



7.3 Fluids and lubricants

Fuel, lubricants and coolants ET65/EZ80

Application	Fluid/lubricant	Specification	Season/temperature	Capacities ¹
Engine	Diesel fuel ²	ASTM D975 grade 2D S15 (USA) ³	Year-round ⁴	85 liters (22.5 gal)
		EN 590 (EU) ⁵		
		BS 2869:2010 class A2 (GB) ⁶		
	Coolant	Distilled water and ASTM D6210	Year-round	10.5 l (2.8 gal) ⁷
Engine (Tier III)	Engine oil ⁸	API CH-4; ACEA E5; EMA-DHD-1	-15 °C (+5 °F) +45 °C (+113 °F)	8.9 liters (2.4 gal)
Engine (Tier IV)		API CJ-4; ACEA E9; ECF-3		8.6 liters (2.3 gal)
Hydraulic oil reservoir	Hydraulic oil	Eurolub HVLP 46 ⁹	Year-round ¹⁰	92 liters (24.3 gal)
	Biodegradable hydraulic oil ¹¹	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 zerks	Grease	KPF 2 K-20 ¹² ISO-L-X-BCEB 2 ¹³	Year-round	As required
Battery terminals	Acid-proof grease ¹⁴	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. In regions without exhaust gas regulations the Tier III engine may be operated with a sulfur content of up to 0.4 % (= 4000 ppm).
3. Sulfur content up to 0.0015 % (= 15 ppm)
4. Summer or winter diesel depending on outside temperatures
5. Sulfur content up to 0.0010 % (= 10 ppm)
6. Sulfur content up to 0.0010 % (= 10 ppm)
7. System fills incl. hoses and diesel engine
8. According to DIN 51511 (API CJ-4, ACEA E9, ECF-3) – see chapter "Engine oil types (ET65 Tier III/EZ80 Tier III)" on page 7-21
9. According to DIN 51524 section 3, ISO-VG 46
10. Depending on local conditions – see chapter "Hydraulic oil types" on page 7-19
11. Biodegradable hydraulic oil based on saturated synthetic esters with an iodine value of < 10, according to DIN 51524, section 3, HVLP, HEES
12. KPF 2 K-20 according to DIN 51502 lithium-saponified grease
13. ISO-L-X-BCEB 2 according to DIN ISO 6743-9, lithium-saponified grease
14. Standard acid-proof grease NGLI category 2


Fluids and lubricants ET90

Application	Fluid/lubricant	Specification	Season/temperature	Capacities ¹
Engine	Diesel fuel	EN 590 (EU) ²	Year-round ³	85 liters (22.5 gal)
		ASTM D975 grade 1D S15 (USA) ⁴		
		ASTM D975 grade 2D S15 (USA) ⁴		
	Coolant ⁵	Variant 1: De-stilled water and Eurolob D-48 Extra (blue) ⁶	Year-round	11 l (4 gal) ⁷
		Variant 2: De-stilled water and Fuchs Maintain Frico- fin -35 (green) ⁸		
Engine oil ⁹	API CJ-4; ACEA E9; ECF-3	-15 °C (+5 °F) +45 °C (+113 °F)	7.5 Liters (2 gal)	
Hydraulic oil reservoir	Hydraulic oil	Eurolob HVLP 46 ¹⁰	Year-round ¹¹	92 liters (24.3 gal)
	Biodegradable hydraulic oil ¹²	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 zerks	Grease	KPF 2 K-20 ¹³ ISO-L-X-BCEB 2 ¹⁴	Year-round	As required
Battery terminals	Acid-proof grease ¹⁵	FINA Marson L2	Year-round	As required
Control lever base	Adhesive fluid grease	Förch S401	Year-round	As required

- The capacities indicated are approximate values; the oil level check alone is relevant for the correct oil level.
Capacities indicated are no system fills
- Sulfur content up to 0.001 % (= 10 ppm)
- Summer or winter diesel depending on outside temperatures
- Sulfur content up to 0.0015 % (= 15 ppm)
- Factory filling. Coolant in accordance with Norm Deutz DQC CA-14. The coolants should not be mixed.
- Up to serial number WNCE1404LPAL00771
- System fills incl. hoses and diesel engine
- From serial no. WNCE1404HPAL00772
- According to DIN 51511 (API CJ-4, ACEA E9, ECF-3) – see chapter "Engine oil types (ET65 Tier III/EZ80 Tier III)" on page 7-21
- According to DIN 51524 section 3, ISO-VG 46
- Depending on local conditions – see chapter "Engine oil types (ET65 Tier III/EZ80 Tier III)" on page 7-21
- Biodegradable hydraulic oil based on saturated synthetic esters with an iodine value of < 10, according to DIN 51524, section 3, HVLP, HEES
- KPF 2 K-20 according to DIN 51502 lithium-saponified grease
- ISO-L-X-BCEB 2 according to DIN ISO 6743-9, lithium-saponified grease
- 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 (ET65 Tier III/EZ80 Tier III))**

Viscosity grade (SAE)	Ambient temperature			
	min. °C	min. °F	max. °C	max. °F
0W20	-40	-40	10	50
0W30	-40	-40	30	86
0W40	-40	-40	40	104
5W30	-30	-22	30	86
5W40	-30	-22	40	104
10W30	-20	-4	40	104
15W40	-10	14	50	122

Engine oil types ET65 (Tier IV)

Viscosity grade (SAE)	Ambient temperature			
	min. °C	min. °F	max. °C	max. °F
0W30	-30	-22	30	86
0W40	-30	-22	40	104
5W30	-25	-13	30	86
5W40	-25	-13	50	122
10W30	-18	0	40	104
10W40	-18	0	50	122
15W40	-10	14	50	122

Engine oil types ET90

Viscosity grade (SAE)	Ambient temperature			
	min. °C	min. °F	max. °C	max. °F
0W30	-35	-31	30	86
0W40	-35	-31	40	104
5W30	-30	-22	30	86
5W40	-30	-22	40	104
10W30	-15	5	30	86
10W40	-15	5	40	104
15W40	-15	5	40	104
20W50	-5	23	>40	>104