

Introduction

Preface

MECALAC's swivel shovel loaders, articulated loaders and loader excavators with backhoe are machines included in **MECALAC's** vast product range covering a wide variety of working tasks.

Decades of experience in the construction of earth-moving machines, the wide range of attachments available as well as modern production facilities, careful testing and highest quality demands guarantee the highest degree of reliability of your **MECALAC** machine.

The documentation delivered by the manufacturer includes the following:

- Loader operating instructions
- Engine operating instructions
- Loader spare parts list
- Engine spare parts list
- EC conformity declaration

Operating instructions

The operating instructions contain all the information which the user requires for operation and maintenance.

In the "Maintenance" section, all maintenance work and operation tests are described which can be carried out by trained personnel.

This section does not cover more extensive maintenance work that is reserved to personnel authorized and trained by the manufacturer. In particular, this applies to facilities governed by Motor Vehicle Construction and Use Regulations and the Regulations for the Prevention of Accidents.

Due to the construction modifications reserved by the manufacturer, there may be differences in the figures; however, this has no influence on the technical contents.

How to use this manual

Explanations

- The designations "**left**" and "**right**" are to be seen from the driver's seat in the driving direction.
- Special equipment
means: not fitted in series.

Information about illustrations

- (3-35)
means: chapter 3, fig. 35
- (3-35/1)
means: chapter 3, fig. 35, item 1
- (3-35/arrow)
means: chapter 3, fig. 35, 

Abbreviations used

UVV = Unfallverhütungsvorschrift (Accident Prevention Regulations)

StVZO = Straßenverkehrszulassungsordnung (German Traffic Regulations)

Edition: 06.2012

Printed: 06.2012

Table of contents

1	Basic Safety Notes		
1.1	Warnings and symbols	1	- 2
1.2	Appropriate use	1	- 2
1.3	Administrative tasks	1	- 2
1.4	Selecting and training staff	1	- 3
1.5	Safety notes in various operating modes	1	- 4
1.5.1	Normal operations	1	- 4
1.5.2	Special tasks applicable to using the equipment and troubleshooting; waste disposal	1	- 7
1.6	Note on specific dangers	1	- 9
1.6.1	Electrical power	1	- 9
1.6.2	Hydraulics	1	- 10
1.6.3	Noise levels	1	- 10
1.6.4	Oils, greases and other chemical substances	1	- 11
1.6.5	Gas, dust, steam, smoke	1	- 11
1.7	Transporting and towing; re-commissioning	1	- 11
1.8	Safety notes for the owner or responsible persons	1	- 12
1.8.1	Administrative tasks	1	- 12
1.8.2	Selecting and training staff; basic requirements	1	- 12
2	Signs		
3	Protection against theft		
3.1	Identifying features on the loader	3	- 2
3.2	Parking the loader	3	- 2
3.3	Transponder for drive-away interlock	3	- 3
4	Description		
4.1	Overview	4	- 2
4.2	Swivel unit and axle support	4	- 3
4.3	Floating position	4	- 3
4.4	Bucket position indicator	4	- 3
4.5	Acoustic warning buzzer	4	- 3
4.6	Air-conditioning system	4	- 4
4.7	Lifting device suspension	4	- 5
4.8	Pipe break protection	4	- 5
4.9	Wheel change	4	- 5
4.10	Controls	4	- 7
4.11	Instrument panel	4	- 8
4.11.1	Multifunction panel	4	- 10
4.11.2	Teach function	4	- 11
4.11.2.1	How to activate the teach function	4	- 11
4.11.2.2	How to activate the emergency traction mode (when there is an accelerator fault)	4	- 11
4.11.2.3	How to activate the emergency traction mode (when there is a fault with the EP magnet of the hydro motor)	4	- 11
5	Operation		
5.1	Checks before start-up	5	- 2
5.2	Commissioning	5	- 2
5.2.1	Start the diesel engine	5	- 2
5.2.2	Winter operation	5	- 3
5.2.2.1	Fuel	5	- 3

5.2.2.2	Engine oil change	5 - 4
5.2.2.3	Changing the oil in the hydraulic system	5 - 4
5.2.2.4	Anti-freezing agent for the windshield washer system	5 - 4
5.2.3	Driving the loader on public roads	5 - 4
5.2.3.1	Carrying a bucket	5 - 5
5.2.4	Working with the loader	5 - 5
5.2.5	Heater and ventilation system/air-conditioning system	5 - 7
5.2.5.1	Setting the air flow	5 - 7
5.2.5.2	Switch on the heater	5 - 7
5.2.5.3	Switching on the air-conditioning system	5 - 7
5.2.5.4	Setting the temperature	5 - 8
5.3	Decommissioning the loader	5 - 8
5.3.1	Parking the loader	5 - 8
5.3.2	Switching off the diesel engine	5 - 8
5.3.3	Switching off the heater and ventilation/air conditioning system	5 - 8
5.3.4	Leaving the loader	5 - 9
5.4	Adjusting the driver's seat	5 - 9
5.4.1	Isri seat	5 - 9
5.4.2	Grammer seat	5 - 9
5.4.3	Grammer seat (air-cushioned)	5 - 11
5.5	Switching the steering type	5 - 13
5.5.1	Synchronising the steering	5 - 13

6 Attachments

6.1	Mounting and dismounting attachments without hydraulic connections	6 - 2
6.1.1	Standard/lightweight bucket	6 - 2
6.1.2	Fork-lift attachment	6 - 3
6.1.3	Lifting hook	6 - 4
6.2	Mounting and dismounting attachments with hydraulic connections	6 - 4
6.2.1	Multi-purpose bucket	6 - 4
6.2.2	Front-end excavator	6 - 7
6.2.2.1	Shovel replacement	6 - 8
6.3	Use of additional attachments	6 - 8

7 Rescue, towing, lashing, lifting by crane

7.1	Rescue, towing, lashing	7 - 2
7.1.1	Rescue/towing of the swivel shovel loader if the engine or drive has failed	7 - 2
7.1.1.1	Towing the swivel shovel loader if the engine has failed	7 - 2
7.1.1.2	Towing the swivel shovel loader if the drive has failed	7 - 5
7.2	Lifting by crane	7 - 7

8 Maintenance

8	Maintenance plan	8 - 1
8.1	Notes regarding maintenance	8 - 3
8.2	Maintenance work	8 - 4
8.2.1	Engine oil level check	8 - 4
8.2.2	Oil level check for axles	8 - 4
8.2.2.1	Rear axle	8 - 4
8.2.2.2	Planetary gear	8 - 4
8.2.2.3	Front axle	8 - 5
8.2.3	Oil level check (distribution gear)	8 - 5
8.2.3.1	Oil level check (distribution gear) type 1	8 - 5
8.2.3.2	Oil level check (distribution gear) type 2	8 - 6
8.2.4	Oil level check of the hydraulic oil reservoir	8 - 7
8.2.5	Oil change, engine	8 - 7
8.2.6	Oil change, axles	8 - 8
8.2.6.1	Rear axle	8 - 8
8.2.6.2	Planetary gear	8 - 9
8.2.6.3	Front axle	8 - 9

8.2.7	Oil change, distribution gear	8 - 10
8.2.7.1	Oil change, distribution gear type 1	8 - 10
8.2.7.2	Oil change, distribution gear type 2	8 - 11
8.2.8	Oil change, hydraulic system	8 - 12
8.2.9	Replacing the suction return flow filter cartridge	8 - 13
8.2.10	Maintaining/replacing the air filter	8 - 14
8.2.11	Replacing the safety cartridge	8 - 15
8.2.12	Replacing the fuel filter	8 - 15
8.2.13	Replacing the starter batteries	8 - 15
8.2.14	Maintaining/replacing the fresh air filter	8 - 16
8.2.15	Checking the lining play	8 - 16
8.3	Lubrication points	8 - 17
8.3.1	Rear axle pivot bolt	8 - 17
8.3.2	Rear axle	8 - 17
8.3.3	Front axle	8 - 17
8.3.4	Ball bearing ring	8 - 18
8.3.5	Bucket assembly	8 - 18
8.3.6	Driver's cabin doors	8 - 18
8.3.7	Engine hood	8 - 19
8.4	Oil lubrication points	8 - 19
8.4.1	Supporting valve actuator	8 - 19
9	Faults, causes and remedies	
9.1	Diagnostic code (engine error code)	9 - 5
10	Circuit diagrams	
10.1	Electric wiring diagram	10 - 3
10.2	Hydraulic diagram	10 - 6
10.2.1	Hydraulic diagram AS 150e (bolt lock)	10 - 6
10.2.2	Hydraulic diagram AS 150e (claw lock)	10 - 7
11	Technical data (loader)	
11.1	Loader	11 - 2
11.2	Engine	11 - 2
11.3	Starter	11 - 2
11.4	Alternator	11 - 2
11.5	Hydrostatic drive motor	11 - 2
11.6	Axle loads	11 - 3
11.7	Tyres	11 - 3
11.8	Steering system	11 - 3
11.9	Brakes	11 - 3
11.10	Electrical system	11 - 3
11.11	Hydraulic system	11 - 3
11.11.1	Working hydraulics	11 - 3
11.11.2	Swivel unit hydraulics	11 - 4
11.11.3	Support system	11 - 4
11.12	Fuel supply system	11 - 4
11.13	Heater and ventilation system (driver's cabin)	11 - 4
11.14	Suction / return flow filter (hydraulics)	11 - 4
11.15	Electric contamination indicator	11 - 4
11.16	Oil cooler (combination cooler) with thermostat valve	11 - 4
11.17	Noise emission	11 - 4
12	Attachments	
12.1	Buckets	12 - 2
12.2	Fork-lift attachment	12 - 4
12.3	Front-end excavator	12 - 6
12.4	Lifting hook	12 - 8
12.5	Grab bucket	12 - 10

13	Additional options	
13.1	Additional options	13 - 2