



LUBRICANTS.
TECHNOLOGY.
PEOPLE.



AGRICULTURAL & EARTHMOVING LUBRICANTS

fuchs.com.au



Protect your machinery for a long and reliable life

The leading OEM supplier in Germany.

Nobody understands engines, gearboxes and hydraulic lubrication better than FUCHS. As the world's largest independent manufacturer of lubricants, FUCHS' technical resources concentrate exclusively on lubricants.

That means FUCHS know and understand the technical demands and can always offer the best possible product no matter what the lubrication requirement.

All the lubricants for on highway fleets.

Whether it is grease for vehicle and machinery bearings, hydraulic oils for any application or engine and gear oils for vehicles and machines - FUCHS has the perfect lubricant for the job.

And because FUCHS has everything from just one source, you benefit from the flexibility of rationalisation of oil grades for your entire vehicle and machinery fleet. That means lower operating costs and increased reliability.

Not all lubricants are created equal. Along with ultimate reliability at all temperatures, FUCHS' high performance lubricants also offer a noticeable reduction in fuel consumption and extended oil change intervals.

More efficient gearboxes and engines result in lower operating costs, thanks to decreased down time and lower fuel consumption.

The operational reliability of your machinery and the protection of your investment is FUCHS' highest priority.

FUCHS PETROLUB is a global Group based in Germany which produces and distributes lubricants and related specialties around the world. The Group, with its headquarters in Mannheim, ranks number one among the world's independent lubricant providers.

The wholly owned Australian subsidiary has been supplying specialised lubricants since the late 1890's and is the leading market player in many lubricant sectors. Manufacturing facilities are located in Melbourne, Perth and Newcastle, all with ISO9001 certification and individual distribution, R & D and quality control capabilities.

In addition, Fuchs' extensive range of specialist lubricant services is supported by 12 qualified laboratory technicians providing a vast array of fluid analyses including the highly specialised condition monitoring tool known as CENT.

The Fuchs Group is at the leading edge in formulation and application technology of all types of rapidly biodegradable lubricants and functional fluids, leading the development of the PLANTO product range and a continued commitment to the environment through the Fuchs Environmental Policy.

There is no better testament to this commitment than Fuchs' Melbourne operation being awarded ISO14001 Environmental Certification.

Fuchs Lubricants specialises in six main areas of lubrication:

- Automotive
- Industrial
- Specialist Applications including Open Gearing Lubrication
- Mining
- Food grade
- Private Label

Fuchs Lubricants provides an unrivalled personalised focus to its customer-base with 12 distribution sites throughout Australia and New Zealand and over 95% of products manufactured locally.

Through the dedication to maintain market leadership, Fuchs' products and services are constantly evaluated and updated to meet the ever-increasing demands of industry. This ongoing process ensures that Fuchs Lubricants will consistently exceed all future requirements.



**LUBRICANTS.
TECHNOLOGY.
PEOPLE.**



Engine Oils

TITAN CARGO MAXX SAE 10W-40

Contains new additive technology and carefully selected synthetic base oils to provide full performance retention for the long term.

Provides further protection to exhaust after treatment systems, shielding against clogging and contamination. Developed for the latest generation of heavy duty European diesel engines in commercial vehicles.

SPECIFICATIONS ACEA E9/E7/E6 API CI-4 CATERPILLAR ECF-1-a JASO DH-2	APPROVALS DEUTZ DQC IV-10 LA MACK EO-M PLUS / EO-N MAN M 3271-1/M 3477 MB Approval 235.28/228.51 MTU DDC TYPE 3.1 RENAULT RXD / RGD / RLD-2 SCANIA LA VOITH-RETARDER 'B' VOLVO VD-3 / CNG	RECOMMENDATIONS CUMMINS CES 20077 DAF MAN M 3277 CRT
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TITAN CARGO SAE 15W-40

Ultra high-performance, fuel-economy oil for a variety of commercial vehicle diesel engines. Specially developed for Volvo with extended service intervals, exhaust after treatment and turbocharger.

Protecting exhaust gas treatment systems with very low sulphated ash levels and low content levels of phosphorus and sulphur.

Excellent wear protection, even under constant full load due to the new additive and base oil technology.

Highest neutralization potential (TBN) in its class. Durable protection against aggressive acids and corrosion during the whole oil drain interval.

Reduced content of heavy metals, minimizes contaminant emissions.

Prevents deposits in the engine and turbocharger due to excellent soot handling properties. This results in high levels of performance, reliability and low maintenance costs.

Rationalization of the newest VOLVO, MACK and RVI engine oil specifications in a single product.

SPECIFICATIONS ACEA E9/E7 API CJ-4/CI-4 PLUS/CI-4 CAT ECF-3	APPROVALS DETROIT DIESEL DDC 93K218 MACK EO-O PREMIUM PLUS MAN M 3575 / 3275-1 MB-APPROVAL 228.31 RENAULT RLD-3 VOLVO VDS-4 DEUTZ DQC III-10LA CUMMINS CES 20081 MTU DDC Type 2.1	RECOMMENDATIONS ALLISON C-4
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TITAN TRUCK PLUS SAE 15W-40

Super High Performance engine oil for a variety of diesel engines. Specially for supercharged commercial vehicle diesel engines.

TITAN TRUCK PLUS SAE 15W-40 is a super-long-term all season engine oil of the SHPD category for diesel and gasoline engines with and without turbo charging in passenger cars, trucks, buses and industrial equipment that have high requirements with respect to engine cleanliness and maintenance intervals.

SPECIFICATIONS ACEA E7 API CI-4/SL CAT ECF-1-a/ECF-2 GLOBAL DHD-1	APPROVALS CUMMINS CES 20076 DEUTZ DQC III - 10 MACK EO-N MAN M 3275-1 MB-APPROVAL 228.3 MTU DDC TYPE-2 RENAULT RLD / RLD-2 VOLVO VDS-3 CUMMINS CES 20077 CUMMINS CES 20078	RECOMMENDATIONS ACEA A3/B4 ALLISON C-4 CASE MS 1121 CAT TO-2 CUMMINS CES 20071/2 DAF IVECO 18-1804 CLASSE T2 E7 NH 330 H STEYR A-201
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TITAN ULTRALUBE SAE 15W-40

A heavy duty diesel engine oil developed for use under the most arduous conditions in both on and off highway applications.

Titan Ultralube SAE 15W-40 contains an advanced formula that meets the latest API and ACEA specifications

Suitable for European, American & Japanese diesel engines

Unlike most other oils on the market Titan Ultralube SAE 15W-40 allows for product rationalisation as you can eliminate stocking separate oils for American and European engines.

SPECIFICATIONS ACEA E7 API CI-4 / SL	APPROVALS	RECOMMENDATIONS CUMMINS CES 200 71 / 72 / 76 / 77 / 78 VOLVO-VDS-3 CAT ECF 1-a / ECF – 2 RENAULT RLD-2 / RLD MB 228.3 MACK EO-M Plus ZF TE-ML 07C MAN 3275
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TITAN UNIVERSAL HD SAE 15W-40

Titan Universal HD SAE 15W-40 is a high performance lubricant for diesel & petrol engines, with and without turbochargers.

Equally suited for highway & construction vehicles

Designed to meet the requirements of European equipment

Contains high detergency level to ensure maximum engine cleanliness and minimal bore polishing or ring sticking

SPECIFICATIONS ACEA A3/B3/B4 API CG-4/CF/SL	APPROVALS DEUTZ DQC I-02 MAN 271 MB-APPROVAL 228.1 / 229.1 MTU DDC TYPE-2	RECOMMENDATIONS ACEA E2 MIL-L-2104 E ALLISON C-4 CASE MS 1120 DAF MACK EO-L NH 330 G SCANIA STEYR A-202 VOLVO VDS VW 501 01/505 00
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Gear Oils

TITAN SUPERGEAR SAE 80W-90

TITAN SUPERGEAR SAE 80W-90 is mineral universal gear oil for use in manual transmissions and axle gear boxes in both passenger cars and commercial vehicles.

Good cold flow properties. This supports easy cold starting and easy shifting in the warm-up period. Improved lubrication and excellent protection against wear even during short-distance winter operation.

Excellent corrosion protection, with providing a defense against rust and attacking of non-ferrous metals.

SPECIFICATIONS API GL-4 / GL-5	APPROVALS MAN 342 TYPE M2 ZF TE-ML 05A / 12E / 16B /17B / 19B	RECOMMENDATION MIL-L-2105 D
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TITAN SUPERGEAR SAE 85W-140

Super high-performance gear oil for extended oil change intervals.

TITAN SUPERGEAR SAE 85W-140 is a mineral universal gear oil for use in manual transmissions and axle gearboxes in both passenger cars and commercial vehicles.

TITAN SUPERGEAR SAE 85W-140 is miscible and compatible with conventional branded gear oils. However, intermixtures with other gear oils should be avoided in order to fully utilize the product's benefits. Respectively a complete oil change is recommended when converting to TITAN SUPERGEAR SAE 85W-140.

SPECIFICATIONS API GL-4 / GL-5	APPROVALS ZF TE-ML 05A ZF TE-ML 12E ZF TE-ML 16D	RECOMMENDATION MIL-L-2105 D
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TITAN SUPERGEAR LS SAE 80W-90

High Performance LS (Limited Slip) hypoid gear oil for axles in commercial vehicles and passenger cars with or without limited slip differentials.

LS (Limited Slip) hypoid gear oil for highly stressed normal and limited slip differentials in cars, vans, trucks, buses, tractors, construction and industrial machinery.

All-season, high performance, LS hypoid gear oil. Miscible with all mineral and synthetic gear oils. No flushing is therefore required

SPECIFICATIONS	APPROVALS	RECOMMENDATION API GL-5 / GL-5 LS API MT-1 MACK GO-J MIL-PRF-2105E
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TITAN SUPERGEAR LS SAE 85W-140

Lubricant for limited slip differentials and hypoid gears.

LS (Limited Slip) hypoid gear oil for highly stressed normal and limited slip differentials in cars, vans, trucks, buses, tractors, construction and industrial machinery.

All-season, high performance, LS hypoid gear oil. Miscible with all mineral and synthetic gear oils. No flushing is therefore required.

SPECIFICATIONS	APPROVALS	RECOMMENDATION API GL-5 / GL-5 LS API MT-1 MACK GO-J Mil-PRF-2105E
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TITAN SUPERGEAR HTB SAE 85W-140

The unique borate additive technology used in HTB has the ability to reduce operating temperatures in highly loaded and stressed diffs and gear boxes.

The multigrade specification has CRI (corrosion and rust Inhibitor) technology which gives added protection in the harshest environments.

SPECIFICATIONS	APPROVALS	RECOMMENDATION API GL-5
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TITAN GEAR FD 60

Specialty final drive and axle oil designed to meet Caterpillar specification FD-1.

TITAN GEAR FD 60 is an SAE viscosity grade 60 final drive and axle oil, which exceeds the requirements of Caterpillar FD -1 specification.

Meets the following performance requirements: CATERPILLAR FD-1 Rationalisation of product and pack size variety by universal use for all final drives.

Fully compatible with all components and materials used in mixed fleets

SPECIFICATIONS SAE Grade 60 CATERPILLAR FD-1	APPROVALS	RECOMMENDATION
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TITAN CYTRAC ETN-EP SAE 80W-140

Heavy-duty, synthetic, extreme pressure gear oil.

TITAN CYTRAC ETN-EP SAE 80W-140 is a heavy-duty, extreme pressure API GL-5 gear lubricant compounded using a synthetic base stock, which has a high viscosity index and an exceptionally low pour point. This lubricant contains extreme pressure additives, as well as rust, oxidation and corrosion inhibitors to protect gears and bearings operated under a wide variety of load conditions.

The high and low temperature performance exceeds the conventional 85w-140 hypoid gear lubricants.

SPECIFICATIONS API MT-1. GL-5S	APPROVALS Dana SHAE 429	RECOMMENDATIONS ARVIN MERITOR O-80, O-76-B International TMS 6816 Mack GO-J
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Transmission Oils

TITAN UTTO TO-4 SAE 10

A special multi purpose transmission fluid designed to optimise performance in a range of mobile equipment applications incorporating hydrostatic drives.
Provides outstanding levels of friction performance and wear protection.
Suitable for modern complex power shift transmissions, wet-disk brakes and final drives.

SPECIFICATIONS API GL-4 CAT TO-4 KOMATSU KES 07.868.1	APPROVALS ZF TE-ML 03C	RECOMMENDATION ALLISON C-4 DANA EATON
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TITAN UTTO TO-4 SAE 30

Transmission and final drive fluid for use in earthmoving applications.
Also approved for Allison transmissions and hydraulic systems.
Exceeds the requirements of all Caterpillar TO-4 tests.

SPECIFICATIONS API GL-4 CAT TO-4 KOMATSU KES 07.868.1	APPROVALS ZF TE-ML 03C	RECOMMENDATION ALLISON C-4 ALLISON TES – 439 DANA EATON ZF TE-ML 07F
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TITAN UTTO TO-4 SAE 50/60

Heavy duty transmission and final drive fluids used in a wide range of applications such as automotive, mining, agricultural, and earthmoving.
Exceeds the requirements of Caterpillar TO-4 tests, suitable for use in Allison transmissions for on-road and off- highway applications where a C4 specification is required.

SPECIFICATIONS API GL-4 CAT TO-4 KOMATSU KES 07.868.1	APPROVALS	RECOMMENDATION DANA (SAE 50 only) EATON (SAE 50 only)
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TITAN CYTRAC ETN SAE 50

A synthetic transmission lubricant designed for extended drain intervals and increased gear life.
TITAN CYTRAC ETN SAE 50 transmission lubricant is a specially formulated synthetic lubricant designed for extended drain and severe service in heavy duty manual transmissions, which require a non-EP gear or transmission lubricant

SPECIFICATIONS API MT-1	APPROVALS Eaton PS-164 rev 7	RECOMMENDATIONS Arvin Meritor O-81 (pending) International TMS 6816 MACK TO-A-PLUS ZF TE-ML 02L (pending)
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TITAN AGRIFARM UTTO MP

TITAN AGRIFARM UTTO MP is a universal tractor transmission oil, ideally suited to agricultural equipment operating under severe load conditions, requiring a common oil for trans-mission, differential, final drives, hydraulics, wet clutches and wet brakes.
TITAN AGRIFARM UTTO MP was formulated for use under the most arduous conditions in both on and off highway applications so you can be sure your equipment is always protected.

SPECIFICATIONS API GL-4 SAE J300: 15W-30	APPROVALS ZF TE-ML 03E, 05F, 17E, 21F	RECOMMENDATION AGCO Powerfluid 821 XL AGCO Q-186 (Whitefarm) ALLISON C-4 CASE MS 1230, 1210, 1209, 1207, 1206 CLAAS / LANDINI / SAME-Transmission CNH MAT 3525, 3526, 3509, 3506, 3505 FNHA-2-C-200.00 / -201.00 FORD M2C48-C3, ESN M2C86-B/C FORD M2C134-D JOHN DEERE JDM J20C Massey Ferguson CMS M 1145 (1135/1141/1143) NH 410 B SAE J306: 75W-80 VALTRA G02-08 SDFG OT 1891 A ZF TE-ML 06K
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Multifunctional Engine Oils

TITAN HYDRAMOT 15W-40

Multifunctional Super Tractor Oil Universal (STOU) oil for naturally aspirated and turbo-charged engines, manual gearboxes, wet-brake systems, and hydraulics in tractors and construction equipment.
Titan Hydramot 15w-40 is a multifunctional, SAE 15W-40 oil for naturally aspirated and turbocharged engines, manual gearboxes, wet-brake systems, hydraulics in tractors, construction equipment and conventional diffs.
Multifunctional, all-season 15W-40 lubricant. Hydraulic performance and gear performance satisfy the requirements of off-highway and construction equipment.

SPECIFICATIONS API CF-4/SF SAE 15W-40 STOU	APPROVALS	RECOMMENDATION
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Greases

RENOLIT POLIPLEX SERIES

RENOLIT POLIPLEX SERIES is an all-round lithium complex grease that represents the most advanced lubricating technology which has been formulated for conditions of extreme pressure & temperature.
Also ideal for general purpose applications contains a “tacky additive” that increases water resistance & improves lubrication on worn parts

		RECOMMENDATION NLGI1 NLGI2
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RENOLIT XTB 2

Long life multipurpose grease that has been specially designed for eXTreme Bearing applications.
RENOLIT XTB 2 is suitable for a variety of automotive applications, including wheel bearing and general chassis lubrication
Blue coloured lithium complex grease which has been formulated to provide improved oxidation, wear protection and corrosion resistance compared to conventional greases

		RECOMMENDATION NLGI2
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RENOLIT LEP 2 HD

RENOLIT LEP 2 HD is a heavy duty extreme pressure grease that protects against component wear under severe conditions.
Excellent resistance to water washout ensures lubrication is maintained under extremely wet conditions.

		RECOMMENDATION NLGI2
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RENOLIT HDCE 2

RENOLIT HDCE 2 a high quality heavy duty extreme pressure grease that was specially formulated for earthmoving and construction equipment operating under arduous conditions.
RENOLIT HDCE 2 grease is especially suited to applications including hammers, bucket pins and bushes and plain bearing applications of excavators, dump trucks and various other applications where parts are subjected to oscillating movements, vibrations and shockloads. Protects against corrosion even under extreme wet conditions.

		RECOMMENDATION NLGI2
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RENOLIT CXI 2

RENOLIT CXI 2 is an optimised calcium sulphonate complex grease based on selected mineral oils.
RENOLIT CXI 2 is an optimised calcium sulphonate complex grease based on selected mineral oils.
RENOLIT CXI 2 features excellent working stability, EP load ability and wear protection and shows good corrosion protection behaviour even in the presence of salt water.
RENOLIT CXI 2 has low oil separation, it is water and aging resistant and can be used in a wide temperature range.

		RECOMMENDATION Ford ESA-M1C 172-A
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Hydraulic Oils

RENOLIN B HVI PLUS RANGE

High performance hydraulic oil series with a high viscosity index that reduces energy consumption.
Protects against wear and maintains designed viscosity under a wider operating temperature range.

SPECIFICATIONS DIN 51 524-3, HVLP ISO 6743-4, HV Denison HF0 Bosch Rexroth Vickers US Steel Cincinnati Milacron		
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RENOLIN B PLUS RANGE

THE RENOLIN B PLUS RANGE is a series of high quality HLP hydraulic oils and CLP Lubricating Oils.
RENOLIN B Plus series of oils improve resistance to ageing increase service life. They provides extended greasing intervals whilst improving wear & corrosion protection as well as oxidation resistance.

SPECIFICATIONS AFNOR E48-603 Cincinnati Milacron P-68, P-69, P-70 US Steel 136, 127 Denison HF-1, HF-2, HF-0 Racine, variable volume vane pumps Ford M-6C32 AFNOR E48- Cincinnati Milacron P-68, P-69, P-70 US Steel 136, 127 Denison HF-1, HF-2, HF-0 Racine, variable volume vane pumps Ford M-6C32		
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Coolants

MAINTAIN FRICOFIN

Longlife Antifreeze and Corrosion Protection Concentrate for all Liquid Cooled Engines.

MAINTAIN FRICOFIN is an antifreeze coolant concentrate based on mono ethylene glycol. It is free of nitrite, amine and phosphate. Due to its additive composition MAINTAIN FRICOFIN belongs to the hybrid type coolants. MAINTAIN FRICOFIN provides reliable protection against damages caused by cavitation, frost, corrosion and overheating for both modern passenger car and heavy duty engines. Due to its highly active component package, MAINTAIN FRICOFIN protects all metals used in coolant systems. At the same time it preserves seals, plastics and hoses.

SPECIFICATIONS ASTM D 3306-05 ASTM D 4985 AFNOR NF R 15-601 BS 6580:1992 BUNDESWEHR TL 6850-0038/1 SAE J1034	APPROVALS DEUTZ TR 0199-99-1115 JENBACHER TA 1000-0201 MAN 324 NF MAN 324 NF PRITARDER MB-FREIGABE 325.0/MB-APPROVAL 325.0 MTU MTL 5048 MWM TR 0199-99-2091 PN-C 40007:2000 VOITH TURBO 172.00225010	RECOMMENDATION BOMAG LIEBHERR TLV 035; TLV 23009 A OPEL/GM B 040 0240 VW TL 774-C(G 11)
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MAINTAIN FRICOFIN HDD

Ultra high performance engine coolant concentrate based on monoethylene glycol. Free of amines and phosphates with low silicate technology.

MAINTAIN FRICOFIN HDD is a long term coolant concentrate based on mono ethylene glycol for heavy duty diesel applications as well as stationary engines.

MAINTAIN FRICOFIN HDD is free of amines and phosphates, combined with a low silicate technology, it prevents reliably highly loaded engines from frost, overheating, corrosion and cavitation. This most efficient protection extends to all metals in the cooling system, especially aluminium.

SPECIFICATIONS ASTM D 3306 ASTM D 4985 ASTM D 6210 BS 6580 AS/NZS 2008:2004 Type A FORD ESE-M97B44-A FORD ESE-M97B18-C FORD WSS-M97-B44-D JIS K2234	APPROVALS MTU 5048 DD 93K217	RECOMMENDATION CATERPILLAR EC1 CUMMINS CES 14603 DETROIT DIESEL 7SE 298 DETROIL DIESEL 93K217 FREIGHLINER 48-2288D GM 1825M / 1899M / HEAVY TRUCK HYUNDAI KENWORTH RO26-170-97 MACK TRUCKS MAN 324 NEW HOLLAND WSN-M97B18-D PACCAR CS 0185 PERKINS TOYOTA RP 329
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MAINTAIN FRICOFIN LL

Premium Coolant Additive based on monoethylene glycol. Free from nitrite, amine, phosphate and silicates.

MAINTAIN FRICOFIN LL is a long term anti-frost coolant concentrate based on mono ethylene glycol for heavy duty application as well as passenger cars and stationary combustion engines. MAINTAIN FRICOFIN LL is free of nitrites, amines, silicates and phosphates and is formulated using the high efficient OAT (Organic Acid Technology). MAINTAIN FRICOFIN LL reliably prevents frost, overheating, corrosion and cavitation in highly loaded engines of passengers & commercial vehicles. This most efficient protection extends within the cooling system to all present metals, specially aluminium.

MAINTAIN FRICOFIN LL will be used best with following drain interval recommendation, if OEM does not give other advice: Commercial vehicles 500000km / 8000 hrs Passenger cars 250000 km / 2000 hrs Stationary engines 030000 hrs / 5 years OEM service fill regulations are preferred and keep their validity.

SPECIFICATIONS ASTM D 3306, D 4985 BS 6580 KSM 2142 FORD WSS-M97-B44-D	APPROVALS Bez.Reg.Arnsbg. E62.12.22.64-2011-1 DAF 74002 DEUTZ TR 0199-99-1115 MAN 324 SNF MB-FREIGABE 325.3/MB-APPROVAL 325.3 MWM TR0199-99-2091	RECOMMENDATION AFNOR NFR 15-601 NATO S-759 CUMMINS (ISBe ENGINES AT DAF & LEYLAND) DETROIT DIESEL COMPANY 93K217 GM 6277M IRISBUS JASO M325 JIS K 2234 KOBELCO KOMATSU (DIFFERENT COLOUR AND READY TO USE) LIEBHERR MD 1-36-130 PSA B 71 5110 RENAULT TYPE D VW TL 774 D/F (DIFFERENT COLOUR) VOLVO 128 6083/002 (=VOLVO TRUCKS, VOLVO CE, FROM MY 2005) WAUKESHA YANMAR
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Cleaners

RENOCLEAN DEGREASER 9110

Renoclean Degreaser 9110 is a solvent based degreasing solution developed to dissolve oil and grease residues.

Renoclean Degreaser 9110 is suitable for heavy duty degreasing operations where a versatile solvent based cleaner is required. It does not effect any common metals and is easily removed by rinsing with cold water.

RENOCLEAN ECOSOLVE

Renoclean Ecosolve is a solvent based, biodegradable, quick break degreaser. Renoclean Ecosolve has been formulated to remove tenacious soilage as encountered in mining operations.

Renoclean Ecosolve is a biodegradable, solvent-based, heavy duty wash with “quick-break” properties. Renoclean Ecosolve is formulated to effectively clean heavy mining & industrial equipment such as dump trucks, cranes, prime movers, trailers, dozers and excavators.

RENOCLEAN FLEETWASH

Renoclean Fleetwash is a detergent based heavy duty vehicle wash with “quick-break” properties.

Renoclean Fleetwash was formulated to effectively clean heavy equipment such as dump trucks, cranes, prime movers, trailers, dozers and excavators.

Renoclean Fleetwash is highly effective for removing most soils including dirt, mud, grime, oil and soot.

SPECIFICATIONS Biodegradable AS 4351.2 ISO 7827		
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RENOCLEAN ORANGE

Renoclean Orange is a quality hand cleaner that has been developed for the effective cleaning of heavily soiled, oily and grease covered hands.

Renoclean Orange leaves hands feeling smooth and clean without the greasy feeling that many other cleaners leave behind.

This guide explains the different lubricants available for your equipment and what the specifications mean.

Engine oils

A variety of different engine oils which fulfil a range of specifications are available. The table here shows what lubricant types are implied by the most important engine oil specifications:

ACEA

The various engine oil applications are characterized by letters following the European ACEA classifications.

ACEA E is for diesel engines in commercial vehicles and thus for tractors, harvesters, etc.

- E1 Became invalid in March 2000
- E2 Normal use / normal intervals / largely based on MB 228.1 and MAN 271
- E3 Heavy-duty use / Euro 1 and 2 / extended intervals possible / largely based on MB 228.3 and MAN M 3275
- E4 Very heavy-duty use / Euro 1, 2 and 3 / extended intervals possible / largely based on MB 228.5 and MAN M 3277
- E5 Heavy-duty use / Euro 1, 2 and 3 / extended intervals possible / performance similar to E3, additional wear test on American engines
- E6 Called low-ash oils with low ash contents for engines fitted with exhaust treatment systems, e.g. diesel particulate filters. Otherwise, the same performance as ACEA E4.
- E7 Follow-on category for E3 and E5 heavy-duty use / Euro 1, 2, 3 and 4 extended intervals possible. For engines fitted with particulate filters and/or exhaust treatment systems.
- E9 Super High Performance Diesel (SHPD) engine oil with SAPS limitations. Recommended for standard oil drain intervals in commercial vehicles with exhaust gas after treatment systems like DPF, EGR and SCR running under severe conditions in combination with low sulphur Diesel fuel.

API

Diesel engines (C = Commercial): 4-stroke engines

- API CC No longer valid. For commercial vehicles with older engines (up to about 1985).
- API CD No longer valid. For commercial vehicles with older engines (up to about 1990).

Indirect injection diesel engines

- API CF Especially for diesel engines with indirect injection (swirl chamber). Also suitable for fuel sulphur > 0.5% (Standard exists since 1994).

Direct injection diesel engines

- API CE Heavy-duty and turbocharged diesel engines. Improved characteristics regarding oil consumption, oil thickening, piston coking and wear.
- API CF-4 Surpasses API CE regarding piston coking and oil consumption. For higher-speed diesel engines (Standard exists since 1990).
- API CG-4 For high performance diesel engines and fuel sulphur < 0.5%. Required for engines complying with German 1994 emission regulations. Since September 1998, for 1998 emission regulations for trucks in the USA. Surpasses API CG-4.
- API CH-4 Since March 2003, for engine emissions according to TIER II (US exhaust emission regulations), Surpasses CH-4.
- API CI-4 Introduced in 2004, identifies oils formulated to provide a higher level of protection against soot-related viscosity increase and viscosity loss due to shear in diesel engines.
- API CI-4+ Introduced in 2006 for high speed, four stroke engines emissions designed to meet 2007 model year on-highway exhaust emission standards. Surpasses CI-4 PLUS

Gear oils

A variety of different gear oils which fulfil a range of specifications are available. The table here shows what lubricant types are implied by the most important gear oil specifications:

API Classifications

The American Petroleum Institute (API) has created a gear oil classification system which allows categorization according to application conditions. API gear oil classifications are used internationally.

API Gear Oil Classifications	Operating Conditions	Type of Gearbox
API GL-1	Low bearing loads and sliding speeds. No longer valid.	Axle drives with bevel gears, worm drives, manual gearboxes.
API GL-2	Higher loads than API GL-1. No longer valid.	Worm drives which can be operated with API GL-1 oils.
API GL-3	Moderately high loads and speeds. No longer valid.	Axle drives with bevel gears, manual gearboxes.
API GL-4	High speed/low torque or low speed/high torque. No longer valid.	Manual gearboxes, hypoid axles, axle with slightly off-set pinions.
API GL-5	High speed/shock loads or high speed/ low torque or low speed/high torque. Currently valid.	Hypoid axles, manual gearboxes, axles with considerably off-set pinions.
MT-1	Spur gear, dog-engaged gear boxes	Non-synchromesh manual gear boxes

WHY FUCHS?

LUBRICANTS.

FUCHS focuses on lubricants and offers solutions for all issues and fields of application in the world of lubricants.

TECHNOLOGY.

FUCHS claims technological leadership in strategically important fields of application and is acknowledged as the number one technology partner by its customers. Not only does FUCHS focus on its own lubricants, it also takes a holistic approach, paying close attention to the processes in place at its customers.

PEOPLE.

FUCHS’ dedicated corporate culture, coupled with its loyal and motivated workforce, is the strategic key to its success. Our employees form the basis for this success.



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YOUR NEAREST DISTRIBUTOR IS: