

## Precautions for use of Renewable fuel or Alternative fuel (except Biodiesel fuel)

This letter describes the impact on Yanmar diesel engine performance and warranty when using renewable or alternative fuels, except the Biodiesel FAME type.

Renewable fuels or alternative fuels here refer to GTL (Gas to Liquid), BTL (Biomass to Liquid) and HVO (Hydrotreated Vegetable Oil) that complied with the EN15490 standard.

EN15940 complies with European Directive 98/70/EC, CEN's diesel fuel standard EN 590, and American diesel fuel standard ASTM D975. The alternative fuels that complies with the EN15940 have lower density and lower calorific value per unit capacity than ordinary diesel fuels, and it is expected that the engine output will decrease. In addition, since cetane number is high, the work machine manufacturers are kindly requested to evaluate output characteristics, exhaust temperature and startability at low temperature when using these fuels.

Failures like poor engine performances due to fuel properties are therefore not covered by the Yanmar standard warranty.

Furthermore please be informed that using fuels not complying with EN15940 may lead to additional problems such as seizure of the fuel injection pump due to deterioration of fuel lubricity. Therefore, the machine manufacturer should inform the users about such possible problems.

Also in this case the Yanmar standard warranty does not apply.

After Sales Function Manager Sales Division

YANMAR ITALY SPA



YANMAR ITALY S.P.A. Sede legale: via Manfredo Camperio 9, 20123 Milano (MI) TEL 39-0331-208-409 FAX 39-0331-204-864 Sede operativa, amministrativa e comm.le: via D. Carabelli 7/9, 21012 Cassano Magnago (VA)