

### 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
Transmission oil		SAE 15W-40
Axle oil	~#0293 (VOLVO)	SAE 80W-90LS(API GL-5) for wet type brake & limited slip differential
	#0294~ (ZF)	*Refer to below list
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
  - UTTO : Universal Tractor Transmission Oil
- \* Recommended oil list
  - BP TERRAC SUPER TRANSMISSION 10W-30
  - CASTROL AGRI TRANS PLUS 10W-30
  - MOBILFLUID 426
  - SHELL DONAX TD 10W-30
  - TOTAL DYNATRANS MPV

## 2) RECOMMENDED LUBRICANTS

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(4.8)	SAE 30						
			SAE 10W						
			SAE 10W-30						
			SAE 15W-40						
Transmission	Engine oil	32(8.5)	SAE 10W-30						
			SAE 15W-40						
VOLVO axle (-#0293)	Gear oil	Front : 45(11.9) Rear : 40(10.6)	SAE 80W-90LS/API GL-5						
ZF axle (#0294-)	UTTO	Front : 38(10.0) Rear : 31(8.2)	*Refer to below list						
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	39(10.3)	Ethylene glycol base permanent type						

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