

TECHNICAL BULLETIN

TO : **YANMAR Marine Distributors and Dealers**
MODEL : **All engine models up to 90kW (4JH3-DTE)**
SUBJECT : **Permission for the use of alternative fuels (EN 15940)**
REF. No. : **YMTQTB22-005**
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1. Introduction

This technical bulletin describes the latest recommended use of renewable or alternative fuels in YANMAR engine models up to 90kW. This technical bulletin will describe the impact on the engine as well as the warranties when using renewable or alternative fuels on engines up to 90kW. The use of renewable or alternative fuels in this bulletin refer to: GTL, HVO and BTL that are in accordance with EN590 or EN15940 **only**. The use of conventional diesel fuels in accordance with EN590 are already approved in the standard fuel specification.

2. Paraffinic diesel fuels

Paraffinic diesel fuels are specified in EN15940 and have higher cetane numbers and lower density than conventional diesel fuels (EN590). Hydro-treated Vegetable Oil (HVO) and Bio To Liquid (BTL) are renewable paraffinic (diesel) fuels. Gas To Liquid (GTL) is an alternative fossil paraffinic (diesel) fuel. The use of renewable (HVO and BTL) fuels will give a substantial decrease of fossil CO2 emissions.

3. Engine performance, seizure, service and warranty

The renewable or alternative fuels that are in accordance with EN15940 have lower density and lower calorific value per unit capacity than conventional (EN590) diesel fuels. It is therefore expected that the engine performance will decrease slightly. Also it is expected that the fuel consumption will increase slightly. Engine performance loss and higher fuel consumption are not covered by warranty.

When renewable or alternative fuels are used that are not in accordance with EN15940, problems as fuel pump seizure or fuel injector seizure may occur due to deterioration of fuel lubricity. This will not be covered by YANMAR's Limited Warranty Coverage.

When shifting from conventional EN590 diesel fuel to renewable or alternative (diesel) fuels in accordance with EN590 or EN15940 for existing engines (not new engines), the fuel hoses and all (nitril) rubber seals **must** be replaced. Leakage due to no replacement of these parts is not covered by warranty.

4. Blending of fuels

Renewable or alternative fuels (EN15940) are also found to be blended with conventional EN590 diesel fuel. Examples are : HVO20, HVO50 and also GTL found to be blended. YANMAR allows these blends as well.

5. Engine models

This bulletin is applicable on YANMAR Marine engine models up to 90kW only, specified in table below.

Engine models			
1GM10	3JH5E	4JH4-TE	4JH3DTE
2YM15	3JH40	4JH80	
3YM20	4JH45	4JH4-HTE	
3YM30AE	4JH57	4JH110	

6. Conclusion

Based on above described limitations, the use of renewable or alternative (diesel) fuels that are in accordance with EN590 or EN15940 is permitted.



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