

Group 1: General Information

Safety instructions, Signs on the machine 1.10

- 1 Meaning of the symbols in this manual 1.10.1
- 2 Use in accordance with the regulations 1.10.2
- 3 Safety Instructions 1.10.2
- 4 Servicing the machine safely 1.10.12

Tightening torques 1.20

- 1 Tightening torques for screws with metric coarse and fine thread (Liebherr Standard WN 4037) ... 1.20.1
- 2 Tightening torques of screw-in studs (Ermeto) 1.20.3
- 3 Tightening torques of swivelling connections (Ermeto) 1.20.4
- 4 Tightening torques of screw-in studs (Ermeto) 1.20.5

Installations for pistons and piston nuts by hydraulic cylinders 1.22

- 1 Application and purpose 1.22.1
- 2 Requirements / description of procedure 1.22.1
 - 2.1 Tightening with assembly wrench 1.22.2
 - 2.2 Tightening with hydraulic assembly device 1.22.4
- 3 Torque table - Status 02.06.2010 1.22.7
 - 3.1 Tightening with assembly wrench (siehe Kap. 2.1, "Tightening with assembly wrench" auf Seite 2) .
 - 3.2 Tightening with hydraulic assembly device (siehe Kap. 2.2, "Tightening with hydraulic assembly device" auf Seite 4)1.22.9

Assembly instruction for piston rod bearings with external threads (hydraulic cylinders) .. 1.24

- 1 Description 1.24.1
 - 1.1 Definitions 1.24.1
- 2 Tightening torques for factory standard (02.07.2008) 1.24.3

Lubricants and operating fluids 1.51

- 1 General information on changing lubricants and operating fluids 1.51.1
- 2 Lubricant chart 1.51.1
- 3 Fuels, lubricants and process chemicals 1.51.2
- 4 Diesel fuels 1.51.3
 - 4.1 Specification 1.51.3
 - 4.2 Sulphur content of diesel fuel 1.51.3
 - 4.3 Diesel fuels for operation at low temperatures (winter) 1.51.4
 - 4.4 Diesel fuels with the LIEBHERR Particles filter 1.51.4
- 5 Lubricating oil for the diesel engine 1.51.4
 - 5.1 Viscosity 1.51.4
 - 5.2 Lubricating oil change intervals 1.51.5

Hydraulic system		1087 NLC	1022 LC
Boom cylinder (adjustable equipment) Ø piston / rod	mm	170 / 105	
Stick cylinder at adjustable equipment Ø piston / rod	mm	140 / 95 150 / 105	
Bucket cylinder Ø piston / rod	mm	125 / 85 130 / 85	
Hydraulic pump / servo control	Type	Gear pump	
max. flow / servo control	l / min	53	
Hydraulic pump / fan drive (cooling)	Type	Gear pump	
max. flow / fan drive (cooling)	l / min	50	
Further informations		see group 6	

Electrical system		1087 NLC	1022 LC
Voltage	V	24 (2x 12 switched in series)	
Battery capacity	Ah	135	
Alternator voltage / max current	V / A	28 / 80	
Starter power	V / KW	24 / 6,6	

Swing gear		1087 NLC	1022 LC
Gear	Type	SAT 275 / 261	
Swing gear	Type	KUD 64 VJ 021-000	
Motor oil	Type	FMF 64	
Swing speed max.	U / min	11	
Gear oil quantity	l	6	
Oil quality / -viscosity and oil change intervals		see sub-group 1.50, 1.51 and 3.60	
Swing brake	Type	disc brake (negativ)	
Further informations		see group 9	

Travel gear		1087 NLC	1022 LC
Travel gear	Type	FAT 355 P 077	
normal speed / high speed	km / h	3,7 / 6,1	
Travel motor	Type	CMVE 108	
Gear oil quantity	l	2 x 4,3	
Oil quality / -viscosity and oil change intervals		see sub-group 1.50, 1.51 and 3.60	
Travel brake	Type	disc brake (negativ)	
Further informations		see group 11	

Track		1087 NLC	1022 LC
Track	Type	B60	B60

LFR / En / Issue: 03/2011

6.1.1 Oil motor

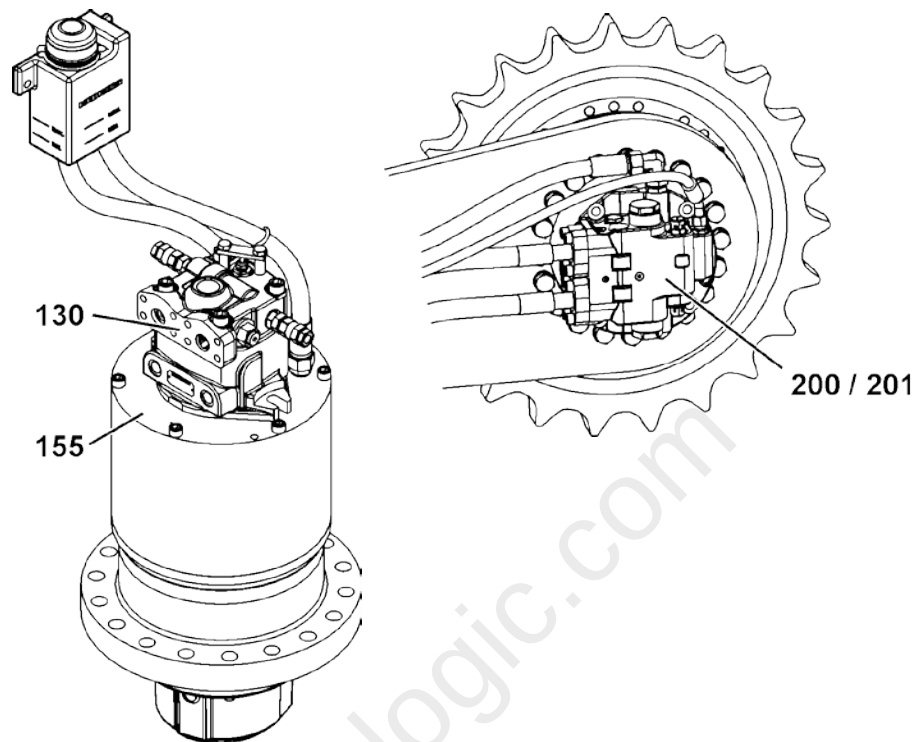


Fig. 10 Swing gear motor **130** and travel motor **201**

130	Swing gear motor	200	Travel motor left
155	Swing brake	201	Travel motor right

Design:

- Axial piston swash plate
 - Constant (with constant displacement)
 - Regulated (with variable displacement)

Functional description, see **Group 7**

Arrangement:

- Swing gear motor **130** with integrated control to drive the uppercarriage via swing gear transmission
- Travel motors **200 - 201** to drive the travel gear chains via travel gear transmission

7 Servo-control circuit

Task:

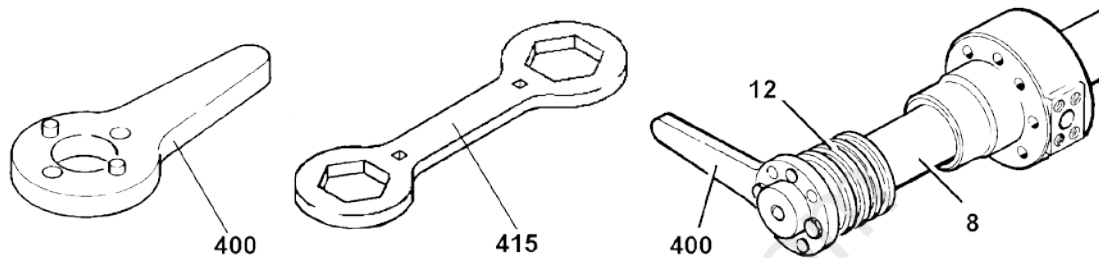
- Hydraulic control of all working and travel movements of the machine via hand-operated or foot-operated control unit (servo controls / sensor equipment)

**Caution!**

If components are mounted without having been treated with lubricant, the turning distance prescribed according to factory standard 4121 cannot be achieved.

As the parts tend to become jammed (seizing), it is not possible either to remove the component at a later stage.

Apply Gleitmo 800 lubricant (ID no. 8300004) to all components.

Mounting of the piston

8 Piston rod

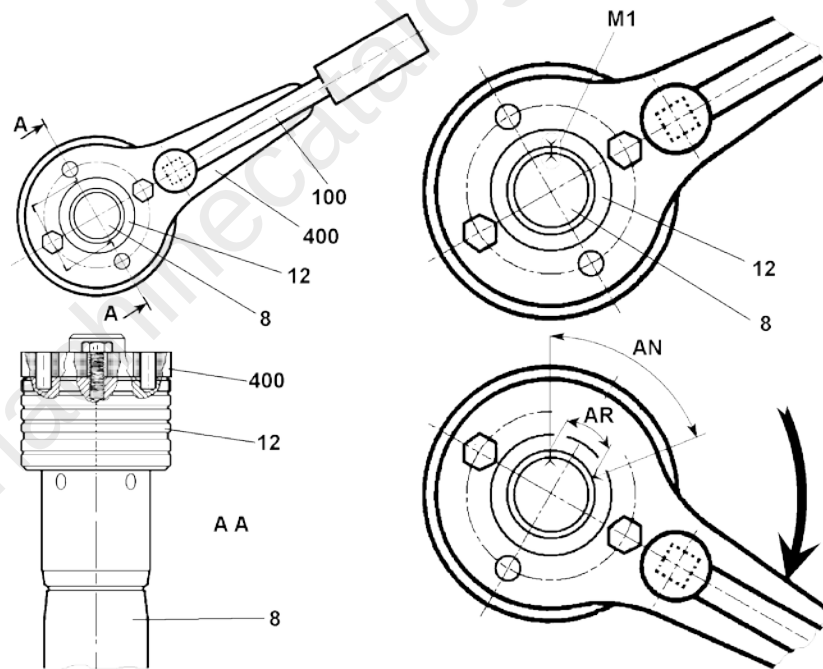
12 Piston

400 Wrench for piston (variant P1)

415 Wrench for piston nut (variant 2)

► Attach a piston wrench - special tool **400** (see group 2) to the piston **12**.

► Screw the piston **12** on the piston rod **8** with the wrench - special tool **400**.



8 Cylinder rod

12 Piston

100 Torque wrench

400 Piston wrench

AN Torsional angle (as per WN4121)

AR Torsional path (as per WN4121)

M1 Mark

► Mount a torque wrench **100** onto the piston wrench **400** (see above) and tighten the piston **12** at the tightening torque prescribed (corresponding to code number in the WN 4121).

► Make a mark **M1** on the piston **12** and the piston rod **8**.

- ▶ Remove the oil drain hose and reinstall the cap **105** on drain valve **94**.
- ▶ Remove the appropriate hydraulic lines and parts, which might be in the way when removing the gear.
- ▶ Remove hydraulic, leak oil and brake lines from the oil motor and gear.
- ▶ Remove screws **104** and lift the gear with a lifting device from the upper carriage.

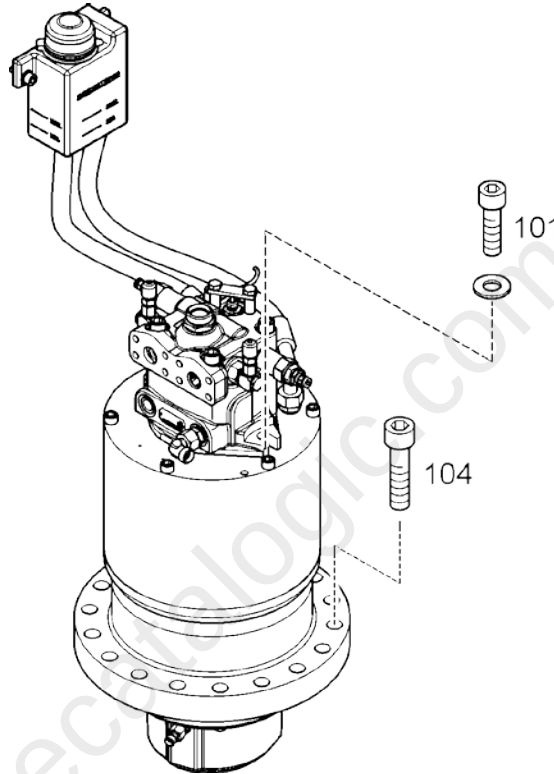
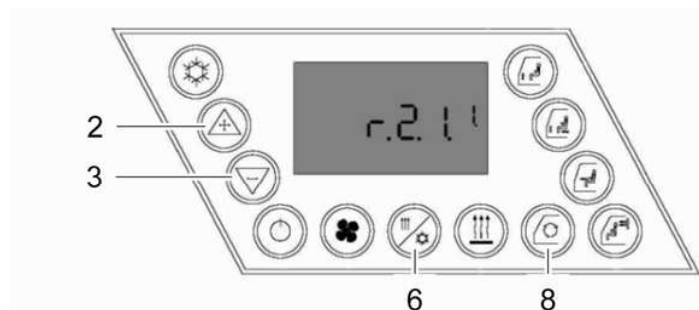


Fig. 3 Fastening screws for swing motor and swing gear

5.2 Installation of swing gear

- ▶ Coat the centring surface of the swing gear (surface Z, (see "Sectional drawing of swing gear" on page 8)) and its housing in the upper carriage with anticorrosive grease (preferably use "Optimol White T" Ident no. 8500307).
- ▶ Lift the gear into the upper carriage (watch that it is positioned correctly because of the oil drain plug).
- ▶ Install the swing gear complete in the uppercarriage.
- ▶ Install screws **104** and torque to prescribed value (according to Liebherr Standard 4037, see subgroup 1.20).
- ▶ Install cap **105** on drain valve **94**.
- ▶ Connect the brake, leak oil and hydraulic lines to the oil motor and gear.
- ▶ Remove the cover and refill the gear with oil, (oil quality see lubrication chart in group 1.51). until the level reaches the upper mark on the dipstick or on the expansion reservoir.
- ▶ Reinstall the cover.
- ▶ Check gear and function and pinion mesh into the swing ring.
- ▶ Reinstall all the removed parts (drain valve, . . .) and reconnect all the lube lines.

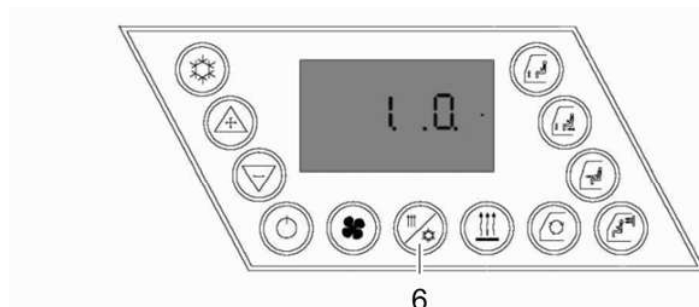
7.23 Restoring default settings



□ Activate the system: see 7.2.

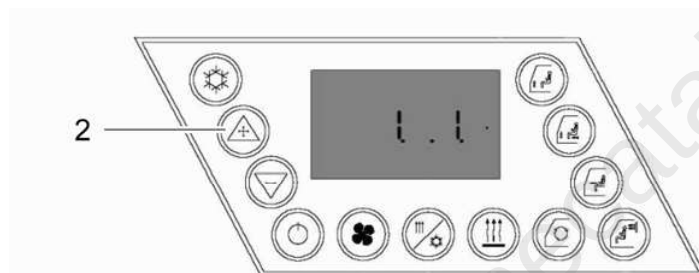
Access to controller menu :

- ▶ Press key **6** and then release.
- ▶ Press keys **8**, **3** and **2** simultaneously and then release.
 - ↳ The control unit is now in controller menu mode. Cabin temperature is displayed (eg.: 21.1°C).



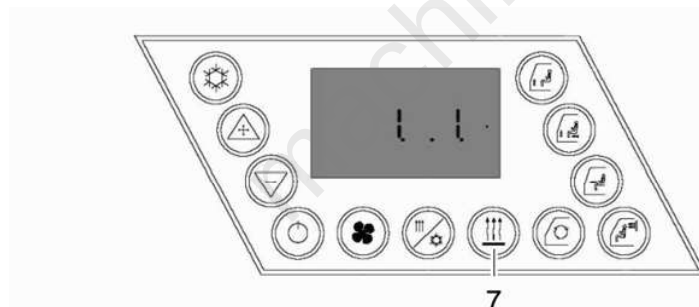
Access to initialisation mode 0:

- ▶ Press key **6** and then release.
 - ↳ Initialisation mode 0 is displayed.



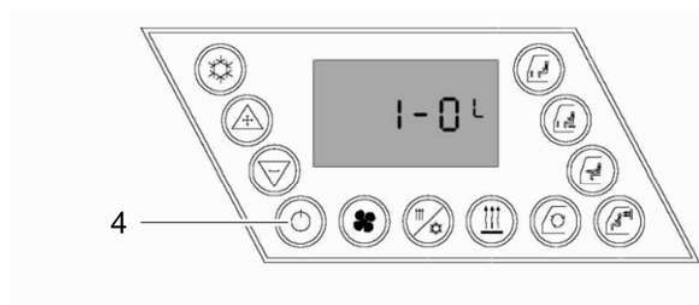
Access to initialisation mode 1 :

- ▶ Press key **2** and then release.
 - ↳ Initialisation mode 1 is displayed.



Save initialisation mode 1 :

- ▶ Press key **7**.
 - ↳ It takes approximately 25 seconds to save the default settings into the control unit. Wait for completion of the default setting saving process before exiting the controller menu.



Exit from controller menu:

- ▶ Press key **4** and then release.
 - ↳ Control unit carries out a reset. The software version is displayed for about 5 seconds.
- ▶ Switch the engine off, then switch the engine on again.
 - ↳ Default settings are active again.

LFR / En / Issue: 03/2011

Full Version Available

Liebherr R 906 Classic, R 916 Classic and R 926 Classic Excavator Service Manual

Liebherr R 906, R 916, R 926 Classic excavator service manual with repair procedures, adjustments and troubleshooting. 724-page searchable PDF.

[VIEW THE FULL MANUAL](#)

File Pages: 724 · File Count: 1 · File Language: English