Volvo Construction Equipment is different. Our machines are designed, built and supported in a different way. That difference comes from an engineering heritage of over 175 years. A heritage of thinking first about the people who actually use the machines. About how to help them be safer, more comfortable, more productive. About the environment we all share. The result of that thinking is a growing range of machines and a global support network dedicated to helping you do more. People around the world are proud to use Volvo.

Not all products are available in all markets. Under our policy of continuous improvement, we reserve the right to change specifications and design without prior notice. The illustrations do not necessarily show the standard version of the machine.
We have designed and built your Volvo machine, and that is why we know what it needs.

Lubricants specially developed for Volvo Construction Equipment machines:

- Improve your Volvo components’ performance
- Extend the service life of your machine
- Reduce fuel and oil consumption

Volvo Construction Equipment lubricants contain many protective additives that reduce wear, bind water, carbon, sludge and metal particles and neutralize acids. Through lower fuel consumption, carbon dioxide emissions are reduced as well, which helps to protect the environment.

**Always use Genuine Volvo Lubricants**

Genuine Volvo Lubricants meet the high standards required so that your Volvo maintains its performance, productivity and low owning and operating costs during its entire service life.
NOTE! THE AVAILABLE PRODUCT RANGE MAY VARY BETWEEN DIFFERENT MARKETS!
DIESEL ENGINE OIL

Volvo engine oils are developed for our diesel engines. The choice of engine oil is important to the whole machine’s profitability, both in the short term and in the long run. Depending on the machine and its application, you can choose the right Volvo oil which always gives you valuable qualities, such as:

- Lower oil and fuel consumption due to low friction
- Outstanding cleaning characteristics
- Minimal engine wear and longer service life
- Excellent protection against corrosion and rust

ULTRA DIESEL ENGINE OIL VDS-4

Volvo Ultra Diesel Engine Oil VDS-4 is an extra high performance engine oil formulated from high quality base oils and a superior additive technology to deliver outstanding performance in both new and older engines.

- Fully backwards compatible - can be used in older engines if the sulphur content in the fuel is max 5000 ppm (0.5%)
- Developed and specifically designed for the Volvo engine and engines with Exhaust Gas Recirculation (EGR) and after treatment systems such as Selective Catalytic Reduction (SCR) and Diesel Particulate Filters (DPF)
- Effective oxidation resistance, even under severe conditions
- Excellent protection against piston deposits and oil consumption
- Exceeds API CJ-4 with tighter pass limits in the Mack T-12, Cummins ISM and Cummins ISB engine tests plus the Volvo D12D engine test
<table>
<thead>
<tr>
<th>Part No.</th>
<th>Quantity</th>
<th>Viscosity</th>
<th>Quality level</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOE 17271279</td>
<td>5 litres</td>
<td>SAE 15W-40</td>
<td>VDS-3, API CI-4, ACEA E7</td>
</tr>
<tr>
<td>VOE 17232682</td>
<td>20 litres</td>
<td>SAE 15W-40</td>
<td>VDS-3, API CI-4, ACEA E7</td>
</tr>
<tr>
<td>VOE 17265252</td>
<td>205 litres</td>
<td>SAE 15W-40</td>
<td>VDS-3, API CI-4, ACEA E7</td>
</tr>
<tr>
<td>VOE 17265224</td>
<td>1000 litres</td>
<td>SAE 15W-40</td>
<td>VDS-3, API CI-4, ACEA E7</td>
</tr>
</tbody>
</table>

ULTRA DIESEL ENGINE OIL VDS-3

This oil is developed specifically for Volvo diesel engines. It optimizes engine performance as well as oil and fuel consumption.

► Good lubricating characteristics and keeps the engine clean, which extends the engine’s service life

► Allows longer change intervals in combination with Volvo long-life filter

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Quantity</th>
<th>Viscosity</th>
<th>Quality level</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOE 17271279</td>
<td>5 litres</td>
<td>SAE 15W-40</td>
<td>VDS-3, API CI-4, ACEA E7</td>
</tr>
<tr>
<td>VOE 15067197</td>
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<td>VDS-3, API CI-4, ACEA E7</td>
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<tr>
<td>VOE 17249823</td>
<td>205 litres</td>
<td>SAE 15W-40</td>
<td>VDS-3, API CI-4, ACEA E7</td>
</tr>
<tr>
<td>VOE 17249832</td>
<td>1000 litres</td>
<td>SAE 15W-40</td>
<td>VDS-3, API CI-4, ACEA E7</td>
</tr>
</tbody>
</table>
REQUIREMENTS FOR EXTENDED ENGINE OIL DRAIN INTERVAL

VDS-4, Requirements for 500 hours oil drain interval

Volvo DXXH engines (TIER 4i/Stage IIIb):
D stands for Diesel, XX for Volume (Engine size) and H for Engine Series

➤ Mandatory oil grade: VDS-4
➤ Genuine Volvo Filter: For D9-D16 engines, Long life Part No. VOE 21707133 and Bypass Part No. VOE 21707132. For D4-D8 engines, Part No. VOE 3831236.
➤ Fuel sulphur content: Max 15ppm

Volvo DXXF Engines and general engines:
D stands for Diesel, XX for Volume (Engine size) and F for Engine Series

➤ Genuine Volvo Filter: For D9-D16 engines, Long life Part No. VOE 21707133 and Bypass Part No. VOE 21707132. For D4-D8 engines, Part No. VOE 3831236.
➤ Fuel sulphur content: < 3000ppm.
   Higher sulphur content shortens service interval.
VDS-3, Requirements for 500 hours oil drain interval

Volvo DXXF engines

D stands for Diesel, XX for Volume (Engine size) and F for Engine Series

➤ Genuine Volvo Filter: For D9-D16 engines,
  Long life Part No. VOE 21707133 and
  Bypass Part No. VOE 21707132.
  For D4-D8 engines, Part No. VOE 3831236.

➤ Fuel sulphur content: < 3000ppm.
  Higher sulphur content shortens service interval.

Note:

➤ For Volvo DXXH engines (TIER 4i/Stage IIIB):
  Oil grade VDS-4 is mandatory.

➤ Maximum 12 months between oil change.

➤ Oil filter must be changed at every oil change.
HYDRAULIC OIL

The right viscosity is essential when choosing hydraulic oil. But hydraulic oils with the same viscosity may differ a lot in quality. When you choose Volvo hydraulic oils you don’t have to take a chance. Volvo oils can handle high temperatures as well as severe cold. With Volvo hydraulic oils you don’t have to worry about oxidation stability or lubricating capacity.

SUPER HYDRAULIC OIL

This is a high-quality oil that meets the highest requirements for filtration and protects against rust and corrosion.

- High viscosity index, enabling trouble-free operation in a wide range of temperatures
- Excellent anti-wear characteristics and improved lubricating capacity with minimal foaming
- Good oxidation stability gives the oil maximal service life

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Quantity</th>
<th>Viscosity</th>
<th>Quality level</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOE 15058186</td>
<td>20 litres</td>
<td>ISO VG 68</td>
<td>ISO 6743/4, Category HV</td>
</tr>
<tr>
<td>VOE 17249815</td>
<td>205 litres</td>
<td>ISO VG 68</td>
<td>ISO 6743/4, Category HV</td>
</tr>
<tr>
<td>VOE 17249817</td>
<td>1000 litres</td>
<td>ISO VG 68</td>
<td>ISO 6743/4, Category HV</td>
</tr>
</tbody>
</table>
AXLE AND TRANSMISSION OIL

Just like engine oils, axle and transmission oils are made up of high-quality base oils, mixed with an optimal proportion of special additives. Different transmissions and spur gears have different requirements of the oil’s characteristics – our oils are developed for Volvo’s machines, for maximal operating reliability and service life.

AUTOMATIC TRANSMISSION FLUID AT 102

Volvo Automatic Transmission Fluid 97342 AT 102 is a high performance automatic transmission fluid. It provides the excellent oxidation and friction stability, anti-wear properties, and low temperature fluidity desired in automatic transmissions.

- Provides great fuel economy thanks to the selected base oils and additive technology in this oil
- Correct frictional requirements to give smooth transmission operation over wide operational conditions
- Low temperature pumpability and circulation ensuring cold start performance
- The AT 102 can be used at low temperatures. Pour point for AT 102 is below -50°C
- Longer service intervals, up to 4000 hours

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Quantity</th>
<th>Quality level</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOE 15142868</td>
<td>20 litres</td>
<td>Transmission Oil 97342</td>
</tr>
<tr>
<td>VOE 17249857</td>
<td>208 litres</td>
<td>Transmission Oil 97342</td>
</tr>
<tr>
<td>VOE 17249860</td>
<td>1000 litres</td>
<td>Transmission Oil 97342</td>
</tr>
</tbody>
</table>
**SUPER WET BRAKE TRANSAXLE OIL**

WB102 is a unique lubricant specially developed and verified for Volvo machines with wet brakes. It is based on premium group III base fluids and carefully selected additives and exceeds all industry standard specifications for wet brake oil.

- Optimal equipment performance over a wide range of temperatures
- Reduced fuel consumption
- Increased machine productivity and faster driving speed
- Excellent gear protection
- Longer service intervals
- Prevents noise in the brakes

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Quantity</th>
<th>Quality level</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOE 15067098</td>
<td>20 litres</td>
<td>Transmission Oil 97341, ALLISON C-4</td>
</tr>
<tr>
<td>VOE 17249851</td>
<td>205 litres</td>
<td>Transmission Oil 97341, ALLISON C-4</td>
</tr>
<tr>
<td>VOE 17249855</td>
<td>1000 litres</td>
<td>Transmission Oil 97341, ALLISON C-4</td>
</tr>
</tbody>
</table>
### WET BRAKE TRANSAXLE OIL

This oil is developed for certain transmissions and dropboxes as well as axles with wet brakes.

- Wet Brake Transaxle Oil has very good lubricating characteristics, even in tough conditions
- Good protection against foaming, corrosion and oxidation
- Good protection against wear and noise from the brakes

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Quantity</th>
<th>Quality level</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOE 15058290</td>
<td>20 litres</td>
<td>WB102</td>
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<tr>
<td>VOE 15058299</td>
<td>208 litres</td>
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<tr>
<td>VOE 17249877</td>
<td>1000 litres</td>
<td>WB102</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Quantity</th>
<th>Quality level</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOE 15067644</td>
<td>20 litres</td>
<td>WB101, API GL-4, ALLISON C-4</td>
</tr>
<tr>
<td>VOE 17249880</td>
<td>205 litres</td>
<td>WB101, API GL-4, ALLISON C-4</td>
</tr>
<tr>
<td>VOE 17249882</td>
<td>1000 litres</td>
<td>WB101, API GL-4, ALLISON C-4</td>
</tr>
</tbody>
</table>
SUPER TRANSMISSION OIL

Axle and Gear Oil

An oil for axles and dropboxes based on a mixture of high-quality base oils and carefully selected additives.

➤ Very good protection against wear, even during high working loads and heavy impacts

➤ Long-term stable viscosity, even at high temperatures

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Quantity</th>
<th>Viscosity</th>
<th>Quality level</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOE 15067515</td>
<td>20 litres</td>
<td>SAE 80W-90</td>
<td>API GL-5</td>
</tr>
<tr>
<td>VOE 17249869</td>
<td>205 litres</td>
<td>SAE 80W-90</td>
<td>API GL-5</td>
</tr>
<tr>
<td>VOE 15067629</td>
<td>20 litres</td>
<td>SAE 85W-140</td>
<td>API GL-5</td>
</tr>
<tr>
<td>VOE 17249871</td>
<td>205 litres</td>
<td>SAE 85W-140</td>
<td>API GL-5</td>
</tr>
</tbody>
</table>
Super Gear Oil

Volvo Super Gear Oil GO102 is specifically developed for Volvo machines and tested according to specifications from Volvo Construction Equipment, thus meet the highest requirements in terms of quality, safety and environmental care.

- Optimal equipment performance over a wide range of temperature
- Allows faster travelling speeds under tough conditions
- Superior shear stability
- Extended components lifetime thanks to excellent oxidation stability and cleaning properties
- Excellent wear and gear protection, even at extreme loads
- Reduced fuel consumption thanks to low friction
- Longer Service Intervals - you can double the service intervals for your Articulated Hauler, from 2000 to 4000 hours

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Quantity</th>
<th>Viscosity</th>
<th>Quality level</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOE 15057965</td>
<td>20 litres</td>
<td>SAE 75W-80</td>
<td>GO102</td>
</tr>
<tr>
<td>VOE 17249863</td>
<td>208 litres</td>
<td>SAE 75W-80</td>
<td>GO102</td>
</tr>
<tr>
<td>VOE 17249866</td>
<td>1000 litres</td>
<td>SAE 75W-80</td>
<td>GO102</td>
</tr>
</tbody>
</table>
GREASE

Volvo grease is designed to lubricate and protect machine parts exposed to friction such as wheel bearings, pins and bushings, which operate in very tough conditions. Volvo grease protects at high temperatures and under heavy loading and offers high resistance against water washout. Thanks to its good adherence properties it gives effective protection against corrosion.

LITHIUM GREASE EP2

A quality grease appropriate for machines operating in dusty and humid environments.

- Developed to give extra protection against wear and rust
- Suitable for use in central lubrication systems

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Quantity</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOE 15067640</td>
<td>20 kg</td>
<td>NLGI-2 EP Lithium</td>
</tr>
</tbody>
</table>
SUGGESTIONS AND ADVICE

Change oil and filter on time
For every hour you operate, the amount of impurities in the oil rises, thus increasing engine wear at the end of the oil’s usable life. Seized piston rings are often caused by carelessness with oil changes. It is economical to change the oil filter at the same time as you change oil. A new oil’s characteristics deteriorate quickly when an old oil filter is used. When the oil filters become clogged and the oil circulation is obstructed, there is risk for oil stop and engine failure.

Maintain cleanliness during all filling of oil
When filling oil, it is very important to maintain cleanliness in your work area, especially around the filler hole. Be very thorough because carelessness is one of the major sources of impurities that cause wear, erosion, corrosion and malfunctions.

Biodegradable hydraulic oil
This oil is used as an alternative to mineral hydraulic oil for machines that operate in sensitive environments, for example, a gravel pit in a water conservation area. Both the fully synthetic base oil and the additives have been selected for minimal environmental impact in case of spillage. Contact your Volvo dealer to find out what requirements must be met to be able to replace the normal hydraulic oil with biodegradable hydraulic oil.

Check the oil level
An oil level that is too low is a frequent cause of component failures. Therefore, check the oil level in the engine, transmission and hydraulic system at regular intervals.

Waste oil
Waste oils should be handled as environmentally hazardous waste. They may contain substances that cause cancer and impurities such as lead, nickel and copper. Ensure that waste oil is disposed of responsibly and according to the local regulations.

Direct contact with oil and grease
In case of daily contact, the skin may dry out and crack. Therefore, avoid direct skin contact with oil and grease. Oil smoke and oil mist can irritate respiratory organs and damage the nervous system and lungs.

In case of contact with eyes, rinse immediately with plenty of water.

Volvo Oil Analysis
Continuous monitoring of the oil’s status with the help of Volvo Oil Analysis gives better control of your machine, which leads to reduced downtime, reduced time for troubleshooting/diagnostics and lower operating costs.

Contact your Volvo dealer for more information.
EXPLANATIONS

ACEA
European automotive manufacturers organisation. Specifies oils for passenger cars, light duty and heavy duty vehicles.

ACEA E2, E3, E4, E5, E9
Meet requirements for heavy duty diesel engines. ACEA E9 meets the most recent requirements.

API

API CI-4, CH-4, CG-4, CF, CF-4
Specifies oil quality standard for Diesel Engine Oil. This standard indicates requirements regarding carbon deposits on pistons, bearing corrosion, camshaft wear, oil consumption as well as max. viscosity increase of the oil.

API CF-4
Lubricants that only meet the API CF-4 specifications are NOT suitable for Volvo engines. By using such oil there is a risk of engine failure.

API CI-4
Oil intended for use in high speed four-stroke diesel engines manufactured to meet 2004 truck emission demands from the USA. Oils that meet the API CI-4 standard are adapted for engines with EGR system. API CJ-4 oils exceed the performance criteria of previous API categories such as CH-4 and CG-4 and can effectively lubricate engines calling for those API Service Categories.

API CJ-4
API CJ-4 is the latest standard from American Petroleum Institute. For high-speed four-stroke cycle diesel engines designed to meet USA 2010 model year on-highway and Tier 4 nonroad exhaust emission standards. Optimum protection is provided for control of catalyst poisoning, particulate filter blocking, engine wear, piston deposits, low- and high-temperature stability, soot handling properties, oxidative thickening, foaming, and viscosity loss due to shear. API CJ-4 oils exceed the performance criteria of API CI-4 with CI-4 PLUS, CI-4, CH-4, CG-4 and CF-4 and can effectively lubricate engines calling for those API Service Categories.

API GL-5
Refers to oils for hypoid (bevel) gears under high load.

AT 101
Volvo Transmission Oil 97341 AT 101 meets Volvo’s requirements for Automatic Transmission Fluids (ATF) in order to guarantee the right performance in Volvo automatic transmissions. It has higher demands for shear and oxidation stability compared to other common ATF.

AT 102
Volvo Automatic Transmission Fluid AT 102 is an extra high performance automatic transmission fluid exceeding the latest industry specifications and meeting Volvo 97342 standard. It will give you protection against degradation at high operating temperature, improved anti-wear protection as well as extended drain oil intervals.

DPF Diesel Particulate Filters
A diesel particulate filter (or DPF) is a device designed to remove diesel particulate matter or soot from the exhaust gas of a diesel engine.

EGR Exhaust Gas Recirculation
Exhaust gas recirculation (EGR) is a nitrogen oxide (NOx) emissions reduction technique used in petrol/gasoline and diesel engines.
**EP grease**
Grease containing additives to prevent metals surfaces from seizing under extreme pressure (EP) conditions.

**GO102**
Volvo Super Gear Oil 75W-80 GO102 is specially designed for Volvo Construction Equipment, meeting Volvo 97317 standard. GO102 will give you reduced fuel consumption, extended components lifetime as well as extended drain oil intervals.

**ISO VG**
Viscosity classification of industrial oils. A class designation does not entail a quality evaluation, it only informs about the viscosity at the reference temperature which is 40°C. VG stands for Viscosity Grade.

**ISO VG 46**
Viscosity’s nominal value = 46 cSt at 40 °C

**ISO VG 68**
Viscosity’s nominal value = 68 cSt at 40 °C

**NLGI number**
A scale for comparing consistency (hardness) range of greases. Number are in order of increasing consistency with NLGI 0 being semifluid and NLGI 6 solid.

**SAE**
Society of Automotive Engineers. Classification of lubricants depending on their viscosity. There are two systems for SAE-numbers, one for engine oils and one for transmission oils. The lower the SAE-no. in respective SAE-system, the thinner the oil.

**SCR Selective Catalytic Reduction**
Selective Catalytic Reduction (SCR) is one of the most cost-effective and fuel-efficient diesel engine emissions control technologies available.

**VDS-4**
Volvo Drain Specifications. VDS-4 is the first VDS specification that is not based on field test. It was decided to abandon field tests since these are time consuming (2-3 years) and do often provide inconclusive results. VDS-4 is now built on API CJ-4 but with additional requirements adapted to suit the particular needs of Volvo Powertrain engines. VDS-4 oils are particularly intended for EGR engines equipped with diesel particulate filters and/or SCR systems but can also be used in all other engines. The full requirements are described in Volvo Corporate Standard 417-0001.

**VDS-3**
Volvo Drain Specifications. Volvo’s high requirements for protection against cylinder polishing, ring wear, camshaft/tappet wear, high oil consumption, etc. VDS-3 gives lower piston deposits and makes it possible to extend oil change intervals.

**WB101**
Specification specially developed for Volvo Construction Equipment with wet brake axles.

**WB102**
The WB102 is a semi-synthetic product which is a further development of WB101 with even better shear stability and oxidation resistance.