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Lubricants and process chemicals.....1.51

R 934 C from serial number 22 965

R 944 C from serial number 22 915

R 954 C from serial number 23 166

- 1 General information on changing lubricants and operating fluids. 1.51.1
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Hydraulic system		786/791/792/1000/1079	793
Control valves	Typ	M8-1389-00/7M8-22	M8-1410-00/7M8-22
5 ways rotary connection	Typ	DDF 525	
Boom cylinder (adjustable and monoblok equipment) Ø piston / rod		160 / 110	
Stick cylinder at adjustable equipment Ø piston / rod		170 / 115	160 / 105
Bucket cylinder Ø piston / rod		160 / 110 - 150 / 105	
Adjustment cylinder at boom adjustment Ø piston / rod		210 / 140	
Hydraulic pump / servo control	Typ	Gear pump	
max. flow / servo control	l / min	32	
Hydraulic pump / fan drive (cooling)	Typ	Swash plate - axial pump piston	
max. flow / fan drive (cooling)	l / min	69	
Further informations		see chap. 6	

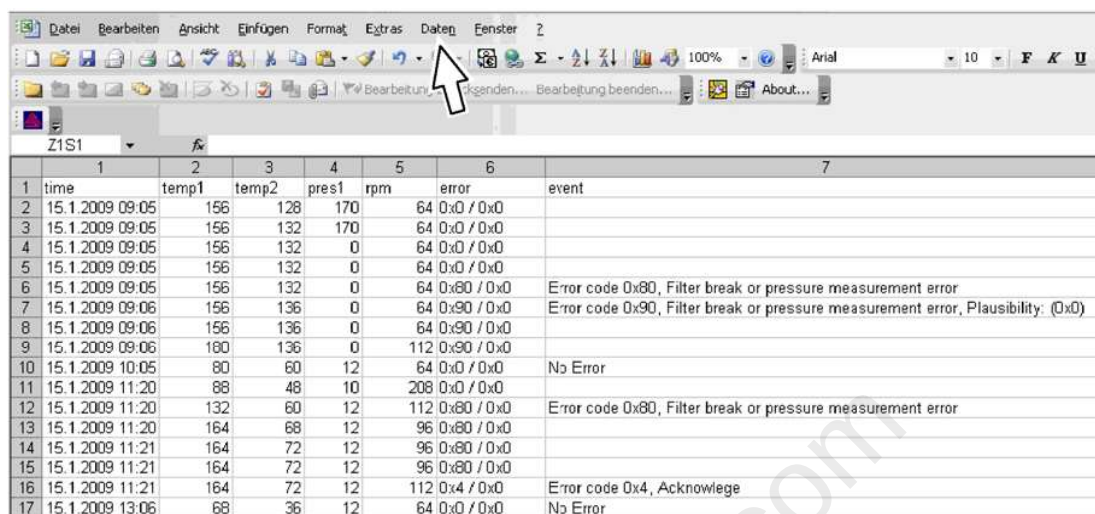
Electrical system		786/791/792/1000/1079	793
Voltage	V	24	
Battery capacity	Ah	2 x 170 (switched in series)	
Alternator voltage / max current	V / A	28 / 80	
Starter power	V / KW	24 / 6,6	

Swing gear		786/791/792/1000/1079	793
Gear	Typ	SAT 325 / 254	
Swing gear	Type	KUD 164	
Motor oil	Typ	FMF 90	
Swing speed max.	U / min	8,0	
Gear oil quantity	l	8,0	
Oil quality / -viscosity and oil change intervals		see chap. 1 «Lubrication» and chap. 3 «Fluids and lubricants»	
Swing brake	Typ	disc brake (negativ)	
Further informations		see chap. 9	

Travel gear		786/791/ 793	1000	792/1079
Travel gear	Typ	FAT 400 P073	FAT 450 065	FAT 450 044
max. normal speed / high speed	km / h	3,2 / 5		
Travel motor	Typ	FMV 100		FMV 140
Gear oil quantity	l	2 x 4,5	2 x 9,5	
Oil quality / -viscosity and oil change intervals		see chap. 1 «Lubrication» and chap. 3 «Fluids and lubricants»		
Travel brake	Typ	disc brake		

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- In MS Excel, select the **Data** menu, see Fig. 17, and then select "Import external data".
 - ↳ The stored data is displayed in a spreadsheet in MS Excel, see Fig. 17.



	1	2	3	4	5	6	7
1	time	temp1	temp2	pres1	rpm	error	event
2	15.1.2009 09:05	156	128	170	64	0x0 / 0x0	
3	15.1.2009 09:05	156	132	170	64	0x0 / 0x0	
4	15.1.2009 09:05	156	132	0	64	0x0 / 0x0	
5	15.1.2009 09:05	156	132	0	64	0x0 / 0x0	
6	15.1.2009 09:05	156	132	0	64	0x80 / 0x0	Error code 0x80, Filter break or pressure measurement error
7	15.1.2009 09:06	156	136	0	64	0x90 / 0x0	Error code 0x90, Filter break or pressure measurement error, Plausibility: (0x0)
8	15.1.2009 09:06	156	136	0	64	0x90 / 0x0	
9	15.1.2009 09:06	180	136	0	112	0x90 / 0x0	
10	15.1.2009 10:05	80	60	12	64	0x0 / 0x0	No Error
11	15.1.2009 11:20	88	48	10	208	0x0 / 0x0	
12	15.1.2009 11:20	132	60	12	112	0x80 / 0x0	Error code 0x80, Filter break or pressure measurement error
13	15.1.2009 11:20	164	68	12	96	0x80 / 0x0	
14	15.1.2009 11:21	164	72	12	96	0x80 / 0x0	
15	15.1.2009 11:21	164	72	12	96	0x80 / 0x0	
16	15.1.2009 11:21	164	72	12	112	0x4 / 0x0	Error code 0x4, Acknowledge
17	15.1.2009 13:06	68	36	12	64	0x0 / 0x0	No Error

Fig. 17 Table values in Excel spreadsheet

- Click the **OK** button.
 - ↳ The information window is closed.

If required, you can also view the data in the form of charts.

- To do this, click the **Show diagram** button, using the mouse pointer (c), see Fig. 14.
 - ↳ The **Diagram** menu is displayed, see Fig. 18.
 - ↳ The bottom right section of the window shows the names of the measuring channels in colour and the associated statuses (active/inactive).
 - ↳ The curves in the diagram appear in the colour of the respective channel (see diagram name).

You can show and hide curves:

Parameters shown in diagram:

- **Temperature** / °C = exhaust gas temperature (Y-axis, left)
- **Pressure** / mbar = exhaust gas backpressure (Y-axis, left)
- **Number of revolutions** / rpm = diesel engine speed (Y-axis, right)
- **Date and time** = recorded during curve recording (X-axis, bottom)
- **Frequency distribution** (chart in top right corner)

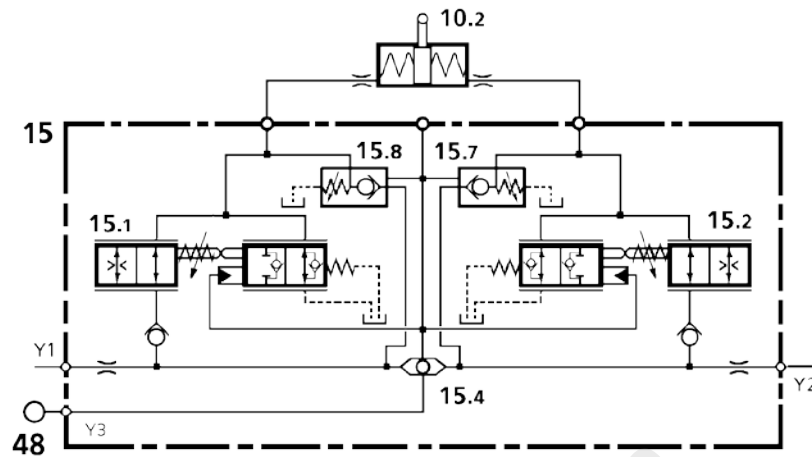


Fig. 17 pump regulator hydraulic scheme

- | | |
|---|---|
| 10.2 Positioning piston | 15.8 Pilot operated check valve / swing right |
| 15 Pump regulator | 48 Test point: p servo pressure |
| 15.1 Brake valve - swing left | y1 Input for servo pressure / swing right |
| 15.2 Brake valve - swing right | y2 Input for servo pressure / swing left |
| 15.4 Shuttle valve: servo pressure | y3 Test point: servo pressure y1 or y2 |
| 15.7 Pilot operated check valve / swing left | |

When returning the joystick lever against zero, the pilot operated check valves **15.7** and **15.8** are closed and the brake spool **15.1** and **15.2** are open.

The oil return from the positioning piston is throttled according the adjustment of the brake valve **15.1**.

The anti-cavitations valves in the brake spool are used, during braking, to provide the necessary oil suction to the opposite positioning chamber.

The braking pressure is not adjustable. It is dependent only on the boom and the attached load.

It should be measured only to check the return swivel time of the pump.

6.1 Drive

- ▶ Remove all lines which might be in the way.
- ▶ The hydraulic and leak oil lines and control lines on the oil motor can possibly stay connected.
- ▶ Remove screws **121** and lift oil motor **100** from the gear.
- ▶ Replace the O-ring **111** on the oil motor **100**.
- ▶ Set the oil motor **100** again into the gear.
- ▶ Reinstall the screws **121**. For torque values, (see Tab. 2 on page2) and (see Tab. 4 on page3).

6.2 Disk brake



Warning:

Before removing the brake, make sure the attachment is lowered to the ground.

6.2.1 Removal

- ▶ Lift the oil motor **100** from the gear. see §6.1.
- ▶ Remove and plug the brake lines from the gear.
- ▶ Remove the screws **77** and lift the brake housing **25** from the inner gear **20**.



Warning:

The ring and piston **105** are spring loaded.

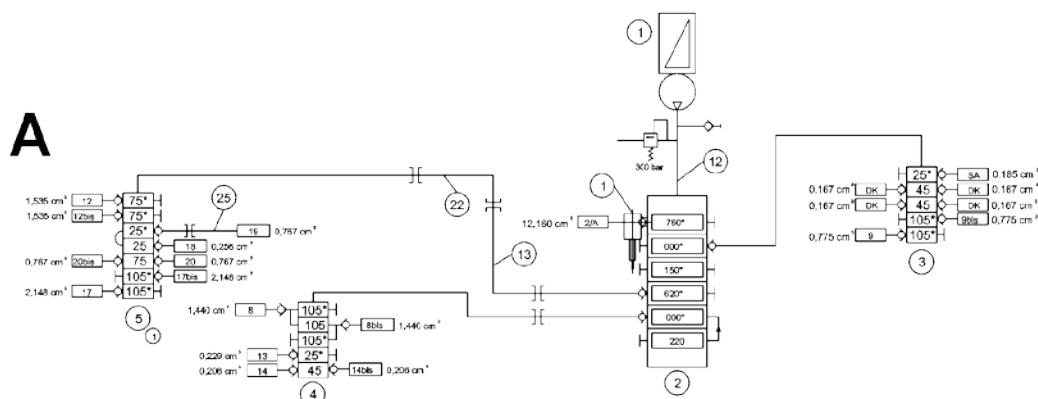
- ▶ Push down piston **105** with special tool No. 120 - see subgroup 2.01, and two M16X 120 screws.
- ▶ Release lock ring **109**.
- ▶ Loosen and remove the special tool.
- ▶ Remove piston **105** with brake housing **25** and springs **107**.
- ▶ Replace O-rings **103** and groove ring with support ring.

6.2.2 Assembly

- ▶ Insert ring **108** with new groove ring on piston **105**. Insert spring **107** and piston **105** onto brake housing.
- ▶ With tool, see Fig. 3, push piston **105** down and insert snap ring **109**, make sure it is seated correctly.
- ▶ Remove tool.
- ▶ Insert brake housing with new seal into the inner gear **25**.
- ▶ Install screws **77** with washer. Make sure screws **77** are torqued correctly, (see Tab. 2 on page2) and (see Tab. 4 on page3).
- ▶ Mount the oil motor **100**, see §6.1.
- ▶ To install gear, (see "Installation of swing gear" on page 6).

For swing gear sealing and repair

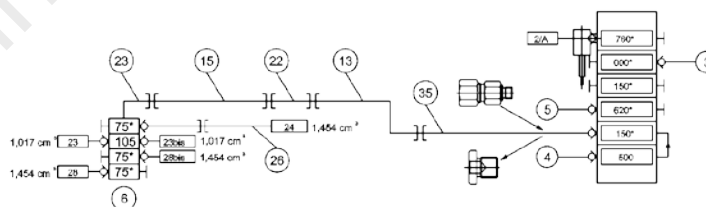
See "Repair Instruction of Swing Gear SAT".



A = Basic lubrication system

Grease distributors	
2	Main distributor
4	Secondary distributor boom
5	Secondary distributor stick
Lubrication points	
DK Swing ring races	
SA/T Swing gear / teeth	
8	Uppercarriage / Boom left
9	Uppercarriage / Boom cylinder left
12	Boom / Stick left
13	Boom / Stick cylinder
14	Boom / Boom cylinder left
17	Stick / bucket or shovel left
18	Stick / Tilt cylinder
20	Stick / Shifting lever left
3	Sec. distributor swing ring & foot of boom
5	Secondary distributor stick
SA/S Swing gear / seat	
8bis	Uppercarriage / Boom right
9bis	Uppercarriage / Boom cylinder right
12bis	Boom / Stick right
14bis	Boom / Boom cylinder right
17bis	Stick / bucket or shovel right
20bis	Stick / Shifting lever right

B



B = A + connecting link lubrication

6	Secondary distributor on connecting rod
Lubrication points	
23	Connecting rod / Shifting lever
28	Connecting rod / bucket resp. Tilt cylinder / Shovel
24	Tilt cylinder / Connecting rod

Full Version Available

Liebherr R 934 C and R 944 C Excavator Service Manual

Liebherr R 934 C, R 944 C excavator service manual covering repair procedures, adjustments and troubleshooting. 914-page searchable PDF.

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