



7.3 Fluids and lubricants

Fluids and lubricants

Unit	Fluid/lubricant	Specification	Season/temperature	Capacities ¹
Diesel engine	Engine oil ²	SAE 10W-40	-15 °C (-5 °F) +45 °C (+104 °F)	About 3.5 l (0.9 gal)
Hydraulic oil reservoir	Hydraulic oil	HVLP 46 ³	Year-round ⁴	19.1 liters (5 gal)
	Biodegradable oil ⁵	Panolin HLP Synth 46 BP BIOHYD SE-S 46		
Grease	Roller and friction bearings	KPF 2 K-20 ⁶ ISO-L-X-BCEB 2 ⁷	Year-round	As required
	Open transmissions live ring: ball bearing			
	Live ring gears			
	Grease zerks			
Battery terminals	Acid-proof grease ⁸	FINA Marson L2	Year-round	As required
Fuel ⁹	Diesel fuel ¹⁰	ASTM D975-94: 1D, 2D (USA)	Summer or winter diesel depending on outside temperatures	24.2 l (6.4 gal)
		EN 590 (EU)		
		ISO 8217 DMX (International)		
		BS 2869-A1, A2 (GB)		
		JIS K2204 (Japan)		
		KSM-2610 (Korea)		
	GB252 (China)			
	Biodiesel	EN 14214		
ASTM D-6751				
Engine cooling system	Coolant	Distilled water and anti-freeze SF D12 Plus/ ASTM D4985 (red-dish) ¹¹	Year-round	3.5 l (0.9 gal)
		Distilled water and anti-freeze D40 Super/ ASTM 6210 (violet) ¹²		
Control lever base	Adhesive fluid grease	Förch S401	Year-round	As required
Washer system	Cleaning solution	Water and antifreeze	Year-round	1.22 l (0.3 gal)

- The capacities indicated are approximate values; the oil level check alone is relevant for the correct oil level.
Capacities indicated are no system fills
- According to DIN 51511 (API CF, CF-4, CI-4; ACEA E3, E4, E5; JASO DH-1)
- According to DIN 51524 section 3, ISO-VG 46.
- Depending on local conditions – see "Engine oil types" on page 7-11.
- 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.
- Sulfur content below 0.05 %, cetane number over 45
- In countries where level 3A/Tier IV exhaust emission regulations apply provisionally, use diesel fuels with a sulfur content of < 15 ppm.
- ET18: up to serial number WNCE1202PPAL01199; ET20: up to serial number WNCE1203HPAL00699; ET24: up to serial number WNCE1204TPAL00599
- ET18: from serial number WNCE1202HPAL01200; ET20: from serial number WNCE1203CPAL00700; ET24: from serial number WNCE1204LPAL00600



Engine oil types

Engine oil grade	Ambient temperature (°C)													
	°C	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40
API CF, CF-4, CI-4; ACEA E3, E4, E5; JASO DH-1	SAE 10W													
	SAE 20W													
	SAE 10W-40													
	SAE 15W-40													
	SAE 20													
	SAE 30													
	SAE 40													
	°F	-4	5	14	23	32	41	50	59	68	77	86	95	104

Additional oil change and filter replacement (hydraulic system)

NOTICE

An additional oil change and filter replacement can be required depending on how the machine is used. Failure to observe these replacement intervals can cause damage to hydraulic components.

- Observe the following intervals.

Application		Hydraulic oil	Hydraulic oil filter insert
Normal work		Every 1000 o/h	Replace the first time after 50 o/h, then every 500 o/h
Percentage of hammer work	20%	Every 800 o/h	300 o/h
	40%	Every 400 o/h	
	60%	Every 300 o/h	100 o/h
	Over 80 %	Every 200 o/h	

Hydraulic oil types

Hydraulics oil grade	Ambient temperature (°C)														
	°C	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	50
HVLP 46 ¹	ISO VG32														
	ISO VG46														
	ISO VG68														
	°F	-4	5	14	23	32	41	50	59	68	77	86	95	104	122

1. According to DIN 51524 section 3, ISO-VG 46.



Important information regarding operation with biodegradable oil

- Use only the biodegradable oils that have been tested and approved by Wacker Neuson. Contact a Wacker Neuson dealer for the use of other products that have not been recommended. In addition, ask the oil supplier for a written declaration of guarantee. This guarantee is applicable to damage occurring on the hydraulic components that can be proved to be due to the hydraulic oil.
- Use only biodegradable oil of the same type for adding oil. In order to avoid misunderstandings, a label providing clear information is located on the hydraulic oil reservoir (next to the filler inlet) regarding the type of oil currently used. Replace missing labels.
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 initial hydraulic oil in the hydraulic system does not exceed 8 % when changing biodegradable oil (manufacturer indications).
- Do not add mineral oil – the content of mineral oil should not exceed 2 % by weight in order to avoid foaming problems and to ensure biological degradability.
- When running the machine 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.
- If additional hydraulic attachments are installed or operated, use the same type of biodegradable oil for these attachments to avoid mixtures in the hydraulic system.
- Subsequent change from mineral oil to biodegradable oil must be performed by a Wacker Neuson service center.