

Presenting Aurobay's Methanol Engine

In the transition toward sustainable energy, the quest for viable alternative fuels has led to significant innovations. For us at Aurobay, it was important to develop a methanol-compatible engine that not only addresses the challenges of methanol as a fuel but also leverages its environmental benefits to create an alternative solution for the future of transportation.

Methanol, an alternative for the future

Methanol, with its efficient combustion and low emissions, presents a compelling case for its adoption in the commercial sector. It offers a cleaner burning process, with reduced carbon monoxide (CO), hydrocarbons (HC), particulates, and nitrogen oxides (NOx), due to its lower carbon content and high oxygen content. Methanol's biodegradability and minimal impact on marine life, coupled with the existing global infrastructure for its transportation, underscore its viability as a sustainable fuel option.

Addressing Methanol's Challenges: Aurobay's Approach

While methanol's advantages are clear, its adoption faces obstacles such as increased aldehydes, poor lubrication properties, and material compatibility issues. Aurobay's solution, centered around our series of Spark Ignition 2.0l engines, is a testament to innovative engineering designed to harness methanol's potential fully.

Engine Specification and Adaptation

Aurobay's engine, targeting specifications of 120 kW power at 4000 rpm and 300 Nm torque, incorporates several key adaptations:

- **Port Fuel Injection (PFI) Conversion:** By transitioning to PFI, the engine reduces the strain on moving parts needing lubrication, a crucial adaptation given methanol's poor lubrication qualities.
- **Engine Oil Specification:** A new engine oil specification ensures the oil retains its lubrication properties and resists the acidity from combustion residuals, addressing the issue of engine oil degradation.
- **Material Upgrades:** Recognizing the challenge of material degradation, Aurobay has selectively upgraded materials in the valve system and other critical components to ensure durability against methanol's poor lubrication and corrosive properties.

Cold Start Innovation: Heated Tip Injection

Aurobay's introduction of the "Phinia" heated tip injection technology signifies a breakthrough in improving methanol's cold start capabilities. This innovation heats the fuel upon injection, facilitated by a separate control module. This technology not only enhances cold starts but also exemplifies Aurobay's commitment to overcoming methanol's limitations.

Leveraging Experience

Drawing on extensive experience from producing engines for E85 and BioGas, we were able to overcome the challenges presented by methanol by developing an innovative solution through a proprietary design and a comprehensive materials survey, ensuring the durability of engine components in contact with the fuel.

Conclusion

Aurobay's methanol engine represents a significant leap forward in the quest for sustainable energy solutions. By addressing the challenges associated with methanol use, Aurobay enhances the fuel's viability and also helps pushing forward innovation in the automotive industry. With our Methanol engine we demonstrate the practical possibilities of alternative fuels and pave the way for a cleaner, more sustainable future.