2 Technical data

2.1 Chassis

Sturdy steel sheet chassis, rubber-mounted engine

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3 Maintenance

Information on special tools is available in our WIKI online portal.

3.1 Fluids and lubricants

Component/application	Fluid/lubricant	Specification	Season/temperature	Capacities [1] EZ53
Diesel engine	Engine oil Tier IV[2]	API CJ-4; ACEA E9; EMA-DHD-1	−20 °C – (−4 °F) +40 °C – (+104 °F)	10.6 l (2.8 gal)
	Engine oil Tier III	API CH-4; ACEA E5; EMA-DHD-1	−18 °C – (0 °F) +50 °C – (+122 °F)	8.9 l (2.4 gal)
Traveling drive	Gearbox oil[3]	SAE 80W-90[4]	Year-round	About 1.3 l each (0.34 gal)
Hydraulic oil reservoir	Hydraulic oil	HVLP 46[5]	Year-round[6]	73 l (19.3 gal)
		HV 46[7]		
	Biodegradable oil[8]	HLP Synth 46		
		BIOHYD SE-S 46		
Grease	Roller and friction bearings	KPF 2 K-20[9], ISO-L-X-BCEB 2[10]	Grease	As required
	Open transmissions live ring: ball bearing			
	Live ring gears			
	Grease zerks			
Grease zerks	Multipurpose grease	KPF 2 K-20[9]	Year-round	As required
Battery terminals	Acid-proof grease [11]	FINA Marson L2	Year-round	As required
Fuel tank	Diesel fuel[12]	ASTM D975-94: 1D, 2D (USA)	Summer or winter diesel depending on outside temperatures	83 l (21.9 gal)
		EN 590 : 96 (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 + antifreeze ASTM D6210 (violet)	Year-round	11.7 l (3.1 gal)
Air conditioning	Refrigerant	R134a[13]	Year-round	500 g (0.13 gal)
	Compressor oil	Sanden SP10	Year-round	116.5 cm³ (7.11 in³)
Washer system	Cleaning solution	Water + antifreeze	Year-round	2 l (0.53 gal)
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. According to DIN 51511 (API CF, CF-4, CI-4; ACEA E3, E4, E5; JASO DH-1).
3. Hypoid gearbox oil based on basic mineral oil (SAE80W-90 according to DIN 51502), API GL5.
4. According to DIN 51502 on a mineral oil basis. Do not mix gearbox oils.
5. According to DIN 51524 section 3, ISO-VG 46.
6. Depending on local conditions – *see Hydraulic oil types* on page 3-3.
7. According to ISO 6743/4
8. Biodegradable hydraulic oil based on saturated synthetic esters with an iodine value of < 10, according to DIN 51524, section 3, HVLP, HEES.
9. KPF 2 K-20 according to DIN 51502 multipurpose lithium grease.
10. ISO-L-X-BCEB 2 according to DIN ISO 6743-9.
11. Standard acid-proof grease NGLI category 2.
12. Sulfur content below 0.05 %, cetane number over 45
13. According to DIN 8960.

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Refueling

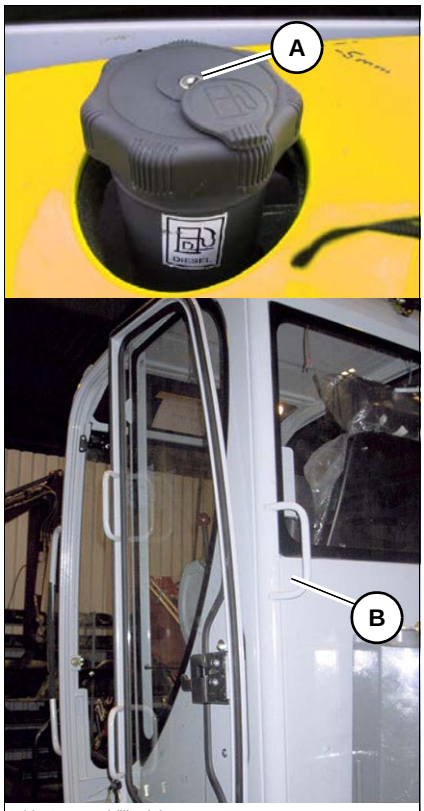

Abb. 2: Fuel filler inlet

The filler inlet for the fuel tank is located behind the cabin, on the left in travel direction.

☞ *Stop the machine on firm, level, and horizontal ground.*

☞ *Position the boom straight ahead at the center of the machine.*

☞ *Lower the boom.*

☞ *Stop the engine.*

☞ *Raise the control lever base.*

☞ *Remove the starting key.*

☞ *Use handle **B** to climb onto the track.*

☞ *Unlock tank lock **A** with the starting key.*

☞ *Open tank lock **A** carefully to release the pressure in the fuel tank.*

☞ *Refuel the machine.*

☞ *Lock tank lock **A** with the starting key.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Refueling with the fuel-filling pump– *see Vantage fuel-filling pump* on page 8-12

Stationary fuel pumps

General

Only refuel from stationary fuel pumps. Fuel from barrels or cans is usually dirty.

Even the smallest particles of dirt can cause

- Increased engine wear
- Malfunctions in the fuel system and
- Reduced effectiveness of the fuel filters

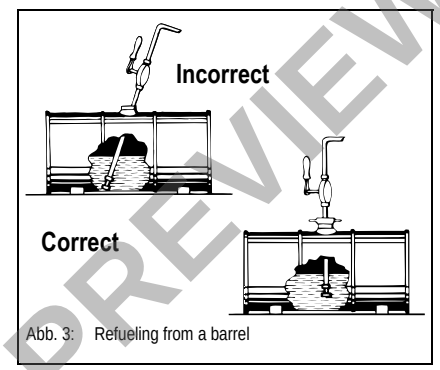

Abb. 3: Refueling from a barrel

Refueling from barrels

If refuelling from barrels is unavoidable, please note the following (see Fig. 2):

- Barrels must neither be rolled nor tilted before refueling
- Protect the suction pipe opening of the barrel pump with a fine-mesh screen
- Immerse it down to a max. 15 cm (6") above the bottom of the barrel
- Only fill the tank using refueling aids (funnels or filler pipes) with an integral microfilter
- Keep all refueling containers clean at all times

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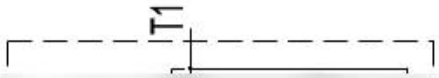
Main valve block diagram



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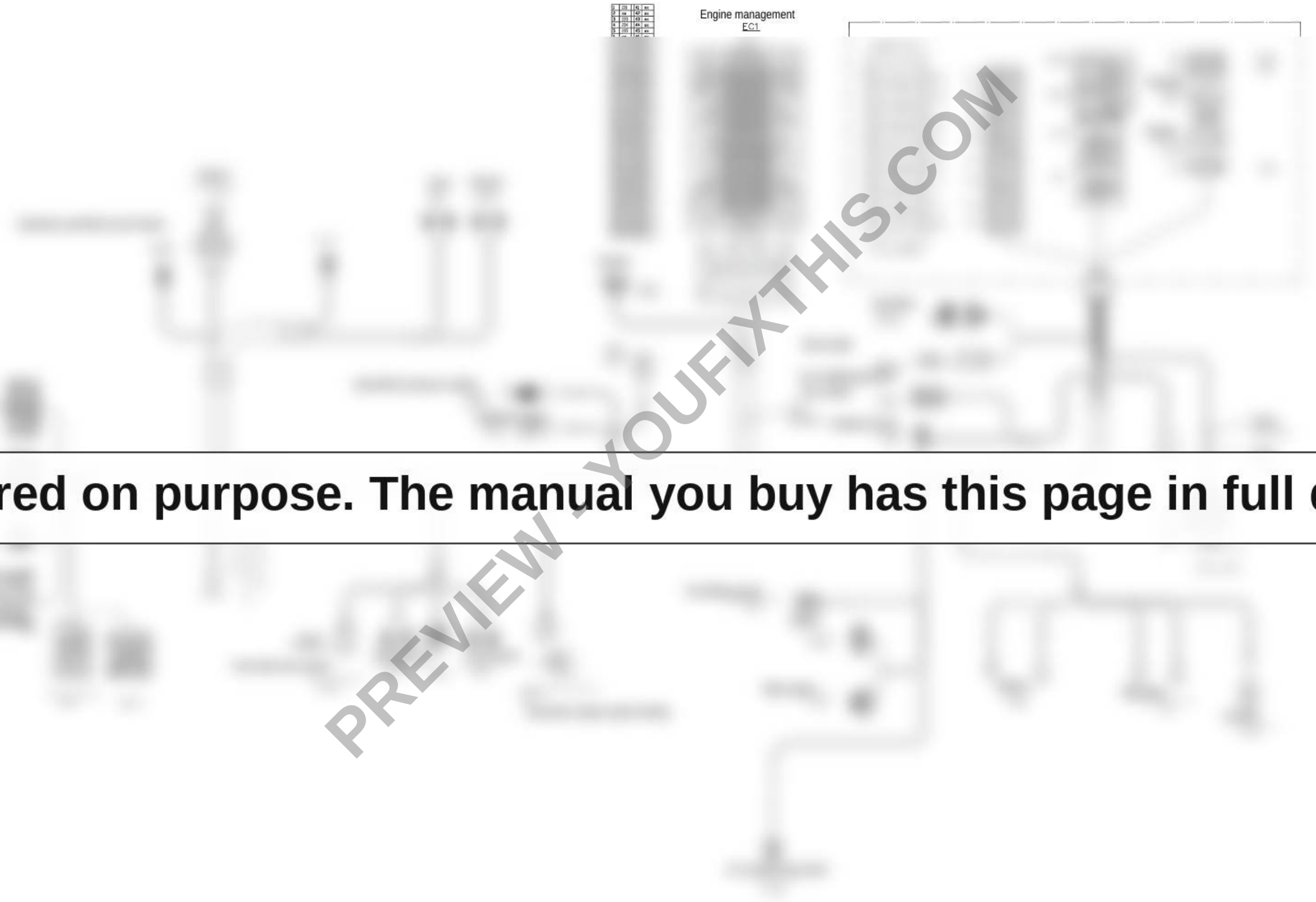
6.9 Engine wiring harness Tier IV (up to serial no. WNCE0510CPAL00181)



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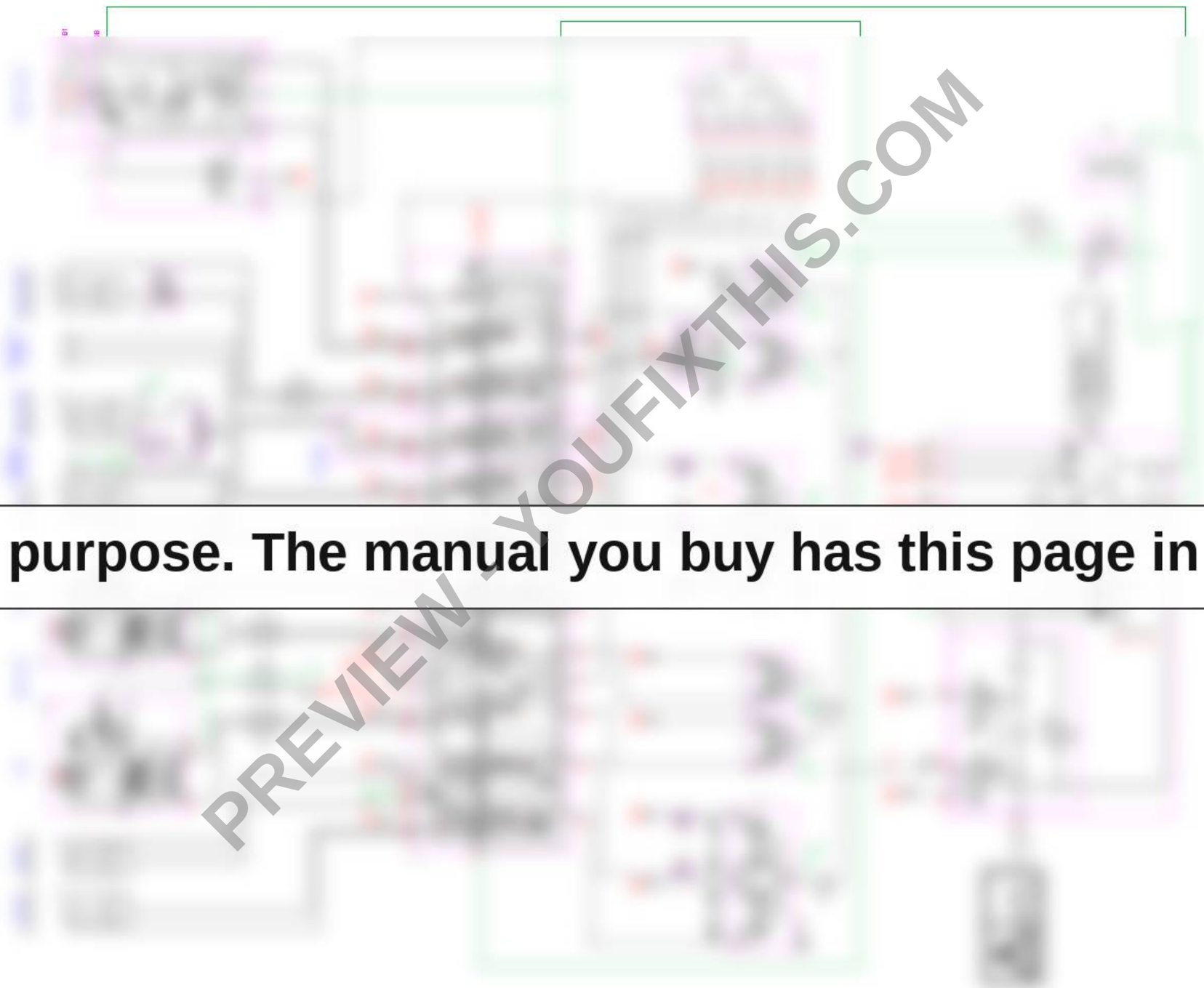
7.2 Hydraulics diagram



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1.2 Identification of warnings and dangers

Important indications regarding the safety of the personnel and the machine are identified in this service manual with the following terms and symbols:



Danger!

Failure to observe the instructions identified by this symbol can cause injury or death for the operator or other persons.

☞ *Measures for avoiding danger*



Caution!

Failure to observe the instructions identified by this symbol can cause damage to the machine.

☞ *Measures for avoiding danger for the machine*



Notice!

This symbol identifies instructions for a more efficient and economical use of the machine.



Environment!

Failure to observe the instructions identified by this symbol can cause damage to the environment. The environment is in danger if environmentally hazardous material (for example waste oil) is not subject to proper use or disposal.

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Replacing the alternator V-belt

Caution!

Overtensioning the V-belt can damage the V-belt, V-belt guide, alternator and water pump bearing.
Avoid contact of oil, grease, or similar substances with the V-belt.

- Checking V-belt tension

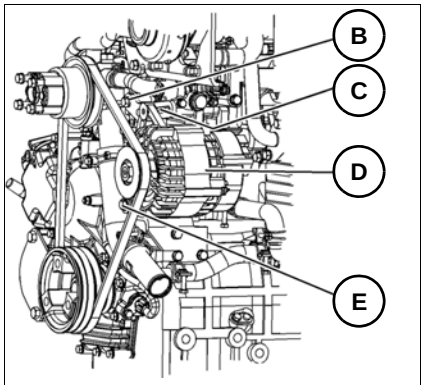

Abb. 28: Replacing the V-belt

☞ *Stop and park the machine. Stop the engine.*
☞ *Remove the starting key and carry it with you.*
☞ *Disconnect the battery or the battery master switch.*
☞ *Let the engine cool down.*
☞ *Open the engine cover.*
☞ *Remove fastening screws **B, E** and adjusting screw **C** with a suitable tool.*
☞ *Tilt alternator **D** to reduce V-belt tension.*
☞ Remove the old V-belt.
☞ *Check all pulleys visually that are driven by the V-belt.*
☞ Ensure that all pulleys are clean and not damaged.
☞ Ensure that the pulleys can turn freely.
☞ *Insert the new V-belt.*
☞ Check visually whether the V-belt is aligned correctly.
☞ *Tighten adjusting screw **C** and increase belt tension.*
☞ Press with your thumb to check the deflection of the V-belt between the crankshaft disk and the fan wheel position **C**. A new V-belt should have a deflection of 6 to 8 mm (0.2" – 0.3"), a used V-belt (after about 5 minutes running time) should have a deflection of 7 to 9 mm (0.3" – 0.35").
☞ *Tighten fastening screws **B** and **E** with a suitable tool.*
☞ *Retension the V-belt if necessary.*
☞ *Connect the battery or the battery master switch.*
☞ *Close the engine cover.*

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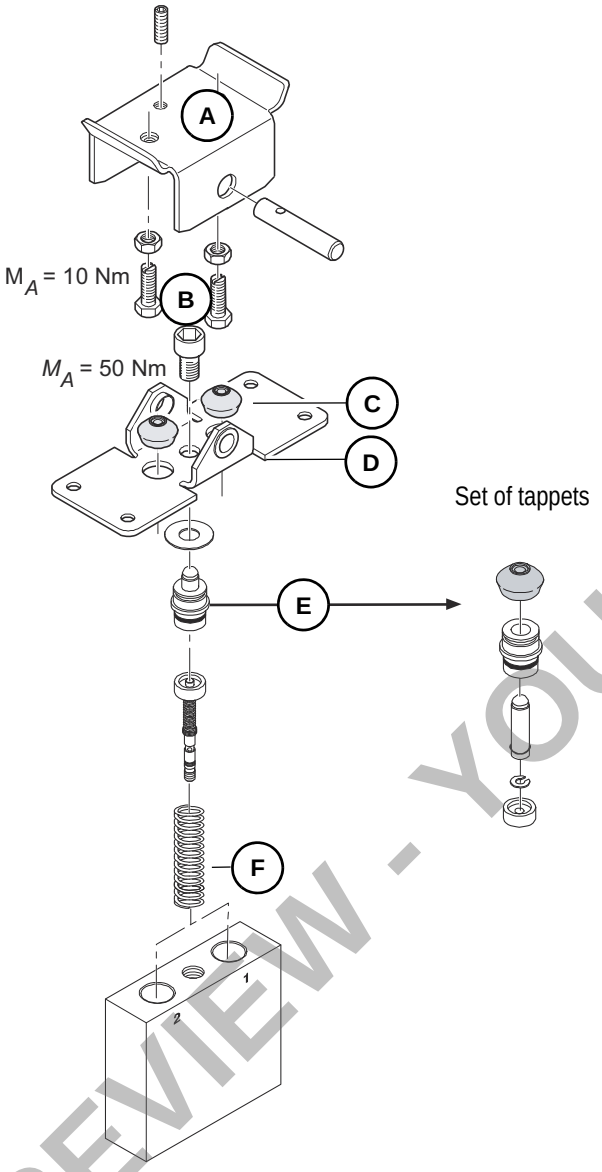
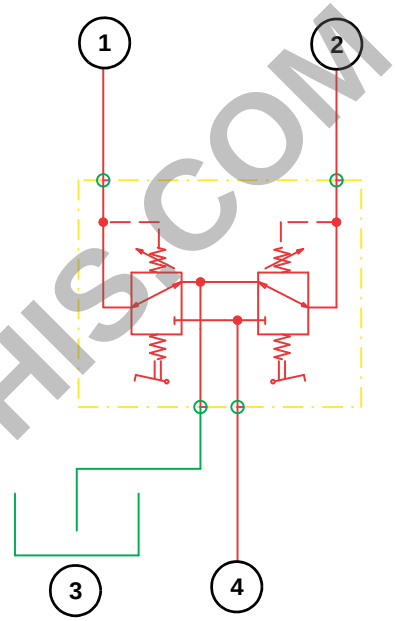
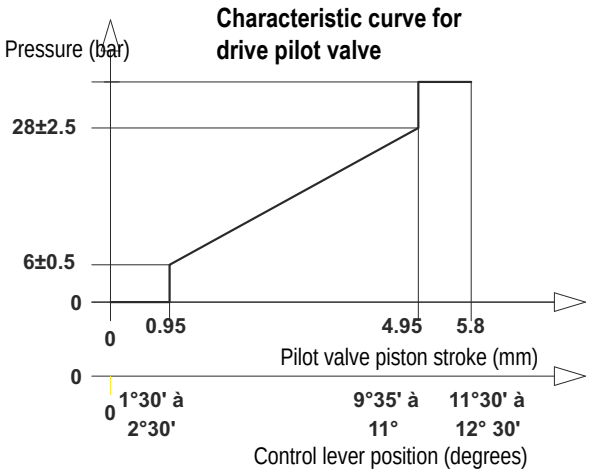
Pilot valve for auxiliary hydraulics

- Pilot control unit with pedals for remote control of directional valves
- Consists of a pedal and two pressure reducing valves







Pos.	Designation
A	Pedal
B	Pedal fixture
C	Protective caps
D	Mounting plate
E	Tappet
F	Spring

Pos.	Designation
1	Auxiliary hydraulics control/swiveling cylinder extension control
2	Auxiliary hydraulics control/swiveling cylinder retraction control
3	Reservoir line
4	Supply from pilot oil supply unit

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Elektroschaltplan EZ53

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Tier 3

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