

## Frequently Asked Questions

How many of these SeaClean system's have you installed and on what boats, are there any 47meter Heesen's with it?

The 55m Heesen motoryacht SERENITY is fitted with 2 SeaClean systems. This installation was performed at Rybovich in late 2013 and to date has more than 2000 hours of trouble-free operation requiring no maintenance.

We are currently installing our 17<sup>th</sup> system and expect to reach 20 by the end of 2014.

Do you have the contact details for any of these boats so that we can ask the engineers how they find the system.

Motor yacht RENA, captain Ken Bracewell. Ken is one of our first customers. We retrofitted the SeaClean heater and control system to provide functionality to a system that failed immediately after installation. Ken's phone number is 954.261.4936 or email [kenbracewell@aol.com](mailto:kenbracewell@aol.com) SERENITY rotational chief engineers Jamie and Tony: [engineer@my-serenity.com](mailto:engineer@my-serenity.com) 954.702.2994 or 954.702.2997: Searacer chief engineer Revel Boulton 206.724.2984 [searacerengineer@hotmail.com](mailto:searacerengineer@hotmail.com): Jim Bento at Ocean Marine Portsmouth Virginia [pres@oceanmarinellc.com](mailto:pres@oceanmarinellc.com)

Has the system class approval i.e. Lloyds

Lloyds approves each installation independently and separately. Since each installation is unique to the boat it is on, there is no practical way to obtain a type approval. We have the SeaClean on 3 Lloyds classed yachts to date and all have been surveyed with the system installed. We submit drawings and plans to class before installation.

What sort of Back pressure do you get using this system, as you know we have the John Deere power tech 6.8L engines model number 6068AFM75 with a maximum allowable back pressure of 7.5Kpa:

We typically develop back pressure in the mid teens of water column or just under 4 kPa at 60 to 80 percent loads. This depends a great deal on the rest of the exhaust system. The ideal situation is when we can design and fabricate the system from turbo outlet to overboard. We try to obtain the greatest margin possible in order to extend filter duration before cleaning is required.

Do you have a European supplier and installer or a recommendation for Europe for installation?

We will send a technician to perform or oversee the fitting in whatever location the boat is in, this may in some cases actually save costs compared to using local labor. We also send a technician to commission and fine tune the system after installation is complete.

Can the system be made modular if there are issue fitting it into the engine room?

The system is modular by design. We build the control panels to fit the size and location you desire and most installations fit within the envelope of the generator sound shield with the water lift separator fit into the space between the shield and the hull. We configure the components to fit the yacht. Both sides may be piped differently if that is what is needed to make it fit and provide for ease of maintenance of the generator.

The heaters are they singular or multiple elements?

The heater is a single unit comprised of multiple "hairpin" elements. The number of elements depends on the wattage calculated to be required to obtain the correct exhaust temperature. The heater is mounted to the inlet side of the DPF.

Roughly what sort of size unit will we need and what would be the power consumption for it?

Power consumption varies with generator output and exhaust temperature. We typically install a heater with a maximum output of 20kW on a 170kW generator. The full capacity may or may not be connected, depending on how the yacht operates and how power is managed by the engineers. The rest of the answer is included in the next question.

With the heater controller if there are multiple elements can it been set to bring the elements on in stages, or do you have a soft start idea. just so that we are not banging heavy load straight onto the engines?

On system startup we initiate a ramping up period to prevent sudden large loads from being imposed. Also, the heaters are isolated unless the generator has been online for at least a minute to allow the power management system to stabilize. The power (and thus exhaust gas temperature) is regulated proportionally to the temperature of exhaust gases leaving the turbocharger. This temperature is, of course, proportional to the load on the generator. By using this method, the SeaClean system will not place a load on shorepower when the generator is running offline such as when cooling down after connection to shore power, and it does not present a parasitic load on the switchboard when the generator is heavily loaded by large hotel loads. When hotel loads are at maximum little if any power is used by the heater so that all power is available to the switchboard.

Do you have a manual regeneration mode on the controller, and do you know if it would be possible to integrate controller in with our alarm and monitoring system?

Manual operation is available from the control panel at any time the system is online. Normal, automatic, operation provides constant and continuous regeneration across the widest possible generator load range.

Is it possible to use set the system up to ran as a possible load bank as without guests on we are running at 50% load on the engines and I would rather run them at 80% load?

By using the manual control feature, the full capacity of the heater is available to serve as an "exhaust cooled" loadbank. If greater loadbank capacity is required or desired beyond what is installed to achieve consistent filter operation, we can install larger capacity heaters in the same "envelope" so there is no space or size penalty.