

3. SPECIFICATION OF FUEL, COOLANT AND LUBRICANTS

1) NEW MACHINE

New machine used and filled with following lubricants.

Description	Specification
Engine oil	SAE 15W-40(API CH-4)
Hydraulic oil	ISO VG46(ISO VG32, ISO VG68 based on the ambient temperature)
Transmission oil	SAE 10W-30/15W-40
Axle oil	SAE 85W-90 with LS-ADDITIVE(API GL-5)
Grease	Lithium base grease NLGI No. 2
Fuel	ASTM D975-No. 2
Coolant	Mixture of 50% ethylene glycol base antifreeze and 50% water

- SAE : Society of Automotive Engineers
- API : American Petroleum Institute
- ISO : International Organization for Standardization
- NLGI : National Lubricating Grease Institute
- ASTM : American Society of Testing and Material

2) RECOMMENDED LUBRICANTS

Use only oils listed below or equivalent.

Do not mix different brand oil.

Service point	Kind of fluid	Capacity (U.S. gal)	Ambient temperature °C(°F)						
			-20 (-4)	-10 (14)	0 (32)	10 (50)	20 (68)	30 (86)	40 (104)
Engine oil pan	Engine oil	16.4(4.3)	SAE 30						
			SAE 10W						
			SAE 10W-30						
			SAE 15W-40						
Torque converter Transmission	Oil	25(6.6)	SAE 10W-30						
			SAE 15W-40						
Axle	Gear oil	Front : 21.2(5.6) Rear : 21.2(5.6)	SAE 80W-90LSD/API GL-5						
Hydraulic tank	Hydraulic oil	Tank: 105(27.7) System: 165(44)	ISO VG 32						
			ISO VG 46						
			ISO VG 68						
Fuel tank	Diesel fuel	228(60.2)	ASTM D975 NO. 1						
			ASTM D975 NO. 2						
Fitting (Grease nipple)	Grease	As required	NLGI NO. 1						
			NLGI NO. 2						
Radiator	Mixture of antifreeze and water 50 : 50	35(9.2)	Ethylene glycol base permanent type						