



### 7.3 Consumables

Application	Fluid/lubricant	Specification	Season/ Temperature	Capacities <sup>1</sup>
Engine	Diesel fuel <sup>2, 3</sup>	EN 590 (EU) <sup>4</sup>	Year-round <sup>5</sup>	44 liters (11.6 gal)
		ASTM D975 grade 1D S15 ASTM D975 grade 2D S15 (USA) <sup>6</sup>		
		BS 2869 class A1 BS 2869 class A2 (GB) <sup>7</sup> GB252 (China) <sup>8</sup>		
	Coolant <sup>9</sup>	Distilled water and anti-freeze ASTM D6210	Year-round	5 liters (1.3 gal) <sup>10</sup>
	Engine oil <sup>11</sup>	API: CF/CF-4/CI-4 ACEA: E3/E4/5 JASO: DH-1	-20°C (-4 °F) to +40°C (+104 °F) <sup>12</sup>	6.7 liters (1.8 gal)
Hydraulic oil reservoir	Hydraulic oil	Eurolub HVLP 46 <sup>13</sup>	Year-round <sup>14</sup>	61.5 liters (16.3 gal)
	Biodegradable hydraulic oil <sup>15</sup>	Panolin HLP Synth 46 BP Biohyd SE-S 46		
Washer system	Cleaning agent	Glass cleaner and anti-freeze	Year-round	1 liters (0.3 gal)
Grease nipples	Grease	KPF 2 K-20 <sup>16</sup> ISO-L-X-BCEB 2 <sup>17</sup>	Year-round	As required
Battery terminals	Acid-proof grease <sup>18</sup>	FINA Marson L2	Year-round	As required
Control lever base	Adhesive fluid grease	Förch S401	Year-round	As required

1. The capacities indicated are approximate values; the oil level check alone is relevant for the correct oil level. Capacities indicated are no system fills
2. 3TNV88-BPWN: In regions without exhaust gas regulations the engine may be operated with a sulfur content of up to 0.5% (= 5000 ppm).
3. 3TNV88F-EPWN: In regions without exhaust gas regulations the engine may be operated with a sulfur content of up to 0.1% (= 1000 ppm).
4. Sulfur content up to 0.0010% (= 10 ppm)
5. Summer or winter diesel depending on outside temperatures
6. Sulfur content up to 0.0015% (= 15 ppm)
7. Sulfur content up to 0.001% (= 10 ppm)
8. GB 20891-2014: Sulfur content up to 0.035% (= 350 ppm)
9. Mixing ratio 50:50
10. System fills incl. hoses and diesel engine
11. Viscosity SAE 10W40 according to DIN 51511; For other temperatures – see chapter "Engine oil types" on page 7-19
12. Temperature guide values are dependent on the oil manufacturer
13. According to DIN 51524 section 3, ISO-VG 46
14. Depending on local conditions – see chapter "Hydraulic oil types" on page 7-18
15. Biodegradable hydraulic oil based on saturated synthetic esters with an iodine value of < 10, according to DIN 51524, section 3, HVLP, HEES
16. KPF 2 K-20 according to DIN 51502 lithium-saponified grease
17. ISO-L-X-BCEB 2 according to DIN ISO 6743-9, lithium-saponified grease
18. Standard acid-proof grease NGLI category 2

## Hydraulic oil types

Viscosity class	Ambient temperature			
	min. °C	min. °F	max. °C	max. °F
ISO VG32	-20	-4	30	86
ISO VG46	-5	23	40	104
ISO VG68	5	41	50	122

### Replacement intervals

Replace the hydraulic oil and hydraulic oil filter depending on the percentage of hammer operation.

Percentage of hammer work	Hydraulic oil	Hydraulic oil filter
20%	800 o/h	300 o/h
40%	400 o/h	
60%	300 o/h	100 o/h
Over 80%	200 o/h	

### Important information regarding operation with biodegradable hydraulic oil

- Use only the biodegradable oils that have been tested and released by Wacker Neuson.
- Add only biodegradable oil of the same type. In order to avoid misunderstandings, attach a clear label to the hydraulic oil filler neck providing clear information regarding the type of oil currently used. The joint use of two different biodegradable oils can affect the quality of one of the oil types. Therefore ensure that the remaining amount of biodegradable oil complies with the national and regional regulations as you replace it. Observe the manufacturer's indications.
- Do not add mineral oil – the content of mineral oil should not exceed 2 % of the system fill in order to avoid foaming problems and to ensure biological degradability.
- When running the vehicle with biodegradable oil, the same oil and filter replacement intervals are valid as for mineral oil.
- Always have the condensation water in the hydraulic oil reservoir drained by a Wacker Neuson service center before the cold season. The water content may not exceed 0.1 % by weight.
- The instructions in this Operator's Manual concerning environmental protection are also valid for the use of biodegradable oil.
- Subsequent change from mineral oil to biodegradable oil may only be performed by a Wacker Neuson service center.

### Engine oil types

Viscosity grade (SAE)	Ambient temperature			
	min. °C	min. °F	max. °C	max. °F
10W	-20	-4	10	50
20W	-10	14	10	50
10W30	-20	-4	30	86
15W40	-15	5	40	104
#20	0	32	20	68
#30	10	50	30	86
#40	20	68	40	104