



7.3 Fluids and lubricants

Fluids and lubricants

Unit	Fluid/lubricant	Specification	Season/temper- ature	Capacities ¹
Diesel engine	Engine oil ²	SAE 10W-40	-15 °C (-5 °F) +45 °C (+104 °F)	About 3.5 I (0.9 gal)
Hydraulic oil reservoir	Hydraulic oil	HVLP 46 ³	9000	19.1 liters (5 gal)
	Biodegradable oil ⁵	Panolin HLP Synth 46	Year-round ⁴	
		BP BIOHYD SE-S 46		
Grease	Roller and friction bear- ings		Year-round	As required
	Open transmissions live ring: ball bearing	KPF 2 K-20 ⁶ ISO-L-X-BCEB 2 ⁷		
	Live ring gears	1		
	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 win- ter diesel depending on outside tempera-	24.2 l (6.4 gal)
		EN 590 (EU)		
		ISO 8217 DMX (International)		
		BS 2869-A1, A2 (GB)		
		JIS K2204 (Japan)		
		KSM-2610 (Korea)	tures	
		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 I (0.9 gal)
		Distilled water and anti- freeze D40 Super/ ASTM 6210 (violet) ¹²	i cai-iouliu	
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.

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

12. ET18: from serial number WNCE1202HPAL01200, ET20: from serial number WNCE1203CPAL00700, ET24: from serial number WNCE1204LPAL00600

7-10

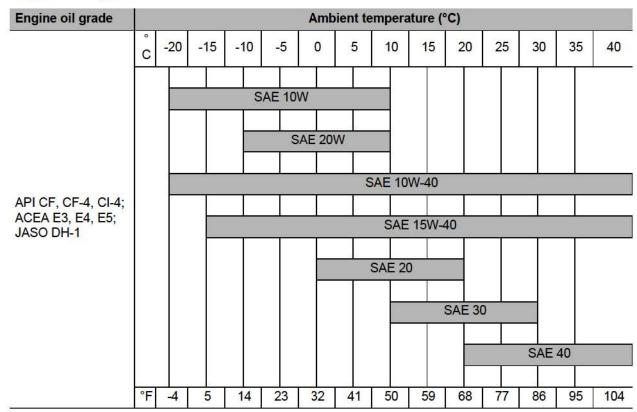
Depending on local conditions — see "Engine oil types" on page 7-11.

Biodegradable hydraulic oil based on saturated synthetic esters with an iodine value of < 10, according to DIN 51524, section 3, HVLP, HEES.

to Incountries 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



Engine oil types



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.

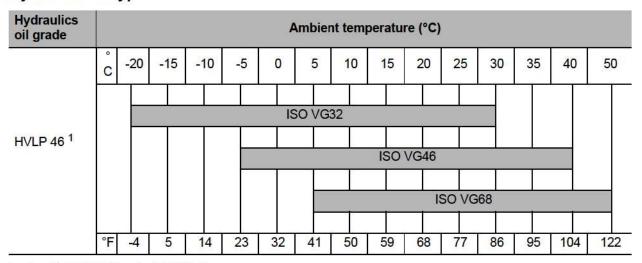
▶ Observe the following intervals.

Application Normal work		Hydraulic oil	Hydraulic oil filter insert	
		Every 1000 o/h	Replace the first time after 50 o/h, then every 500 o/h	
	20%	Every 800 o/h	300 o/h	
Percentage of	40%	Every 400 o/h		
hammer work	mer work 60% Every 30		100 -//-	
	Over 80 %	Every 200 o/h	100 o/h	





Hydraulic oil types



^{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.