

Huckins Yacht Corporation

3482 LAKESHORE BLVD.

Jacksonville, Florida 32210

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Hybrid Electric Propulsion Benefits:

- **Best of both worlds,** The Sportsman 38 can cruise at high speed while going from point A to point B, and then seamlessly switch from diesel to electric for low speed cruising, sunset parties, and silent trolling while fishing.
- **Emergency get home power,** In the event of loss of diesel power from contaminated fuel or other reasons, there is 8 + hours at 4-5 knots of get home electric propulsion available.
- **Reduced Emissions,** Diesel engines are most efficient when they are running at their optimum design planing speed, however when running at slow speeds in restricted areas, fishing, or waiting for a bridge to open, the diesel is operating with high emissions. When switched to electric propulsion emissions are cut to zero.
- **Passenger comfort,** On hot windless days while cruising at slow speed the smell of diesel exhaust fumes can become noticeable, switching to electric eliminates exhaust fumes, heat, and noise coming from the diesel.
- **Noise and fumes in restricted mooring and docking areas,** There are restricted areas and harbors where the running of diesel engines or gensets is not permitted. The hybrid electric boat can cleanly and silently run air conditioning and other house loads from the propulsion batteries using an inverter, for days at a time without noise or fumes. This is also a major safety consideration since the practice of running a genset for air conditioning while asleep at a mooring generates fumes that are very dangerous. *The inverter is an extra item.
- **Periodic engine maintenance,** The electric motor is brushless with only one moving part, requiring no periodic maintenance, with a bearing life expectancy of 50,000 hours. The electric motor bearings are standard off the shelf sealed deep groove ball bearings that are easy to replace.
- **Propulsion Batteries,** The propulsion batteries are of a Lithium Iron Magnesium Phosphate (LiFePho4) design as compared to Lithium Ion batteries as predominantly used in automobiles. The virtue of (LiFePho4) batteries is that they are more stable than Lithium Ion batteries and are not prone to failure from physical abuse.
- **Battery charging,** The propulsion Batteries can be recharged from shore power (115vac/240vac, 50/60Hz), on board genset power, , or re-generation power from the main diesel engines driving the electric motors as generators while cruising.

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Hybrid Electric Propulsion Benefits:

- **Throttle integration,** The same throttle that controls the diesel engine speed and forward/reverse function, is used to control the electric motor in the same manner, when electric propulsion is selected.
- **Electric propulsion instrument panel,** This is a full color LCD screen that displays motor RPM, amount of power being used (Amps), and state of charge of the batteries (0%-100%). It can also serve as a screen to display key areas in the boat, using optional cameras that can be mounted around the boat as desired.
- **History,** Elco has been powering boats with electric motors since 1893 and continues to do so to this day with modern AC electric motors ranging in size up to 200 hp, and as a testimony to the robustness of Elco electric propulsion, Elco has serviced Elco electric propulsion systems from the late 1890s to the early 1900s that are still in regular service. Elco has installed modern electric propulsion systems in passenger boats up to 66' in length and is currently working on quotes to power passenger vessels up to 120' in length.