

Energy Solutions has worked on Superyachts for over 15 years developing products that increase efficiency and comfort onboard.

ES LoadBank Established as a Superyacht Essential

One of these products is the ES LoadBank - designed to help control the large variations in onboard power requirements often experienced by superyachts. For example in peak season, with hot weather, a full contingent of guests and daily cruising the generators will be working at near to full capacity but out of season, with no guests, power requirements are low. So, despite the best engineering practice, the generators will often be running under capacity, which is where the LoadBank steps in. When a generator runs under capacity its working life is cut short and the generator runs with increased soot emissions. The ES LoadBank is a sophisticated generator loading system that ensures that sufficient load is applied to the generator at all times – increasing its working efficiency and life span. Extra load will also increase exhaust gas temperature, making it a great aid for generators with DPF (Diesel Particulate Filter) exhaust systems. These rely on high exhaust temperatures for the catalytic process.

Already over 20 superyacht generators are running with ES LoadBanks and in Q4 2014 two more superyachts were fitted with units. The first of these was MY Blush and her Chief Engineer, Mark Cryer explains how the LoadBank has proved essential:

“I first came to know about the Energy Solutions LoadBank when I joined MY Blush in build. Having sailed on a large variety of commercial and pleasure vessels, and having not seen one before, I was naturally curious as to its practicality.

Having just come from a commercial vessel where we were overhauling 4X MTU 396 V12 generators; each of which were suffering badly from cylinder glazing and excess oil consumption. This was found to be primarily down to low load running. I thought the load bank was a prudent investment. I’ve found the load bank to be a cost effective and practical solution, to counteracting the damage that can be caused by low-load running on generators, which can be common in the industry.

Having now sailed with the product, I couldn’t recommend it highly enough. It couldn’t be easier to use. It’s just a matter of selecting whether you want it on, or not, and all the rest is automatic. It works to keep your generator in a healthy load range at all times.”



80KW LoadBank

ES LoadBanks are designed and built in house by the Energy Solutions team. The standard models can be modified in design to fit the individual vessel and ensure the best results.

Member of
SUPERYACHT UK

A member of Superyacht UK Energy Solutions is one of the many UK business in this sector powering innovation and growth in the market.

MY Blush:

- Accommodation: 10 guests & 11 crew
- Length: just under 50 metres
- Speed: Up to 22 knots






Case Study

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ES LoadBank - Optimising Generator Loading

	LoadBank Model 36kW	LoadBank Model 80kW	Control Panel
			
Operating Voltages	400V nominal	400V nominal	Control: <ul style="list-style-type: none"> • 7" colour touchscreen providing full system monitoring and diagnostics • System on / off switch • Power on lamp • LoadBank active lamp • Fault lamp Power: <ul style="list-style-type: none"> • Supplied at 24V DC from LoadBank Inputs: <ul style="list-style-type: none"> • Remote shutdown input • 8 x 4 - 20mA inputs, 4 per generator configurable as: <ul style="list-style-type: none"> 1 x Voltage, 3 x current or 3 x current , fixed voltage or 3 x power in kW or 1 x load required Outputs: <ul style="list-style-type: none"> • Applied Load 4 - 20mA • Coolant temperature 4 - 20mA • Alarm relay
Frequency	50/60Hz	50/60Hz	
Control Cabinet	Remote	Remote	
Control Inputs	4 - 20mA load signals or CT's	4 - 20mA load signals or CT's	
Control	PLC	PLC	
Load Steps	4 x 9kW steps	9 x 9kW steps	
Switching	Contactors	Contactors	
Load elements	4 x 9kW	9 x 9kW	
Heater Tank Construction	316 Stainless steel	316 Stainless steel	
Working pressure	0.3 - 1 Bar	0.3 - 1 Bar	
Test Pressure	1.75 Bar	1.75 Bar	
Temperature range	40°C - 80°C	40°C - 80°C	
Cooling Primary	Closed system (inhibited water)	Closed system (inhibited water)	
Cooling Secondary	Sea water	Sea water	
Cooling Secondary flow rate	Min flow 120l/min @ 14mtrs	Min flow 120l/min @ 14mtrs	
Safety Systems	Level switch, temp switch, pressure relief valve	Level switch, temp switch, pressure relief valve	
Outputs	Alarm relay output. Optional 4 - 20mA outputs	Alarm relay output. Optional 4 - 20mA outputs	
	Size		
Dimensions (mm)	750H x 673W (871 inc. feet) x 602D	758H x 1190W (1388 inc. feet) x 602D	400H x 500W x 200D
Weight (approx.)	130kg dry	200kg dry	15kg

There are three operating modes:

- Fixed Loadbank – maintains load at a fixed minimum at all times
- Fuel saver mode – maintains generator at a target load for a certain proportion of any time period
- Exhaust temperature mode – maintains exhaust gas temperature at target level for a certain proportion of any time period

The LoadBank will work with any brand of generator. Larger requirements can be met by specifying multiple LoadBanks which, via software settings, will work as a master and slave(s) arrangement.

Details given are for guidance only and may be subject to change, E&OE.