



The new integrated propulsion system



Hydropack is an **Integrated Naval Propulsion System** that manages, with a hydrostatic transmission driven by diesel engines:

1. Vessel propulsion
2. Fishing gears and auxiliary installations
3. Electric energy production

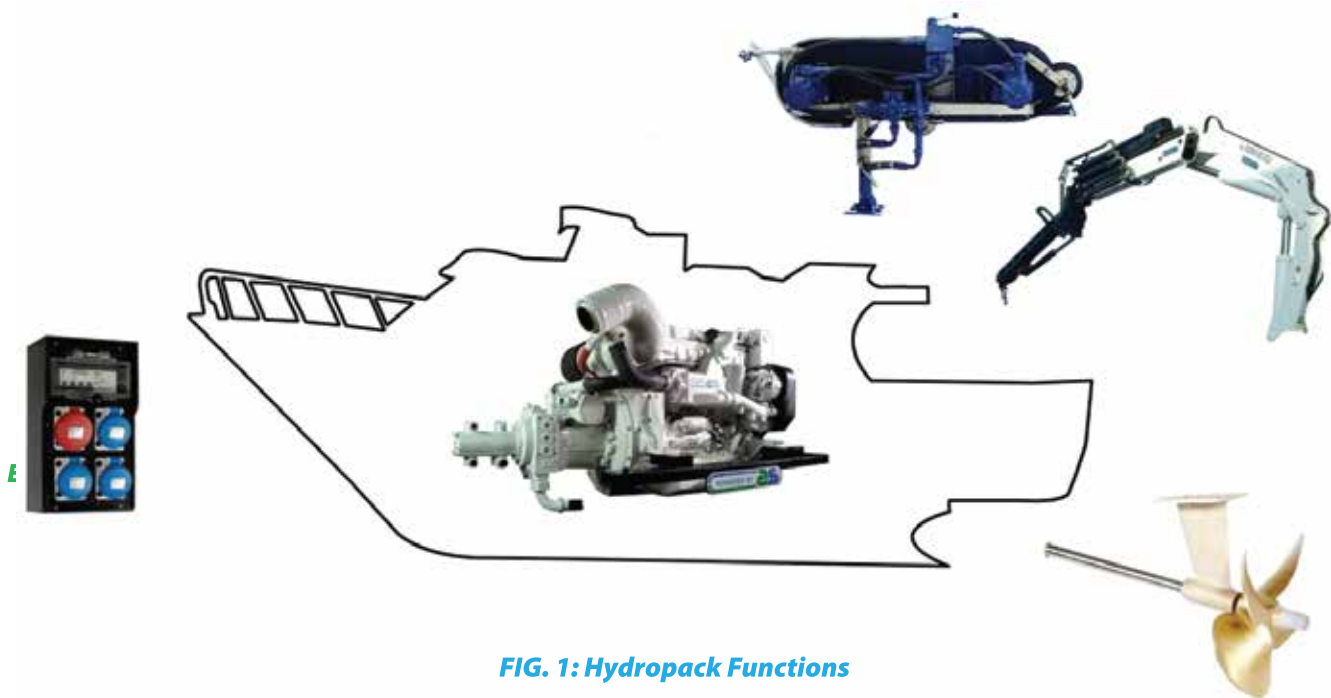


FIG. 1: Hydropack Functions

The **main components** of Hydropack are:

- Diesel engine/s
- Hydraulic pumps
- Hydraulic motor/s
- Oil tank and hydraulic accessories
- HMCS (Hydropack Management and Command System)

The diesel engine is **coupled to a variable displacement hydraulic pump** that delivers high pressure oil to the hydraulic drive motor.

This is a fixed displacement motor which is **coupled to the transmission type of the boat:**

- Propeller shaft
- Stern drive
- Sail drive
- Pod drive
- Water jet

Hydropack is a **multi-configurable system**:

- One engine – One propeller
- Multi engines – One propeller
- One engine – Multi propellers
- Multi engines – Multi propellers

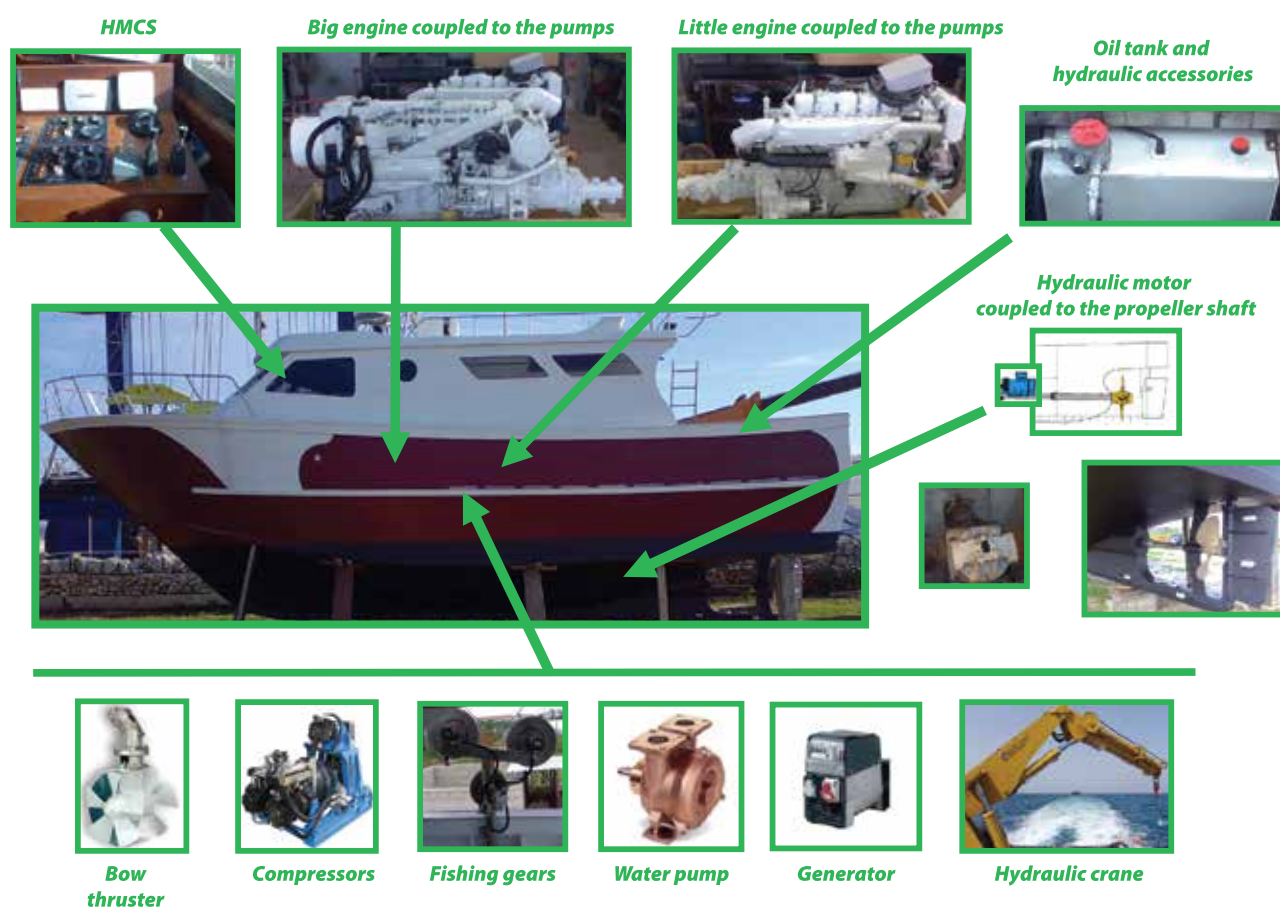


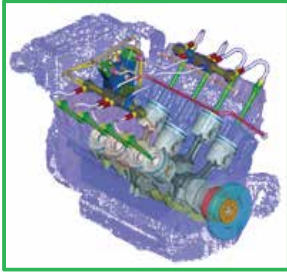
FIG. 2: Example of configuration "Two engines - One propeller"

1. Propulsion:

- Big engine for cruise
- Little engine for work operations or in case of failure of big engine
- Two engines for fast cruise

2. Auxiliary installations and energy production:

- Little engine in standard conditions
- Big engine in case of failure of little engine



The engines used in Hydropack are **modern diesel engines**, with innovative technological solution and they are comply with:
IMO / MARPOL – 2003 / 44 / EC – CCNR.

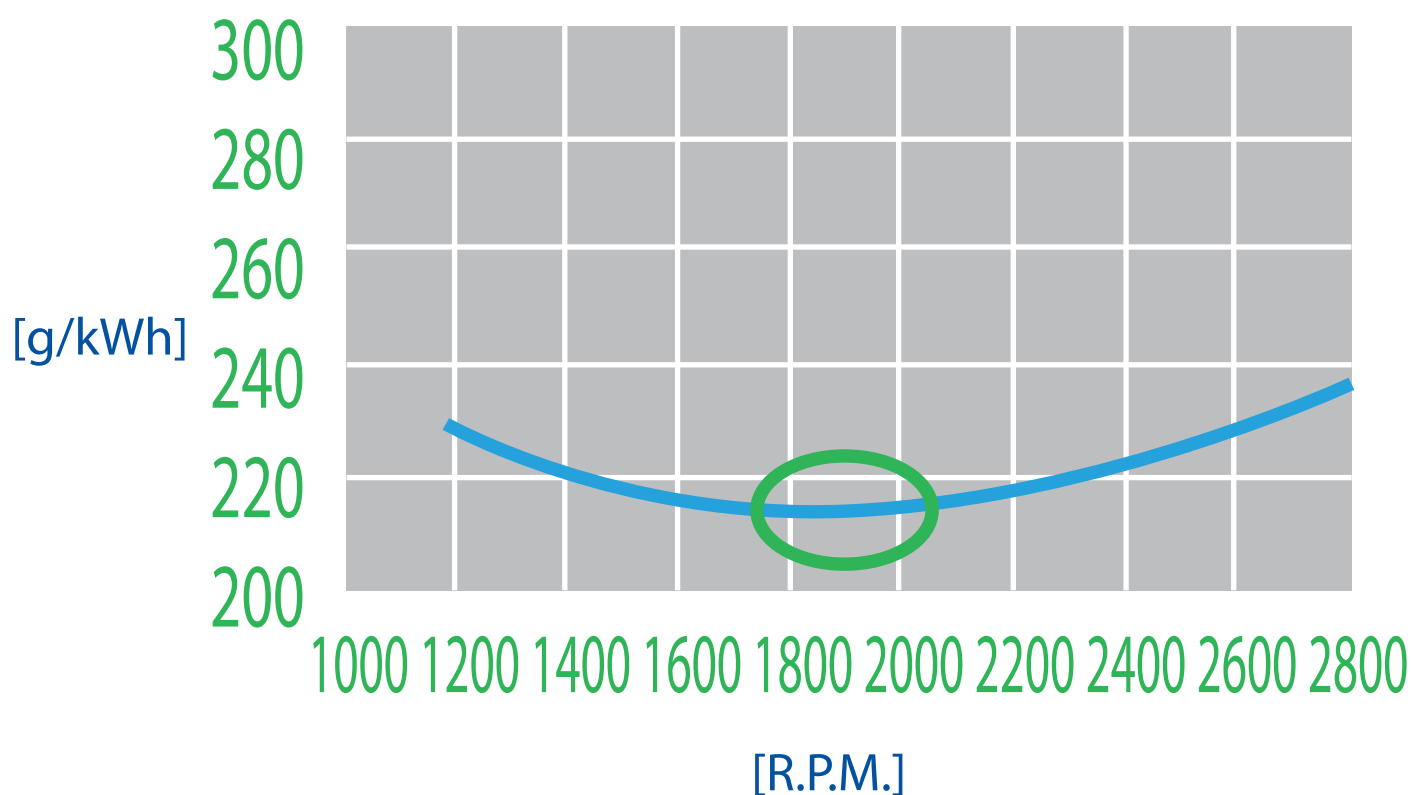


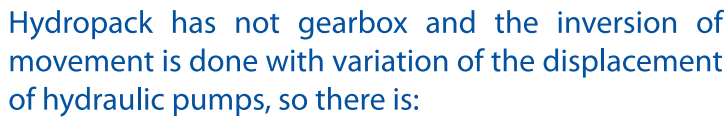
FIG. 3: Engine coupled to the propulsion pump and auxiliary pumps



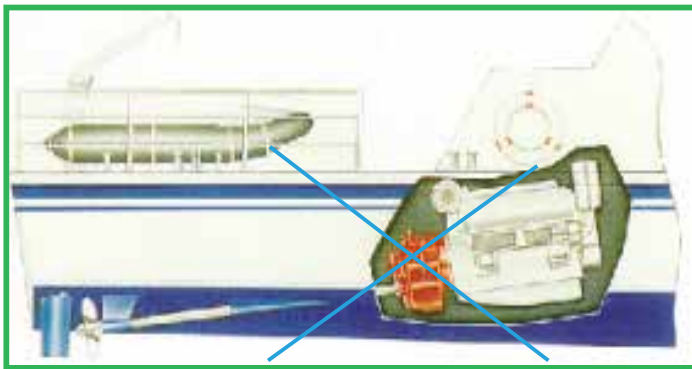
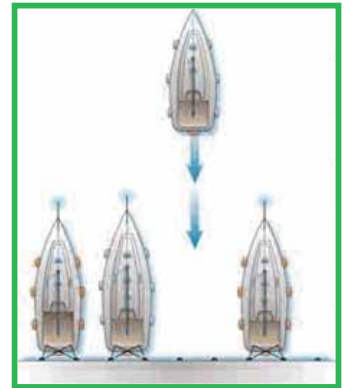
Hydropack engines work in their best point of efficiency (60-70% of max RPM) with constant speed, so there is:

- Optimal management of fuel injection
- Less fuel consumption until 50% than the traditional system
- Lower emissions of Particulate and NOX
- Reduction of smoke levels (no white smoke at cold starting, less acceleration smoke, no black smoke)
- High decrease of sound and vibrational emissions
- Minimum operational and maintenance costs
- Maximum safety and long engine life





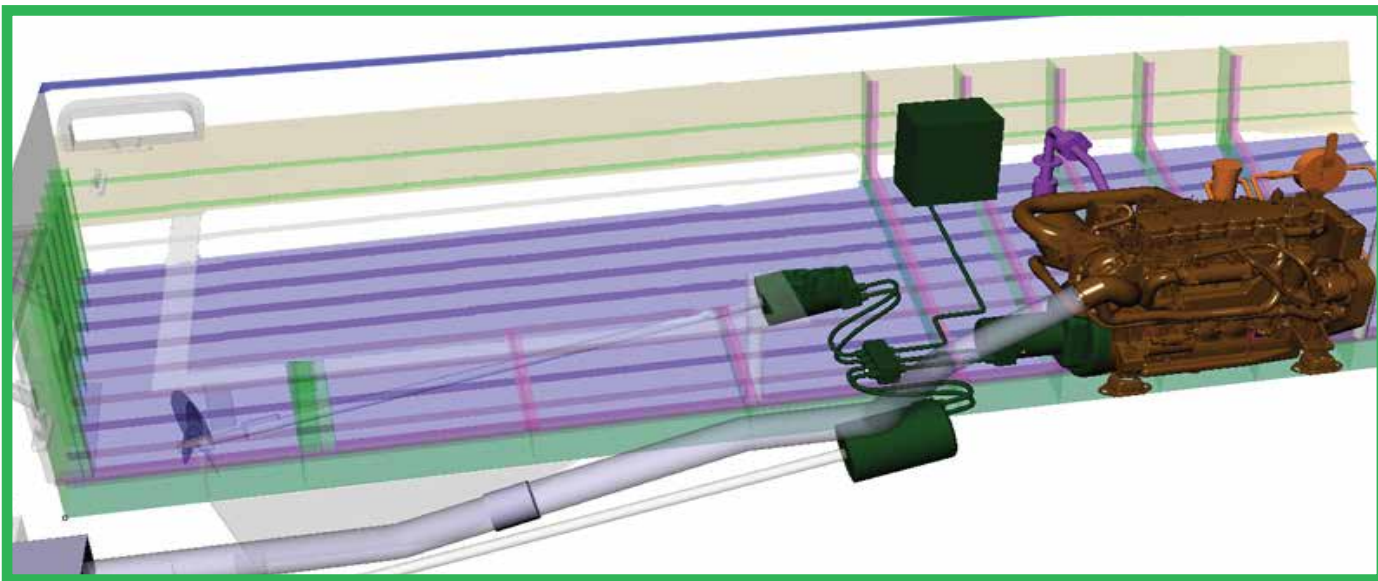
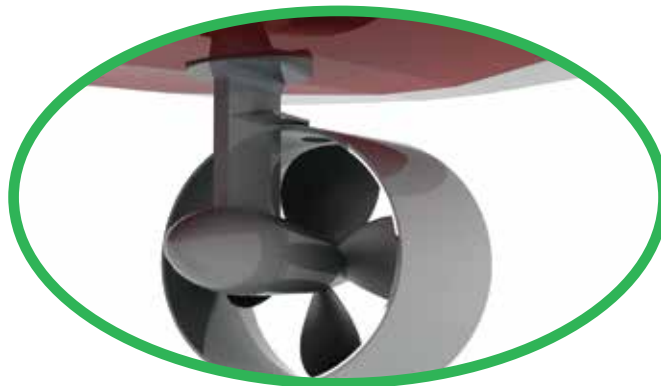
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- Diesel engines can be **installed everywhere in the boat** according to naval architect exigencies; also the little boat can be equipped with refrigerated space, can have accommodation and cooking facilities and can be seaworthy
- The engine can be sited away from the steering position to give a quieter cruise

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Through HMCS Hydropack becomes the hearth of the boat.





"Hydropack" is a registered trademark ®