

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	18.5(4.9)				SAE 30			
				SAE 10W					
Transmission case		3.0(0.8)	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 : 10.5(2.8) Hub : 2.5×2(0.7×2)	SAE 85W-90						
Rear axle		Center : 15.1(4.0) Hub : 2.5×2(0.7×2)							
Hydraulic tank	Hydraulic oil	Tank: 160(42.3) System: 270(71.3)	ISO VG 32						
			ISO VG 46						
			ISO VG 68						
Fuel tank	Diesel fuel	260(68.7)	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	30(7.9)	Ethylene glycol base permanent type						

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