

### 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(4.2)	SAE 30						
			SAE 10W						
			SAE 10W-30						
							SAE 15W-40		
Transmission	Oil	32(8.5)	SAE 10W-30						
							SAE 15W-40		
Axle	Gear oil	Front : 45(11.9) Rear : 40(10.6)	SAE 80W-90LSD/API GL-5						
Hydraulic tank	Hydraulic oil	Tank: 150(39.7) System: 260(69)	ISO VG 32						
						ISO VG 46			
						ISO VG 68			
Fuel tank	Diesel fuel	330(87.2)	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	40(10.6)	Ethylene glycol base permanent type						