Service Manual

Track excavator

2404



Machine model	**2404**
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WACKER NEUSON

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3 Maintenance

3.1 Fluids and lubricants

Component/application	Engine/machine fluid	Specification	Season/temperature	Capacities[1]
Diesel engine	Engine oil SAE 10W-40[7]	API: CF, CF-4, CI-4	-20 °C (-4 °F) +40 °C (104 °F)	About 3.4 l (0.90 gal)
		ACEA: E3, E4, E5		
		JASO: DH-1		
Travelling drive	Gearbox oil SAE 80W-90	API: GL-4, GL-5	Year-round	About 0.6 l each (0.16 gal)
Hydraulic oil tank	Hydraulic oil	HVLP46[3]	Year-round[4]	21 l (5.5 gal)
		HV 46[5]		
	Biodegradable oil[6]	---		

Roller and friction bearings	Grease	KPF2N-20[7]	Year-round	As required
Live ring: ball bearings				
Live ring gears				
Grease nipples				
Battery terminals	Acid-proof grease[8]	FINA Marson L2	Year-round	As required
Fuel tank	Diesel fuel[9]	2-D ASTM D975 – 94 (USA)	Depending on outside temperatures Summer or winter diesel fuel	About 30 l (7.9 gal)
		1-D ASTM D975 – 94 (USA)		
		EN 590 : 96 (EU)		
		ISO 8217 DMX (International)		
		BS 2869 – A1 (UK)		
		BS 2869 – A2 (UK)		
Radiator	Coolant	Soft water + antifreeze ASTM D4985	Year-round	About 4.5 l (1.19 gal)
		Distilled water + antifreeze ASTM D4985		
Washer system	Cleaning agent	Water + antifreeze	Year-round	1.2 l (0.31 gal)

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 51502
3. According to DIN 51524 section 3
4. Depending on local conditions – see *Hydraulics oil grade* on page 3-4
5. According to ISO 6743/4
6. Biodegradable hydraulic oil based on saturated synthetic esters with an iodine value of < 10 g/mg, according to DIN 51524, section 3, HVLP, HEES
7. KPF2N-20 according to DIN 51502 multipurpose calcium sulphonate complex grease
8. Standard acid-proof grease
9. Sulphur content below 0.05 %, octane number over 45

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Wiring diagrams and wiring harnesses include all options.

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Safety features

- *Microcontroller ... diagnoses errors supplied by the output stage.*
- *Monitor...disables the output stage if the microcontroller breaks down.*
- *Output stage...controls the status of the supply lines from the pressure regulating valves*
- *Watchdog...disables the microcontroller in case the microcontroller breaks down*
- *Switch for valve supply...disables the power supply to the valves if a critical error is detected.*

Measures to be taken in case of malfunctions

Caution!

System breakdowns can never be excluded, therefore:

- Disconnect the electronic controls from the power supply before carrying out repair work or maintenance on the hydraulic system
- Stay clear of areas and parts with danger of crushing
- Stay clear of areas between moving hydraulic components and fixed obstacles!

DANGER OF CRUSHING!

- The machine operator must be aware of possible machine errors!

Diagnosis display

The control unit status is displayed to the user by means of a flashing code. The following errors are identified by the number of flash pulses:

No.	Pin no.	Description	Error	Troubleshooting	Critical error
0	-	-	No error	-	-
1	B 5	Channel 1 input (left)	Defective input voltage	Check voltage, home position: 2.5 V deflected: 0.7 V – 4.3 V	-
2	A4, A9	Channel 1 output; Y16/Y17	Overload or overheating (output stage)	Check magnet on valve	-
3	A4, A9	Channel 1 output; Y16/Y17	Short circuit on earth or operating voltage	Check wiring	x
4	B4	Channel 2 input (right)	Defective input voltage	Check voltage, home position: 2.5 V, deflected: 0.7 V – 4.3 V	-
5	A7, A8	Channel 2 output; Y18/Y19	Overload or overheating (output stage)	Check magnet on valve	-
6	A7, A8	Channel 2 output; Y18/Y19	Short circuit on earth or operating voltage	Check wiring	x
7	-		System start	-	x
8	A10, A11	Motor output	Overheating (output stage)	Check motor	x
9	-	-	EEProm data error	-	x
10	B6	+5 V joystick	Defective 5 V supply	-	x

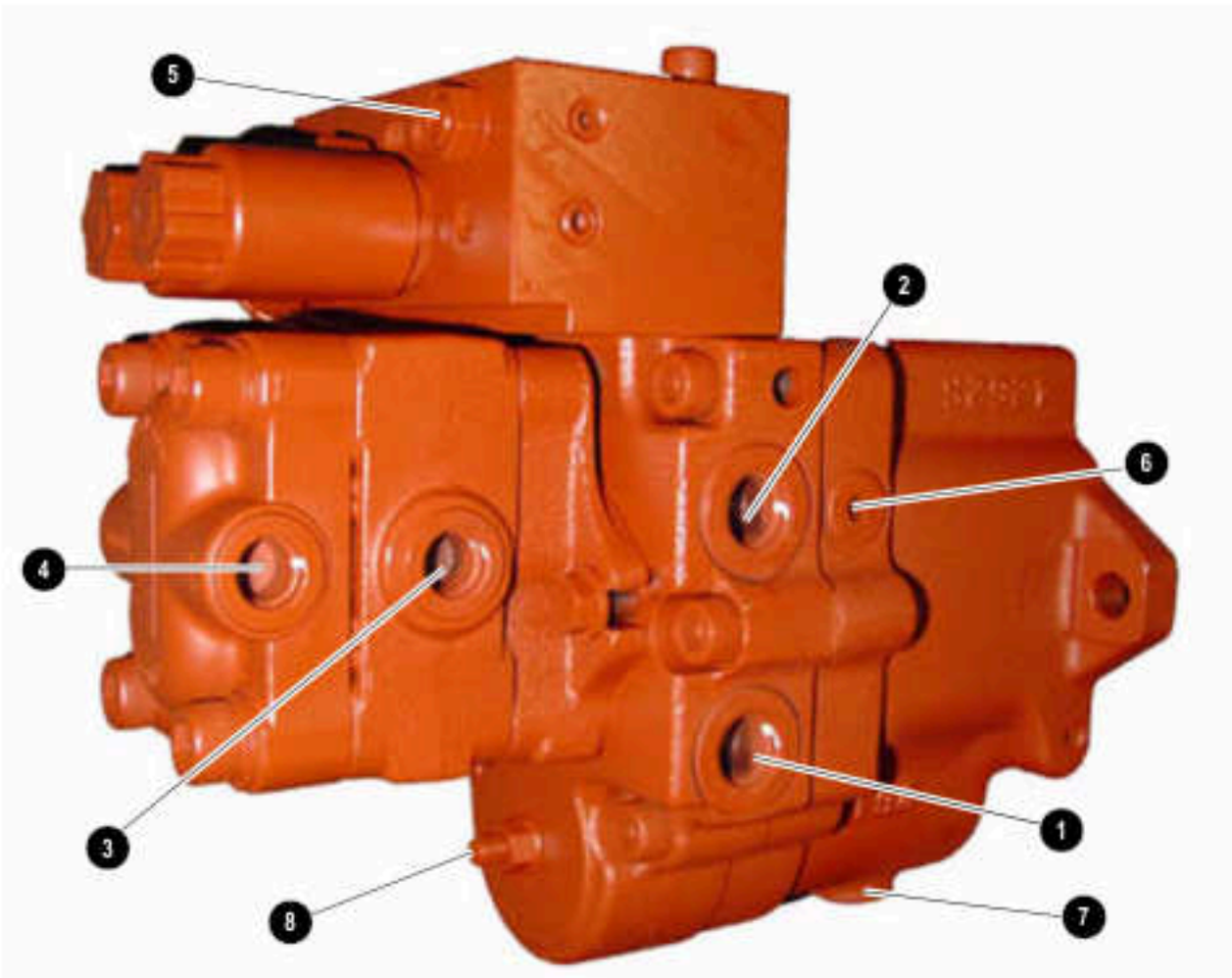
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5 Hydraulic system

The hydraulic system is governed by a throttle

5.1 Hydraulic pump PVD-0B-22BP

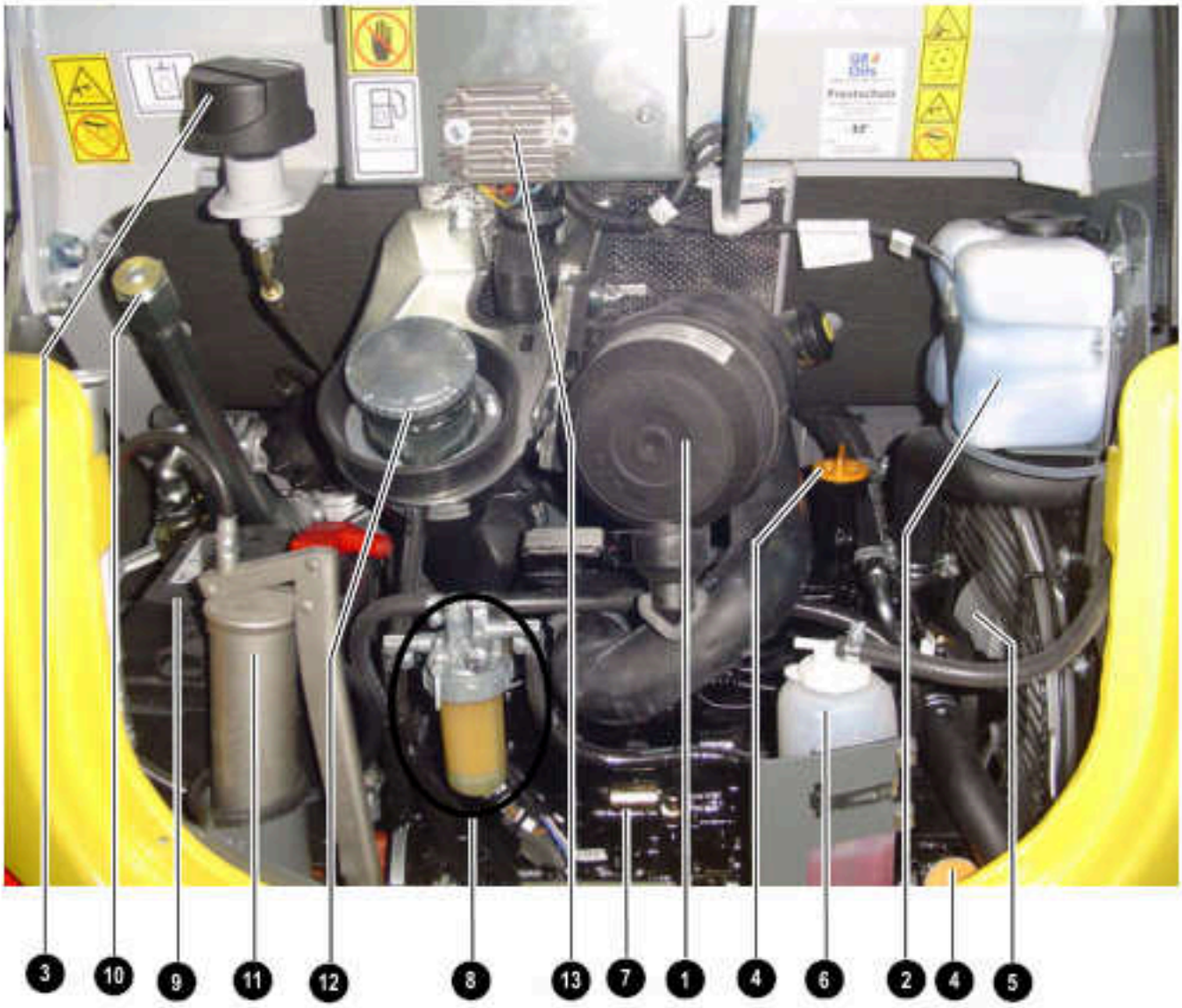
Double variable displacement pump + 2 gear pumps



Pos.	Description
1	Port P1
2	Port P2
3	Port P3
4	Port P4
5	Pilot oil supply unit pressure limiting valve
6	Ventilation hose port
7	Bleed screw (not active)
8	Control initiation set screw

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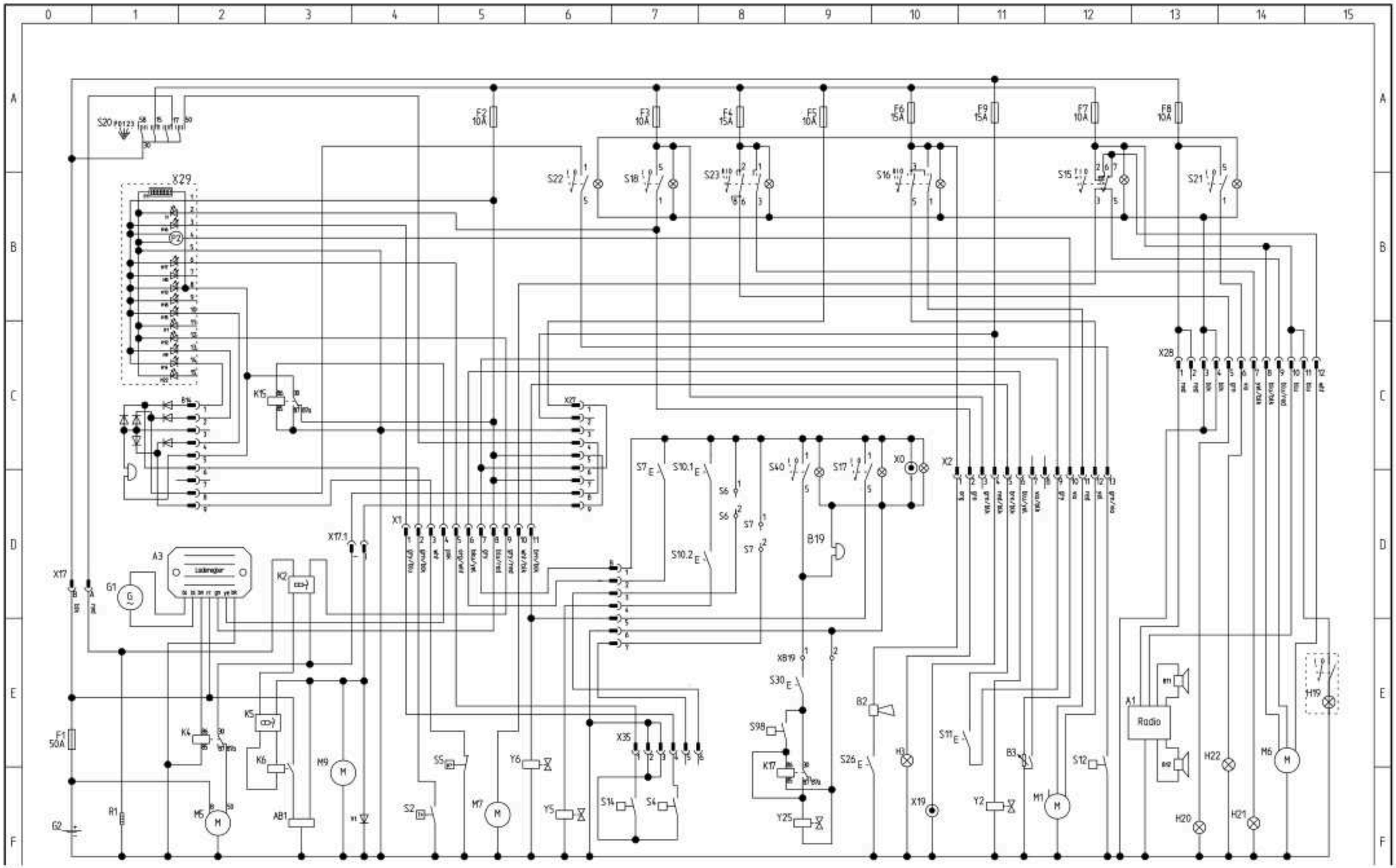
1.10 Engine compartment overview



Pos.	Description	For more information see page
1	Air filter	3-19
2	Washer fluid tank	
3	Breather filter	5-34
4	Engine oil filler inlet	3-13
5	Fan wheel	
6	Expansion tank	3-17
7	Fuel injection pump	4-10
8	Fuel filter	3-12
9	Battery	3-51
10	Hydraulic oil filler inlet	3-26
11	Grease gun	
12	Fuel filler inlet	3-9
13	Regulator	6-8

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6.18 Wiring diagram A3



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