

**LUBRICANT GUIDE FOR DIESEL ENGINES****SMØREOLJEKART FOR DIESELMOTORER****Fuel category to Total Base Number (TBN)****Brennstoffkategori i forhold til totalt basetall (TBN)**

Gas-oil / Marine diesel	0 - 0.5% Sulphur	~ TBN 7-12
Marine diesel / Intermediate fuel	0.5 - 1.0% Sulphur	~ TBN 10-16
Intermediate Fuel	1.0 - 2.0% Sulphur	~ TBN 15-20
Intermediate Fuel	2.0 - 3% Sulphur	~ TBN 30
Intermediate Fuel	3.0 - - % Sulphur	~ TBN 40

Oil company	Oil product	TBN	VISC.
AGIP	AGIP CLADIUM 120 SAE 40	12	SAE 40
	AGIP CLADIUM 300 SAE 40	30	SAE 40
BP	ENERGOL DS 3-154	15	SAE 40
	ENERGOL IC-HFX204	20	SAE 40
	ENERGOL IC-HFX304	30	SAE 40
	ENERGOL IC-HFX404	40	SAE 40
CASTROL	CASTROL MPX	9	SAE 40
	CASTROL MLC	12	SAE 40
	CASTROL MXD 154	15,5	SAE 40
	CASTROL TLX 204	20	SAE 40
	CASTROL TLX 304	30	SAE 40
	CASTROL TLX 404	40	SAE 40
CENTURY	CENTLUBE SUPERB	10,6	SAE 40
	CENTIMAR DX304	30	SAE 40
CEPSA	TRONCOIL 6000	13	SAE 40
	TRONCOIL 3000	30	SAE 40
	TRONCOIL 4000	40	SAE 40
CHEVRON	CHEVRON DELO 1000 MARINE OIL 40	12	SAE 40
	CHEVRON DELO 2000 MARINE OIL 40	20	SAE 40
	CHEVRON DELO 3000 MARINE OIL 40	30	SAE 40
	CHEVRON DELO 3400 MARINE OIL 40	40	SAE 40
ELF	DISOLA MT40	11	SAE 40
	DISOLA M4015	15	SAE 40
	AURELIA 4020	20	SAE 40
	AURELIA 4030	30	SAE 40
	AURELIA XT4040	40	SAE 40
ENGEN	GENMARINE EO 4015	15	SAE 40
	GENMARINE EO 4030	30	SAE 40
ESSO / EXXON	EXXMAR CM + 40	11	SAE 40
	EXXMAR 12 TP 40	12	SAE 40
	EXXMAR 24 TP 40	24	SAE 40
	EXXMAR 30 TP 40	30	SAE 40
	EXXMAR 40 TP 40 and EXXMAR TP PLUS	40	SAE 40
FINA	CAPRANO S 412	12	SAE 40
	STELLANO S 420	20	SAE 40
	STELLANO S 430	30	SAE 40
	STELLANO S 440	40	SAE 40

Oil company	Oil product	TBN	VISC.
IRVING OIL	MARINE MLC 40	12	SAE 40
	MARINE MXD 154	15	SAE 40
	MARINE 220 MXD	22	SAE 40
	MARINE MXD 304	30	SAE 40
	MARINE MXD 404	40	SAE 40
MOBIL	DELVAC 1340	9	SAE 40
	MOBILGARD 412	15	SAE 40
	MOBILGARD 430	30	SAE 40
	MOBILGARD 440	40	SAE 40
PERTAMINA	MEDRIPAL 412 12 SAE 40 1	12	SAE 40
REPSOL - YPF	NEPTUNO NT 1500	15	SAE 40
	NEPTUNO NT 2000	20	SAE 40
	NEPTUNO NT 3000	30	SAE 40
	NEPTUNO NT 4000	40	SAE 40
SHELL	GADINIA 40	11	SAE 40
	ARGINA S40	20	SAE 40
	ARGINA T40	30	SAE 40
	ARGINA X40	40	SAE 40
STATOIL	STATOIL DieselWay DD 40	10	SAE 40
	STATOIL MarWay 1040	10	SAE 40
	STATOIL MarWay 1540	15	SAE 40
	STATOIL MarWay 3040	30	SAE 40
TEXACO	Ursa Marine 40	11	SAE 40
	TARO 16XD 40	16	SAE 40
	TARO 20DP 40	20	SAE 40
	TARO 30DP 40	30	SAE 40
	TARO 40XL 40	40	SAE 40

This list is given as a guide only, and Rolls-Royce cannot accept responsibility for problems that may be caused by the lubricant.

Engines earlier specified with SAE 30, may still use same viscosity.

If using brands equivalent to those listed here, the relevant manufacturer should be consulted about affinity between the products.

It is strongly recommended to send oil samples to your lubr.oil supplier at regular intervals for analysis, as this gives valuable information about the performance both of the oil itself and the engine.

All inquiries should be addressed to Rolls-Royce.

### Selection of Lubricant

Selection of a suitable lubricant for engines may at times prove complicated and difficult, as a number of different factors have to be taken into

Listen er gitt som veiledende informasjon, og Rolls-Royce tar ikke ansvar for vanskeligheter som er forårsaket av smøreolje.

Motorer som tidligere er spesifisert med SAE 30, kan fortsatt bruke samme viskositet.

Ved bruk av smøreoljer som tilsvarende de ovenfornevnte, vennligst kontakt den aktuelle produsent for sammenligning av produktene.

Det anbefales sterkt å sende inn smøreoljeprover til oljeleverandøren for analyse med jevne mellomrom, da dette gir verdifulle opplysninger både om oljens og motorens driftstilstand.

Eventuelle spørsmål angående smøreoljekartet adresseres til Rolls-Royce.

### Valg av smøreolje

Valg av riktige smøreoljer til motorer kan være et komplisert og omfattende område, fordi det er mange faktorer som det må tas hensyn til. En kan



consideration. This implies that only a general guidance can be given by the engine manufacturer, to which lubricating oil is suitable for their engines.

In engines burning fuels of various quality, the combustion characteristics of the fuel to a great extent dictates the necessary properties of the lubricant.

Different fuel qualities contain a varying degree of elements that will form acid compounds in the combustion process.

An important function of the lubricating oil is to neutralize these acids in order to minimise corrosive wear. This is done by adding alkalies to the lubricant. The "Total Base Number" (TBN) of an oil is a measure of the alkalinity or basicity of the oil and is expressed in milligrams of potassium hydroxide per gramme of oil (mg KOH/g).

The "Total Base Number" will for different engines fall at a varying rate, determined by the consumption of alkaline additives combined with refilling of new oil.

Our list of recommended/approved lubricants shows the approximate TBN value recommended to meet different fuel qualities.



**It is inadvisable to use a lubricating oil of higher additive content (TBN) than required, as this may cause deposits in the combustion chamber (piston top/cylinder head).**

**The oil companies are also marketing lubricants of considerably higher TBN value than listed by us. These may come into consideration where extremely poor fuels demand it.**

**As the oil companies may change their product specifications without previous notice, and without changing the products name, the information given in the lubricant guide is valid from the stated date and until further notice.**

**This list is given as a guide, and Rolls-Royce takes no responsibility for difficulties that may be caused by the lubricating oil.**

**Lubricant guide for valve gear lubr. oil system (engine type L and K)**

derfor bare gi generelle retningslinjer for hvilken smøreolje som bør velges.

Et av hovedhensynene ved valg av smøreolje er hvilken type brennstoff den aktuelle motoren bruker.

Forskjellige typer brennstoff inneholder i større eller mindre grad elementer som danner syre-forbindelser under forbrenningen. En av smøreoljens oppgaver er å nøytralisere disse syrene, og den er derfor tilsatt alkalier. Oljens innhold av slike alkalier angis ved det såkalte basetallet (TBN). Basetallet angir mengden av alle baser i 1 gram smøreolje uttrykt i mg KOH (ekvivalent mengde kalilut).

Basetallet reduseres etter hvert som tilsetningene blir oppbrukt. Dette, kombinert med varierende grad av etterfylling, fører til at basetallet faller med ulike hastighet for forskjellige motorer. Smørekartet antyder i hvilket område basetallet for ny olje bør ligge for de forskjellige brennstoffkvaliteter.



**En bør ikke velge smøreolje med høyere basetall enn nødvendig, da dette kan føre til ødeleggende avleiringer i forbrenningsrommet (Sylinderdeksel / stempeltopp).**

**Oljeselskapene markedsfører også smøreoljer med vesentlig høyere basetall enn angitt i smørekartet. Disse kan komme til anvendelse i tilfeller der ekstremt dårlige brennstoff vil kreve det.**

**Da oljeselskapene fra tid til annen endrer spesifikasjonsdata på sine produkter uten varsel og uten at produktbetegnelsen endres, er smørekartet gyldig fra den påførte dato og inntil videre.**

**Smørekartetets innhold er veiledende, og Rolls-Royce tar ikke ansvaret for vanskeligheter forårsaket av smøreoljen.**

**Smøreoljekart for vippearmsmøreoljesystem (Motortype L og K)**



The same lubr. oil is used as for diesel engine.  
Please see above.

Det brukes samme smørelje som for dieselmotor.  
Se tabell ovenfor.

### Lubricant guide for governor and nozzle cooling and turning gear

Oils for Turbocharger, see separate page.

### Smørelje for regulator, dysekjøling og tørnemaskin

Oljer for turbolader, se egen side.

Oil company	Oils for governor *)	Oils for nozzle cooling **)	Turning gear ***)
AGIP			BLASIA 320
BHARAT PETROLIUM	Turbol 68 Actuma Ultra Oil 30	Hydrol 32	
BP	Turbine / Engine oil	Baratran HV 15, HV 22, HV32	ENERGOL GR-XP 320
CASTROL	Engine oil or Perfecto T68	Perfecto T32 Hyspin AWH15 Hyspin AWH32	
CHEVRON	Engine oil or GST Oil 68	Mechanism LPS 15 Mechanism LPS 32	
ELF	Turbine / engine oil	Misola H22 Misols H32	
ESSO / EXXON	Tro - Mart 68	Univis N 15, 32 Nuto H 15, H 32	SPARTAN EP 320
FINA	Turbine / engine oil	Hydran 22 - 32L	
INDIAN OIL	Turbine / engine oil	Servo Spin 22 Servo system 32	
IP			MELLANA OIL 320
MOBIL	Turbine / engine	Rarus AHC 924	MOBILGEAR 632
PERTO CANADA	Turbine / engine oil	Harmony AW 22 Harmony HVI 15 Harmony HVI 22	
REPSOL	Turbine / engine oil	Aries 22 / 32 Telex E 22 / 32	
SHELL	Turbine / engine oil	Thermia oil B Tellus 32 Turbo T32	OMALA 320
STATOIL	Statoil TurbWay 68, 77	Statoil HydraWay HV (A) 15, 32 Statoil HydraWay HM (A) 15, 32	
TEXACO	Turbine/Engine oil	Rando oil HD Z32 Rando oil HD32	
CEPSA	Turbine oil	Compresores ES68	

\*) For Hydraulic Governor with separate oil system.

\*) For hydraulisk regulator med eget oljesystem.

\*\*) On engine type B32:40 the nozzle cooling oil system is a part of the engine main lubr. oil system.

\*\*) For motortype B32:40 er dysekjølingen tilsluttet motorens hovedsmøreljesystem.

\*\*\*) Oils for turning gear are relevant for BV and B32:40, only.

\*\*\*) Oljer for tørnemaskin gjelder bare BV og B32:40.

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FINA	CAPRANO S 412	12	SAE 40
	STELLANO S 420	20	SAE 40
	STELLANO S 430	30	SAE 40
	STELLANO S 440	40	SAE 40

**Lubricant guide for turbocharger**

NOTE: On engine type B32:40L the turbocharger is lubricated by oil from the main lubr. oil system.

LIST 1	
Mineral oils (oil basis narrow cut) for oil change intervals of max 1000 h	
Oil company	Oil Product
AGIP	OTE 68
BP	Energol THB 77 Energol THB 68 Energol HLP 68 Energol SHF 68
CASTROL	Perfecto T 68 Hyspin AWS 68 Hyspin AWH 68
CHEVRON	Turbine oil AST 68 Mechanism LPS 68
ELF	Turbinet T 68 SA 68 Visga 68 Hydraelf DS 68
ESSO / EXXON	Tro-Mar T 68 Teresso 68 Nuto H 68
FINA	Turbine oil medium (68) / Bakola 68 Turbine oil heavy (80) Hydran LZ 68
INDIAN OIL CORP.	Servoprime 68 Servoprime 76 Servopress 68 Servosystem HLP 68
MOBIL	DTE Oil heavy medium DTE 16M Raris 427 *)
PEPSOL	Aries 68 Telex E 68
SHELL	Turbo oil T 68 Turbo oil T78 Tellus oil 68
STATOIL	Statoil TurbWay 68 Statoil HydraWay HMA 68
CEPSA	HD Turbinas 68 Hidraulico HV 68 Compresores ES 100
TEXACO	Regal oil R & O 68 Rando oil HD 68
TOTAL	Preslia 68

**Smøreljekart for turbolader**

Merk: For motortype B32:40L er smøringen av turbolader tilsluttet motorens hovedsmøreljesystem.

LIST 2	
Mineral oils and synthetic *) oils for change intervals of max 3000 h	
Oil company	Oil Product
BP	Energol Rc 68
CEPSA	Compresores ES 68
REPSOL	Merak VDL 68
VALVOLINE	Compressor oil 62

\*) No US - version

LIST 3	
Synthetic lubricants for change intervals of max 5000 h	
Oil company	Oil Product
BP	Energol TC-S 68
CASTROL	Aircol SN 68
CEPSA	Compresores ARS 68
ELF	Barelf CH 68
ESSO / EXXON	Synesstic 68
MOBIL	Rarus SHC 1026
NYCO	Nycolube 3060
SHELL	Corena AS 68 Madrela AS 68
Q8	Q8 Shumann 68