

Bulletin Number

A1 /Perkins confirms the use of B20 Biofuels on all 400D, and 1100D Engines / Misc/060

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Product Bulletin

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Market	Industrial sector plus Electric Power Generation
Application	All 400D, 1103D (Excluding 1103D-33), 1104D & 1106D mechanical and electronic engines
Description	Perkins engines are pleased to confirm the use of B20 bio diesel - 20% dilution of standard diesel with bio diesel - across its range of 400D and 1100D Tier 3 & Stage IIIA compliant engines.
Service Considerations	Oil Service interval remains unchanged at 500hrs Service intervals for the fuel filters are reduced to 250hrs. Please Note: due to the aggressive properties of biofuels it is required that following the first use of B20 biofuel blend, the fuel filters are changed after 50 hours of operation.
Availability	Engines compatible with B20 have been progressively released as follows: <ul style="list-style-type: none"> • 400D, at model introduction, starting April 07 • 1104D Mechanical, at model introduction, starting Nov 07 • 1103D (Excluding 1103D-33), at model introduction, • 1104D electronic engines built after Serial numbers Industrial - U022408S, Genset - E5M00654 • 1106D electronic engines built after Serial numbers Industrial - U013753S, Genset - E6M01224
Pricing Information	No change to engine price
General Comments	Due to the aggressive properties of Biofuel and the difficulty storing it, the following standards and requirements must be adhered to.

Specification Requirements

The neat biodiesel must conform to EN14214 or ASTM D6751 (in the USA) and can only be blended in mixture of up to 20% by volume in acceptable mineral diesel fuel meeting EN590, ASTM D 975 or BS2869 class A2 (with oxidation stability of EN590) commercial standards.

In North America biodiesel and biodiesel blends must be purchased from the BQ-9000 accredited producers and BQ-9000 certified distributors.

In other areas of the world, the use of biodiesel that is BQ-9000 accredited and certified, or that is accredited and certified by a comparable authority to meet similar biodiesel quality standards is required.

Engine Service Requirements

Aggressive properties of biodiesel fuel may cause debris in the fuel tank and lines to be cleansed, giving rise to premature blocking of the fuel filters. It is therefore **required** that following first use of B20 biodiesel blend fuel filters are changed after 50 hours of operation.

Glycerides present in bio-diesel fuel will also cause fuel filters to become blocked more quickly, therefore the regular service interval for these items should be reduced to 250 hours.

Regular oil service interval remains at 500 hours.

Performance Related Issues

Due to the lower energy content than the standard distillate fuel B20 will cause a power loss in order of 2 - 4%. In addition over time, the power may deteriorate further due to deposits in the fuel injectors. The use of CAT additive P/N 256-4968 is recommended to reduce the effect on engine performance due to prolonged use of biofuels.

General Requirements

Biodiesel has poor oxidation stability, which can result in long-term problems in the storage of bio-diesel. Biodiesel fuel should be used within six months of its manufacture. Equipment should not be stored with the B20 biodiesel blends in the fuel system for longer than three months.

Due to poor oxidation stability and other potential issues, engines with infrequent operational time should limit biodiesel blend to a maximum of B5. Examples of applications that should limit the use of bio-diesel are standby generator sets and certain emergency vehicles.

Seasonally operated engines such as combine harvesters, should have the fuel systems, including fuel tanks, flushed with conventional diesel fuel before prolonged shutdown periods.

Microbial contamination and growth can cause corrosion in the fuel system and premature plugging of the fuel filter. Consult your supplier of fuel for assistance in selecting appropriate anti-microbial additive.

Water accelerates microbial contamination and growth. When biodiesel is compared to distillate fuels, water is naturally more likely to exist in the biodiesel. It is therefore essential to more frequently check and if necessary drain the water separator.

Materials such as brass, bronze, copper, lead, tin, and zinc accelerate the oxidation process of the biodiesel fuel and can cause deposits formation therefore these materials must not be used for fuel tanks and fuel lines. The summary of compatibility of various materials with biodiesel fuel can be found from the following external website link:

http://www.biodiesel.org/pdf_files/fuelfactsheets/Materials_Compatibility.pdf (Perkins cannot be held responsible for the content of external web site)

If you require any additional information, please do not hesitate to contact your local Perkins representative/distributor.

IPS&M Marketing Team

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