



Technical Bulletin

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DEUTZ engines

- Assemblies:
99

Lubricating oil

Replacement is made because of:

- Editorial change(s)
- Oil qualities for the emission stages EU COM IV and US EPA Tier 4



This Technical Bulletin applies for all air and liquid-cooled DEUTZ compact engines. For previous engines which are no longer in the production program, please contact your DEUTZ Service responsible.



Lubricating oil recommendations for gas engines of the series TCG 2015 V6/V8 and 913/914 are described in the Technical Bulletin 0199-99-1213.

Note:
The part numbers indicated in this document are not subject to updating.
Binding for the identification of spare parts is exclusively the spare parts documentation.

Contents

Lubricating oil in general
Lubricating oil quality
Lubricating oil viscosity
Lubricating oil change intervals
DEUTZ lubricating oil diagnosis system

Further remarks on the use of lubricating oils in fast running DEUTZ engines

Lubricating oil in general

Modern diesel engines place very high demands on the lubricating oil used. The continuously increasing specific engine performances over the last few years are leading to an increased thermal load on the lubricating oil, and the lubricating oil is also becoming more heavily contaminated due to reduced lubricating oil consumption and longer lubricating oil change intervals. For this reason, it is necessary to observe the requirements and recommendations in this Technical Bulletin in order not to reduce the life of the engine.

Lubricating oils always consist of a base oil and an additive package. The most important tasks of a lubricating oil (e.g. wear protection, corrosion protection, neutralisation of acids from combustion products, prevention of coke and soot deposits on engine components) are assumed by the additives. The properties of the base oil are also decisive for the quality of the product, e.g. with regard to the thermal load capacity and low-temperature performance.



Mixtures of engine lubricating oils should be avoided because the worst properties of the mixture always dominate. In principle, all engine lubricating oils are mixable so that a complete lubricating oil change from one type of lubricating oil to another is no problem as far as mixability is concerned.

DEUTZ lubricating oil recommendation

We recommend the following DEUTZ lubricating oils of the appropriate quality classes for use in DEUTZ engines (see section Lubricating oil quality).

The lubricating oils are specially adapted to the engine requirements and have been proven in hard engine operation.



DEUTZ Quality class	DEUTZ Lubricating oil designation	Container	Part No.:
DQC II-10	DEUTZ OIL TLS-15W40D	5 l canister	0101 6331 **
		20 l canister	0101 6332
		209 l barrel	0101 6333
		Tankers	0101 6334 *
DQC III-10	DEUTZ OIL TLX-10W40FE	5 l canister	0101 6335 **
		20 l canister	0101 6336
		209 l barrel	0101 6337
		Tankers	0101 6338 *
DQC IV-10	DEUTZ OIL DQC4-5W30-UHP	20 l canister	0101 7849
		209 l barrel	0101 7850
* loose delivery in the tanker, state order quantity			
** only available in container size 4 x 5 l			

T 1 DEUTZ lubricating oils

DEUTZ Quality class	DEUTZ Lubricating oil designation	Container	Part No.:
DQC III-10 LA	DEUTZ OIL Rodon 10W40 Low SAPS	20 l canister	0101 7976
		209 l barrel	0101 7977

T 2 DEUTZ lubricating oils for engines with exhaust aftertreatment

Lubricating oil quality

The lubricating oil quality has a considerable influence on the life, efficiency and thus the economy of the engine. The performance capacity and therefore the quality of the lubricating oil is determined in standardised laboratory and test bench tests.

Lubricating oils which are intended mainly for the European market are tested and classified according to ACEA regulations (ACEA = Association des Constructeurs European d'Automobiles). The testing includes laboratory tests for determining physical-chemical properties of the lubricating oils and extensive engine tests on European engines which represent the advanced state-of-the-art.

Accordingly, lubricating oils for the US market are tested according to the API (American Petroleum Institute) guidelines.

These specifications are used world-wide. The use of the ACEA classification is to be preferred to the API classification in the European trade area.

For use in DEUTZ engines the lubricating oils are divided into DEUTZ lubricating oil quality classes (DQC).

Engines without exhaust aftertreatment system	
DQC I-02	Minimum quality for standard engines, partly with reduced lubricating oil change intervals.
DQC II-10	Standard quality for standard engines
DQC III-10	High-performance diesel engine lubricating oil for engines with closed crankcase breather and/or for engines with increased performance.
DQC IV-10	Ultra-high-performance diesel engine lubricating oils for engines with maximum power and/or closed crankcase breather.
Remark(s)	
1) Low-ash / low SAPS engine lubricating oils may only be used in engines without exhaust aftertreatment systems if the sulphur content in the fuel does not exceed max. 50 mg/kg. However, low-ash lubricating oils may be used up to sulphur contents of 500 mg/kg if the base number (TBN) is ≥ 9 mg KOH/g. A corresponding note regarding suitable lubricating oils is published in the DEUTZ release list. 2) Lubricating oils which are released according to higher DQC classes may also be used in the respective lower DQC classes.	

T 3 Engines without exhaust aftertreatment system

Owing to new, stricter exhaust gas regulations for Europe and the USA and the associated widespread use of exhaust aftertreatment systems, for example diesel particle filters (DPF), SCR systems, diesel oxidation catalysts (DOC) or combinations of these exhaust aftertreatment systems, the introduction of new DEUTZ lubricating oil quality classes (DQC) is necessary for low-ash engine lubricating oils.

Sulphate and oxide ashes from metal-organic additives significantly shorten the life of diesel particle filters. Phosphor from wear-protection additives as well as sulphur and sulphur compounds can have negative influences on the catalyst activity in exhaust aftertreatment systems. The mineral oil industry has therefore developed low-ash engine lubricating oils (low SAPS oils - low **S**ulphated **A**sh, **P**hosphorus, **S**ulphur), which are classified according to the general specifications API CJ-4, JASO DH-2, ACEA E6 and ACEA E9.

DEUTZ has therefore extended the DEUTZ lubricating oil release system DQC with additional classes for low-ash engine lubricating oils and introduced the classes DQC II-10 LA, DQC III-10 LA and DQC IV-10 LA (LA = low ash).



Engines with exhaust aftertreatment system	
DQC II-10 LA	Low-ash standard quality, partially with reduced lubricating oil change intervals
DQC III-10 LA	Low-ash high-performance diesel engine lubricating oil for engines with closed crankcase breather and/or for engines with increased performance.
DQC IV-10 LA	Low-ash ultra-high-performance diesel engine lubricating oils for engines with maximum power and/or closed crankcase breather.
Remark(s)	
1) Low-ash engine lubricating oils are mandatory for the exhaust aftertreatment systems diesel oxidation catalyst (DOC), diesel particle filter (DPF) and SCR systems (Stage IV / Tier 4) or the combination of these exhaust aftertreatment systems.	
2) Low-ash engine lubricating oils are recommended for Agri Power engines with stage IIIB / Tier 4 interim SCR exhaust aftertreatment systems, but are not mandatory.	
3) Lubricating oils which are released according to higher DQC classes may also be used in the respective lower DQC classes.	

T 4 Engines with exhaust aftertreatment system



The use of the DQC release list should make the choice of lubricating oils for DEUTZ engines easier for the customer and ensure a quality level that is tailor made for the requirements of DEUTZ engines.

The list of released lubricating oils and information about the release procedure in accordance with factory standard H 0685-3 can be downloaded from the Internet at www.deutz.com - Service - Operating Liquids and Additives - Deutz Quality Class.



For engines which require a lubricating oil quality of DQC III or DQC IV and/or DQC III LA or DQC IV LA according to the specifications of this technical bulletin, only lubricating oils from the internet release list may be used. The release lists in earlier editions of TR 0199-99-3002 and in older operating instructions are dispensed with.



As the lubricating oil manufacturers often change or adapt the lubricating oil formulations at regular intervals for marketing and cost reasons, solely the lubricating oils in the most up-to-date internet release list apply.

Release lists are also available for DQC I, DQC II and DQC II LA for which application is recommended but not an absolute obligation.

As an alternative to the release lists, lubricating oils as per ACEA, API, JASO DH or DHD-1 can also be used exclusively for DQC I, DQC II and DQC II LA corresponding to the following table:

DEUTZ lubricating oil quality class							
	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA
DEUTZ release list	DQC I-02	DQC II-10 or DQC II-05	DQC III-10 or DQC III-05	DQC IV-10 or DQC IV-05	DQC II-10 LA	DQC III-10 LA	DQC IV-10 LA
or ACEA specification	E2-96	E3-96 or E4-12 or E5-02 or E7-12	-	-	E6-12 or E9-12	-	-
or API specification	CF or CF-4 or CG-4	CH-4 or CI-4 or CI-4 Plus	-	-	CJ-4	-	-
or world-wide / other specification	-	JASO DH-1 DHD-1	-	-	JASO DH -2	-	-
Note: Older ACEA releases from the years 2008 and 2010 are also released.							

T 5 Definition of permissible lubricating oils for DEUTZ engines

The exact assignment of the permissible lubricating oil qualities to the engines is indicated in tables T 5 to T 25 of the section "Lubricating oil change intervals".

Please contact your responsible DEUTZ Service in regions where none of these qualities is available.



Lubricating oil for initial commissioning

As a matter of principle, the OEM / genset manufacturer must ensure that, when filling the engines at the factory for the first time, all of them are filled with the respective permissible oil quality.

- Engines with exhaust aftertreatment: Basically, low-ash / low SAPS oils
 - DQC III-10 LA or DQC IV-10 LA oils
- Engines without exhaust gas after-treatment
 - DQC III-10 or DQC IV-10 oils
 - or
 - DQC III-10 LA or DQC IV-10 LA oils

with a base number > 9 mg KOH/g, when it is ensured that engines / gensets are exported to countries where the sulphur content does not exceed max. 500 mg/kg.

Lubricating oil qualities for authorities vehicles and special vehicles

Normally, special lubricants, which have to meet the specific operating conditions (long-term corrosion protection, use of kerosene, logistics), are used for these applications.

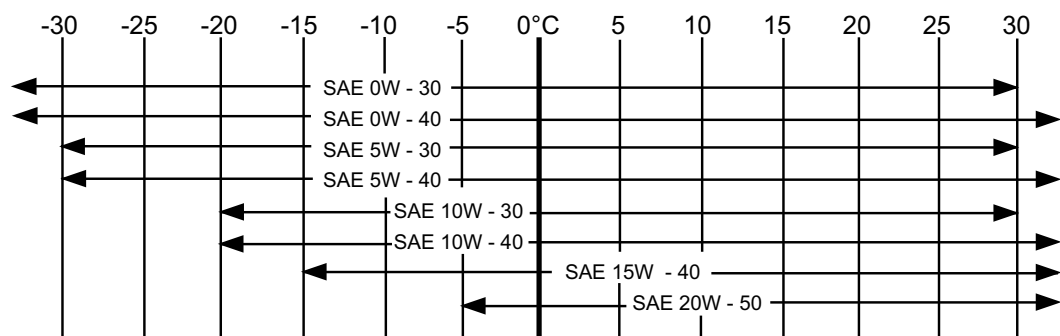
For new customers, it must be ensured before initial use of these lubricating oils that a release is available from the head office.

Lubricating oil viscosity

The ambient temperature at the installation site or in the area of application of the engine is decisive for selecting the right viscosity class. Too high a viscosity can lead to starting difficulties, too low a viscosity can endanger the lubricating effect and result in high lubricating oil consumption. At ambient temperatures below -40°C the lubricating oil must be pre-heated (e.g. by placing the vehicle or machine in a hall).

The viscosity is classified according to SAE. Oils suitable for multiple ranges must always be used. Oils for single ranges can be used in closed, heated rooms at temperatures > 5°C. The specified lubricating oil qualities must also be observed for single range oils of course.

Depending on the ambient temperature we recommend the following common viscosity classes:



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A 1 Viscosity classes according to ambient temperature

At even higher ambient temperatures than those specified in the diagram the risk of premature oil ageing under full load operation is avoided by an automatically activated power reduction.



In the 2009 series, the area of application in the negative temperature range must be increased by 5°C, and a lubricating oil of viscosity class SAE 10W-30, for example, is only to be used in the range from -15 to +30 degrees.

Lubricating oil change intervals

The lubricating oil change intervals are dependent on the lubricating oil quality, the sulphur content in the fuel and the operating conditions. The first lubricating oil change after first commissioning or restarting after a major repair (general overhaul) takes place after 50 operating hours in 226/413/513/912/913/1008/2008/2009 engines, see operation manual.

In the case of built-in engines, the required lubricating oil change interval is specified in operating hours (oh), in vehicle engines usually as mileage.

However, the lubricating oil change intervals indicated in tables T 5 to T 25 must not be exceeded here.



An extension of the lubricating oil change intervals is not permitted if using bypass filters and/or additionally installed filter systems, or using cleaning procedures of the customer carried out externally!

The customer must reckon with a loss of warranty if damage occurs.

Lubricating oil filter maintenance

The filter cartridges must be changed with every oil change and the filter cleaned.

For the 226/413/513/912/913/1008/2008/2009 engine series the first filter cartridge change or the first filter cleaning must be made after 50 oh after first commissioning or restarting after major repairs (general overhaul).

All intervals also apply for sub-flow filters delivered by DEUTZ (e.g. centrifugal filters in the fan).

An additional lubricating oil conditioning by sub-flow filters is not necessary.

DEUTZ lubricating oil diagnosis system

An extension of the specified lubricating oil change times up to 100% is **only then** possible if it is ensured by using the DEUTZ lubricating oil diagnosis system that the lubricating oil quality is still adequate, see TR 0199-99-1119.



The DEUTZ lubricating oil diagnosis system can be ordered via the DEUTZ dealer network.



Remarks on the use of lubricating oils in fast-running DEUTZ engines

Biologically degradable lubricating oils

Biologically degradable lubricating oils may be used in DEUTZ engines if they meet the requirements of this Technical Bulletin.

For biologically degradable engine lubricating oils released according to the DQC system, an appropriate reference is made in the lubricating oil release list.

Synthetic lubricating oils

Synthetic lubricating oils have a better temperature and oxidation stability, better soot dispersal properties and a relatively low cold viscosity, thus making them suitable for use in arctic temperatures ($< -25^{\circ}\text{C}$), see Figure A1.

Tractor universal lubricating oils

To simplify the storage in agricultural enterprises, universal lubricating oils have been developed for agriculture which can be used in the engine, gears, hydraulic system and in oil-cooled, so-called wet brakes. These lubricating oils which are known as STOU = "Super Tractor Oil Universal" may only be used in the engine when the specifications in this Technical Bulletin are observed and at the same time the relevant specifications for all oil-lubricated tractor components must be satisfied. Although almost all the currently requisite specifications and requirements can be met with STOU oils, compromises are obviously necessary and the possible optimum performances of special oils optimised for individual tractor components cannot be fully achieved. In particular, the demands on a high-performance engine lubricating oil are difficult to reconcile with other demands. Therefore DEUTZ recommends to use only appropriate engine lubricating oils according to DQC.

For STOU engine lubricating oils released according to the DQC system, an appropriate reference is made in the lubricating oil release list.

Additives to the lubricating oil

The lubricating oils described in this Technical Bulletin contain additives for all tasks in the engine which are carefully coordinated to each other and finally tested extensively as a finished product. The effect of other additives is not usually tested with the same care so that unforeseeable effects cannot be ruled out. The use of additives in DEUTZ engines is therefore prohibited.

Definition of terms

DOC = diesel oxidation catalytic converter

DPF = Closed diesel particle filter

SCR = Selective catalytic reduction (nitrogen oxide (NO_x) reduction using ammonia by adding a 32.5 % urea solution (Adblue® / DEF / AUS 32)

Lubricating oil change intervals for built-in and marine engines

See:

T6 - T 15

Lubricating oil load

- A normal lubricating oil load (up to max. 50 %) occurs in engines with low to medium workload:

This workload limit can be calculated by the customer based on the fuel consumption as follows:

$$\text{Fuel consumption [litres/hour]} \leq \text{nominal power [kW]} \times 0.135$$

- A high lubricating oil load (> 50 %) occurs in engines with high workload:

This workload limit can be calculated by the customer based on the fuel consumption as follows:

$$\text{Fuel consumption [litres/hour]} > \text{nominal power [kW]} \times 0.135$$

A high engine workload can typically occur in the following applications:

Built-in engines:	Tractors > 150 kW, compressors in multi-compressor refrigeration systems, mining equipment, graders, combined heat and power plants, waste compressors, mains/parallel operation
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Marine engines:	Speed boats, catamarans, yachts, generator drives
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- An increased lubricating oil load also occurs at high dust levels, during highly dynamic operation or in engines with 2-stage combustion.
- The assignment of the workload to the applications is an example, the assignment may be different in the concrete case.
- If the prescribed lubricating oil change intervals are not reached within a year, the lubricating oil change must be made at least once a year.

Other lubricating oil load factors

- The lubricating oil change interval must be halved at
 - Continuous ambient temperatures < -10 °C (< +14 °F) or lubricating oil temperature < 60 °C (+ 140 °F)
 - or
 - Sulphur content in the fuel > 0.5 to 1.0 % by weight
 - or



- Operation with biodiesel (FAME)
or
- Continuous ambient temperatures $\geq 40\text{ }^{\circ}\text{C}$ ($\geq +104\text{ }^{\circ}\text{F}$) with high engine workloads or lubricating oil temperature $\geq 125\text{ }^{\circ}\text{C}$ ($\geq +257\text{ }^{\circ}\text{F}$). (Only applies for DQC I-10 LA)

Lubricating oil change intervals for vehicle engines

Building site machinery/city traffic/city buses (average speed approx. 25 km/h)

See:

T16 - T19

Local transport (average speed approx. 40 km/h)

See:

T20 - T22

Long distance transport (average speed approx. 60 km/h)

See:

T23 - T25

- If lubricating oil changes are carried out according to operating hour intervals in vehicles, the lubricating oil change intervals in table T1-2 for "Normal lubricating oil load" apply.
- If the prescribed mileage is not reached within a year, the lubricating oil change must be made at least once a year.
- The lubricating oil change interval must be halved at
 - Continuous ambient temperatures $< -10\text{ }^{\circ}\text{C}$ ($< +14\text{ }^{\circ}\text{F}$) or lubricating oil temperature $< 60\text{ }^{\circ}\text{C}$ ($+140\text{ }^{\circ}\text{F}$)
or
 - Sulphur content in the fuel > 0.5 to $1.0\text{ }\%$ by weight
or
 - Operation with biodiesel (FAME)



If you have questions on this topic, please contact the staff member(s) below.

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DEUTZ lubricating oil quality													
	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA						
Lubricating oil change intervals in oh													
Engine types:	Engine version:	Lubricating oil load											
		Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High
B/FM 1008	All engines	125*	125*	125*	125*	125*	125*	125*	125*	125*	125*	125*	125*
BFM/L 1011 BFM/L 2011	Aspirated engines	1000	500	1000	500	1000	500	1000	500	1000	500	1000	500
	Turbocharged en- gines	250*	125*	500	250*	500	250*	500	250*	500	250*	500	250*
TD/D 226 BFL 413/513	Aspirated engines	500	250*	500	250*	500	250*	500	250*	500	250*	500	250*
	Turbocharged en- gines	250*	125*	500	250*	500	250*	500	250*	500	250*	500	250*
BFL 912 BFL 913/914	Aspirated engines	500	250*	500	250*	500	250*	500	250*	500	250*	500	250*
	Turbocharged en- gines	250*	125*	500	250*	500	250*	500	250*	500	250*	500	250*
BF 6L 913 BF 6L 914 C	with 176 kW at 2500 rpm	-	-	500	250*	500	250*	500	250*	-	-	500	250*
BFM 1012	All engines ex- cept:	500	250*	500	500	500	500	500	500	500	500	500	500
	engines in har- vesting machin- ery, combined heat and power plants, electricity generators**	-	-	500	500	500	500	500	500	-	-	500	500
* No additional halving if other lubricating oil load factors corresponding to page 10 apply.													
** Power gensets are to be understood here as those with mains/parallel operation. Emergency power gensets are dealt with in the Technical Bulletin 0199-99-1126.													

* No additional halving if other lubricating oil load factors corresponding to page 10 apply.

** Power gensets are to be understood here as those with mains/parallel operation. Emergency power gensets are dealt with in the Technical Bulletin 0199-99-1126.

T 6 Lubricating oil change intervals for built-in and marine engines

DEUTZ lubricating oil quality														
	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA							
Lubricating oil change intervals in oh														
Engine types:	Engine version:	Lubricating oil load												
		Normal	High	Normal	High	Normal	High	Normal	High	Normal	High	Normal	High	
BFM 1013	All engines except:	250*	250*	500	500	500	500	500	500	500	500	500	500	500
	engines from non-road stage II	-	-	500	500	500	500	500	500	500	500	500	500	500
	engines in harvesting machinery, combined heat and power plants, electricity generators**	-	-	500	500	500	500	500	500	-	500	500	500	500
	BF 4M 1013 FC	-	-	500	500	500	500	500	500	-	500	500	500	500
	BF6M 1013 FC (P ≤ 200 kw), Crankcase breather open	-	-	500	500	500	500	500	500	500	500	500	500	500
	BF6M 1013 FC (P ≤ 200 kw) Crankcase breather closed	-	-	500	500	500	500	500	500	-	500	500	500	500
	BF6M 1013 FC (P > 200 kw) Crankcase breather open	-	250*	250*	250*	250*	250*	250*	250*	250*	250*	250*	250*	250*
* No additional halving if other lubricating oil load factors corresponding to page 10 apply.														
** Power gensets are to be understood here as those with mains/parallel operation. Emergency power gensets are dealt with in the Technical Bulletin 0199-99-1126.														

T 7 Lubricating oil change intervals for built-in and marine engines



DEUTZ lubricating oil quality													
		DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA					
Lubricating oil change intervals in oh													
Engine types:	Engine version:	Lubricating oil load											
		Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High
BFM 1013	BF6M 1013 FC (P > 200 kw) Crankcase breath- er closed	-	-	250*	250*	250*	-	-	250*	250*	250*	250*	250*
	BF 6M 1013 FC Genset 200 kVA Crankcase breath- er open	-	-	500	500	500	500	500	500	500	500	500	500
	BF 6M 1013 FC Genset 200 kVA ** Crankcase breath- er closed	-	-	-	-	500	-	-	500	-	-	500	500
* No additional halving if other lubricating oil load factors corresponding to page 10 apply.													
** Power gensets are to be understood here as those with mains/parallel operation. Emergency power gensets are dealt with in the Technical Bulletin 0199-99-1126.													

DEUTZ lubricating oil quality															
	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA								
Lubricating oil change intervals in oh															
Engine types:	Engine version:	Lubricating oil load													
		Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High		
BFM 2012	All engines except:	250*	250*	500	500	500	500	500	500	500	500	500	500	500	500
	BF 4M 2012 C > 95 kW	-	-	500	500	500	500	500	500	-	-	500	500	500	500
	BF 6M 2012 C > 143 kW from non-road stage II with cylinder bore 101 mm or 98 mm with solenoid valve system	-	-	500	500	500	500	500	500	-	-	500	500	500	500
	BF 6M 2012 C > 135 kW from non-road stage II with cylinder bore 98 mm with me- chanical injection system	-	-	500	500	500	500	500	500	-	-	500	500	500	500
	Other engines from non-road stage II	-	-	500	500	500	500	500	500	500	500	500	500	500	500
	engines in harvest- ing machinery, com- bined heat and power plants, elec- tricity generators**	-	-	500	500	500	500	500	500	-	-	500	500	500	500
* No additional halving if other lubricating oil load factors corresponding to page 10 apply.															
** Power gensets are to be understood here as those with mains/parallel operation. Emergency power gensets are dealt with in the Technical Bulletin 0199-99-1126.															

T 9 Lubricating oil change intervals for built-in and marine engines

DEUTZ lubricating oil quality														
	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA							
Lubricating oil change intervals in oh														
Engine types:	Engine version:	Lubricating oil load												
		Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	
BFM 2013	All engines except:	250*	250*	500	500	500	500	500	500	500	500	500	500	High
	engines from non- road stage II	-	-	500	500	500	500	500	500	500	500	500	500	500
	BF 4M 2013 C > 90 kW	-	-	-	500	500	500	500	-	-	500	500	500	500
	BF 6M 2013 C >120 kW	-	-	-	500	500	500	500	-	-	500	500	500	500
	engines in harvest- ing machinery, com- bined heat and power plants, elec- tricity generators**	-	-	-	500	500	500	500	-	-	500	500	500	500
BFM 1015	All engines except:	250*	125*	500	250*	500	250*	500	250*	500	250*	500	250*	250*
	1015 C	-	-	500	500	500	500	500	500	500	500	500	500	500
	engines from non- road stage II													
	1015 CP	-	-	-	500	250*	500	250*	-	-	500	250*	500	250*
	BF 6M 1015 MC (P ≤ 300 kw)	-	-	500	250*	500	250*	500	250*	500	250*	500	500	250*
	BF 8M 1015 MC (P ≤ 400 kw)	-	-	500	250*	500	250*	500	250*	500	250*	500	500	250*
	BF 6M 1015 MC (P > 300 kw)	-	-	-	500	250*	500	250*	-	-	500	250*	500	250*
* No additional halving if other lubricating oil load factors corresponding to page 10 apply.														
** Power gensets are to be understood here as those with mains/parallel operation. Emergency power gensets are dealt with in the Technical Bulletin 0199-99-1126.														

T 10 Lubricating oil change intervals for built-in and marine engines

DEUTZ lubricating oil quality															
	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA								
Lubricating oil change intervals in oh															
Engine types:	Engine version:	Lubricating oil load													
		Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High		
BFM 1015	BF 8M 1015 MC (P > 400 kw)	-	-	500	250*	500	250*	500	250*	-	-	500	250*	500	250*
2008 / 2009		250*	125*	500	250*	500	250*	500	250*	500	250*	500	250*	500	250*
TD 2011		500	250*	500	500	500	500	500	500	500	500	500	500	500	500
D 2011		500	250*	1000	500	1000	500	1000	500	1000	500	1000	500	1000	500
TD/w 2011		250*	125*	500	250*	500	250*	500	250*	500	250*	500	250*	500	250*
TD/i 2011		250*	125*	500	250*	500	250*	500	250*	500	250*	500	250*	500	250*
TCD/w 2011		250*	125*	500	250*	500	250*	500	250*	500	250*	500	250*	500	250*
TCD 2012 2V	Crankcase breath- er open	-	-	500	500	500	500	500	500	500	500	500	500	500	500
	Crankcase breath- er closed	-	-	-	-	500	500	500	500	-	-	500	500	500	500
TCD 2012 4V	Crankcase breath- er open	-	-	500	500	500	500	500	500	500	500	500	500	500	500
	All engines except:														
	L04 P > 88 kW	-	-	500	500	500	500	500	500	-	-	500	500	500	500
	L04 P > 132 kW	-	-	500	500	500	500	500	500	-	-	500	500	500	500
	Crankcase breath- er closed	-	-	500	500	500	500	500	500	-	-	500	500	500	500
DEUTZ Natu- ral Fuel Engine TCD 2012 L06 2V/4V	In rapeseed oil op- eration as per DIN 51605	-	250*	250*	250*	250*	250*	250*	250*	250*	250*	250*	250*	250*	250*

* No additional halving if other lubricating oil load factors corresponding to page 10 apply.

* No additional halving if other lubricating oil load factors corresponding to page 10 apply.

DEUTZ lubricating oil quality													
	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA						
Lubricating oil change intervals in oh													
Engine types:	Engine version:	Lubricating oil load											
		Normal	High	Normal	High	Normal	High	Normal	High	Normal	High	Normal	High
TCD 2013 2V	Crankcase breather open	-	-	500	500	500	500	500	500	500	500	500	500
	Crankcase breather closed	-	-	-	-	500	500	-	-	500	500	500	500
TCD 2013 4V	Crankcase breather open	-	-	-	-	500	500	-	-	500	500	500	500
	Crankcase breather closed	-	-	-	-	500	500	-	-	500	500	500	500
TCD 2015	Crankcase breather closed	-	-	-	-	500	250*	500	250*	500	250*	500	250*
D 2.9 L4	with exhaust after-treatment system	-	-	-	-	-	-	-	-	500	500*	1000	500*
	without exhaust after-treatment system	-	-	500	250*	1000	500*	1000	500*	500	500*	1000	500*
TD 2.9 L4	with exhaust after-treatment system	-	-	-	-	-	-	-	-	250*	250*	500	250*
	without exhaust after-treatment system	-	-	500	250*	500	250*	500	250*	500	250*	500	250*
TCD 2.9 L4	with exhaust after-treatment system	-	-	-	-	-	-	-	-	250*	250*	500	250*
	without exhaust after-treatment system	-	-	500	250*	500	250*	500	250*	500	250*	500	250*
* No additional halving if other lubricating oil load factors corresponding to page 10 apply.													

T 12 Lubricating oil change intervals for built-in and marine engines

DEUTZ lubricating oil quality															
	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA								
Lubricating oil change intervals in oh															
Engine types:	Engine version:	Lubricating oil load													
		Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High		
TD 3.6 L4	with exhaust after-treatment system	-	-	-	-	-	-	-	-	250*	-	500	250*	500	250*
	without exhaust after-treatment system	-	-	500	250*	500	250*	500	250*	500	-	500	250*	500	250*
TCD 3.6 L4	with exhaust after-treatment system	-	-	-	-	-	-	-	-	250*	-	500	250*	500	250*
	without exhaust after-treatment system	-	-	500	250*	500	250*	500	250*	500	-	500	250*	500	250*
TCD 4.1 L4	with exhaust after-treatment system	-	-	-	-	-	-	-	-	250*	-	500	250*	500	500
	without exhaust after-treatment system	-	-	500	250*	500	500	500	500	250*	-	500	250*	500	500
	Agri Power engines Stage IIIB / Tier 4 interim	-	-	-	-	500	500	500	500	250*	-	500	250*	500	500
	Agri Power engines stage IV / Tier 4	-	-	-	-	-	-	-	-	-	-	500	500	500	500
	with exhaust after-treatment system	-	-	-	-	-	-	-	-	250*	-	500	250*	500	500
	without exhaust after-treatment system	-	-	500	250*	500	500	500	500	250*	-	500	250*	500	500
TCD 6.1 L6	Agri Power engines Stage IIIB / Tier 4 interim	-	-	-	-	500	500	500	500	250*	-	500	250*	500	500

* No additional halving if other lubricating oil load factors corresponding to page 10 apply.

T 13 Lubricating oil change intervals for built-in and marine engines



DEUTZ lubricating oil quality													
	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA						
Lubricating oil change intervals in oh													
Engine types:	Engine version:	Lubricating oil load											
		Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High
TCD 6.1 L6	Agri Power engines stage IV / Tier 4	-	-	-	-	-	-	-	-	-	-	500	500
TTCD 6.1 L6	Agri Power engines stage IV / Tier 4	-	-	-	-	-	-	-	-	-	-	500	500
TCD 7.8 L6	with exhaust after-treatment system	-	-	-	-	-	-	-	250*	-	-	500	500
	without exhaust after-treatment system	-	-	250*	500	500	500	250*	-	-	-	500	500
	Agri Power engines Stage IIIB / Tier 4 interim	-	-	-	-	500	500	250*	-	-	-	500	500
TTCD 7.8 L6	Agri Power engines stage IV / Tier 4	-	-	-	-	-	-	-	-	-	-	500	500

* No additional halving if other lubricating oil load factors corresponding to page 10 apply.

* No additional halving if other lubricating oil load factors corresponding to page 10 apply.

T 14 Lubricating oil change intervals for built-in and marine engines

DEUTZ lubricating oil quality													
	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA						
Lubricating oil change intervals in oh													
Engine types:	Engine version:	Lubricating oil load											
		Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High	Nor- mal	High
TCD 12.0 V6	with SCR (Stage IIIB / Tier 4 interim) Crankcase breather closed	-	-	500	250*	1000	500*	-	-	500	250*	1000	500*
	with SCR (Stage IV / Tier 4) Crankcase breather closed	-	-	-	-	-	-	-	-	500	250*	1000	500*
TCD 16.0 V8	Crankcase breather closed with SCR (Stage IIIB / Tier 4 interim)	-	-	500	250*	1000	500*	-	-	500	250*	1000	500*
	with SCR (Stage IV / Tier 4) Crankcase breather closed	-	-	-	-	-	-	-	-	500	250*	1000	500*
* No additional halving if other lubricating oil load factors corresponding to page 10 apply.													

T 15 Lubricating oil change intervals for built-in and marine engines



DEUTZ lubricating oil quality								
		DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA
Engine types:	Engine version:	Lubricating oil change intervals in km x 1000						
TD/D 226 BFL 413/513/ 912/913/914	Aspirated engines	15	15	20	20	15	20	20
	Turbocharged engines	10	15	20	20	15	20	20
BFM 1012/ 1013/2012/ 2013	Euro I	10	15	20	20	15	20	20
	Euro II and Euro III except:	-	15	20	20	15	20	20
	BF 4M 1013 FC, Euro II, ≤ 14 l Lubricating oil content (first filling)	-	-	10	10	-	10	10
	BF 4M 1013 FC, Euro II, > 14 l Lubricating oil content (first filling)	-	-	20	20	-	20	20
	BF 4M 1013 FC, Euro III	-	-	20	20	-	20	20
	BF 6M 1013 FC, Euro II, ≤ 19 l Lubricating oil content (first filling) Crankcase breather open	-	10	10	10	10	10	10

T 16 Lubricating oil change intervals for vehicle engines (average speed approx. 25 km/h)

		DEUTZ lubricating oil quality						
Engine types:	Engine version:	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA
		Lubricating oil change intervals in km x 1000						
BFM 1013	BF 6M 1013 FC, Euro II, > 19 l Lubricating oil con- tent (first filling) Crankcase breath- er open	-	20	20	20	20	20	20
	BF 6M 1013 FC, Euro III Crankcase breath- er open	-	20	20	20	20	20	20
	BF 6M 1013 FC, Euro II, ≤ 19 l Lubricating oil con- tent (first filling) Crankcase breath- er closed	-	-	10	10	-	10	10
	BF 6M 1013 FC, Euro II, > 19 l Lubricating oil con- tent (first filling) Crankcase breath- er closed	-	-	20	20	-	20	20

T 17 Lubricating oil change intervals for vehicle engines (average speed approx. 25 km/h)



		DEUTZ lubricating oil quality						
Engine types:	Engine version:	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA
		Lubricating oil change intervals in km x 1000						
BFM 1013	BF6M 1013 FC, Euro III, Crankcase breather closed	-	-	20	20	-	20	20
	BF 4M 2012 C, > 95 kW, as of Euro II	-	-	20	20	-	20	20
BFM 2012	BF 6M 2012 C, > 143 kW, with cylinder bore 101 mm or 98 mm with solenoid valve system	-	-	20	20	-	20	20
	BF 6M 2012 C, > 135 kW, with cylinder bore 98 mm with mechanical injection system	-	-	20	20	-	20	20
BFM 2013	BF 4M 2013 C > 90 kW	-	-	20	20	-	20	20
	BF 6M 2013 C > 120 kW	-	-	20	20	-	20	20
BFM 1015	Euro I except:	-	15	20	20	15	20	20
	BFM 1015 CP Euro II	-	-	20	20	-	20	20

T 18 Lubricating oil change intervals for vehicle engines (average speed approx. 25 km/h)

		DEUTZ lubricating oil quality						
Engine types:	Engine version:	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA
		Lubricating oil change intervals in km x 1000						
TCD 2013 4V	TCD 2013 L04 4V	-	25	45	45	25	45	45
	TCD 2013 L06 4V	-	30	50	50	30	50	50
	TCD 2013 L06 4V City bus	-	15	20	20	15	20	20
TCD 2015	-	-	-	20	20	-	20	20

T 19 Lubricating oil change intervals for vehicle engines (average speed approx. 25 km/h)



		DEUTZ lubricating oil quality							
Engine types:	Engine version:	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA	
		Lubricating oil change intervals in km x 1000							
TD/D 226 BFL 413/513/ 912/913/914	Aspirated engines	20	20	30	30	20	30	30	
	Turbocharged engines	15	20	30	30	20	30	30	
BFM 1013	Euro I	15	20	30	30	20	30	30	
	Euro II and Euro III except:	-	20	30	30	20	30	30	
	BF 4M 1013 FC, Euro II, ≤ 14 l	-	-	15	15	-	15	15	
	Lubricating oil content (first filling)								
	BF 4M 1013 FC, Euro II, > 14 l	-	-	30	30	-	30	30	
	Lubricating oil content (first filling)								
	BF 4M 1013 FC, Euro III	-	-	30	30	-	30	30	
	BF 6M 1013 FC, Euro II, ≤ 19 l	-	15	15	15	15	15	15	
	Lubricating oil content (first filling)								
	Crankcase breather open								

T 20 Lubricating oil change intervals for vehicle engines (average speed approx. 40 km/h)

		DEUTZ lubricating oil quality						
Engine types:	Engine version:	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA
		Lubricating oil change intervals in km x 1000						
BFM 1013	BF 6M 1013 FC, Euro II, > 19 l Lubricating oil content (first filling) Crankcase breather open	-	30	30	30	30	30	30
	BF 6M 1013 FC, Euro III Crankcase breather open	-	30	30	30	30	30	30
	BF 6M 1013 FC, Euro II, ≤ 19 l Lubricating oil content (first filling) Crankcase breather closed	-	-	15	15	-	15	15
	BF 6M 1013 FC, Euro II, > 19 l Lubricating oil content (first filling) Crankcase breather closed	-	-	30	30	-	30	30
BF 6M 1013 FC, Euro III, Crankcase breather closed		-	-	30	30	-	30	30
		-	-	30	30	-	30	30

T 21 Lubricating oil change intervals for vehicle engines (average speed approx. 40 km/h)

		DEUTZ lubricating oil quality						
Engine types:	Engine version:	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA
Lubricating oil change intervals in km x 1000								
BFM 2012	BF 4M 2012 C, > 95 kW, as of Euro II	-	-	30	30	-	30	30
	BF 6M 2012 C, > 143 kW, with cyl- inder bore 101 mm or 98 mm with sole- noid valve system	-	-	30	30	-	30	30
	BF 6M 2012 C, > 135 kW, with cyl- inder bore 98 mm with mechanical in- jection system	-	-	30	30	-	30	30
BFM 2013	BF 4M 2013 C > 90 kW	-	-	30	30	-	30	30
	BF 6M 2013 C > 120 kW	-	-	30	30	-	30	30
BFM 1015	Euro I except:	-	20	30	30	20	30	30
	BFM 1015 CP Euro II	-	-	30	30	-	30	30
TCD 2013 4V	TCD 2013 L04 4V	-	40	60	60	40	60	60
	TCD 2013 L06 4V	-	50	70	70	50	70	70
	TCD 2013 L06 4V Regional bus	-	20	30	30	20	30	30
TCD 2015		-	-	30	30	-	30	30

T 22 Lubricating oil change intervals for vehicle engines (average speed approx. 40 km/h)

		DEUTZ lubricating oil quality						
Engine types:	Engine version:	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA
		Lubricating oil change intervals in km x 1000						
TD/D 226 BFL 413/513/ 912/913/914	Aspirated engines	30	30	40	40	30	40	40
	Turbocharged engines	20	30	40	40	30	40	40
BFM 1013	Euro I	20	30	40	40	30	40	40
	Euro II and Euro III except:	-	30	40	40	30	40	40
	BF 4M 1013 FC, Euro II, ≤ 14 l Lubricating oil content (first filling)	-	-	20	20	-	20	20
	BF 4M 1013 FC, Euro II, > 14 l Lubricating oil content (first filling)	-	-	40	40	-	40	40
	BF 4M 1013 FC, Euro III	-	-	40	40	-	40	40
	BF 6M 1013 FC, Euro II, ≤ 19 l Lubricating oil content (first filling) Crankcase breather open	-	20	20	20	20	20	20

T 23 Lubricating oil change intervals for vehicle engines (average speed approx. 60 km/h)



		DEUTZ lubricating oil quality						
Engine types:	Engine version:	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA
Lubricating oil change intervals in km x 1000								
BFM 1013	BF 6M 1013 FC, Euro II, > 19 l Lubricating oil content (first filling) Crankcase breather open	-	40	40	40	40	40	40
	BF 6M 1013 FC, Euro III Crankcase breather open	-	40	40	40	40	40	40
	BF 6M 1013 FC, Euro II, ≤ 19 l Lubricating oil content (first filling) Crankcase breather closed	-	-	20	20	-	20	20
	BF 6M 1013 FC, Euro II, > 19 l Lubricating oil content (first filling) Crankcase breather closed	-	-	40	40	-	40	40
	BF 6M 1013 FC, Euro III, Crankcase breather closed	-	-	40	40	-	40	40

T 24 Lubricating oil change intervals for vehicle engines (average speed approx. 60 km/h)

		DEUTZ lubricating oil quality						
Engine types:	Engine version:	DQC I	DQC II	DQC III	DQC IV	DQC II LA	DQC III LA	DQC IV LA
		Lubricating oil change intervals in km x 1000						
BFM 2012	BF 4M 2012 C, > 95 kW, as of Euro II	-	-	40	40	-	40	40
	BF 6M 2012 C, > 143 kW, with cyl- inder bore 101 mm or 98 mm with sole- noid valve system	-	-	40	40	-	40	40
	BF 6M 2012 C, > 135 kW, with cyl- inder bore 98 mm with mechanical in- jection system	-	-	40	40	-	40	40
BFM 2013	BF 4M 2013 C > 90 kW	-	-	40	40	-	40	40
	BF 6M 2013 C > 120 kW	-	-	40	40	-	40	40
BFM 1015	Euro I except:	-	30	40	40	30	40	40
	BFM 1015 CP Euro II	-	-	60	60	-	60	60
TCD 2013 4V	TCD 2013 L04 4V	-	60	80	80	60	80	80
	TCD 2013 L06 4V	-	75	100	100	75	100	100
	TCD 2013 L06 4V Intercity bus	-	30	50	50	30	50	50
TCD 2015	-	-	-	60	60	-	60	60

T 25 Lubricating oil change intervals for vehicle engines (average speed approx. 60 km/h)