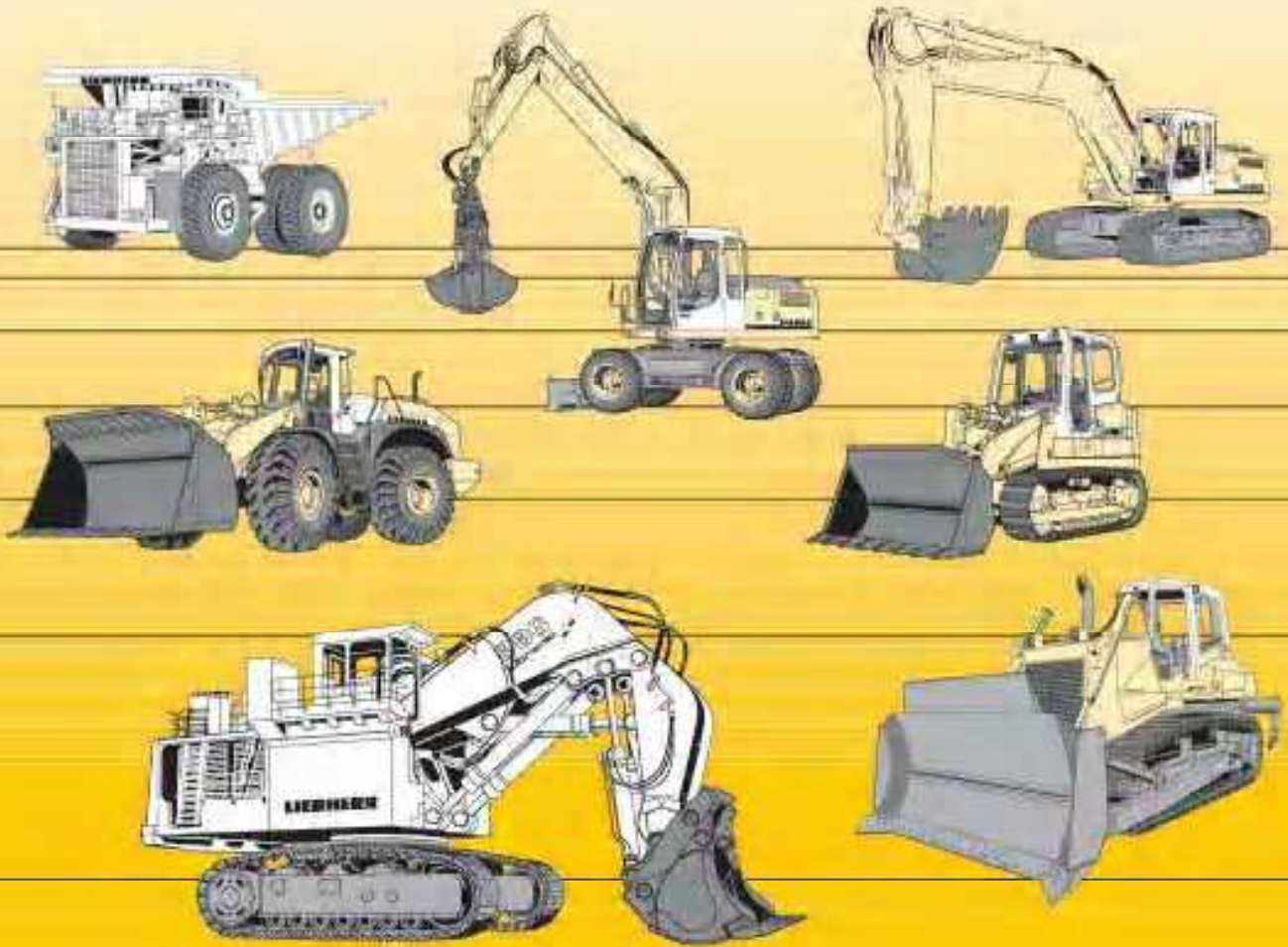


PRELIMINARY

en

Service manual
Wheel loader
L550 - L586 2plus2



LIEBHERR

en

Service manual
Wheel loader
L550 - L586 2plus2

Address

Address: LIEBHERR-WERK BISCHOFSHOFEN GMBH

Dr. Hans Liebherr – Straße 4
A – 5500 BISCHOFSHOFEN, AUSTRIA

Product identification

Manufacturer: LIEBHERR-WERK BISCHOFSHOFEN GMBH

Product group: Wheel loader

Type:	L 550	L 556	L 566	L 576	L 580	L586
Construction number:	456	454	460	457	459	461
Serial number:	99999	99999	14171	14171	14171	99999

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Foreword

- Target group** This Service Manual has been written for those whose job it is to make sure that the machines remain operational on a daily basis. This specifically includes the mechanics and workshop specialists at Liebherr dealers and Liebherr branch offices.
- Contents** In the first chapter you will find information about safety regulations as well as specifications of the special tools needed for maintenance and repair.
- Chapter 2 provides an overview of all important technical data for the entire machine and the individual assemblies.
- The following chapter, entitled Maintenance, contains the maintenance and inspection schedule, inspection and setting logs, lubrication schedules and filling quantity tables, a description of maintenance procedures and specifications for prescribed lubricants and fuels.
- The technical description of the machine in the following chapters is divided into 15 functional groups. The design, function, and technical data for each group, component and part are explained.
- Chapter 19 is new. In it, you will find a list of available repair manuals, troubleshooting hints, the service code table and a description of the BODEM service software.
- How to use this manual** This manual describes a variety of types and finished forms. In general, this information applies to the types and serial number groups specified in the footnotes. One exception is that specific type and serial number data are indicated at the beginning of each section (e.g. the technical specifications of the components).
- Whenever possible, parts and components are supplemented by indication of the identification number in the heading.
- This manual is available in German, English, French, Spanish and Italian.
- Working instructions** It is imperative that safety regulations be observed with all tasks done on the machine. You will find information on this in the **General Information** chapter.
- A complete set of tools in perfect condition is required for work on the machine, along with any special tools that might be needed. Absolute cleanliness must be observed with all tasks!
- Sealing material such as O-rings and surface seals should be replaced whenever repairs are carried out.
- DVD edition** We would particularly like to draw your attention to the fact that this book is available not only in printed form, but also as an electronic document on DVD (Lidos).

General information	1
Product description	2
Maintenance	3
Diesel engine, pump distributor gear	4
Cooling system	5
Travel hydraulics	6
Working hydraulics	7
Steering system	8
Brake system	9
Electrical system	10
Transfer gear	11
Axles, drive shafts	12
Machine frame, ballast weight	13
Central lubrication system	14
Covering, cab access	15
Cab, heating, air-conditioning	16
Lift arm, quick-change device	17
Attachments, accessories	18
Repair work, troubleshooting	19
Options	20

1 General Information

Chapter contents

1	General Information	1.0-1
1.1	Safety regulations	1.1-1
1.1.1	Introduction.....	1.1-1
1.1.2	Overview of the safety regulations	1.1-2
1.2	Special tools for maintenance and repair work.....	1.2-1
1.2.1	Special tools in general	1.2-1
1.2.2	Special tools for Liebherr diesel engines.....	1.2-2
1.2.3	Special tools for hydraulic cylinders	1.2-3
1.2.4	Special tools for electronics.....	1.2-3
1.2.5	Special tools for axles.....	1.2-4
1.2.6	Special tools for the transmission.....	1.2-5
1.2.7	Central lubrication system	1.2-5
1.2.8	Special tools for the air conditioning system	1.2-5
1.2.9	Special tools for cab windows	1.2-6

1.1 Safety regulations

Working on the machine poses safety risks to the operator, driver or maintenance engineers. You can prevent risks and accidents by regularly reading and observing the various safety instructions.




This is especially important for personnel who only occasionally work on the machine, for example, carrying out rigging or maintenance work. The safety regulations listed below, if conscientiously followed, will ensure your own safety and that of others, and will prevent the machine from being damaged.

Whenever tasks which could cause danger to personnel or damage to the machine are described, the necessary safety precautions are explained in this manual.

These are indicated by the headings Danger, Warning or Caution.

1.1.1 Introduction

1. The symbols below have the following meanings:

Danger		<p>Danger</p> <p>Warning that without appropriate precautions, certain procedures could result in fatal accidents.</p>
Warning		<p>Warning</p> <p>Warning that without appropriate precautions, certain procedures could result in severe physical injuries.</p>
Caution		<p>Caution</p> <p>Warning that without appropriate precautions, certain procedures could result in minor physical injuries or damage to the machine.</p>

2. Observance of these instructions does not exempt you from following any additional rules and guidelines that may apply

The following should also be observed:

- The safety rules in force at the operating site
- Legally enforceable road traffic regulations
- Guidelines issued by trade associations

1.1.2 Overview of the safety regulations

A detailed description of these can be read in the relevant section of the safety regulations chapter in the operating manual.

The following sections are included in the operating manual:

- 1 Introduction
- 2 General safety regulations
- 3 Proper use
- 4 Decals on the machine
- 5 Instructions on preventing crushing injuries and burns
- 6 Instructions on preventing fires and explosions
- 7 Safety instructions for start-up
- 8 Safety precautions during start-up
- 9 Instructions for safe working
- 10 Safety instructions for driving on slopes
- 11 Parking safely
- 12 Transporting the machine safely
- 13 Towing the machine safely
- 14 Measures for ensuring safe maintenance
- 15 Safety instructions for working on machines with hydro accumulators
- 16 Safety instructions for welding work on the machine
- 17 Instructions for working safely on the working attachment
- 18 Safety instructions for transporting the machine by crane
- 19 Safe maintenance of hydraulic hoses and hose lines
- 20 Attachments and accessories
- 21 Protection against vibrations

1.2 Special tools for maintenance and repair work

1.2.1 Special tools in general

Description	ID no.	Use	Remarks
Anti-freeze and battery tester	7408922	All wheel loaders	For checking the acid concentration (battery charging state) and anti-freeze
24 volt vacuum pump	7408148	All wheel loaders	For preventing oil loss
Filling and testing device with case	8145359	All wheel loaders	For checking the hydro accumulator
Manometer 0-40 bar	7361288	All wheel loaders	For checking the hydraulic pressure
Manometer 0-250 bar	5002932	All wheel loaders	For checking the hydraulic pressure
Manometer 0-600 bar	5002866	All wheel loaders	For checking the hydraulic pressure
Manometer connection	7002436	All wheel loaders	Connection for the manometer
High pressure hose 1500 mm	7002475	All wheel loaders	High pressure hose for manometer
High pressure hose 4000 mm	7009134	All wheel loaders	High pressure hose for manometer
Screw connection M 10 x 1	5005180	All wheel loaders	For checking the hydraulic pressure
Draining hose	7005660	All wheel loaders	For draining oil via a drain valve
Drain piece	7402657	All wheel loaders	For the drain hose
Safety cap SW 10	7009315	All wheel loaders	For securing the valves on the variable adjustment motor
Safety cap SW 13	7615515	All wheel loaders	For securing the valves on the pumps
Safety cap SW 17	7615589	All wheel loaders	For securing the valves on the pumps
Safety cap SW 19	7009317	All wheel loaders	For securing the valves on the pumps
Safety cap SW 17	7622068	All wheel loaders	For securing the valves on the control block
USB dongle	10333608	L550 - L586	With SERVICE authorisation
Diagnostic data cable	10035410	L550 - L586	For adjusting the travel hydraulics, and testing the electrical system and options
Adapter cable RS232<->USB	693190714	All wheel loaders	For communicating with the wheel loader electronics if there is an error with the RS232 interface on the notebook.
Extraction tool size 20 for pin and bushing	8503630	All wheel loaders	For DEUTSCH connectors
SDCF – 03 memory card adapter	10223098	L550 - L586	For writing to the compact flash card
Compact flash card	10223095	L550 - L586	Blank compact flash card. Data medium for application software

1.2.2 Special tools for Liebherr diesel engines

Description	ID no.	Use	Remarks
Mandrel	9078118	L550 - L556 engine	For installing the mass equalisation shafts (D 934)
Mandrel	9078119	L550 - L556 engine	For installing the mass equalisation shafts (D 934)
Rotary angle device	0524062	L550 - L586 engine	For installing and removing the cylinder head
Holder	0528464	L550 - L586 engine	For checking projection of the cylinder bushings
Dial gauge holder	10023885	L550 - L586 engine	For checking projection of the cylinder bushings
Compression tester	8008782	L550 - L586 engine	For checking the compression
Compression tester insert	10012817	L550 - L586 engine	For checking the compression
Adapter	10297211	L550 - L586 engine	For checking the compression
Claw	10117612	L550 - L586 engine	For checking the compression
Engine turner	0524045	L550 - L586 engine	For installing and removing the pistons and rods
Holder	0528464	L550 - L586 engine	For installing and removing the pistons and rods
Piston strap	8000592	L550 - L586 engine	For installing and removing the pistons and rods
Rotary angle device	0524062	L550 - L586 engine	For installing and removing the pistons and rods
Piston ring tongs	7009319	L550 - L586 engine	For installing and removing the piston rings
Extractor tool	0526855	L550 - L586 engine	For installing and removing the cylinder bushing
Extractor tool	0528462	L550 - L586 engine	For installing and removing the cylinder bushing
Mounting pin	0528470	L550 - L586 engine	For installing and removing crankshaft attachments
Hook and lever	7019858	L550 - L586 engine	For installing and removing the front crankshaft seal
Inserter	10116249	L550 - L586 engine	For installing and removing the front crankshaft seal
Mounting pin	0528470	L550 - L586 engine	For installing and removing the flywheel
Inserter	10116250	L550 - L586 engine	For installing and removing the rear crankshaft seal
Special spanner	10020852	L550 - L586 engine	For installing and removing the injection line
Adapter	0524029	L550 - L586 engine	For installing and removing the pressure pipe port and injection nozzles
Adapter	10220689	L550 - L586 engine	For installing and removing the pressure pipe port and injection nozzles
Hammer puller	0524072	L550 - L586 engine	For installing and removing the pressure pipe port and injection nozzles
Pusher tube	10289319	L550 - L586 engine	For installing and removing the injection pump and roller tappet
Pusher tube	10289320	L550 - L586 engine	For installing and removing the injection pump and roller tappet
Mounting pin	0528472	L550 - L586 engine	For installing and removing the exhaust pipe

1.2.3 Special tools for hydraulic cylinders

Description	ID no.	Use	Remarks
Assembly sleeve 80 mm	9227165	L550, L556 steering cylinder	For fitting the seals
Assembly sleeve 90 mm	9227161	L566, L576, L580 steering cylinder	For fitting the seals
Assembly sleeve 130 mm	9998624	L550, L556 lift cylinder	For fitting the seals
Assembly sleeve 150 mm	9998622	L550, L556 tilt cylinder L566, L576, L580 lift cylinder	For fitting the seals
Assembly sleeve 170 mm	9107931	L566, L576, L580 tilt cylinder	For fitting the seals
Expansion sleeve 80 mm	9227166	L550, L556 steering cylinder	For fitting the seals
Expansion sleeve 90 mm	9227162	L566, L576, L580 steering cylinder	For fitting the seals
Expansion sleeve 130 mm	9110408	L550, L556 lift cylinder	For fitting the seals
Expansion sleeve 150 mm	9110410	L550, L556 tilt cylinder L566, L576, L580 lift cylinder	For fitting the seals
Expansion sleeve 170 mm	9110412	L566, L576, L580 tilt cylinder	For fitting the seals
Bearing head assembly spanner 70/8 mm	9210219	L550, L556 steering cylinder	For fitting the piston rod bearing
Bearing head assembly spanner 75/12 mm	9239572	L566, L576, L580 steering cylinder	For fitting the piston rod bearing

1.2.4 Special tools for electronics

Description	ID no.	Use	Remarks
Digital multimeter	8502956	All wheel loaders	For measuring voltage, current, resistance and frequency
Test probe, red	884191214	All wheel loaders	For testing DEUTSCH connectors
Test probe, black	884191114	All wheel loaders	For testing DEUTSCH connectors
Magnet tester	8145743	All wheel loaders	For checking solenoid valves
Stripping and crimping pliers 0.5 - 6.0 mm ²	8460263	All wheel loaders	For MATE-N-LOK connectors
Crimping pliers	8503647	All wheel loaders	For DEUTSCH connectors
Wedge extractor tool	7026267	All wheel loaders	For DEUTSCH connectors
Extraction tool size 12 for pin and bushing	8145674	All wheel loaders	For DEUTSCH connectors
Extraction tool size 16 for pin and bushing	8145673	All wheel loaders	For DEUTSCH connectors

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