

1. Transfluid's HM hybrid system is designed to be fitted on any combustion engine, as long as it has an SAE standard flywheel and connection for any SAE standard transmission

2. The components of a hybrid system (left), which enables smooth, efficient operation in different types of water and in different areas using three optional drive modes (right)

# Hybrid navigation

A hybrid system with stern drive propulsion provides ease of maneuverability and silent operation for vessels with diverse operational requirements

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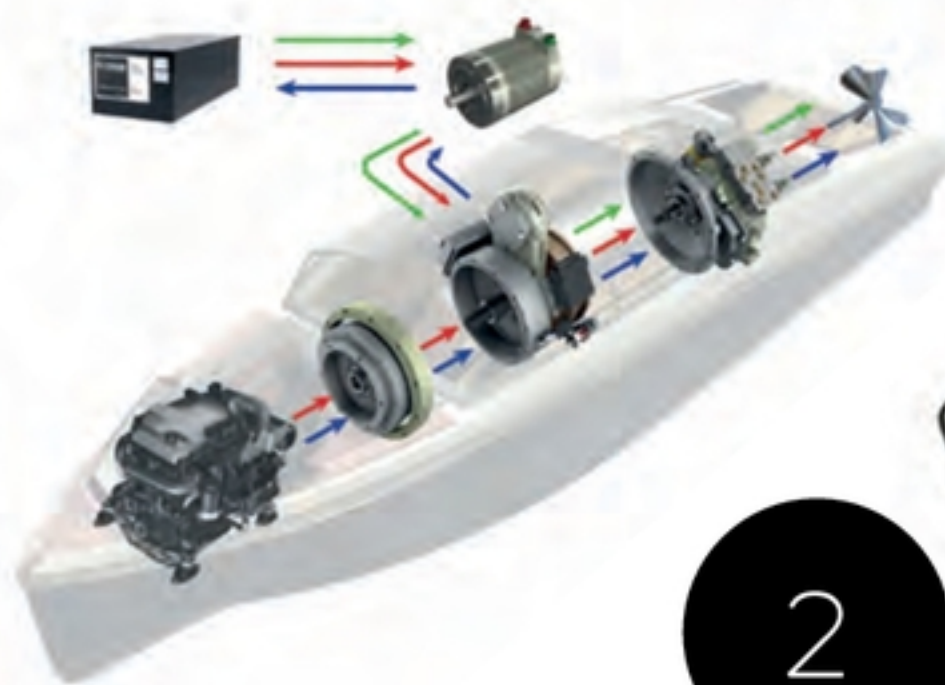
Transfluid continues to develop eco-sustainable propulsion systems and introduces new solutions each year. The company designs innovative alternatives to traditional propulsion systems, which do not alter the installation and navigation features.

Hybrid installations have been implemented with diesel engines up to 400kW on passenger and work boats, installations that have also been integrated with inboard power. Among the number of important systems the company has supplied in recent years, a particularly important project was a collaboration with German shipyard Bavaria Yachtbau, one of the most prestigious in the pleasure boat sector, which chose Transfluid as a partner for the hybrid system. It was applied to both the E40 series and the new E34 model.

Transfluid has also signed an agreement with Whisper Power, an onboard electricity systems company, for the integration of power required by onboard services.

The common denominator of the proposed systems is the transmissions applied to the electric motors, which are identical to those used on combustion engines. This greatly simplifies the installation process because the shipyard is not required to make structural modifications to the boat; it is in fact possible to retrofit these solutions in existing boats. Piloting and navigation methods are also the same as those with combustion engines.

This year, Transfluid will also supply a hybrid system with stern-drive propulsion. This solution was chosen by the Sea Technology shipyard, which, after having



Diesel/regeneration mode  
Booster mode  
Electric mode

constructed a first 10m limousine hybrid vessel, went on to construct a series of six luxury tenders equipped with the Transfluid HM560-20 system with 20kW electrical power at 3,000rpm and thermal Mercury 2.0 125kW at 4,000rpm and, of course, the Bravo Three model stern-drive transmission.

The shipyard was impressed with the performance obtained in the test phase and the client was able to observe the silent navigation in electric mode, with a speed of 7kts (about 13km/h), and 25kts in diesel mode. The stern drive solution has enabled excellent maneuverability even at low speeds. The boat is easy to drive and very flexible for different operational requirements.

## Branching out

Transfluid is also currently working on standard commercial proposals for inboard electric propulsion. New applications are now being finalized, while Sail Drive, which was

introduced last year at Electric and Hybrid Marine World Expo in Amsterdam, has already received wide interest in the market.

The positive reaction to electric drive mode has encouraged Transfluid to expand its offering; the company is currently working on the first installation with an electric engine and stern drive. This provides a perfect synthesis of ecology and maneuverability, enabling many types of boat to be equipped with electrical propulsion.

The Transfluid eco-compatible propulsion systems are standard catalog products, guaranteed for 24 months and supplied with all the necessary certificates.

Transfluid will be at Electric and Hybrid Marine World Expo in Amsterdam this year on Stand 2000 and will introduce its electrical propulsion with stern-drive transmission. This range is ideal for boats up to 10m and is simple to install, providing environmentally friendly and silent propulsion. +