inhibitors and anti-freeze solutions.*
- Secondary heat dump circuit:
  - *Be careful when installing pipes and fittings. If the seawater coolant pipes and/or fittings fail, the vessel could flood.*
  - *If possible, the WhisperGen™ should have its own inlet and outlet for the secondary coolant system.*



## Fuel system design

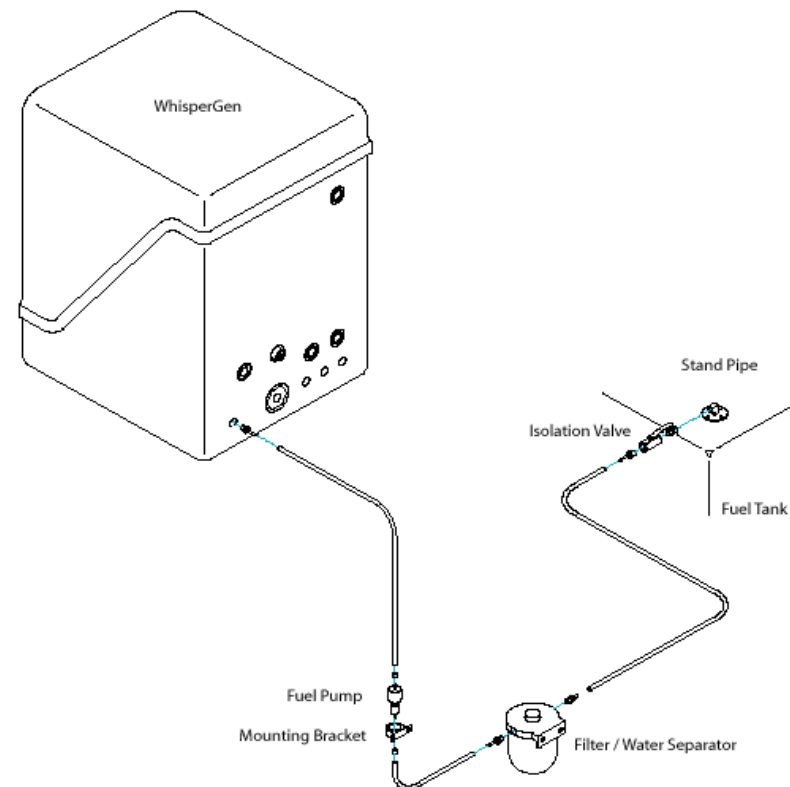


- It is important to plan for each installation
- Each installation is unique
- Correct fuel system layout is critical to correct operation
- Mounting the fuel pump, fuel pipe size and length are all important and instructions in the manual must be followed
- Warnings and cautions must be read and understood

# Fuel system design- Custom design plan for every installation



- Relative positioning of WG, pump, filters, and fuel tanks will vary for every installation.
- Min and max parameters for pressure, lift, flow, lengths must be designed in.
- All parameters are detailed in the manual.
- Always draw a scale diagram that meets the specifications *before* starting the installation.

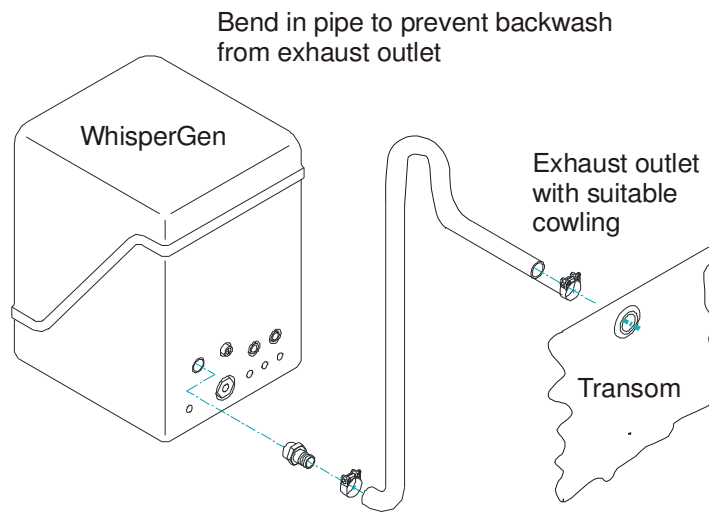


## Exhaust & condensate drain

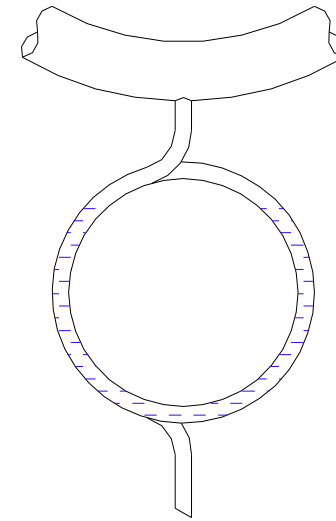


- The exhaust system is critical to the operation of the WG
- Back pressure must be taken into consideration
- Try to avoid low points where condensate will collect
- Condensate drain points with water-seal air traps must be used when a low point is unavoidable
- The exhaust must be leak free for safety reasons
- Observe the instructions in the Installation manual
- Do not run the exhaust through living cabins
- The fitting of a suitable cowling on the exhaust outlet for wind and wave deflection is required.

# Exhaust & condensate drain



Typical exhaust installation



Dealing with low points in the exhaust

## Fresh water flushing



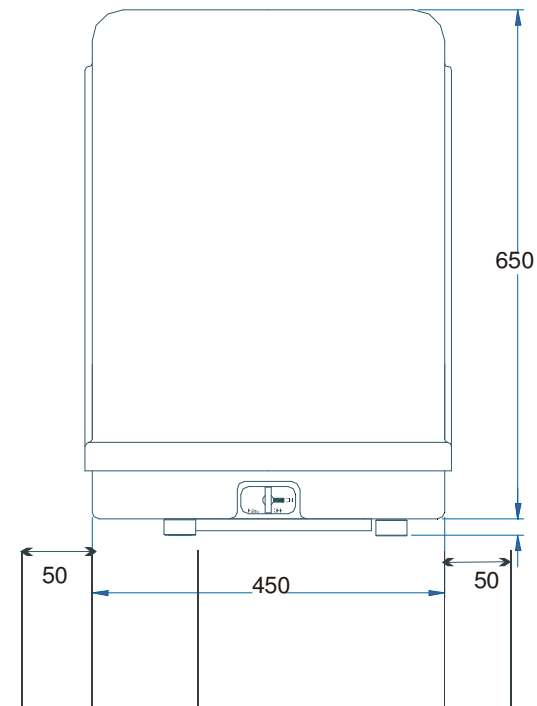
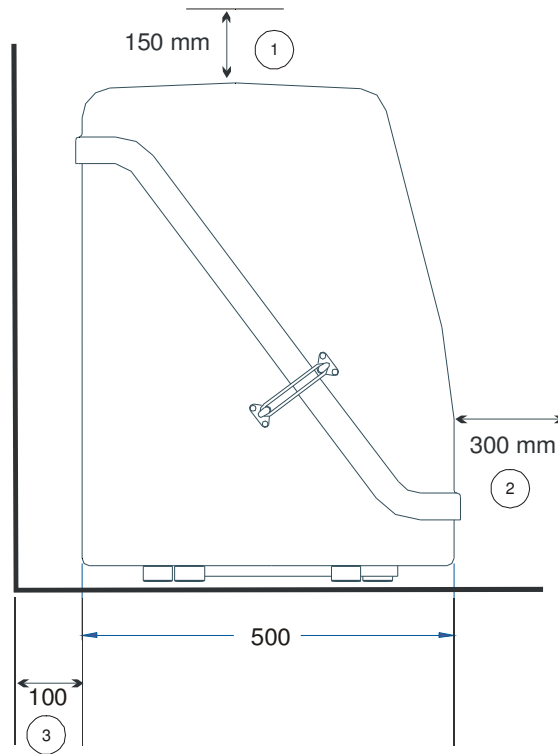
- Fresh water must be connected for flushing of the exhaust heat exchanger
- Observe pressure requirements in the manual

## Positioning the WhisperGen™ - Choosing a suitable location

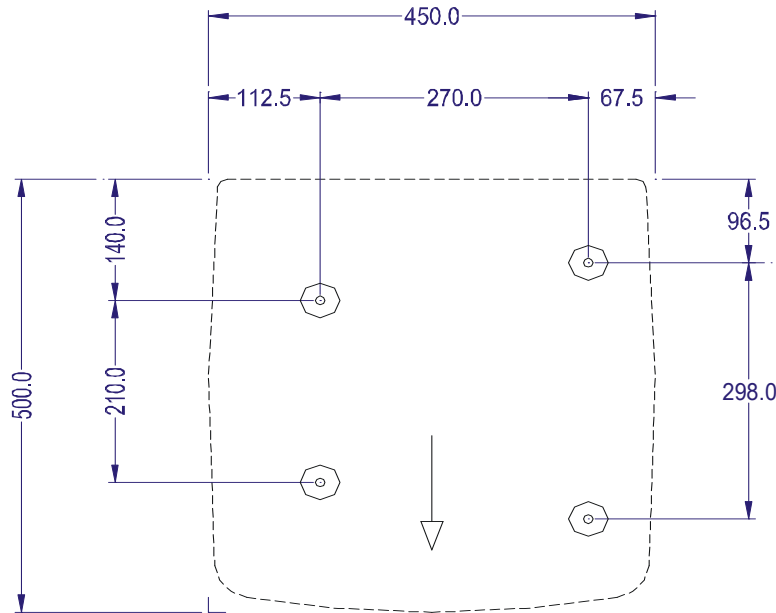


- Select a suitable location for installing the WhisperGen™
- Ensure minimum clearances are observed
- Observe Health & Safety considerations when moving the WhisperGen™
- Select appropriate fixings

# Positioning the WhisperGen™ - Minimum clearances

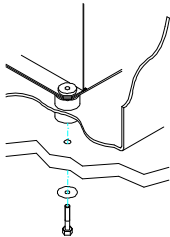


# Positioning the WhisperGen™ - Move & fix into position

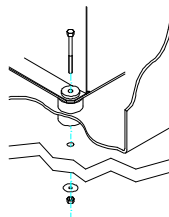


- Unpack carefully!
- Attach heat exchanger
- Use the fixing template supplied

If fixing from underneath, use 4 x M10 bolts allowing sufficient length to pass through the floor, plus 25 mm for screwing into the WhisperGen™ fixing point:



If fixing from the top, use 4 x M8 bolts allowing sufficient length to pass through the floor, plus 60 mm for passing through the WhisperGen™ fixing point:





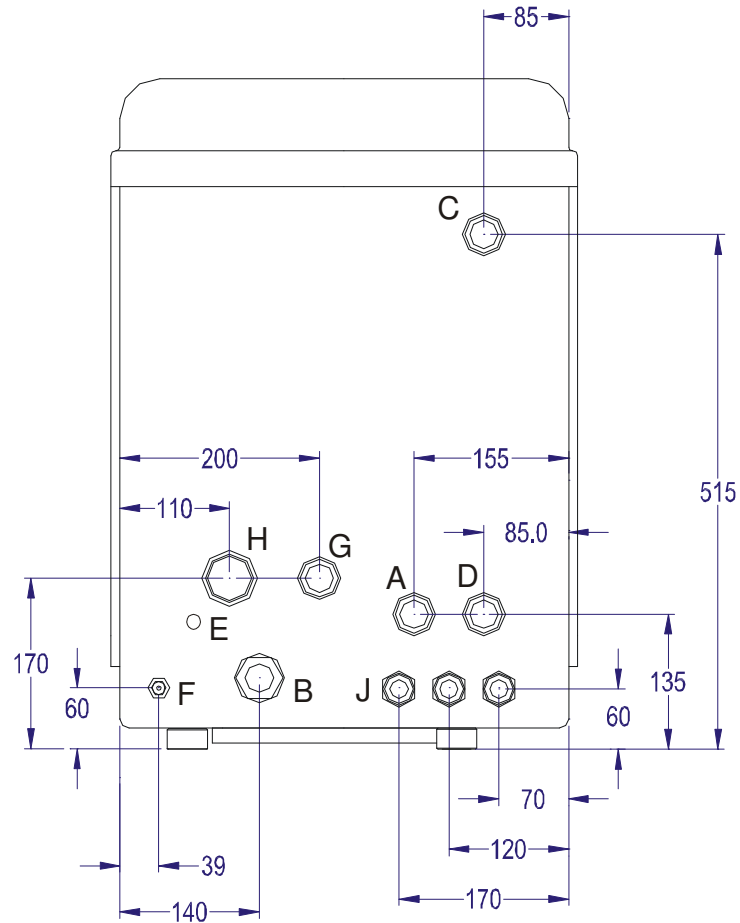
# Plumbing



Read the Installation Manual carefully as the plumbing system is critical to the WGs operation

- All the plumbing connection are on the rear of the WhisperGen™
- Take care to seal all connections properly

# Plumbing- The connections



## Key:

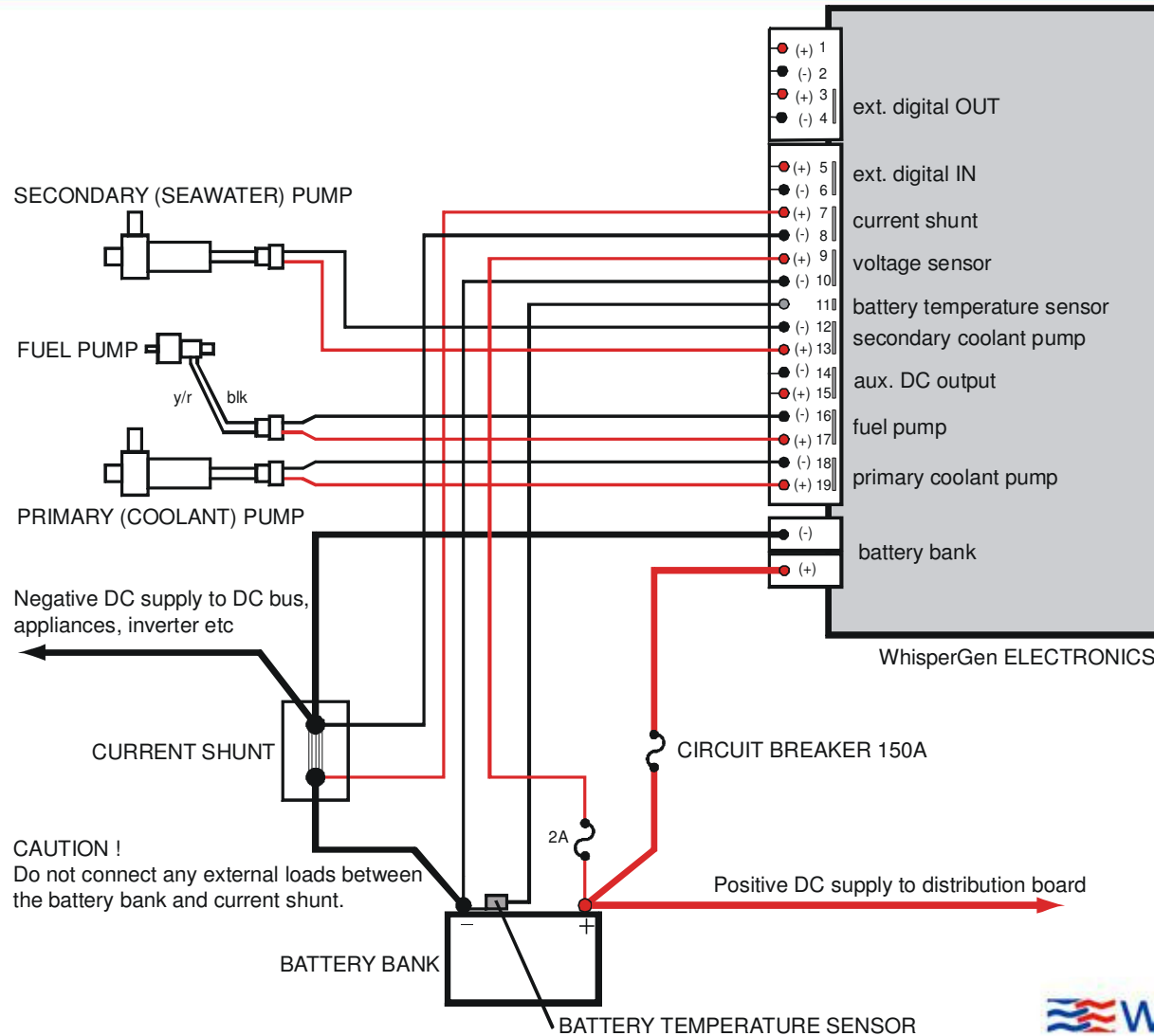
- A - Primary coolant IN (Nylon type, 3/4" BSP Female)
- B - Primary coolant OUT (Brass type, 3/4" BSP Female)
- C - Secondary coolant IN (Nylon type, 3/4" BSP Female)
- D - Secondary coolant OUT (Nylon type, 3/4" BSP Female)
- E - Condensate drain (Stainless steel type, 1/2" OD Stub)
- F - Fuel inlet (Brass type, 1/8" BSP Female)
- G - Fresh water inlet (Nylon type, 3/4" BSP Male)
- H - Exhaust outlet (Stainless steel type, 1-1/4" BSP Female)
- J - Electrical glands (3 x 5/8")

# Electrical

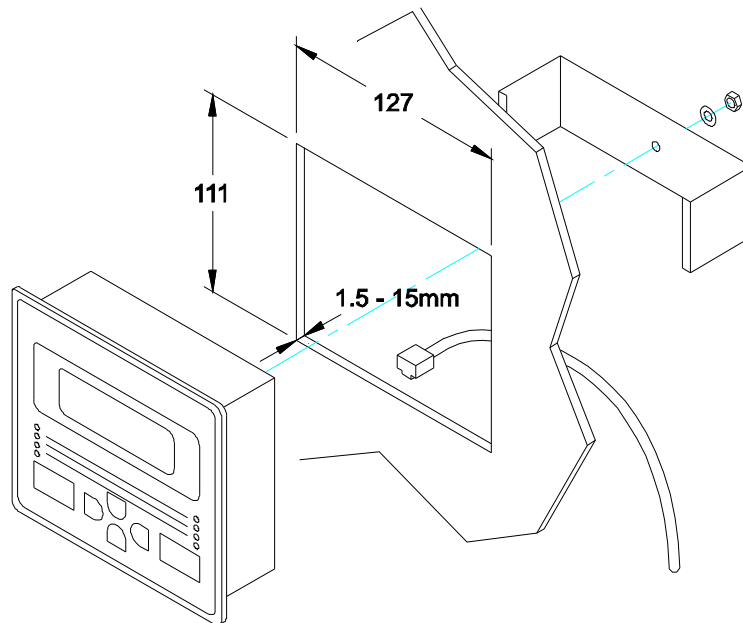


- Mount & connect the control panel
- Take care when routing all cables
- All electrical connections are made inside the WG enclosure to a row of terminals
- Ensure main battery cables are sized correctly - bigger is better!
- Take note of the Warnings, Cautions, & special Notes

# Electrical- The connections



# Electrical- The user control panel



- Access is required to the rear of the control panel
- Take care not to damage the data cable

# Bleeding the fuel and coolant circuits



- All coolant and fuel systems must be bled to rid the system of any trapped air.
- See the instruction in the Installation Manual on how to;
  - operate the control panel
  - bleed the primary coolant circuit
  - bleed the secondary coolant circuit
  - bleed the fuel system
- Trapped air in the primary system can cause the WhisperGen™ to overheat!
- Air in the fuel system will result in flame faults

# Installation checklist



- The Installer must complete the installation checklist located at the back of the Installation Manual.
- It must be removed from manual, and sent to the WhisperGen™ supplier (if different from the installer)
- The Distributor (supplier) must send the all the completed installation sheets back to WhisperGen™ in NZ.
- Note installer declaration:

*I hereby certify that the WhisperGen™ has been installed in accordance with the installation manual, **and accept liability** for the cost of travel and time of the commissioning agent in the event that incomplete or incorrect installation results in the agent incurring time and cost over and above that required for commissioning of a correctly installed WhisperGen™.*

# End of Section 1



End of section 1

Installing the WhisperGen™

Next section 2

[Commissioning](#)