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Subject : Lubricating Oil List for UEC Engines	Application	UEC Diesel Engine
	Type	All UEC
	No.	USI-10004E Rev.7
General		

Regarding to the lubricating oil for UEC diesel engines, it is describing on the group 051,052 and 053 of the engine instruction manual. In these descriptions, the lubricating oil list on the page 2 of group 051 item 01 is always followed to apply the latest products. To cope with the SOx regulation in ECA(Emission Control Area) started since 2015 and the coming global SOx regulation validating after 2020, corresponding new cylinder lubricating oils are being introduced by oil suppliers. Therefore, it rises the necessity of revising the list frequently, it is informed the latest recommended lubricating oil list to the users in this service information.

Please contact to Japan Engine Corporation(J-ENG) with the outline of characters of the lubricants in case of planning to use the lubricants which are not mentioned in the recommended lubricants list on the next page.

System oil is used for the lubrication of the sliding parts like bearings, gears, cams and rollers, etc. and also for the cooling of piston heads, the driving of exhaust valves, the lubrication of turbochargers and fuel oil injection pumps, the sifting of cam shaft (astern operation) and the functions of electronically controlled engines. In among these functions, it is confirmed that the higher BN (base number, alkalinity value) is the better effect for keeping of the detergency on cooling surface.

Cylinder oil is sold the different BN which is corresponded to the sulfur content of used fuel oil. In the UE diesel engine, it is recommended to apply the suitable cylinder oil against the sulfur content of used fuel oil as following table.

Sulfur content of fuel oil	Recommended cylinder oil BN (mgKOH/g)	
	Category II (UEC-LSE, LSH or later)	Category I (UEC-LA, LS, LSII or older models)
Sulfur \leq 0.1%	BN70	(BN40~ ^{※2})BN70
0.1% \leq Sulfur \leq 0.5%		
0.5% \leq Sulfur \leq 1.5%	BN70(~100 ^{※1})	BN70 (~100 ^{※1})
1.5% \leq Sulfur	BN100	BN70~100

※1) When excessive residues on piston top lands are observed, adjust the cylinder oil feed rate and/or select cylinder BN.

※2) In case no trouble with BN40 cylinder oil, the BN40 cylinder oil can be used as it is.

The action priority indicated at the upper right corner is settled by Japan Engine Corporation originally and it does not decide the action of users.

Further, it is not guaranteed the every action carried out according to this service information.

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Plan record	Newly issued 13th Dec. 2017 <i>T.F., N.N., T.Y.</i> MSI-1159 Rev.11 (1st Feb.2017) /No.0305 Rev.3 (7th Mar.2017) Rev.3 26th Jul.2019 <i>T.Y., T.N., K.I.</i> Rev.4 30th Sep.2019 <i>T.Y., T.N., K.I.</i> Rev.5 1st Nov.2019 <i>T.Y., T.N., K.I.</i> Rev.6 13th Dec.2019 <i>T.Y., T.N., K.I.</i> Rev.7 30th Jun. 2020	Approved	<i>K.Yoshida</i>	SERVICE ENGINEERING DEPARTMENT
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		Designed	<i>T.Nagashima</i>	DATE OF REVISED :30th Jun. 2020

BN40 cylinder oil(s), verified the improved detergency / dispersancy and anti- scuffing ability, will be evaluated by J-ENG for its application.

And, it cannot be recommended to adjust the cylinder lubricating oil BN by mixing different BN oils because there is a risk that the lubricating performance is deteriorated. When it cannot but use the mixed different BN oils, please contact the oil company and make sure that there is no problem as for the compatibility, neutralization performance and lubricating performance. And please judge whether to use the cylinder oil based on the precisely observation result for the piston ring / cylinder liner condition and components of combustion chamber under the mixing cylinder oil use.

It is recommended the governor oil (hydraulic type) with the grade of VG100 in order to obtain the stable starting characteristics.

And, the gear oil for the turning gear is used majorly the grade of VG220.

It is also referred the following service information for the necessities;

USI-10003: Notice for Using Low Sulfur / Low Viscosity Fuel Oil

USI-10011: Notice for Using Low Sulfur Fuel Oil (less than 1.5%)

USI-10012: Notice for Mixing Use of Different Brand Cylinder Oils

USI-10022: Recommendations about use of 2020 SOx regulation compliant fuels

Recommended Lubricants List for UEC Diesel Engines

As of Jun. 2020

	Cylinder lubricating oil		
	BN100~80	BN70~50	BN40
ADNOC	Voyager Marine Oil 5100	Voyager Marine Oil 570	—
Aegean	Alfacylo 100HS	Alfacylo 570HS	—
BP (Castrol)	Cyltech 80AW Cyltech 100	Cyltech 70	Cyltech 40SX Cyltech 40
Chevron (Texaco, Caltex)	Taro Special HT 100 Taro Special HT 100X Taro Ultra 100	Taro Special HT 70 Taro Special HT 70X Taro Special HT 55 Taro Ultra 70	Taro Special HT LS 40 Taro Ultra 40
Cosmo	Marine 5100	Marine 5070	Marine 5040
CPC	CPC Marilube Oil CO-1000 SP	CPC Marilube Oil CO-700	—
ExxonMobil	Mobilgard 5100	Mobilgard 570 Mobilgard 560VS	Mobilgard 540
Gazprom Neft	Gazpromneft Ocean CCL 100 HSF	Gazpromneft Ocean CCL 70	Gazpromneft Ocean CCL 40 LSF
Gulf Oil Marine	Gulfsea Cylcare 50100	Gulfsea Cylcare DCA 5070H	—
Idemitsu	Daphne Seamaster A-50NH	Daphne Seamaster A-50N	Daphne Seamaster A-50LS
Indian Oil	—	Servo Marine 7050	—
JXTG Nippon Oil & Energy	Marine C1005	Marine C705	Marine C405 Marine C405S Marine C405Z
Kygnus	—	—	—
Lukoil	Navigo 100 MCL	Navigo 70 MCL AW	Navigo MCL Extra
Pertamina	—	Medripal 570 Salyx 570	—
Shell	Alexia S5 Alexia S6 Alexia 100	Alexia 50 Alexia S4 Alexia 70	Alexia 40
Sinopec	Sinopec MCO 5080S Sinopec MCO 50100	Sinopec MCO 5070S	Sinopec MCO 5040
TOTAL	Talusia Universal 100 Talusia Optima	Talusia HR 70 Talusia Universal	Talusia LS40

NOTE

Please contact to Japan Engine Corporation In case of planning to use the lubricants which are not mentioned in this table. It is recommended to obtain the advice by the cylinder oil manufacturer if the lower sulphur fuel oil is used for a long period.

Recommended Lubricants List for UEC Diesel Engines

As of Jun. 2020

	System lubricating oil Turbocharger lubricating oil Hydraulic oil	Governor Oil (only for Camshaft controlled engine)	
		(Hydraulic type)	(Digital type)
ADNOC	—	—	—
Aegean	—	—	—
BP (Castrol)	CDX 30	Perfecto T 100 Hyspin AWH-M 100	Spheerol SX 2
Chevron (Texaco, Caltex)	Veritas 800 Marine 30	Regal R&O 68	Regal EP 100
Cosmo	Marine 3005 Marine 3010	Turbine Super 100	Grease Dynamax EP No.2 Grease Ginga No.2
CPC	CPC Marilube Oil AC-30 SP	—	—
ExxonMobil	Mobilgard 300 Mobilgard 300C	Mobil DTE Oil Heavy	Mobilith SHC 460 Mobilgrease XHP 222
Gazprom Neft	Gazpromneft Ocean CSO 7	—	—
Gulf Oil Marine	Gulfsea Superbear 3006	Gulfsea Hydraulic HVI Plus 100 Gulfsea Turbine Oil 100	Gulfsea Hyperbar CS2
Idemitsu	Daphne Marine Oil SY 30	Daphne Turbine Oil 100	Daphne Eponex Grease No.2
Indian Oil	Servo Marine 0530	—	—
JXTG Nippon Oil & Energy	Marine S30	FBK Turbine 100 RIX Turbine 100	Multinoc Grease 2
Kygnus	Marine SS30	Turbine Oil S-100	—
Lukoil	Navigo 6 CO	—	—
Pertamina	Medripal 307	—	—
Shell	Melina S 30 Melina 30	Tellus S2V 100	Alvania Grease S2 Gadus S2 V100 2 Gadus S2 V220 2
Sinopec	Sinopec SO 3005 Sinopec SO 3006 Sinopec SO 3008	—	—
TOTAL	Atlanta Marine D 3005 Disola M 3010	Preslia 100	XM 220

NOTE

Please contact to Japan Engine Corporation In case of planning to use the lubricants which are not mentioned in this table.

It is desirable to use the system oil with higher BN in order to keep on the normal condition of the under crown (cooling side).

It is able to obtain the more stable starting characteristics with VG100 grade of governor oil.

(Hydraulic governor)

Recommended Lubricants List for UEC Diesel Engines

As of Jun. 2020

	Turning Gear		
	Gear Oil	Compound	Grease
ADNOC	—	—	—
Aegean	—	—	—
BP (Castrol)	Alpha SP 150 Alpha SP 220 Alphasyn HG 150 Alphasyn HG 220	Spheerol SX 2	Spheerol SX 2
Chevron (Texaco, Caltex)	Meropa 150 Meropa 220	Texclad 2	Multifak EP 2
Cosmo	Gear SE 150 Gear SE 220 Eco Gear EPS 150 Eco Gear EPS 220	Gear Compound No.2	Grease Dynamax EP No.2 Grease Ginga No.2
CPC	—	—	—
ExxonMobil	Mobil SHC 630 Mobil SHC 629 Mobilgear 600 XP 150 Mobilgear 600 XP 220	Mobiltac 375 NC	Mobilith SHC 460 Mobilgrease XHP 222
Gazprom Neft	—	—	—
Gulf Oil Marine	Gulfsea Gear Oil 150 Gulfsea Gear Oil 220	Gulfsea Hyperbar Super CS	Gulfsea Hyperbar CS2
Idemitsu	Daphne Super Gear Oil 150 Daphne Super Gear Oil 220	Daphne Open Gear Oil No.2	Daphne Eponex Grease No.2
Indian Oil	—	—	—
JXTG Nippon Oil & Energy	Bonnoc M 150 Bonnoc M 220	Cranoc Compound 2 OG Grease 500	Epnoc Grease AP(N)2
Kygnus	Sunep Oil 220	Gear Compound No.2	MP Grease No.2
Lukoil	—	—	—
Pertamina	—	—	—
Shell	Omala S2 G 150 Omala S2 G 220	Gadus S2 OG 40 Malleus Fluid RL (*)	Gadus S2 V100 2 Gadus S2 V220 2 Alvania EP Grease 2 (*) Alvania Grease S2 (*)
Sinopec	—	—	—
TOTAL	Epona Z 150 Epona Z 220	Ceran AD Plus	Ceran WR 2 Multis EP 2

NOTE

Please contact to Japan Engine Corporation In case of planning to use the lubricants which are not mentioned in this table.

It is major use of VG220 grade of gear oil for the turning gear.

(*): The lubricants with asterisk are supplied in Japanese domestic only.