

### 3. 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 VG 46(SAE 10W)
Swing reduction gear oil	SAE 85W-140(API GL-5)
Transmission oil	SAE 10W-30(API CF-4)
Axle and differential oil	SAE 85W-90 with LS-ADDITIVE
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 OILS

Use only oils listed below or equivalent.  
Do not mix different brand oil.

Service point	Kind of fluid	Capacity l (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	14.2(3.8)				SAE 30				
				SAE 10W						
Transmission case		3.2(0.85)	SAE 10W-30							
			SAE 15W-40							
Swing drive	Gear oil	5.0(1.3)	SAE 85W-140							
	Grease	1.2(0.3)	NLGI NO.1							
NLGI NO.2										
Front axle	Gear oil	Center : 12 × 2(3.2 × 2)	SAE 85W-90							
Rear axle		Hub : 2 × 4(0.5 × 4)								
Hydraulic tank	Hydraulic oil	Tank: 180(47.6) System: 270(71.3)	ISO VG 32							
			ISO VG 46							
			ISO VG 68							
Fuel tank	Diesel fuel	320(84.5)	ASTM D975 NO.1							
			ASTM D975 NO.2							
Fitting (Grease nipple)	Grease	As required	NLGI NO.1							
			NLGI NO.2							
Radiator (Reservoir tank)	Mixture of antifreeze and water 50 : 50	35(9.2)	Ethylene glycol base permanent type							